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VOL. IV., 1897.





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# CONTENTS OF VOLUME IV.

## MAMMALIA.

	PAGE
1. Neumann's Hartebeest (Plate XIV.). WALTER ROTHSCILD . . . . .	377
(See also pp. 263 and 514.)	

## AVES.

1. Notes on the Localities visited by O. T. Baron in Northern Peru and on the <i>Trochilidae</i> found there (Plate I.). O. T. BARON . . . . .	1
2. On some Necessary and some Desirable Changes of Names lately used in connection with Philippine Birds. ERNST HARTERT . . . . .	11
3. Notes on Palaearctic Birds and Allied Forms. ERNST HARTERT . . . . .	131
4. Notes on Humming-Birds. ERNST HARTERT . . . . .	148
5. Mr. William Doherty's Bird-Collections from Celebes. ERNST HARTERT . . . . .	153
6. On Differences between Gùldenstädt's Redstart and its Eastern Ally. WALTER ROTHSCILD . . . . .	167
7. Description of a New Hill-Wren from Flores. WALTER ROTHSCILD . . . . .	168
8. On the Figures on Plate II. (Plate II.). WALTER ROTHSCILD . . . . .	169
9. Descriptions of Seven New Species of Birds and One New Subspecies from Flores, and of One New Subspecies from Djampoa. ERNST HARTERT . . . . .	170

	PAGE
10. On a Complete Skeleton of <i>Megalapteryx lewinipes</i> in the Tring Museum (Plate VI.). C. W. ANDREWS . . . . .	188
11. On the Birds Collected by Mr. Everett on Savu. ERNST HARTERT . . . . .	263
12. On some <i>Meliphagidae</i> and other Birds from New Guinea. ERNST HARTERT . . . . .	369
13. <i>Comatilis eremita</i> (Linn.), a European Bird (Plates VIII., IX., X.). WALTER ROTHSCHILD, ERNST HARTERT, and O. KLEINSCHMIDT . . . . .	371
14. On the Birds Collected by Mr. Everett in South Flores. Part I. (Plate III.). ERNST HARTERT . . . . .	513
15. Various Notes on Humming-Birds. ERNST HARTERT . . . . .	529

## REPTILIA ET AMPHIBIA.

1. Descriptions of New Species of Lizards and of a Tree-Frog from N.E. Queensland (Plates XI., XII.). A. GÜNTHER . . . . .	403
2. Further Notes on Gigantic Land Tortoises (Plate XIII.). WALTER ROTHSCCHILD . . . . .	407

## COLEOPTERA.

1. On a New <i>Catharsius</i> from Western Australia. JOHN W. SHIPP . . . . .	152
2. Trois Espèces Nouvelles d'Eucnémides de la Collection de Tring. E. FLEUTIAUX . . . . .	177
3. Die Passaliden dichotomisch bearbeitet. 2 <sup>TE</sup> Theil.—Die Arten. A. KUWERT . . . . .	274
4. Some New <i>Anthribidae</i> . KARL JORDAN . . . . .	173
5. On Three Undescribed Coprophagous Lamellicorns. JOHN W. SHIPP . . . . .	185

## LEPIDOPTERA.

1. New Genera and Species of Moths from the Old-World Regions. W. WARREN . . . . .	12
2. Descriptions of some New Species and Subspecies of <i>Lepidoptera</i> . WALTER ROTHSCHILD . . . . .	179
3. New Genera and Species of <i>Drepanulidae</i> , <i>Thyrididae</i> , <i>Epiplemidæ</i> , <i>Uraniidae</i> , and <i>Geometridæ</i> (Plate V.). W. WARREN . . . . .	195
4. Some New Species of <i>Heterocera</i> (Plate VII.). WALTER ROTHSCCHILD . . . . .	307
5. Two New Species of Butterflies. H. GROSE SMITH . . . . .	313
6. Notes on <i>Heterocera</i> , with Descriptions of New Genera and Species (Plate IV.). WALTER ROTHSCCHILD and KARL JORDAN . . . . .	314



	PAGE
7. Descriptions of Five New Species of <i>Lycaenidae</i> , captured by Mr. Doherty. H. GROSE SMITH. . . . .	366
8. New Genera and Species of Moths from the Old-World Regions. W. WARREN	378
9. New Genera and Species of <i>Thyrididae</i> , <i>Epiplemidæ</i> , and <i>Geometridæ</i> . W. WARREN . . . . .	408
10. On some New Butterflies and Moths. WALTER ROTHSCHILD . . . . .	507

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FOURTEEN PLATES.

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1. *Aglaeactis aliciae* Salvin

2. *Aglaeactis aliciae* Salvin  
3. *Formicivora speciosa* Salvin

Miner's Breech

# NOVITATES ZOOLOGICAE.

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## NOTES ON THE LOCALITIES VISITED BY O. T. BARON IN NORTHERN PERU AND ON THE *TROCHILIDAE* FOUND THERE.

By O. T. BARON.

(Plate 1.)

SOME of the localities mentioned in the following notes are referred to in the first paper on the birds collected by me in Peru, and published by Mr. Salvin in the second volume of this journal (Nov. Zool. II. pp. 1-22). The rest will be included in a second paper shortly to appear.

I paid special attention to the humming-birds wherever I was, and the following observations on them will, I hope, prove of interest.

### PACASMAYO.

Pacasmayo, the seaport of Cajamarca, is situated on the beach, so that waves of exceptional size wash into some of the houses facing the ocean. It is a place of very little interest, being built upon sand-dunes without vegetation.

This causes a great scarcity of birds in the immediate vicinity of the town. I saw only a few sparrows and one humming-bird during my stay there. The humming-bird, *Amazilia leucophaea*, was seen feeding from a few flowers, raised in pots and boxes in the hotel garden.

I remained only one night, and took the weekly train in the morning for the interior, arriving at Tembladera, 54 km. distant, after a ride of four hours.

### TEMBLADERA.

Tembladera is located on a large dry tract near the river Yonan. Nothing grows away from the ditches excepting cacti and some desert-bushes. Over the irrigated parts grow various trees, and rice is the principal cereal in the bottoms.

The large cactus, not unlike one of Arizona, differing, however, from it by having small pink flowers along the sides of the stems, instead of white ones on the crown as in the latter, furnishes the source of the principal food of *Rhodopis atacamensis*, not only while in blossom, but also when the fruit is ripe and partly eaten by ants or birds.

The flowers are first visited by these humming-birds so early in the morning that one can hardly distinguish them when feeding. They continue to feed till 9 a.m., when the flowers close in the hot sun, to partly open again after 4 p.m.

Ripe fruit exists nearly at all times, and grows to the size of a small apple. It



is of a sweetish taste, and sticky, so that when a bird sucks at it, it leaves a long thread of glittering juice between its bill and the fruit when flying away.

The little *Myrmia micrura* is also found in this locality, feeding from some small flowers which grow along the dykes. This bird here breeds in June, and frequently builds upon its old nest of the previous season. It selects a bush not over 50 cm. in height, and then places the nest between the top branches.

The *male* at that season watches the *female* from a high twig in the vicinity, and whistles a note very much like that of *Atthis heloisae* of Mexico. Occasionally he descends and flies in a vertical semicircle, always making a sound with the tail when on its downward course. The *female* sits in a thick bush, and at about the centre of the circle so made.

*Amazilia leucophaea* is also quite common near Tembladera, and also a few *Agrytria taczanowskii* were seen in that locality.

### SAN PABLO.

San Pablo is two days' travel along the river Yonan from Tembladera. The place has an elevation of 7500 feet, just above the level of barren lands. Above the town brushwood is seen along the cañons, and even trees grow above 9000 feet. I remained only one day at this place, time enough to recuperate the tired pack-animals.

Several species of humming-birds were seen in this neighbourhood, but few in numbers. I saw a *Diphlogaena*, probably *D. aurora*, in a deep cañon near the town, but in spite of all attempts could not get a shot at it.

Of other humming-birds *Patagona gigas* was the most prominent one. This species is far more plentiful in Peru than in Ecuador, where I have only obtained a few after a great deal of work.

*Adelomyia melanogenys* and *Aglæactis cupreipennis* complete the list of hummers in this locality; the latter were in large numbers above the town. They are very aggressive birds, and even put the *Patagona gigas* to flight.

Crossing the range towards Cajamarca, and all along the elevated grassy plains, were varieties of agaves in blossom. These were visited by *Pterophanes temmincki* and *Oreotrochilus stolzmanni*.

### CAJAMARCA.

After travelling eleven leagues from San Pablo over the high plains of 11,500 feet elevation, the road leads downward to Cajamarca.

This principal town of North Peru has about eight thousand inhabitants, and lies on the eastern slope of the coast range.

On three sides it is surrounded by barren hills, partly cultivated by Indians, whose huts are always surrounded by caeti. Agaves also form a part of the fences. Both of the above-mentioned plants were in bloom, as well as other *Amaryllidaceae*, and among those I observed on the subsequent day after my arrival a large humming-bird with long tail at a considerable distance.

I advanced as quickly as circumstances would allow, and although out of breath and probably a little excited, I had the satisfaction of seeing the bird fall after the shot. I did not know the bird, and considered it entirely new. It proved to be *Cyanolestia griseiventris*!

The entire morning was spent in searching for more specimens of this species, but I only obtained one more *male* that day. From subsequent observations I

concluded that *C. griseiventris* is one of the rarer species of humming-birds. It lives singly among rocky and inaccessible places and in deep cañons. Many times the collector has to shoot away several *Patagona gigas* in order to allow *C. griseiventris* to approach certain flowers. During two weeks' stay in Cajamarca I obtained only eight specimens of this species.

The *Metallura opaca* also may be seen around Cajamarca. I found in May a nest attached to an adobe house, with two grown young. Generally this bird builds under the roof of a house or under an overhanging cliff.

On a hunting excursion up a cañon which furnishes the water supply of Cajamarca, I found a nest of *Patagona gigas* placed on the ground in a little depression in a bank. The nest must have reared many generations of birds, judging from its dimensions of 20 cm. diameter and 15 cm. height.

I also found the nest of the same species with young, attached to a branch of a cactus.

Arriving at an elevation of 11,000 feet and entering a cave, I noticed a female *Oreotrochilus stolzmanni* flying through the entrance. I searched the cave, and was rewarded by finding a nest with eggs attached to the roof of the same. The bird manages to stick some wool into a small crevice very tightly, and then builds from it a hanging nest. Having made this observation, I had no difficulty in finding other nests.

At the Hacienda Santa Ursula, near Cajamarca, I saw a *Patagona gigas* fly from a large boulder of limestone, which was overgrown with lichen. Suspecting it to be a female I searched for a nest, the bird coming sometimes within a few feet of my head. This strengthened my supposition, but I had to give up the search. Next day I again started the bird from the supposed nest, but did not see the exact place from whence she flew, and did not find it. I had to use strategy by hiding behind rocks, and only then was it possible to see the bird return to its nest, which was placed amongst the lichen on a protruding piece of rock, and almost impossible to see from any part.

#### SAN MARCOS.

San Marcos lies about twelve leagues from Cajamarca, to which it is connected by one of the best roads in Northern Peru. It is a small place, but has a considerable extent of cultivated area in the neighbourhood.

Wood is not so scarce as in Cajamarca; all creeks and cañons have plenty of brushwood. Here I discovered my first specimens of *Cyanomyia cyaneicollis* feeding from the flowers of an agave in company with *Petasophora lolala*, *Patagona gigas*, and *Myrtis fanny*.

Although the first-named species, the *C. cyaneicollis*, had difficulty in obtaining food from flowers where the *Petasophora* also fed, the *Myrtis fanny* was entirely overlooked or tolerated, not only by the *Petasophora*, but also by the *Patagona gigas*.

After a day's travel, crossing the Cajamarca river and also the river Huamachuco, I arrived in the Hacienda Malca.

#### MALCA (CAJABAMBA).\*

Hacienda Malca lies on a level with the river bottom of the Huamachuco, and has a temperate climate, where sugar-cane is grown. The hills are covered by low brushwood and cacti, the cañons with willow and pepperwood.

\* This name is given as Malea in Mr. Salvin's paper.

Of humming-birds are found *Aggyrtia taczanowskii*, feeding principally from *Amaryllidaceae*, and *Patagona gigas*, with *Petasophoraolata* and *Myrtis fanny* from the agave. I also shot *Cynomyia cyaneicollis* near the river.

#### CAJABAMBA.

About six hours' travel from Malca, mostly up-hill, is Cajabamba, a town of about four thousand inhabitants. It lies on the western slope of a mountain which has an elevation of over 12,000 feet. To the westward is the Huamachuco river, the margins of which are covered with sugar-cane. The hills are clothed with small brushwood; only the cañons contain some small trees.

In the deep cañons *Diphlogaena eva*\* is found feeding on various flowers, including the agave. It is a shy bird, and difficult to get, owing to the thickets in which it flies. Often one may watch a flower an hour or more before one of the birds arrives to feed, and then, after shooting it, it falls into the creek and is carried down with the rapid-flowing water. Thus many specimens are lost to the collector.

The *Cyanolestia griseiventris* and *Aggyrtia taczanowskii* are also found below the town. At an elevation of 8000 feet I saw the first *Sappho caroli*. It proved to be a very shy bird. In spite of all I could do I could not get a shot that day. It was the next morning that I was enabled to discover the hiding-place of the bird, when it returned from feeding. It sat in a thick bush not over 1½ feet above the ground. This, as I have experienced subsequently, is the habit of the species; in all instances they return to their cover after feeding, or when persecuted by other humming-birds.

Up the mountain above an elevation of 10,000 feet *Lesbia* (the species near *victoriae*) is found. It is a noisy bird, and can be heard at a distance when in flight, chasing another *male* which happens to get within its feeding ground. The *females* keep generally in the brushwood, and are difficult to see. During January and February is the pairing season, and the birds are then in their best plumage. Then one sees the *male* rise high in the air, and come down with spread tail like an arrow, making a noise like a ribbon exposed to a very strong wind. This is repeated many times, or till the *female* has shifted to another bush. It is evident that the performance of the *male* is intended to attract the *female*.

#### HUAMACHUCO.

One short day's travel from Cajabamba, passing over a very broken country, partly cultivated and partly covered with brushwood, brings the traveller to Huamachuco. It is a small town, and has an elevation of 10,400 feet. Around the town the land is mostly barren, but the creeks are lined with small trees, principally alders. In these bushes I found *Buarremon rufigenis* and *B. baroni*. They feed principally under cover, and are only seen when flying from one thicket to another. *B. rufigenis* seems to be rather a rare bird, at least in this locality.

The commonest humming-bird around is *Aglaeactis cupreipennis*, and a great many may be seen about a bush common in the ranges of Ecuador and Peru. It is very much covered with spines, has small leaves and a pink composite flower. The *Metallura opaca* is not uncommon in cañons above the town, and is generally to be seen sitting on a root under the bank of a creek.

Interesting is the *Oreotrochilus stolzmanni*. It seldom rests on a branch, preferring a high boulder from which it commands a good view over its feeding grounds. Its food is taken from the same composite flower which is sought by *A. cupreipennis*,

\* *Diphlogaena eva* Salvin. Bull. B. O. C. No. xlii. p. xxx.



and if a bird of that or any other species attempts to feed, it comes down from its perch and always drives the intruder away. It seems that rights of occupation are always respected by humming-birds, and intruders must give way.

On such occasions I have seen two obstinate *O. stolzmanni* fly high in the air, there get hold of each other with claw and bill, and come down heavily to the ground, still holding fast, till my gun made an end to the fight, and caused them to be preserved for future reference.

All *Oreotrochili* feed while sitting on the flower.

Other humming-birds seen near Huamachuco are : *Patagona gigas*, *Lesbia gouldi*, *Lesbia* (the one near *victoriae*), *Metallura smaragdineicollis*, and *Myrtis fanny*.

### CHUSGON (HUAMACHUCO).

The Hacienda of Chusgon is about eight leagues eastwards of Huamachuco, and has an elevation of about 8700 feet. A considerable amount of cultivated land belongs to it, all near the river. The hills are covered with brushwood to about 10,000 feet elevation, and above that only grass grows.

In all my travels I have never seen *Petasophora iolata* more plentiful than in a cañon, full of blooming sage, in the neighbourhood of the Hacienda. They actually swarmed there, and did not even permit the strong *Patagona gigas* to get a footing among them.

If one of them approached, three to four of the *P. iolata* would immediately set upon it and drive it out of sight.

The *Lesbia gouldi* managed to get along by sucking a few flowers and then dodging quickly into the bush.

From Chusgon a trail leads over a range of mountains, 12,200 feet high, to the Hacienda Succha, eight leagues to the eastward.

### SUCCHA (HUAMACHUCO)\*

Succha is a very interesting place for a collector of birds, having all climates within a short range, the Hacienda being nearly in the middle. The elevation of the place is about 9000 feet, and really is on the slope of the Marañon gorge.

I made an interesting observation here with *Diphlogaena eva* in shooting six male specimens from one and the same little twig, each several days apart from the other. The birds chose the position on the twig because they could overlook a pretty large extent of flowers from that place, and drive away any intruder which happened to come there. Of course the position of the watching bird was known to other birds of the species, and after I shot the watching one, others would soon find out that the preserve was free to be taken up, and they chose the same favourite position of the twig, only to be shot again at my next visit.

Above the Hacienda, and above an elevation of 10,000 feet, I found *Aglaeactis aliciae*† feeding from parasitic flowers which abound upon alder and other trees.

The flower is orange-red, and grows in clusters like the mistletoe of other countries.

They also feed from a bush, the leaves of which are similar to oleander; the flower, however, is more like that of the bean, and is white. The seeds are enclosed in a bealike pod.

\* Suecha instead of Succha in Mr. Salvin's paper.

† Plate I.

The bush grows in high mountains, above 8000 feet elevation, in Ecuador and Peru.

*Chaetocercus bombus* also can be found, at an elevation of 10,000 feet, during March, and *Putugona gigas* descends to 6000 feet west of the Marañon, feeding from *Amaryllidaceae*.

#### VIÑA (HUAMACHUCO).

Going down-hill about four hours from Hacienda Suecha we get to the river Marañon, along which is a narrow strip of cultivated land, planted with coca and some fruit-trees. This is called Viña. The banks along the Marañon are completely barren up to about 7000 feet elevation, and the strip of land along the Marañon is only fertile because irrigated by a small creek from the mountains.

*Aglytrix taczanowskii* seems to claim the exclusive right to feed from the banana flowers in this place, *Cyanomyia cyaneicollis* seldom getting an opportunity to visit a flower.

I have seen one *male* specimen of *Chaetocercus bombus*; attracted by my butterfly net, it came very close to me, the eyes evidently expressing the greatest curiosity. The bird had a narrow escape from becoming a cabinet specimen.

The small parrot which I discovered, *Psittacula xanthops* Salv., is not rare in this locality. They fly in flocks, and feed on the seeds of the balsam tree and cactus seeds.

A large pigeon feeds on the ripe seeds of the coca plant, and gorges itself to such an extent as to burst its crop when falling from a tree after being shot.

In the morning the crops of the birds were always empty if shot before 8 a.m.

#### CHEPEN.

Chepen, a small town on the sandy plains irrigated by the Yonan river, is four hours' distance by rail from Pacasmayo.

Near the ditches and on the river banks can be found large quantities of willows.

The hills are generally barren, but in the depressions grow large mesquites.

Large quantities of parasitic flowers cover the bushes of every kind, and attract the two species of humming-birds found in this coast region.

*Amazilia leucophaea* is very numerous and *Myrmia micrura* is not rare, both feeding from the same flowers.

It rarely happens that the *Amazilia* drives away the *Myrmia*; the former seems to ignore the presence of the latter.

The white-winged pigeon (*Melopelia meloda*) is rare here, but quite numerous higher up among the hills along the river Yonan.

I have seen and heard the same bird among the reeds on river and ditch, travelling towards Truxillo from the mountains.

#### SANTIAGO.

Leaving Huamachuco and following along the river to its source, thence crossing a ridge at an elevation of about 12,000 feet, one comes, by descending some 2000 feet, to a Hacienda called Porcon. The place has about 10,400 feet elevation, and is near the town of Santiago.

The Hacienda has a very cold climate, and produces only potatoes and barley. The rest is pasture.

It would be interesting to examine into a local plague or pest of the potato. The tubers are full of larvae of a beetle while in the ground, and are destroyed by the same insect when stored. A larva of a moth adds to the destruction of the stored potatoes. The beetle did not exist in its perfect state during the month of April.

The people credit the hail, which falls quite often, with producing the worms, and nothing to the contrary will convince them of their error.

*Petasophora iolata* is the most common of humming-birds here, and *Oreotrochilus stolzmanni*, *Patagona gigas*, *Metallura opaca*, and *Lesbia* (near *victoriae*) are also found.

Here also I observed *O. stolzmanni* invariably sitting on rocks instead of on dry twigs like other humming-birds.

#### OTUZCO.

Two days' travel from Porcon, over several ridges more than 12,000 feet high, one comes to Otuzco. The roads are very bad, and during the rainy season quite impassable for pack-animals. There is no shelter for the traveller, with the exception of a rock, in the lee of which the night may be passed, though not without some discomfort.

Otuzco has an elevation of about 9000 feet, and lies on an inclined ledge of sandstone, upon which not a tree or bush grows.

A few miles down the road towards Truxillo some little vegetation and brushwood can be found. The latter is principally found along gulches and creeks.

Along the barren hills, where only a few small flowers could be seen, I found the first *Thaumastura cora*. The male bird generally rests upon some dry limb, and can be seen a long distance away on account of its long whitish tail playing in the wind. It is a known fact that every humming-bird sits head to the wind, and so it is not difficult to go in the proper direction for a shot.

During the pairing season the male is often seen with the tail spread so that the two longest feathers form nearly a straight line, and thus it flutters before the female, which may be sitting in a small bush. The male also flies, like the *Lesbiae*, high up in the air, and then comes down swiftly, making a noise with the tail like a ribbon in a strong wind.

I have found the nest and eggs of this species in the latter part of April. The nest is built between small twigs near the top of a bush.

*Sappho caroli* is also to be found in this locality. The retiring habit of this bird could be better observed here than in Cajabamba. The birds always sit inside a bush, especially preferring one in or above a ravine. After feeding they always return to their old place of rest.

*Myrtis funny*, *Petasophora iolata*, and *Patagona gigas* are the only other hummers in this locality.

#### PLATANAR.

Half a day westerly from Otuzco is the Hacienda Platanar. The elevation of the place is about 4500 feet.

Nothing but barren rocky mountains surround the narrow strip of cultivated land which lies along both sides of the Truxillo river.

Bird life is exceedingly scarce—too far inland for coast birds, and not high enough for those of the mountains.

Of humming-birds I only saw one *male*, *Thaumastura cora*, and a number of *Amazilia leucophaea*, the latter with nest and two eggs on May 10th, 1895. The nest was attached below the roof of the main building of the Hacienda. .

#### TRUXILLO.

One day's travel from the Hacienda Platanar is the largest town of North Peru, Truxillo, surrounded by a vast sandy plain, mostly cultivated with sugar-cane.

In the interior from Truxillo, at an elevation of about 1700 feet, I found various birds of interest, far more than at Truxillo itself.

*Myrmia micrura* was not uncommon at that place, and had mostly young in their nests on May 15th. *Amazilia leucophaea*, the most common bird along the North Peruvian coast, is also well represented here, and also a few *female Rhodopis* were seen near the large cacti which grow on the hills near the coast.

#### CELENDIN.

From Cajamarca eastwards across a ridge of mountains over 12,200 feet elevation, and after two days' travel without a hut to give shelter for the night, the beautiful valleys of Celendin and Vacapampa were reached. The valleys are in a high state of cultivation for Peru, but the hills around are covered with small brushwood. Very few species of birds are to be seen in these localities.

I remained here only a few days, long enough to obtain pack-animals to cross the Marañon to Leimebamba.

From the valley of Vacapampa, 8500 feet elevation, it is necessary to climb a ridge 1000 feet higher, and thence continue to descend over 6000 feet to the Marañon. The country passed over is brushy, showing more varied vegetation than the part gone over to reach the same river at Viña.

Below 6000 feet elevation the brushwood and cacti are covered with landshells, which are also different from those of Viña. The river is passed at an elevation of about 2900 feet.

On both banks of the Marañon I found *Psittacula xanthops*, and shot four specimens. I saw other birds which belonged to the same species as those shot at Viña.

Gladly would I have stayed a few days along the banks of the river, but as the contract had been made to deposit my goods at Leimebamba, no inducement would be accepted by the arrieros to alter the arrangement.

#### LEIMEBAMBA.

On the descent towards Leimebamba, at an elevation of about 10,500 feet, already in the timber-belt of the Rio Utenbamba (cotton river), I remained nearly fourteen days. This proved to be about the best place to collect birds on my entire voyage, being within easy distance of the high ground above which no trees grow. It was necessary for the birds which adapt themselves to woods to remain some time at the end of their daily upward search for food, and thus they became easy game, or else I could get shots at them on their return to the lower levels in the evening.

Here I found the new *Eriocnemis catharina* Salv.\* feeding on various parasitic flowers. It is more of a forest species than *Eriocnemis dybowskii*, found in openings on the way to Guayabamba at an elevation of 7300 feet.

\* *E. catharina* Salvin, *Bull. B.O.C.* No. xlii. p. xxx.



*Diphlogaena iris* also flies in this region. I shot several specimens from my tent while I was busy skinning birds.

Although I searched carefully for *Loddigesia mirabilis* all around my camp, none were found till after descending to Leimebamba.

The town of Leimebamba is merely a collection of huts, at an elevation of 7350 feet, having little cultivated land, most being forest. Here I again searched for *Loddigesia mirabilis*, and had the satisfaction, after two days' search, to obtain a *male* with the two outer tail-feathers barely developed. Otherwise the bird was in old plumage, indicating the necessity of waiting a few months more for full-plumaged specimens.

For the first time in my collecting experience of humming-birds I shot three adult birds (*Adelomyia melanogenys*) with one shot, two *males* and one *female*. Four birds were flying together, evidently one *female* and three *males*, when I fired. Searching carefully I found three birds; one *male* probably escaped.

#### LEVANTO.

Levanto is a small town, a mere collection of huts with stone walls, mostly laid loosely together. It has an elevation of 8800 feet, and is one and a half day's distance from Leimebamba towards Chachapoyas. It is surrounded by forest, some of it quite heavy.

In the cañons, among thick brushwood, can be found *Diphlogaena iris* and *Loddigesia mirabilis*.

*Heliotrypha viola* is not uncommon in the vicinity, feeding from the same flowers as the *D. iris*.

Besides the above-named species, the following are also found: *Aglaeactis cupreipennis*, *Docimastes ensiferus*, *Lesbia gouldi*, *Myrtis fanny*, *Metallura smaragdinicollis*, and *Panopolites matthewsi*.

#### SAN PEDRO.

San Pedro is a little town or village some four or five hours to the south-east from Leimebamba, and has an elevation of about 8900 feet. The town lies upon a hill-side, cultivated towards the Utcubamba river and wooded to the south and up the hill. It must have been a very important place during the times of the Incas, which is indicated by the very large number of burial buildings, still in a pretty good state of preservation. They are all circular structures of stone, some three metres high and four metres diameter. All of them are along the ridge of the mountain.

Here I collected the best specimens of *Loddigesia mirabilis* during December.

*Lesbia gouldi* is very common in this vicinity, and frequently makes it difficult for the above species, which is a more retiring bird, to feed from the raspberry flowers.

#### CHACHAPOYAS.

Chachapoyas is situated upon an open plain between the rivers Utcubamba and Ventillas, and has an elevation of about 7800 feet. To the south-east is a ridge of wooded mountains. Upon the slope of that ridge, about four hours from the town, are the ruins of a former Hacienda, once the hunting ground of Mr. Stolzmann, where I also collected some twelve days.

I found, as above stated, only ruins, and was compelled to pitch my tent. It so happened that the favoured locality for it was very near a thick bush full of flowers. Hardly was the tent up when I heard the already familiar sound of the wings of *Loddigesia mirabilis*. Immediately other arrangements were left and gun seized. I saw a beautiful male *L. mirabilis* in the bush, too near to shoot. A thought came to me to save the bird for observation, for which I have never been sorry, although I may have run the risk of losing so fine a specimen.

Shortly after a female arrived and rested upon a small limb. Immediately the male bird discontinued feeding and flew forward to the female, the tail so spread that the spatules were protruded in front of his bill. In this position it hovered a short time, when a young male appeared upon the scene. The adult male discontinued his performance and sat upon a little branch; the young hovered before it, flying from side to side about ten inches, and flipping its two long tail-feathers at every extreme of its course, producing a sound as if two fine leather belts were flipped together. The old male soon tired, forced the young to sit down, and then performed in the same way, but flipping the spatules together above instead of below the tail as the young one did. At times the adult male would also fly before the female from side to side, making a noise with the spatules so as to be heard thirty metres off. If the young returned alone and had nothing to play with, he would attack a dry leaf furiously, pick at it, and flap the tail for many minutes at a time.

Once two young birds met, one attacking the other. The sitting bird would watch the flying one, moving its head from side to side, and suddenly slip on the branch and into a hanging position. The flying bird would still attack it; yet the hanging one, although imitating death, had its eyes wide open.

#### GUAYABAMBA (= HUAYABAMBA).

Guayabamba is the valley along the river of that name, and has several settlements at various elevations. All is heavily wooded, and is a part of the great Amazon forest. I descended to a place called "Huambo," also the former hunting ground of Mr. Stolzmann, one corner-post of whose hut was still standing.

The fauna of this place, 4000 feet elevation, is very similar to that of Zamora in Ecuador.

I found it a difficult place to hunt, because the former settlement had been abandoned and nearly all paths were overgrown.

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# ON SOME NECESSARY AND SOME DESIRABLE CHANGES OF NAMES LATELY USED IN CONNECTION WITH PHILIPPINE BIRDS.

By ERNST HARTERT.

1. *Cinnyris excellens* Grant, *Bull. B.O.C.* No. XXIII. p. xviii (1895), and *Ibis*, 1895, p. 255, should stand as *Cinnyris flammans* (Oust.), having been described nearly twenty years before by Onstalet under the name of *Aethopyga flammans* in the *Journ. de l'Institut*, 1876, p. 108, and being excellently figured and described by Shelley in his admirable monograph of the *Nectariniidae*. The type of *C. flammans* came from Laguna, the same place whence Everett sent a fine series to the Tring Museum (see *Nov. Zool.* II, p. 488).

2. *Artamides mindanensis* Steere is the name still used for a *Graucalus* with generally pure white under tail-coverts inhabiting Mindanao, Basilan, and some other islands, but it must be called *Graucalus kochii* Kutter, having been clearly described under that name by Kutter in *Ornith. Centralbl.* 1882, p. 183. See also *Journ. f. Orn.* 1883, p. 308, and 1891, p. 293. One might, of course, use the generic name *Artamides* for it, but I do not consider the differences important enough for generic separation.

3. *Alcedo ispida* L. from the Philippines would be with more accuracy called *A. ispida bengalensis*, only the small Eastern subspecies of our kingfisher occurring there.

4. *Macropteryx comata* would be better called *M. comata major* Hart., all Philippine birds having very long wings (*Nov. Zool.* II, p. 473).

5. In *Ibis*, 1896, p. 554, Grant has declared that "*Munia brunneiceps* is merely the worn autumn plumage of *M. jayori*." With this sentence he evidently means to say that the birds of Celebes, North Borneo, and the Philippines all belong to the same species, in which he is doubtless right. It seems, however, still a question whether the Celebes birds are not in the main slightly different after all, thus being subspecifically separable. In any case Grant has, I think, pointed out the true relationship of the so-called *M. brunneiceps*, and it may be further considered whether *M. jayori* is more than subspecifically different from *M. atricapilla*.

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## NEW GENERA AND SPECIES OF MOTHS FROM THE OLD-WORLD REGIONS IN THE TRING MUSEUM.

By W. WARREN, M.A., F.E.S.

### FAMILY DREPANULIDAE.

#### 1. *Albara gracillima* sp. nov.

*Forewings*: pale silky straw-colour, tinged with pale brownish towards costa and apex; the costa yellow; the two lines brown, situated exactly as in *A. lilacina* Moore; fringe brown, straw-colour towards anal angle; no discocellular mark visible.

*Hindwings*: still paler; a brownish postmedian line only visible on inner margin.

Underside like upper. Face, palpi, and vertex dark brown; collar ferruginous; thorax and abdomen pale straw-colour.

Expanse of wings: 27 mm.

One ♂ from the Khasias.

#### 2. *Albara opalescens* sp. nov.

♂. *Forewings*: pale or dark mouse-colour; the costa burnished brown towards apex; lines dark chocolate-brown; first line curved and wavy, very indistinct; exterior line from costa at two-thirds, outwardly oblique and indistinct to near hindmargin, then acutely angled and running nearly straight and thickening to inner margin beyond middle; apex dark; an oblique dark line from the apex all but touches the exterior line at its angle, and is continued as a very faint dark line outside it to inner margin and as a series of dark dots on the veins parallel to hindmargin; fringe dark brown, with the basal line burnished brown; cell-spot very indistinct; at the lower end of the discocellular is a pale yellow trifid spot.

*Hindwings*: with costal area pale, the dark oblique line median; faint traces of a denticulated submarginal line; fringe as in forewings.

Head, thorax, and abdomen concolorous; face and antennae dark brown. Underside opalescent grey, unmarked.

Expanse of wings: 34 mm.

Several ♂♂ from the Khasias.

Nearest to *A. reversaria* Wlk., from Borneo, which has a burnished blotch in the angulation of the outer line.

#### 3. *Ausaris fulvilauta* sp. nov.

*Forewings*: yellow, washed with fulvous-orange, the whole surface sprinkled with shining silvery scales, not massed, as in *argenteola* Moore and other species, along the veins; a straight slightly fulvous line from near apex to inner margin at three-fourths; fringe fulvous, with a basal line of silvery scales.

*Hindwings*: the same, the costal area paler.

Underside wholly fulvous, without any markings. Head, thorax, and abdomen all orange-fulvous.



Expanse of wings : 40 mm.

One ♀ from Sandakan, March 1891.

Distinguished from the allied species by the orange-fulvous coloration.

Walker's generic name *Ausaris* (Wlk., *Cat.* XXVI. p. 1632. 1862), the type of which, *seintillata*, is very close to, if not identical with, *argenteola* Moore, must supersede Felder's *Cullidrepana*, which dates from 1867 only.

#### 4. *Auzata simplicata* sp. nov.

*Forewings*: white, very thinly scaled; costal edge ochreous white; the lines exceedingly faint, formed by sparse blackish scales; first vertical, beyond one-third, projecting outwards on the median vein, preceded by a fainter line; second at two-thirds, excurved beyond cell to inner margin near first line, followed by a fainter line containing a dark blotch and dot on vein 4, and a black dot on each vein below and above it; a strongly dentate but very obscure submarginal line; fringe white.

*Hindwings*: the same, but the lines single, and no black blotch beyond the second.

Underside iridescent white; costa of forewings fuscous towards base. Face and forelegs brown; antennae ochreous; thorax and abdomen white.

Expanse of wings : 32 mm.

One ♂ from the Khasias, May 1896.

#### 5. *Cobanilla cardinalis* sp. nov.

*Forewings*: deep brick-red, with some deeper red and, towards the hindmargin, blackish strigae; an obscurely darker postmedian line, angulated beyond the cell; a sinuate blackish cell-mark with grey centre; fringe red.

*Hindwings*: red, with a black grey-centred spot at each end of the discocellular.

Underside paler and duller; the margins suffused with grey; the strigulae blackish; both discocellulars blackish; the line of forewings hardly marked. Legs bright red; face dark brown; thorax red; abdomen pale grey, flushed with red above.

Expanse of wings : 26 mm.

One ♂ from Penungah, N. Borneo, December 1893 (*Cator leg.*).

#### 6. *Cobanilla hepaticata* sp. nov.

*Forewings*: pale liver-colour, with some sparse brown strigulae; costa with a somewhat diffuse brown triangular blotch at middle, followed by a patch of pale grey scales reticulated with brown; one or two brown spots near anal angle; the lines indistinct; first starting from inner edge of the triangular patch, incurved in middle, to inner margin at one-third; outer line from outer edge of patch, bent out along vein 6, sharply angled towards hindmargin, then nearly straight to inner margin before the anal angle; fringe darker, with slight projecting scales at the veins; discocellular marked by pale grey scales.

*Hindwings*: with scattered blackish dots, and a minute whitish cell-spot.

Underside paler, without markings. Face and vertex dark brown; thorax and abdomen pinkish grey.

Expanse of wings : 26 mm.

One ♂ from Sandakan, April 1894 (*Cator leg.*).

**Cyclura** gen. nov.

*Forewings* : with costa strongly curved throughout ; apex blunt ; hindmargin slightly incurved to vein 3, then oblique.

*Hindwings* : with apex rounded ; hindmargin rounded to beyond vein 3 ; inner margin shortened, the anal angle truncate, with a semicircular excision before vein 3.

Tongue and frenulum both absent ; palpi short ; antennae flattened and compressed ; hind tibiae with terminal pair of spurs.

*Neuration* : forewings, cell more than half as long as wing ; discocellular nearly vertical, slightly incurved ; vein 11 free ; 10 and 9 stalked ; 7 and 8 stalked ; 9 becoming coincident with 8.

Type : *Cyclura excisa* sp. nov.

**7. Cyclura excisa** sp. nov.

*Forewings* : rufous fawn-colour, with a few brown striae ; the lines dark brown ; first from costa shortly before middle, acutely angled close to costa, then oblique to near base of inner margin ; second from just beyond middle, running obliquely outwards, with two bright brown velvety blotches on it, acutely angled outwards and incurved to near middle of inner margin ; a minute white cell-dot.

*Hindwings* : with costal area whitish ; a fine slightly curved central brown line, with a dark brown cloud beyond it.

Underside pale pinkish grey, flushed with reddish in the middle towards hindmargin of each wing. Face, thorax, and base of abdomen reddish ; rest of abdomen pale silky ochreous.

Expanse of wings : 26 mm.

One ♂ from Penungah, N.E. Borneo, December 1893 (Cator leg.).

**Dipriodonta** gen. nov.

*Forewings* : with costa arched throughout and rough-scaled ; hindmargin obliquely curved ; anal angle obtuse.

*Hindwings* : with apex and hindmargin rounded ; anal angle square.

Palpi short, porrect. Antennae of ♂ flattened laterally, uniserrate below ; the teeth broad, close together, and curved ; above appearing rasped, with short sharp teeth.

*Neuration* : forewings, 10 and 11 stalked, 11 from the areole ; 10 anastomosing with 8, 9, to form the areole ; 6 and 7 both from the areole. Scaling thin ; forewings in disc with oval hyaline patches. Frenulum and tongue both present.

Type : *Dipriodonta sericea* sp. nov.

**8. Dipriodonta sericea** sp. nov.

*Forewings* : silky white ; two very faint brown lines near base, strongly curved in cell ; a waved brown line from costa before middle to inner margin before middle, distinct below the median ; a similar outer line from two-thirds of costa to three-fourths of inner margin, strongly excurved in middle ; a brown shade on costa beyond it, approximating to outer line, and forming two dark lunules and dots between veins 2 and 4, and a dot on inner margin ; a grey marginal shade rising from two black subapical dots ; some black specks at apex ; a black spot at base of discocellular, and a minute black dot on inner margin close to base ; lower half of cell

and space between median vein and submedian fold as far as outer line semihyaline ; fringe white, with a few dark scales along the white basal line.

*Hindwings* : with a faint median line, double grey postmedian, the outer arm marked with black dots on veins, and single curved submarginal line ; a minute black dot at lower end of cell.

Underside silky white, with costal area of forewings for three-fourths broadly smoky black. Face, vertex, thorax, and abdomen all white.

Expanse of wings : 21 mm.

Three examples from the Khasias, June 1896.

#### 9. *Drepana forata* sp. nov.

*Forewings* : fulvous-yellow, becoming fulvous-brown towards hindmargin ; outer line from costa at three-fourths, sharply angulated towards hindmargin, then oblique to inner margin at two-thirds, dark brown in its upper part, becoming orange-red below ; traces of a curved orange median line at costa ; the outer line is preceded by four hyaline spots, the two upper and the lowest small, the other larger, between veins 2 and 3 ; a small hyaline cell-spot ; fringe concolorous with hindmargin.

*Hindwings* : with an orange-red median line.

Underside dull yellow ; the hindmargin of forewings orange-red. Face orange-red ; thorax and abdomen like wings.

Expanse of wings : 24 mm.

One ♂ from Madagascar.

#### 10. *Euchera* (?) *nana* sp. nov.

*Forewings* : bronzy brown, with pale lilac-grey acutely angled transverse lines : two at base, two at about one-third, the outer one running out to midwing, there acutely angled, and irregularly wavy and dentate inwards ; a fifth beyond middle, angulated beyond cell, and straight and oblique to inner margin just beyond middle ; two more from apex, parallel to the lower part of the fifth to inner margin before anal angle, the last followed by a purplish blotch with white scales ; some dull purplish blotches along hindmargin ; fringe purplish, with the apex white.

*Hindwings* : more purplish, with six or seven wavy pale lines, the outermost dentate, none of them reaching the costa ; a marginal pale line with dark dots on it ; fringe as in forewings.

Underside bronzy grey ; hindmarginal area of forewings gilded bronzy. Face and palpi dark purple ; thorax and abdomen like wings.

Expanse of wings : 32 mm.

One ♂, one ♀, from Japan.

The antennae are shortly unipectinate.

#### 11. *Euchera sericea* sp. nov.

*Forewings* : silky white ; resembling *pitmani* Moore, but with a broad grey central fascia, followed by a curved line ; the submarginal series of spots more incurved at costa.

*Hindwings*: with the central line of lunate spots straight, not sinuate; the submarginal line of blotches with two large horseshoe-shaped marks between veins 2 and 3, and 3 and 4.

Expanse of wings: 84 mm.

One ♂ from Kina Balu, North Borneo.

## 12. *Oreta bicolor* sp. nov.

*Forewings*: greyish brown, with fuscous irroration towards costa in the outer half of wing; the veins paler; a red and yellow oblique streak from inner margin beyond middle, slightly curved into apex; marginal area with a few dark specks; inner margin slightly paler; fringe concolorous.

*Hindwings*: with costa ochreous, merging into reddish; the rest of wing brown; traces of submarginal lines of dark specks; cell-marks of both wings angular.

Underside deep red, the lines blackish; forewings with inner margin whitish. Face, vertex, pectus, and legs brilliant red; antennae ferruginous; thorax in front lilac-grey; rest of thorax and abdomen brown; sides of abdomen bright red.

Expanse of wings: 44 mm.

One ♀ from Gunong Ijan, Malay Peninsula.

## 13. *Oreta contracta* sp. nov.

*Forewings*: greyish olive, mingled with bright brick-red, and speckled with fuscous and black scales; an obscure diffuse median shade; some irregular black scales before hindmargin, massed towards anal angle into a double blotch, preceded by a scarcely perceptible grey line, starting from a dark costal spot at three-fourths, bent on vein 6, and straight below it; fringe red, mixed towards anal angle with brown-black; a black spot on discocellular at the angulation, and a smaller one at the lower end (these are absent in the ♂, perhaps accidentally).

*Hindwings*: deep red, with irregularly scattered black scales.

Underside duller red mixed with blackish, and with coarse black speckles; a brown nearly straight outer line, plainer than above. Face, palpi, legs, and vertex bright red; thorax dark brown; patagia and abdomen reddish grey.

Expanse of wings: ♂, 28 mm.; ♀, 30 mm.

A pair from Warri, Niger C. P., February 1896 (Dr. Roth).

The forewings have an angle in the hindmargin between veins 3 and 4, with an excavation above and below it; inner margin of hindwings lengthened, especially in the ♂; hindmargin straight.

## 14. *Phalacra multilineata* sp. nov.

*Forewings*: ochreous, suffused and dusted with greyish brown; first line black-brown, oblique from the costa and double, then obliquely dentate inwards to inner margin near base; discal mark oblique, blackish; outer line at two-thirds, brown, minutely crenulate, parallel to hindmargin, forming a brown patch on inner margin, where it approximates to a central line which is very indistinct in its upper course; submarginal line parallel to outer line, marked by dark dots on veins; space between the two paler, forming a whitish blotch on inner margin; a subterminal interrupted line formed of wedge-shaped black and white marks; a dark brown blotch at anal angle; fringe chequered pale and dark ochreous; all the lines start from brown costal blotches.

*Hindwings*: more or less suffused with dark brown; basal area ochreous, with three or four wavy darker lines; marginal line crenulate and zigzag, slender, bluish white, preceded by four parallel straight lines, which are absent in *vidhisaria* Guen.

Underside ochreous, with the markings brown. Face dark brown; thorax and abdomen ochreous, the latter tinged with grey.

Expanse of wings: 32 mm.

Several from the Khasias.

### **Strepsigonia gen. nov.**

♂. *Forewings*: with costa slightly curved near base, then straight, and strongly arched before apex; apex falcate; hindmargin angled at vein 3, concave above and sinuous below.

*Hindwings*: with apex rounded, the inner margin prolonged; hindmargin nearly straight, but with a slight elbow at vein 3; antennae of ♂ bipectinate to apex; palpi short; mid and hind tibiae with a terminal pair of spurs.

*Neuration*: forewings, cell more than half as long as wing; discocellular strongly inangulated; first median at three-fifths, second at four-fifths, third from end; lower radial from just above end; veins 6, 7, 8 stalked; 9, 10, 11 stalked; 6 and 11 shortly separating; 7 at three-fourths of areole, which is long; 10 from just before apex of areole; 8 and 9 anastomosing to form the areole.

Type: *Strepsigonia nigrimaculata* sp. nov.

### **15. Strepsigonia affinis sp. nov.**

*Forewings*: pinkish ochreous, with grey suffusion; two black spots on discocellular, as in *T. quadripunctata* Wlk.; a ferruginous wavy line, nearly vertical, before middle; a strongly dentate line at middle of costa, running out from veins 3 to 5 and inwards again to middle of inner margin; the included space pale rufous; submarginal line pale, lunulate, with dark grey shading on either side, and a dark spot between veins 6 and 7; fringe fuscous, with a broad pale line at base.

*Hindwings*: the same.

Underside shining ochreous, with a brown submarginal line on both wings, angulated on forewings; basal half of the latter suffused with rufous. Head, thorax, and abdomen concolorous with wings.

Expanse of wings: 27 mm.

One ♀ from Padang Rengas, Malay Peninsula.

The hindwings are decidedly angulated at vein 3; and the neuration differs from that of *S. nigrimaculata*: vein 11 rises from middle of areole; 8, 9, 10 all close to costal margin. The antennae are shortly pectinated.

### **16. Strepsigonia nigrimaculata sp. nov.**

*Forewings*: reddish grey, with darker grey markings; the lines indistinct; first at one-fourth, very obscure; second and third close together in middle of wing, irregularly curved and dentate, the space between them slightly darker, especially on costa; two black dots on discocellular; submarginal line lunulate and dentate, preceded by a darker shade, and with a dark grey blotch above vein 6 towards apex; marginal area narrowly greyish; fringe above the angle dark fuscous, with a lighter mark at ends of veins; below the angle reddish grey.

*Hindwings*: with costal area pale pinkish ochreous, without darker dusting;



central fascia forming an oblong blackish blotch on inner margin, its outer edge denticulate, passing outside a small black dot at lower end of discocellular; hind-marginal area tinged with dark grey; fringe pinkish grey.

Underside glossy, vinous; the outer line blackish and strongly expressed, angulated in forewings, curved and sinuous on hindwings. Face dark red; thorax and abdomen pale pinkish grey.

Expanse of wings: 26 mm.

One ♂ from Gunong Ijau, Perak.

Distinguished from *Tridrepana quadripunctata* Wlk. and its allies by the angulation of the wings.

#### 17. *Teldenia fulvilunata* sp. nov.

*Forewings*: white; outer line at three-fourths, brownish grey, irregularly bent and forming a rectangular projection outwards between veins 3 and 4, then strongly incurved to inner margin at two-thirds, preceded by a row of fulvous lunules, black-edged internally, except opposite the cell, where there are two black dots; the lowest lunule on the inner margin wholly black; submarginal line fuscous, oblique outwards, and evenly waved to vein 3, then running in and nearly touching the outer line, thence irregularly waved to anal angle; a marginal row of distinct black dots; fringe white.

*Hindwings*: the same, but the lunules smaller, the space opposite the cell also containing one; a black spot on inner margin at end of outer line.

Underside white; costa of forewings fuscous at base.

Face red-brown, narrowly white below vertex; thorax and abdomen snow-white.

Expanse of wings: 24 mm.

One ♂ from S. Celebes, September 1891 (W. Doherty).

#### 18. *Tridrepana diluta* sp. nov.

Like *T. quadripunctata* Wlk., but larger and more faintly marked on both surfaces.

Expanse of wings: ♂, 36 mm.; ♀, 38 mm.

Khasia Hills.

Walker's type of *quadripunctata*, a ♂ expanding 22 mm., from Sarawak, is decidedly smaller and darker than the large Indian form; but the smaller form does occur in the Khasias, as well as the larger; and the two forms may prove to be seasonal. In *Faun. Brit. Ind. Moths*, I. p. 341, Hampson gives 26 mm. as the size of the ♂, and 38 mm. for the ♀: the latter evidently belongs to the form *diluta*; his description agrees with the smaller.

#### 19. *Tridrepana subobliqua* sp. nov.

Forewings paler ochreous than in *T. diluta* Warr., with faint rufous dusting; the lines darker, the exterior blackish. Markings above as in *diluta*. On the underside of the forewings the exterior line is thick and black, and runs from the submedian fold straight into the apex, whereas in *diluta* the line, which is much fainter, is angulated on vein 6 and retracted to the costa; in the hindwings the outer line is as strongly marked as in the forewings.

One ♂ from S. Java, 1891 (Fruhstorfer).

The single specimen is intermediate in point of size between *T. diluta* Warr. and *T. quadripunctata* Wlk.

**Trotothyris** gen. nov.

*Forewings* : with costa strongly shouldered at base, slightly sinuate beyond ; apex minutely produced ; hindmargin vertical from just below apex to vein 3, where it is bluntly elbowed and excised to anal angle.

*Hindwings* : narrow, with the projection at vein 3 broader, the excision below as in forewings.

Antennae (♀) simple ; tongue present ; frenulum absent ; palpi short, applied to face ; hind tibiae with four spurs ; the legs smoothly scaled.

*Neuration* : forewings, cell not half as long as wing ; discocellular very oblique ; veins 7, 8, 9, 10 stalked ; 11 anastomosing with stalk of 8, 9, 10, forming a long areole.

Type : *Trotothyris abnormalis* sp. nov.

**20. Trotothyris abnormalis** sp. nov.

*Forewings* : pale pinkish fawn-colour ; the costal and subcostal veins marked with silvery scales ; a large hyaline spot beyond cell, edged with black and externally again with ferruginous, with a small hyaline dot at its base ; outer line from costa above the hyaline patch, forming the edge of the ferruginous border, and below the middle straight and oblique to inner margin at two-thirds, where it is edged with a pale lustrous line ; a wavy darker submarginal line, becoming dark brown towards anal angle, and followed by a ferruginous patch at the elbow ; fringe dark brown ; there are traces of three or four curved and wavy lines before the hyaline patch ; a minute black cell-dot.

*Hindwings* : with costal area pale ; a dark diffuse pale-edged central line, and traces of a submarginal line from apex to elbow, which is ferruginous ; fringe blackish ; a dark spot below median vein near base.

Underside pearly ochreous, with a pinkish tinge ; marginal area fawn-colour.

Face dark brown ; vertex, thorax, and base of abdomen concolorous with wings ; rest of abdomen pale grey.

Expanse of wings : 28 mm.

One ♀ from Penungah, December 1893 (Cator leg.).

## FAMILY THYRIDIDAE.

**21. Addea rectisecta** sp. nov.

*Forewings* : ochreous, with numerous oblique pale brown tessellated fasciae which become confluent in the costal area and form a brown subcostal streak ; an annular cell-spot, externally dark-edged, followed by three blackish dashes above vein 5 ; on the submedian fold towards the base are two or three more dark dashes ; fringe pale, with the base broadly pale brown.

*Hindwings* : with six straight brown fasciae parallel to hindmargin, the third the darkest, the sixth narrow.

Underside similar. Face, palpi, and collar pale brown ; thorax and abdomen pale ochreous mixed with pale brown ; the abdomen with a dark ring in middle, corresponding with the dark third fascia of the hindwings.

Expanse of wings : 16 mm.

One ♂ from Amboina, February 1892 (W. Doherty).

Distinguished by the straight-cut hindmargin of hindwings.

22. *Banisia praeusta* sp. nov.

*Forewings*: glossy greyish ochreous, slightly reticulated with darker; traversed by dull rufous grey darker-edged bands; one at base; a second just beyond, bent below middle; the third before middle of wing, broader on costa and inner margin, its outer edge bent on the median; fourth beyond the middle, bifurcate below the middle of wing, followed by a curved black-brown streak with ferruginous edges running to hindmargin below the middle; a short subapical brown streak; fringe glossy greyish fuscous, with a dark dividing line, the basal portion darker, the apical mottled, dark and light.

*Hindwings*: with basal, bifurcate median, and broad ferruginous-tinged submarginal fasciae.

Underside with the fasciae pale coppery brown, with the edges interruptedly darker. Face, palpi, and antennae bright ferruginous; vertex, thorax, and abdomen glossy ochreous grey.

Expanse of wings: 36 mm.

One ♀ from Batchian, May 1892 (W. Doherty).

23. *Banisia bifimbriata* sp. nov.

*Forewings*: rufous ochreous, reticulated with brown; the markings chestnut; costa broadly chestnut, suffused with grey; a vertical brown line near base; a narrow antemedian chestnut fascia, edged with brown; a broader inwardly bent chestnut fascia beyond middle containing the dark cell-spot; a submarginal fascia, interrupted in the middle; an irregular blackish spot near middle of hindmargin; fringe broad, bright chestnut, with a black median line.

*Hindwings*: paler, strigulated with dark brown-black, with two blackish spots above anal angle; fringe as in forewings, but the dividing line hardly darker.

Underside coppery ochreous, with dark strigulations. Head, thorax, and end of abdomen dark chestnut; rest of abdomen paler, the basal segment ringed with black.

Expanse of wings: 29 mm.

One ♂ from the Khasias, May 1896.

24. *Banisia seriata* sp. nov.

*Forewings*: ochreous, suffused with greyish rufous, and with a few obscure transverse striae; a curved fascia just beyond middle, most distinct towards inner margin, where it is filled up with grey and extended basewards; an obscure submarginal fascia, in places tinged with grey.

*Hindwings*: with two grey bands, one central, the other submarginal; the paler spaces traversed by thinner rufous bands.

Underside with the ground-colour paler and all the markings much brighter; an angulated white mark on the discocellulars, with brown suffusion on each side and a black spot at the base. Head, thorax, and abdomen rufous ochreous.

Expanse of wings: 26 mm.

One ♀ from Dar-es-Salaam, German East Africa.

## FAMILY URANIIDAE.

25. *Acropteris costinigrata* sp. nov.

*Forewings*: white; the costa marked with distinct black spots at base, which become broader and doubled towards apex; markings much as in *striataria* Cl.; a straight diffuse shade from one-third of inner margin towards apex, a double line from just beyond middle, and a submarginal line of strigulae, all meeting below apex: costal half of wing above the first diffuse line suffused with grey strigulations except on basal half of costa; fringe grey, with a darker basal line.

*Hindwings*: with an obscure basal, broad central, and narrower submarginal band of grey strigulations, the last followed by scattered strigulae; fringe grey, the basal line darker and slightly thickened at the veins; a single small blackish dot in the tooth.

Underside white; the costa of forewings spotted with black. Head, thorax, and abdomen white; the face black.

Expanse of wings: 38 mm.

One ♀ from the Gold Coast, West Africa.

26. *Acropteris insticta* sp. nov.

*Forewings*: dull whitish, with a broad diffuse oblique fuscous shade from one-third of inner margin, a narrower shade from two-thirds, and a still narrower submarginal one meeting below apex; costa with fine dark strigulae, which are produced as far as the oblique shade; beyond the submarginal line is a series of strigae vertical to the veins; fringe white, with fine blackish basal line.

*Hindwings*: with a double basal, suffused broad central, and narrow somewhat broken submarginal fascia, the last united to the margin by irregular strigulae; fringe white, with black basal line; no spot whatever in the tooth.

Underside grey, paler towards apex of forewings. Face black; thorax and abdomen whitish.

Expanse of wings: 32 mm.

One ♂ from Madagascar.

In the hindwings the hindmargin is convex above the angle, and slightly concave below it.

27. *Acropteris nigrisquama* sp. nov.

*Forewings*: white, the markings very much the same as in *striataria* Cl.; the scales at base of forewings beneath black, and showing through a hyaline spot as a dark mark on the upperside; hindmargin slightly concave.

*Hindwings*: without a distinct black spot at the tail.

Expanse of wings: 36 mm.

One ♂ from Akassa, R. Niger.

28. *Acropteris reticulata* sp. nov.

*Forewings*: dull white; the costa with fine fuscous strigulae; the whole wing covered with transverse partially reticulated striae; an indistinct double grey line of striae from inner margin beyond middle towards anal angle; fringe white, with an ochreous basal line.

*Hindwings*: with the striae tending to arrange themselves in cross lines; a small black dot in the angle.

Underside pure white; thorax and abdomen white.

Expanse of wings: 30 mm.

One ♂ from Tenimber, June 1892 (Doherty).

### **Aploschema** gen. nov.

*Forewings*: with costa curved from base to apex; hindmargin curved.

*Hindwings*: with a short sharp tail at vein 4; apex and anal angle rectangular; hindmargin faintly sinuous on either side of the tail.

Antennae of ♂ lamellate, subdentate; hind tibiae of ♂ with three spurs, as in *Micronia*.

*Neuration*: alike in both sexes. Forewings, cell one-third of wing; discocellular straight; first median at two-thirds, second close to, third from, end of cell; lower radial from a little above the middle of discocellular; 6 and 7 stalked; 8, 9, 10 stalked; 11 free. Hindwings with 6 and 7 short-stalked; 3 and 4 from end of cell.

Type: *Aploschema angulataria* Fab.

### **Dissoprumna** gen. nov.

*Forewings*: with costa arched throughout; apex blunt; hindmargin curved.

*Hindwings*: with a tooth at vein 4; the hindmargin above it sinuous, below it straight; the anal angle lobed.

Antennae flattened, lamellate; legs short; hind tibiae of ♂ with four spurs.

*Neuration*: alike in the two sexes. Forewings, cell one-third of wing; discocellular vertical; first median not far before end of cell; second and third stalked from end; lower radial from centre of discocellular; 6 and 7 long-stalked; 8, 9, 10 stalked; 11 and 12 stalked. Hindwings with both subcostals and last two medians stalked.

Type: *Dissoprumna erycinaria* Guen.

### **29. Micronia fuscifimbria** sp. nov.

*Forewings*: white, with sparse ochreous striae, the costa very faintly dotted with fuscous; median and outer ochreous parallel lines; inner line obsolete; fringe ferruginous ochreous, the base darker, and with minute darker dots at end of veins.

*Hindwings*: with broad ochreous median line curved into inner margin above anal angle; curved and denticulated ochreous submarginal line; some ochreous striae before hindmargin; fringe as in forewings, with a minute black dot at the base of the tooth, and a large black spot before it.

Underside wholly white. Face and palpi dark brown; thorax and abdomen white.

Expanse of wings: 46 mm.

Three examples from the Tenimber Islands, July 1892 (W. Doherty).

### **30. Micronia pluviosa** sp. nov.

♂. *Forewings*: white, with dark grey transverse lines and strigulations, becoming blackish along costa; the strigulations, which are really thick streaks, are all somewhat oblique outwards, while the three lines, which are smoky grey, are parallel



to the hindmargin, the second and third appearing furcate towards costa; fringe white, with dark grey basal line, thickened above and marked with grey blotches between the veins.

*Hindwings*: with inner margin broadly grey and with three grey streaks, one from near base of costa towards anal angle, the second from middle of costa to half-way between anal angle and tooth; the third from before apex, slightly curved and denticulate, joining the second before hindmargin; the black marginal line swollen above the tooth into black spots at end of veins; a black dash in tooth, a large black spot before it and another on vein 3.

Underside uniform grey. Face and palpi black; vertex white; thorax dark grey; abdomen white, grey-tinged.

Expanse of wings: ♂, 58 mm.; ♀, 62 mm.

The ♀ is paler, less densely strigulated; the underside of forewings with the margins white; of hindwings wholly white, except the costa.

The ♂ agrees with *M. sinuosa* in having the hindmargin of forewings indented below apex and above anal angle, the submedian vein of forewings sinuous. In the ♀ the hindmargin of forewings is indented only below apex, the rest being slightly convex.

One ♂ from Penungah, December 1893; one ♀ from Kina Balu, North Borneo.

### 31. *Micronia sinuosa* sp. nov.

*Forewings*: dull white, covered with thick greyish ochreous strigulations; two oblique greyish ochreous streaks parallel to hindmargin, from inner margin beyond middle and at four-fifths, the first thicker, especially on the inner margin, both becoming obsolete before costa; fringe white, with a concise brown-black line at base; hindmargin shortly indented just below apex, and more broadly above anal angle.

*Hindwings*: with a curved central and curved and denticulate submarginal ochreous shade; some more uniform ochreous strigulae before hindmargin; fringe ochreous white; the basal black line much swollen opposite the veins above the tooth, less so below it; a black dash in the tooth and a large black spot before it; an additional, but smaller, black spot on vein 3 before the margin.

Underside uniform dark grey; fringe of forewings white, of hindwings greyer. Face and palpi black; thorax and abdomen white.

Expanse of wings: 54 mm.

One ♂ from Palawan.

Differs from *M. aculeata* in the neururation: veins 2, 3, 4 of forewings are not distorted, but vein 1 is strongly sinuate.

### 32. *Pseudomicronia unimacula* sp. nov.

*Forewings*: white, the costa minutely strigulated with black; the transverse lines very pale ochreous, indistinct; these are six in number, and are arranged much as in *Strophidia fasciata*, each partially double and forking towards costa, the outside one being a fine single line parallel to hindmargin; fringe white, with a faint basal line.

*Hindwings*: with four oblique ochreous fasciae and two lines of striae along hindmargin, curving into anal angle; tooth with one large black spot; marginal line slightly swollen at the veins.

Underside pure white. Face, thorax, and abdomen all white.

Expanse of wings: 32 mm.

Two ♂♂, 1 ♀, from Dili, Portuguese Timor, May 1892 (Doherty).

33. *Stesichora angulilinea* sp. nov.

*Forewings*: white, with ochreous strigulation; costa finely marked with blackish; an upright ochreous line from inner margin at two-thirds, slightly curved above and not reaching costa; a fainter line, formed of striae, half-way between it and the margin; fringe rufous, with a dark fine line at base.

*Hindwings*: with the two lines equally distinct, angled and denticulate in the middle; some fine straight rufous strigae before hindmargin; fringe rufous, with shallow black lunules at end of veins; a black dash in the tail and a black spot before it.

Underside white. Face and palpi black; thorax and abdomen white.

Expanse of wings: 48 mm.

Many of both sexes from Dili, Portuguese Timor, May 1892 (Doherty).

34. *Stesichora combinata* sp. nov.

*Forewings*: white; basal half of costa with numerous oblique short dark striae; apex with a double blackish blotch; two very pale brown oblique lines from inner margin, which become obsolete before the apex; fringe white.

*Hindwings*: with two straight lines, the outer one greyer, and a short basal line.

Underside of forewings slightly tinged with grey; the apex smoky grey; of hindwings white. Face and palpi black; thorax and abdomen white.

Expanse of wings: 32 mm.

One ♂ from Constantinhafen, German New Guinea.

35. *Stesichora nivea* sp. nov.

*Forewings*: white; three black dots near base of costa and one at apex; marginal line and fringe pure white.

*Hindwings*: with fringes wholly white, without a speck of black.

Underside all white. Thorax and abdomen white; face and palpi black; antennae above white at base, then grey; underneath yellowish.

Expanse of wings: 50 mm.

A pair from Kei Toeal, January to March 1896 (H. C. Webster).

36. *Stesichora pieridaria*.

*Micronia pieridaria* Guen., *Phal.* II, p. 30 (? locality).

*Stesichora quadristriata* Warr., *Nov. Zool.* III, p. 274 (Fergusson Island).

The species described by me as *quadristriata* is evidently identical with Guenée's *pieridaria* and must sink.

FAMILY EPIPLEMIDAE.

37. *Decetia numicusaria* Wlk. ab. *sinelinea* nov.

*Forewings*: rufous, with a few brown strigulations at anal angle only; the submarginal apical spots black, with white scales round them; cell-dot minute; no trace of oblique outer line; fringe deep red, with an orange line at base.

*Hindwings*: with the outer half brown, with dense strigulations; the orange line before fringe conspicuous; the rest as in type-form.

One ♂ from the Khasias, June 1896.

This form is almost identical with Butler's *D. insignis* from the Solomon Islands.

### 38. *Epiplema caesia* sp. nov.

*Forewings*: pale blue grey, dusted with fuscous and tinged in parts with fulvous; traces of a dark curved median line near costa; hindmargin freckled with iron-grey, edged internally by blackish scales, forming a curved line from near apex to anal angle, protuberant towards cell; fringe mottled dark and light grey.

*Hindwings*: with costal area white, dusted finely with black, edged by an undulating black line followed by deep chestnut, mixed with fulvous and metallic scales, this tint running up in middle of wing towards base; on centre of inner margin is a whitish patch varied with yellow and black scales; a black spot below the base of lower tooth.

Underside grey, coarsely mottled with blackish; the forewings dark, the hindwings whiter. Face, palpi, and collar a mixture of dark fuscous and yellowish scales; the collar and basal half of costa of forewings varied also with metallic scales. Thorax and base of abdomen like forewings; anal half of abdomen fuscous, with paler rings.

Expanse of wings: 20 mm.

One ♀ from the neighbourhood of Manila (J. Whitehead).

Akin to *E. instabilata* Wlk.

### 39. *Epiplema instabilata semifulva* subsp. nov.

In this local form the markings of the hindwings are all bright fulvous, with a few fuscous strigae towards anal angle and the small black dot before second tail.

Expanse of wings: 20 mm.

Several examples from the Khasias.

### 40. *Epiplema niveipuncta* sp. nov.

*Forewings*: dull grey, traversed by close vertical lines of dark grey scales and tinged with ferruginous in certain lights; the costa paler, either ochreous or ferruginous, between the striae; first line at one-third, blackish, edged inwardly with ferruginous; second just beyond middle, edged outwardly with bright ferruginous, convex outwards from costa to middle, concave thence to inner margin; submarginal line indistinct, sinuous, blackish; a deep black dot before apex; fringe mixed, dark grey and ferruginous, with a paler basal line and paler tips.

*Hindwings*: with the lines rather more distinct, especially towards inner margin; a pale somewhat ferruginous patch above anal angle; an indistinct submarginal line of black dashes surrounded by ferruginous scales; a snow-white triangular spot before the upper tooth.

Underside dark cinereous; the white spot of hindwings marked. Head, thorax, and abdomen like wings, a mixture of dark iron-grey and ferruginous.

Expanse of wings: 16 mm.

One ♂ from the neighbourhood of Manila (J. Whitehead).

41. *Epiplema paradeicta* sp. nov.

*Forewings*: white, indefinitely suffused with very pale yellowish ochreous, and with fine yellowish striae; costa finely dotted with blackish; beyond the middle are traces of a double yellowish fascia, containing slightly darker striae, the first having on its inner edge a spot of dark brown scales between veins 2 and 3, the second with some slight dark scales on inner margin at anal angle; a minute black subapical dot between veins 6 and 7; fringe white, with yellow basal line.

*Hindwings*: with an ochreous patch at base, angulated in middle of wing; a pale ochreous line from costa before middle to beyond the angle of basal patch; a postmedian diffuse yellowish shade from costa before apex to below middle of wing, where it is expanded and reaches from the end of the basal patch to hindmargin, containing a deeper yellow patch opposite the cell, and some very fine darker curved strigae on its inner edge; a black dot before upper tooth, a very minute one above it, and a brown dot before lower tooth; fringe white, with ochreous basal line, broader between the teeth.

Underside white, the costa at base blackish; a subcostal ochreous fuscous streak from base to four-fifths, where a similar fascia runs straight to anal angle, its inner edge diffuse, its outer edge concise and straight; a minute black dot between veins 6 and 7; hindwings white, with the costa and a patch opposite cell ochreous; the dark dots slightly marked; fringe of upper tooth blackish. Face brown; thorax and abdomen white and ochreous.

Expanse of wings: 21 mm.

One ♀ from S. Celebes, September 1891 (W. Doherty).

The inner margin of forewings is sinuous; costa of hindwings evenly curved and fringed with hair throughout; the teeth both long, the lower one deflexed.

42. *Gathynia divaricata* sp. nov.

*Forewings*: pale ochreous, suffused and dusted, except along the submedian area, with brownish grey and rufous; the costal region thickly speckled with grey; the lines ferruginous; first from costa at one-fourth, irregularly excurved and bluntly angled on the median vein, thence oblique and straight to inner margin at one-third; second at three-fourths, strongly excurved to below median, then sinuous to inner margin at four-fifths; a faint ochraceous streak along the cell; two small black dots or dashes before hindmargin below apex; marginal line fine, dark; fringe ochreous grey, with a darker dividing line.

*Hindwings*: wholly greyish rufous; first line acutely angled in middle, second curved and hardly angled; four or five black dashes on ferruginous scales below the tooth.

Underside pale straw-colour, the forewings much smeared with grey. Face and palpi blackish; vertex and collar dark grey; thorax ochreous mixed with grey; the patagia and abdomen ochreous, the latter marked with grey on back of basal segments.

Expanse of wings: 24 mm.

One ♂ from Bonthain, S. Celebes, 5000—7000 feet, October 1895 (A. Everett).

Resembles *Gathynia funicosta* Warr. from the Khasias, but at once distinguished by the wholly brown hindwings and their single tooth at vein 6.

## FAMILY GEOMETRIDAE.

## SUBFAMILY OENOCHROMINAE.

**Adeixis** gen. nov.

*Forewings*: with costa straight; apex blunt, nearly rectangular; hindmargin oblique, straight above, strongly rounded below, the anal angle truncate.

*Hindwings*: with margin and both angles well rounded.

Forehead with rough porrect scales; palpi porrect, subrostriform, roughly scaled; antennae of ♂ bipectinate; the pectinations stiff and bent forwards at their apex, all strongly ciliated; those on the inner side of the shaft only half as long as those on the outer; hind tibiae thickened and roughly scaled, with four stout spurs; hind tarsi short, one-third of tibiae; forewings with rough hair at base of costa beneath, covering the retinaculum.

*Neuration*: forewings, cell more than half as long as wing, both margins bent inwards towards extremity; first median nervule at two-thirds, second before end, third from end of cell; lower radial from somewhat above centre of discocellular; upper from upper end of cell; veins 7 and 8, and 9 and 10 stalked, 8 anastomosing with 9 and 10 to form a single areole; 11 free. Hindwings with costal closely approximated to subcostal for three-fourths of cell, then rather strongly curved away; cell three-fifths of wing; first subcostal and second median from before the end of cell; radial from above the middle of discocellular.

Type: *Adeixis insignata* sp. nov.

The genus seems to agree in the main with what Mr. Meyrick (in the *Proceedings of the Linnean Society of N. S. Wales for 1889*, p. 1196) calls *Aspilates* Tr.; but as I cannot see how a genus formed for European species can be restricted (?) so as to include Australian *Oenochrominae*, I have referred the insect under notice to a new genus.

43. **Adeixis insignata** sp. nov.

*Forewings*: mouse-colour, dusted with darker atoms; no distinct markings; a slightly darker cell-spot; an oblique outer line from middle of inner margin towards apex, sometimes marked by darker denticulations on the veins, and traces of a pale curved submarginal line; fringe concolorous, beyond a very fine dark marginal line.

*Hindwings*: paler, ochreous grey, becoming darker only along hindmargin.

Underside the same. Head and thorax mouse-grey; abdomen somewhat paler; palpi tinged with ochreous.

Expanse of wings: 21 mm.

Two ♀♀, four ♂♂, from Parkside, Australia.

A very obscure-looking insect.

44. **Onycodes rubra** sp. nov.

*Forewings*: reddish fawn-colour, sprinkled with black scales; the lines very obscure, reddish, at one-third, one-half, and two-thirds, oblique from the costa, then vertical and waved; a paler diffuse grey shade from apex towards inner margin, the marginal area beyond reddish; fringe reddish.

*Hindwings*: dull red, sprinkled with black; with two dark lines; the inner margin greyer.



Underside of both wings brighter red; apex of forewings and inner margin of hindwings grey, the latter with a curved orange-red band in the middle. Face and vertex dark brown; thorax concolorous with wings; abdomen wanting.

Expanse of wings: 38 mm.

One ♀ from Dawson, N. Queensland (A. S. Meek).

#### SUBFAMILY ORTHOSTIXINAE.

##### **Barrama** gen. nov.

Allied to *Rambara* Moore; the wings more thickly scaled, not hyaline; abdomen not elongated; hind tibiae of ♂ not thickened or with a pencil of hairs, slender, with the terminal spurs only; antennae of ♂ subseriate, with fascicles of very fine cilia.

Type: *Barrama impunctata* sp. nov.

##### 45. **Barrama impunctata** sp. nov.

*Forewings*: whitish, suffused, especially towards costa, with pale ochreous fuscous; an outer greyish line at two-thirds, slightly more oblique than the hindmargin; a small blackish cell-dot, and row of dark marginal dots; fringe greyish.

*Hindwings*: paler, with the line strongly curved and often very obscure.

Underside the same. Face, thorax, and abdomen pale fuscous grey.

Expanse of wings: ♀, 24 mm.; ♂, 26 mm.

Ten ♂♂, two ♀♀, from Weenen, Natal, March 1894.

##### 46. **Bociraza reversa** sp. nov.

*Forewings*: black, with a broad deep yellow blotch from middle of costa towards anal angle, rounded at the end and not continued basewards along the costa.

*Hindwings*: with a similar blotch, but broader, from the inner margin towards apex.

Underside the same, but duller. Head, thorax, and abdomen all black; antennae black at base, with the outer half white.

Expanse of wings: 39 mm.

Three ♂♂ from Obi, Moluccas, May 1892 (W. Doherty).

##### 47. **Cartaletis flexilimes** sp. nov.

*Forewings*: orange-red, with a broad black marginal border containing three white blotches, the upper one large and irregular in shape, the lower two long ovals; the dividing line between the two colours is not angularly bent, as in *C. erici* Kirby, but irregularly sinuous.

*Hindwings*: with a narrower black border from apex to anal angle, narrowest at the ends, and containing seven oval white spots.

Underside like upper. Face orange, with a white spot at top; frontlet and antennae black; collar white, with a dark edge; thorax and patagia striped black and white; abdomen black with white rings above, orange-red below.

Expanse of wings: ♂, 52 mm.; ♀, 58 mm.

A pair from Warri, Niger Coast Protectorate, February 1896 (Dr. Roth).

In this species the bar between costal and subcostal of the hindwings, instead of being near the base, is half-way down the cell, much longer, and very distinct.

48. *Eumelea albimacula* sp. nov.

*Forewings*: brown-black; costa towards base dotted with white; an oblong irregularly dentate-edged blotch beyond the cell from vein 7 towards anal angle; two small white triangular spots on inner margin before the anal angle; fringe black; cell-spot deep black.

*Hindwings*: with the white blotch broader, its edges more regularly crenulate, touching the inner margin, and containing the black cell-spot.

Underside rather paler. Face and palpi (damaged) tinged with fulvous, probably when fresh wholly fulvous; vertex and collar fulvous; thorax and abdomen black; a small fulvous spot at base of forewings and side of thorax; legs grey; fore tibiae fulvous; tuft of hind tibiae pale.

Expanse of wings: 38 mm.

One ♂ from Obi, Moluccas, May 1892 (W. Doherty).

This unusually coloured species is, of course, nearest to *E. algidaria* Wlk. from Mysol.

The forewings are decidedly narrow, the apical portion much produced; hind-margin very oblique, slightly bent at vein 6 and incurved before anal angle.

49. *Eumelea ludovicata cupreata* subsp. nov.

♂. *Forewings*: wholly suffused with rich coppery fulvons, with thick purplish fuscous or olive-fuscous dots and striae; costa purplish, dotted with black; the lines purplish fuscous; first line curved, at one-third, consisting of a costal spot and a spot on submedian fold; second from middle of costa, excurved round cell, and also marked by a round spot on submedian fold; submarginal shade nearly straight, diffuse; an obscure fuscous annulus on discocellular; fringe dark.

*Hindwings*: with the lines distinct only towards costa; apex slightly paler, in only one example yellowish.

Underside yellow; the forewings suffused with fulvous, and spotted and blotched with brown-red; the costa and submarginal shade prominently brown; hindwings with all the spots and blotches tinged with rosy.

♀. Exactly like the ♀ of the form *rubrifusa* from Dili, Timor, except that the spot at base of middle line on inner margin of forewings, and the corresponding spot on costa of hindwings, are larger and round.

Seven ♂♂, three ♀♀, from Tenimber, July 1892 (W. Doherty).

Interesting as showing the local variation, confined almost wholly to the ♂♂. These from Tenimber have lost all trace of the yellow blotches which are the special characteristic of *ludovicata* Guen. in the various ♂-forms.

50. *Eumelea sanguinata australiensis* subsp. nov.

Differs from the type (*sanguinata* Warr.) in being about two-thirds the size and less vividly red; apex of hindwings sometimes narrowly yellow.

Several examples from Cedar Bay, south of Cooktown, and Geraldton (A.S. Meek).

The ♀♀ in this species are as red as the ♂♂.

51. *Eumelea semirosea* sp. nov.

*Forewings*: olive-fulvous, with rosy transverse striae; the costa yellow, with purple-fuscous striae; discal ocellus bright rosy; a curved thick deep rosy line at

two-thirds, beyond which the whole marginal third is suffused with deep rosy, including the fringe, the costa remaining narrowly yellow; no trace of inner or submarginal line.

*Hindwings*: the same, with cell-spot obscure.

Underside similar, but duller. Face, palpi, and collar marked with brilliant red; thorax, like the extreme base of forewings, yellow; abdomen yellow and suffused with rosy.

Expanse of wings: 54 mm.

One ♂ from Halmabeira, August 1892 (W. Doherty).

The apex of forewings is blunt, the hindmargins of both wings more fully curved and rounded than usual; distinguished by the contrast between the fulvous inner area and the rosy marginal third.

## 52. *Noreia muricolor* sp. nov.

*Forewings*: mouse-colour, reddish-tinged, and very finely speckled with black; first line marked only by dark dots on veins; cell-spot brown; outer line deep brown, edged outwardly with ochreous, from two-thirds of inner margin towards costa before apex, slightly concave outwards; fringe concolorous, with a very slender dark basal line.

*Hindwings*: rather darker; the cell-spot more prominent; the oblique line central and thicker.

Underside paler, more speckled, with a sinuous brown outer line on both wings. Head, thorax, and abdomen concolorous.

Expanse of wings: 32 mm.

One ♂ from Natal.

There is not the slightest trace of any hairs on the underside of the hindwings.

## 53. *Ozola pulverulenta* sp. nov.

*Forewings*: pale greyish ochreous or greyish fawn-colour, with darker mottlings; the lines indistinct; first at about one-third, curved; the second at two-thirds, also curved from costa to submedian fold, then straight to inner margin; cell-spot slightly darker; fringe grey.

*Hindwings*: a little paler, with denser mottlings along inner margin; fringe concolorous; a linear cell-mark. Head, thorax, and abdomen greyish.

Underside paler, with rufous frecklings.

Expanse of wings: 26 mm.

Numerous examples from Weenen.

Evidently a very variable insect, both in the ground-colour and in the distinctness of the markings.

## ab. *fasciata* ab. nov.

The whole of the central space between the two lines filled up with dull brown, the lines themselves being still darker brown and clouded.

## *Xantheliodes* gen. nov.

*Forewings*: elongate; costa straight, slightly curved just at base and before apex; apex rounded; hindmargin obliquely curved and passing into inner margin without forming a distinct anal angle.

*Hindwings*: elongate, narrow; apex rounded; hindmargin scarcely curved; anal angle obtuse.

Frenulum absent. Antennae of ♂ bipectinated nearly to apex, the pectinations clavate; palpi very short; tongue slight; face smooth; forehead hairy; hind tibiae with apical pair of spurs; legs short.

*Neuration*: forewings, cell nearly two-thirds of wing, shorter above than below; discocellular vertical in upper half, then strongly oblique onward; first median at three-fourths, second well before end of cell, third from the end; median vein inclined upwards between the last two; lower radial from above the angle of discocellular; upper radial stalked with the last four subcostals from end of cell; 11 free from cell, anastomosing with 12; 10 closely approximated to 11, and there suddenly bent, but not anastomosing. Hindwings with costal approximated to subcostal near base, then gradually divergent; the two subcostals stalked; radial from above the angle of the discocellular; medians as in forewings.

Type: *Xantheliodes uniformis* sp. nov.

#### 54. *Xantheliodes uniformis* sp. nov.

*Forewings*: deep yellow; costa narrowly black; hindmargin black, rather broadly at apex, gradually narrowing to a point at anal angle.

*Hindwings*: the same, with the marginal black border much narrower at apex.

Underside like upper. Face black, yellow above and below; vertex black, laterally yellow; antennae black; centre of thorax and shoulders black; patagia yellow; abdomen yellow, with black segmental rings; legs blackish.

Expanse of wings: 36 mm.

One ♂ from Zomba, Upper Shiré River (3000 feet), December 1895 (Dr. P. Rendall).

#### SUBFAMILY PSEUDOTERPNAE.

#### 55. *Pingasa subpurpurea* sp. nov.

*Forewings*: white, dusted and shaded with pale olive; the lines dark olive; first at one-fourth, forming a curve above and below the median, followed by olive dusting; cell-mark diffuse, dark olive; outer line at two-thirds, dark olive, strongly denticulate outwards on the veins; submarginal line wavy, bluish white, preceded and followed by pale olive suffusion; fringe pale olive, with a hardly darker basal line.

*Hindwings*: the same, with no basal line and the fringe whiter; inner margin with scattered red scales.

Underside white, with the costa of forewings and inner area of both wings broadly suffused with yellow; cell-mark on forewings and submarginal band on both wings deep purple; the band touching the margin opposite cell and above anal angle, and there tinged with yellowish.

Face, palpi, antennae, and vertex ochreous white, the face above tinged with rufous; thorax in front olive-green; rest of thorax, patagia, and abdomen whitish, with scattered ochreous and olive scales.

Expanse of wings: 38 mm.

One ♂ from Sandakan, N. Borneo, January 1893.

56. *Terpna ruficoloraria* sp. nov.

Like *T. varicoloraria* Moore, but the wings suffused with rufous brown; and crossed by fine brown and fuscous striae, with hardly any green; extreme base whitish ochreous; first line at one-fifth, fine, black, outwardly oblique and slightly waved; outer line at two-thirds, black, denticulate, with two prominent teeth on veins 3 and 4; a black discocellular line; inner margin between the lines and at anal angle deeper red-brown; a large pinkish white apical patch, inwardly edged with dark brown, and throwing whitish streaks inwards along the veins; marginal line black, interrupted; fringe rufous, whitish below apex.

*Hindwings*: similar; the outer line followed by whitish grey patches, more or less diffused towards margin.

Underside white, with a tinge of ochreous on forewings and costal area of hindwings; a broad black submarginal fascia, touching margin on forewings opposite the cell; forewings with black cell-spot.

Face and palpi reddish; vertex white, tinged with red; thorax and abdomen rufous and grey, the latter with fine black lines on each side of the tufts.

Expanse of wings: 58 mm.

One ♂ from Kina Balu, N. Borneo.

## SUBFAMILY GEOMETRINAE.

57. *Agathia confuscata* sp. nov.

*Forewings*: deep green; the costa grey, dotted with fuscous; the base with a vinous-red blotch; an irregularly bent and angled vertical band at one-third, rufous grey; marginal third rufous grey, its inner edge deeper and sinuous, containing a green blotch below apex, touching hindmargin, and a small green spot between veins 2 and 3; fringe rufous grey.

*Hindwings*: with base and inner margin narrowly vinous-red; outer third rufous grey, containing a green apical blotch, its inner edge marked on costa by a blackish red-edged narrow blotch.

Underside pale whitish green, with a fuscous submarginal fascia on both wings. Face and palpi rufous; vertex and thorax green; abdomen wanting.

Expanse of wings: 28 mm.

One ♀ from Sierra Leone.

58. *Agraptochlora modesta* sp. nov.

*Forewings*: uniform deep green; the costa ochreous.

*Hindwings*: the same; the fringe grey, without basal line.

Underside wholly green; the costa of forewings broadly ochreous, towards the base tinged with red. Face and palpi deep red; fillet whitish; vertex and thorax green; abdomen discoloured, probably green.

Expanse of wings: 26 mm.

One ♂ from S. Africa.

Distinguished from *A. subaspersa* by the much smaller size and uniform green underside. The type of *subaspersa*, however, is a ♀.



59. *Agraptochlora rubriplaga* sp. nov.

*Forewings*: deep green; the costa ochreous, tinged at base with red; fringe pale, with a reddish middle line and minute dark brown dots at ends of veins.

*Hindwings*: the same.

Underside paler green, fading to ochreous; costa broadly ochreous, with a large blood-red spot at base. Face, palpi, and forelegs red; vertex white; thorax and abdomen green.

Expanse of wings: 36 mm.

Four ♂♂ from Natal (A. J. Spiller).

60. *Anisogamia albilauta* sp. nov.

*Forewings*: pale green, subtransparent; the veins with white dots; costa broadly brown; a white curved line at one-fourth, and a wavy sinuous white line at two-thirds, followed by white blotches at apex, middle, and anal angle; fringe green.

*Hindwings*: the same.

Underside pale whitish green. Palpi and face ochreous; vertex white; antennae brown; thorax and abdomen green.

Expanse of wings: 34 mm.

One ♂ in bad condition from Moroka, British New Guinea, October 1895, at 3500 feet (Anthony).

The antennae are shortly pectinated for half their length only; the apex of hindwings is not truncate.

The species of the genus here described—except *dentata*—together with *metaspila* and *saturataria* Wlk. and *neisparsa* Butler, differ from the more typical species, *pietroides* Wlk., etc., in having the two sexes nearly alike in colour and markings.

61. *Anisogamia albimacula* sp. nov.

*Forewings*: sea-green, subtransparent, with numerous whitish strigulations; the veins darker green, dotted with white; costa finely dark brown, with white dots; no distinct lines, but traces of a curved whitish one at one-third, *white* on inner margin, and of a wavy submarginal line containing a small whitish blotch between veins 3 and 4, more distinct in the ♂; a row of large pale spots along margin at the ends of the veins, white in the ♂, pinkish white in the ♀; fringe green, in the ♀ marked with pinkish grey beyond the spots; the hindmargin and fringe distinctly crenulate.

*Hindwings*: the same, with a large double white blotch in the ♂ on each side of the second median, which is absent in the ♀.

Underside pale whitish green. Palpi with second joint green above, third joint pinkish; lower half of face pale; upper half, vertex, thorax, and abdomen green; metathorax and penultimate segment of abdomen brownish, marked with white; the ♂ with some white dorsal spots, the ♀ with pinkish spots; legs and abdomen beneath white; the fore tarsi fuscous brown.

Expanse of wings: 36 mm.

Both sexes from Mackay, Queensland; Cedar Bay, near Cooktown, and Geraldton (A. S. Meek).

62. *Anisogamia curvigutta* sp. nov.

♀. *Forewings*: as in *A. albimacula*, thinly scaled, sea-green, with white spots on the darker veins; the costa narrowly brown, with white dots; a wavy whitish line is distinct on inner margin just before middle; a cream-coloured blotch at apex, edged with fuscous, narrow above and swelling out below, reaching to beyond third median, with some fuscous scales along its centre; fringe green, with white spots at the ends of veins on the hindmargin; the spots in the blotch *brown*.

*Hindwings*: the same; the blotch longer and more sinuous.

Underside whitish green, the blotches showing white; a small brown spot at apex of hindwings. Palpi, face, and vertex ochreous tinged with brown; shoulders, patagia, and first segment of abdomen green; thorax and rest of abdomen white; fore tarsi fuscous, dotted with white.

Expanse of wings: 32 mm.

Two ♀♀ from Mackay, Queensland.

63. *Anisogamia dentata* sp. nov.

*Forewings*: deep sea-green, semitransparent, the veins dark green, dotted with white; the costa broadly greyish fuscous, with ochreous streaks; first line at one-fourth, white, distinct only above inner margin; a pale ochreous fuscous-dotted roundish spot on upper half of discocellular, touching costal streak; outer line white, at four-fifths, incurved in middle, and forming a broad sinus outwards above and below; marginal area grey-brown or reddish brown, deeper brown along the outer line and at the costa, where the outer line is itself more broadly white, preceded by a curved green space; marginal line strongly marked, dark brown; fringe paler.

*Hindwings*: similar; upper half of discocellular marked by a linear white spot of raised scales; inner margin wholly green.

Underside pearly whitish green; outer line broadly edged with a blackish dentate fascia, the margin beyond dull white, with black marginal spots. Palpi whitish ochreous, tinged with pale fuscous; face snow-white below, deep green above; vertex whitish, thickly mottled with rufous grey; thorax and patagia deep green; metathorax and abdomen ochreous, suffused with rufous and densely dusted with black scales, the latter sometimes marked with lateral green scales.

Expanse of wings: 32 mm.

Two ♀♀ from Cedar Bay, south of Cooktown, North Queensland (A. S. Meek).

Nearest to *A. pieroides*, but easily separable, not only by the deeper green tint and absence of bright red markings, but also by the margins of the wings, which, instead of being waved, are very highly dentate, the tooth at vein 4 being conspicuous.

64. *Anisogamia moniliata* sp. nov.

*Forewings*: deep green, the costa broadly ochreous, speckled with fawn-colour; first line hardly traceable, ending in a pale spot on inner margin beyond one-third; second line absent; marginal space narrowly ochreous, mottled with fuscous, expanding slightly towards apex and anal angle; fringe ochreous, with a yellowish basal line.

*Hindwings*: the same.

Underside pale whitish green; the costa of forewings luteous. Palpi ochreous,

terminal joint fuscous; face deep green; fillet and antennae white; thorax and abdomen green, the latter tinged with pinkish ochreous.

Expanse of wings : 36 mm.

One ♀ from Cedar Bay, south of Cooktown (A. S. Meek).

65. *Anisogamia muscosa* sp. nov.

*Forewings* : deep green, shagreened with dull pinkish white; the costa pale ochreous, with numerous red-brown dots and blotches; a red-brown blotch at base, and a dot at base of cell; a costal blotch at one-fourth, indicating first line: a much contorted red-brown band from costa just beyond middle, incurved below cell along the median vein, running to inner margin before middle; this band is double at costa, and throws spurs outwards along veins 5 and 3; outer band at four-fifths, parallel to hindmargin, composed of red-brown blotches, with paler centres, the largest at costa, those below vein 5 and on vein 2 conspicuous; a submarginal row of red-brown white-tipped spots between the veins; fringe green, with pinkish dashes opposite the veins; cell-spot large, triangular, deep liver-colour.

*Hindwings* : with the base silvery; cell-spot smaller, with a small red-brown spot above it; outer macular line and submarginal row of spots only marked, the former with a conspicuous blotch above anal angle.

Underside whitish green, with the cell-spot and lines only marked in the costal half of forewing. Face ochreous at bottom and along sides, green in middle, edged above and below with red-brown; palpi red-brown above, ochreous below; vertex, thorax, and abdomen deep green; antennae deep red-brown, the base whitish; anal segment of abdomen silvery white, edged with red-brown.

Expanse of wings : 36 mm.

One ♂ from Fergusson Island, September to December 1894 (A. S. Meek).

66. *Anisogamia nigrimaculata* sp. nov.

*Forewings* : yellowish green, the costa narrowly dark brown; first line pale, marked by a brown-black patch on inner margin at one-third; exterior line lunulate, whitish, followed by three similar lines, which make the whole marginal area appear whitish, except opposite the cell.

*Hindwings* : with the basal area much mottled with white; the outer line and marginal area as in forewings, but the apex marked with a large black blotch.

Underside whitish green, with the black blotch at apex of hindwings. Palpi and face reddish; thorax and abdomen green.

Expanse of wings : 34 mm.

One ♂ from Moroka, British New Guinea, October 1895, at 3500 feet (Anthony).

Though taken at the same time and place as *A. albilanta*, it is quite distinct. The antennae are pectinated for two-thirds, and the apex of the hindwings is distinctly truncate.

67. *Anisogamia undilinea* sp. nov.

*Forewings* : sea-green; costa white, speckled below with fuscous, the extreme edge remaining pure white; first line at one-fourth, second at three-fourths, both finely white and distinctly waved; fringe green, with white spots at ends of veins.

*Hindwings* : with no basal line.

Underside pale whitish green ; forewings towards costa becoming bright green ; the costal edge white, with a bright yellow streak below it from base to middle. Palpi white underneath, green above ; face green, with two white dots below ; vertex white, greenish behind ; antennae with shaft white, and pectinations yellow ; thorax and abdomen green, the latter with white spots on dorsum ; underside of abdomen and legs white ; forelegs tinged with fuscous yellow.

Expanse of wings : 34 mm.

One ♂ from Cedar Bay, Cooktown (A. S. Meek).

Distinguished by the white-edged costa and distinctly undulating outer line.

#### 68. *Chloromma persimilis* sp. nov.

*Forewings* : dull olive-green, with the two lines brown, placed almost exactly as in *C. mimica* Warr. from the Khasias : cell-spot brown.

*Hindwings* : with two brown spots on the discocellular, instead of the large brown blotch.

Underside wholly pale green, with no markings.

Expanse of wings : 26 mm.

One ♂ from Warri, River Niger, January 1896 (Dr. Roth).

In the forewings veins 6, 7, 8, 9, 10, and 11 are all stalked, 11 anastomosing with the costal ; the discocellular is excurved in the upper part, and rectangular outwards in middle.

#### *Chlorostrota* gen. nov.

*Forewings* : with costa straight for two-thirds, then curved ; apex blunt ; hindmargin bent at vein 4, more oblique below.

*Hindwings* : with hindmargin bluntly toothed at vein 4.

Antennae of ♂ bipectinate to apex ; palpi inclined upwards, the second joint thickly sealed ; third small and blunt ; tongue and frenulum present ; hind tibiae not thickened, with four adjacent spurs.

*Neuration* : forewings, cell two-fifths of wing ; first median at two-thirds, second just before angle of cell ; last four subcostals stalked, the first free. Hindwings with the subcostals and last two medians stalked ; first median just before angle of cell.

Type : *Chlorostrota praeampla* sp. nov.

To this genus belongs also *albiviridis* Moore.

#### 69. *Chlorostrota marginata* sp. nov.

*Forewings* : grass-green : the costa ochreous, thickly dusted with brown ; traces of a curved exterior line marked by white dashes on the veins ; marginal line brown, preceded by an irregular narrow ochreous brown-dotted fascia, which swells out below vein 4 into a large pale patch and smaller patches below the large one.

*Hindwings* : the same.

Underside wholly whitish green. Face dark brown : thorax and abdomen (probably) green.

Expanse of wings : 38 mm.

One ♀ from Warri, River Niger, January 1896 (Dr. Roth).

The only example is much worn, and a more exact description will be desirable when better specimens are obtainable.

70. *Chlorostrota praeampla* sp. nov.

*Forewings*: deep green; the costa whitish, with fuscous speckles; first line at one-fourth, fine, whitish, oblique inwards; second line from a dark costal spot at two-thirds, white, bent at vein 6, and incurved at vein 3, where it broadens and runs into a large white anal blotch, marked with flesh-coloured fuscous and green scales; submarginal line white, bent on vein 7, then oblique to the anal blotch, nearly touching a diffuse white marginal shade, which is edged by green lunules before the white fringe; cell-spot whitish; vein 6 whitish from cell-spot, all the other veins whitish between the outer and submarginal line.

*Hindwings*: with basal half green, its edge sinuous; costal and inner margins narrowly, outer margin broadly, cream-white; some rufous fuscous scales at apex and anal angle; an interrupted green band from vein 6 to anal blotch, followed by another and fainter band of green scales; the lunules below apex deep fuscous red; cell-spot linear, white.

Underside of forewings pearly white, green-tinged in basal half; costa yellowish; costal area irrorated with fuscous, with two spots and the cell-spot large and fuscous; a fuscous blotch at anal angle of forewings and apex of hindwings; the marginal spots black. Palpi dark and light fuscous; face dark green above, white below; vertex whitish; thorax green; abdomen white, speckled with green, more thickly towards base.

Expanse of wings: 42 mm.

One ♂ from the Khasias, June 1896.

*Collesis* gen. nov.

♀. *Forewings*: with costa arched throughout, apex minutely projecting; hind-margin vertical above, curved below.

*Hindwings*: with rounded hindmargin, the anal angle prominently square.

Antennae in ♀ pectinated; palpi porrect, short; tongue present; frenulum absent.

*Nervation*: forewings, cell not half the length of wing; discocellular with lower arm long and oblique; first median at three-fourths, second before end, third from end of cell; lower radial from upper end of discocellular, upper from the angle; all five subcostals stalked, the first anastomosing with the costal. Hindwings with costal anastomosing with subcostal for half the length of cell; the two subcostals on a long stalk; last two medians short-stalked.

Type: *Collesis mimica* sp. nov.

Distinguished from *Euchloris* and its allies, to which it is nearest akin, by the anomalous anastomosis of the costal vein in hindwings.

71. *Collesis mimica* sp. nov.

*Forewings*: pale whitish green; a darker green outwardly white-edged oblique line from just before apex to inner margin at two-thirds.

*Hindwings*: with the line just beyond the middle; fringe of both wings concolorous.

Underside whitish. Head, thorax, and abdomen concolorous; vertex white.

Expanse of wings: 28 mm.

One ♀ from Mpetá, Loangwa River, north of Zambesi, November 1893 (P. T. Coryndon).

Superficially very much resembling a small *Metrocampa margaritata*.



72. *Episothalma marginata* sp. nov.

*Forewings*: deep green; the costa rufous, thickly dotted with fuscous and much darker on basal half; marginal third rufous grey, with dark fuscous strigae, edged internally by a wavy dark brown line, which forms a sinus in the middle and a curve on the inner margin; fringe fuscous, with a darker basal line.

*Hindwings*: similar, but the costal area broadly greyish fuscous; the inner margin narrowly rufous brown.

Underside pale dull green, with the marginal area reduced, dull brown. Face, palpi, and collar black-brown; tillet rufous; thorax and base of abdomen green; rest of abdomen and tufts rufous brown.

Expanse of wings: 25 mm.

One ♂ from Sierra Leone.

73. *Episothalma semigrisea* sp. nov.

*Forewings*: deep green in basal half; marginal half and costa greyish drab, thickly strewn with dark liver-coloured striae; the two colours separated by a sinuous brown line from the lower edge of the costal streak; a dark brown marginal line; fringe concolorous.

*Hindwings*: with the costal half and the outer half grey, with brown striae; the inner margin narrowly grey, leaving only a restricted green space near inner margin.

Underside dull liver-coloured, with traces of a straight pale submarginal band, complete on hindwings, but indistinct on forewings, except on inner margin; costa of forewings ochreous; inner margin whitish; a small pale patch below apex, and a larger one before the angle at middle. Face and vertex dark liver-colour; thorax pale drab; abdomen greyish cinereous.

Expanse of wings: 32 mm.

One ♂ from Upoto, Congo (Rev. Oram).

Closely related to *E. marginata* from Sierra Leone, but larger, with the green area much smaller.

74. *Euchloris oleagina* sp. nov.

*Forewings*: whitish, tinged with yellow; the costa broadly yellowish; fringe concolorous.

*Hindwings*: the same, as is the underside.

Face deep red; palpi and forelegs reddish; thorax and abdomen greased, probably concolorous with wings.

Expanse of wings: 20 mm.

Two ♂♂ from Weenen, Natal, dated October 1893 and January 1895.

The antennae are thickened, with strong produced serrations, which are laterally pubescent; the frenulum is absent; the wings, like the bodies, are saturated with grease, and were probably once greenish.

75. *Eucrostes rubridisca* sp. nov.

*Forewings*: bright green; the costa broadly whitish; cell-spot orange-red; marginal line of the same colour, with traces of marginal spots.

*Hindwings*: the same. The fringes of both wings are entirely gone.

Underside paler green. Face and forelegs bright rosy; vertex, thorax, and abdomen green.

Expanse of wings: 13 mm.

One ♂ from Dar-es-Salaam, German East Africa.

76. **Euxena insulsata** sp. nov.

*Forewings*: dull grey-green; the lines darker, diffuse; the first at one-fourth, curved and wavy; the second from costa at four-fifths to inner margin at two-thirds, slightly bent and thickened downwards; cell-spot blackish green, rather large; fringe concolorous.

*Hindwings*: slightly ochreous towards base; no first line; the outer line denticulate and running to anal angle; marked, as in the forewings, by pale dashes on the veins.

Underside pale yellowish green; the costa of both wings yellowish. Face and palpi brown, paler below; vertex white; thorax grey-green; abdomen ochreous.

Expanse of wings: 45 mm.

One ♂ from North Luzon, 5000 to 6000 feet (Whitehead).

77. **Halterophora fulgurata** sp. nov.

*Forewings*: bluish green; the costa pale ochreous, with dark purplish spots; first line marked only by whitish spots on veins; second line very strongly dentate, the line itself finely paler, and marked on the veins at the denticulations by white spots; fringe at base deep red-brown, broadly interrupted between each vein by a whitish dash; outer half of fringe white.

*Hindwings*: with outer line much plainer, and strongly denticulate, the teeth on veins 7, 6, and 5 being exactly above those on veins 4, 3, and 2; a dark green mark on discocellular.

Underside whitish green; the costal half of forewing brighter green; costa broadly white, with strong purple striae. Face, palpi, vertex, thorax, and abdomen concolorous green; front of thorax deeper green.

Expanse of wings: 45 mm.

One ♂ from Moroka, British New Guinea (3500 feet), October 1895 (Anthony).

78. **Hemithea albistrigulata** sp. nov.

*Forewings*: dull green, thickly covered with minute pale wavy strigulae; a darker green central fascia, edged by the first and second lines, which are wavy; the outer line indented in cell and on the submedian fold; fringe pale green.

*Hindwings*: the same; both wings with a deeper green cell-spot.

Underside uniform whitish green. Face, palpi, and forelegs bright red; fillet white; vertex, thorax, and abdomen concolorous with wings.

Expanse of wings: 20 mm.

One ♂ from S. Africa.

79. **Hemithea approximans** sp. nov.

*Forewings*: very pale green; the costa whitish; two fine hardly waved white lines, rather near one another; the first at quite one-third, the second before two-thirds; fringe green.

*Hindwings* : with the outer line only ; a faintly darker cell-spot.

Underside uniform whitish green. Face ochreous ; vertex white ; thorax and abdomen pale green.

Expanse of wings : 20 mm.

Two ♂♂ from Weenen, Natal.

80. **Hemithea atridisca** sp. nov.

*Forewings* : semidiaphanous pale bluish green ; the costa ochreous ; lines whitish, denticulate ; first at one-third, second at three-fourths, incurved below middle, and marked most strongly on the veins ; a large cell-spot of raised brown-black scales, edged with pale, on the lower arm of discocellular.

*Hindwings* : the same.

Underside paler, with the cell-spot distinct. Face and palpi dark red-brown ; vertex and thorax green ; abdomen reddish cinereous.

Expanse of wings : 28 mm.

Two ♂♂ from Natal (A. J. Spiller).

81. **Hemithea malescripta** sp. nov.

*Forewings* : very pale green, with two faint wavy darker green pale-edged lines at one-third and two-thirds ; fringe paler.

*Hindwings* : with only the outer line ; both wings with an obscure darker green cell-spot.

Underside paler and glossy. Face olive-green ; vertex white ; thorax and abdomen pale green, like the wings ; abdomen with slight reddish tufts.

Expanse of wings : 22 mm.

Three ♂♂, one ♀, from Weenen, Natal, August 1894 and April 1895.

One of the ♂♂ has the lines whitish.

82. **Hemithea simplex** sp. nov.

*Forewings* : greyish green ; the costa ochreous, dotted with fuscous ; the lines darker green, obscure, slightly waved ; first from costa beyond one-third to inner margin before middle ; second at two-thirds to inner margin before anal angle ; fringe green, with a deep green basal line.

*Hindwings* : with the outer line and cell-spot deep green.

Underside whitish green, the costa spotted as above. Face dull brown ; palpi above and the whole of the terminal joint and forelegs dark fuscous ; vertex white ; thorax and abdomen green, the latter with dark red blotches along dorsum.

Expanse of wings : 20 mm.

One ♂ from Sukabumi, West Java, 1893 (Fruhstorfer).

83. **Hemithea unilinea** sp. nov.

*Forewings* : pale green ; the costa narrowly ochreous ; inner line very fine and hardly perceptible, curved near base ; outer line at three-fourths, white, straight and oblique to inner margin shortly before anal angle ; fringe paler green, with a whitish line at base.

*Hindwings* : with the outer white line curved ; cell-spots hardly darker.

Underside glossy, whitish green. Face ochreous ; vertex white ; thorax and

base of abdomen green; rest of abdomen ochreous; basal segments with slight reddish tufts.

Expanse of wings : 23 mm.

Three ♂♂ from Weenen, Natal.

#### 84. *Hemithea vermiculata* sp. nov.

*Forewings* : pale green, densely covered with minute white wavy striae; no lines visible; fringe broad, pale yellowish.

*Hindwings* : the same, with an obscure darker cell-spot.

Underside whitish green. Face and palpi dark brown; thorax and abdomen pale green.

Expanse of wings : 19 mm.

One ♂ from Warri, River Niger, June 1896 (Dr. Roth).

Antennae with well-developed fascicles of cilia.

#### *Hypocoela* gen. nov.

*Forewings* : with costa strongly arched, the apex not produced; hindmargin oblique, with a shallow excision between veins 6 and 4; anal angle well marked.

*Hindwings* : with inner margin lengthened, apex rounded, hindmargin evenly curved.

Palpi short, porrect; antennae of ♂ bipectinate to two-thirds.

*Neuration* : forewings, discocellular acutely inangulated; veins 7, 8, 9, 10 stalked, 11 anastomosing with costal.

Type : *Hypocoela subfulva* sp. nov.

A development of *Tanaorhinus* Butler.

#### 85. *Hypocoela subfulva* sp. nov.

*Forewings* : dull olive-green, faintly speckled with darker; a straight oblique brown line from costa at three-fourths, below which it is slightly bent, to inner margin beyond middle, followed by a paler streak; marginal area with an olive-brown shade, broad on inner margin, narrowing to a point at vein 6; marginal line dark green, black along the excision and at the submedian fold, and there preceded by some whitish scales; fringe rufous olive, with two white patches in the excision; a small black cell-dot.

*Hindwings* : the same, but the submarginal fascia of uniform width throughout and much speckled with darker; fringe rufous.

Underside of forewings yellow-green, becoming fulvous towards inner margin, with two black spots in cell and a black submarginal and marginal blotch towards inner margin; hindwings deep orange-fulvous, with a few black specks.

Expanse of wings : 32 mm.

One ♂ from Warri, River Niger, June 1896 (Dr. Roth).

#### 86. *Metallochloa differens* sp. nov.

*Forewings* : pale apple-green; the costa yellowish, with fine purplish striae; a minute red cell-dot; faint traces of two darker green paler-edged wavy transverse lines, first from costa at one-fourth, second at three-fourths, to one-third and two-thirds of inner margin respectively; fringe yellow.

*Hindwings* : with the cell-dot bright red, the outer line excurved in middle : hindmargin visibly elbowed at vein 4.

Underside uniform pale green. Face and palpi rufous : vertex, thorax, and abdomen vivid green ; abdomen with shining brown-red dorsal blotches.

Expanse of wings : 20 mm.

One ♂ from Tenimber, July 1892 (W. Doherty).

Distinguished from the other species of the genus by the much more developed antennae of the ♂. These are subdentate, the teeth with *long* fascicles of cilia.

#### 87. *Microloxia ruficornis* sp. nov.

*Forewings* : pale yellowish : the costa deep ochreous ; fringe concolorous.

*Hindwings* : the same.

Underside similar. Palpi, antennae, and forelegs reddish ; face yellowish, edged with red ; thorax and abdomen yellowish.

Expanse of wings : 14 mm.

One ♂ from Weenen, Natal, January 1895. The insect is in very good condition, and the wings do not seem to be either faded or greased.

A ♀ from the same locality, dated December 1893, not in good condition, with the fringes gone and the wings somewhat greased, must be referred here. This has the antennae subserrate, and expands 19 mm.

#### 88. *Microloxia* (?) *serraticornis* sp. nov.

Superficially exactly like *Nemoria attenuata* Wlk., but whereas in that species the antennae of the ♂ are simply pubescent, in this they are subpectinate and pubescent, the pectinations being short, claw-shaped, with a fascicle of cilia at the end : in this respect the insect agrees neither with *Nemoria* nor *Microloxia*. Walker's two species *indecretata* from India and *latilineata* from Australia agree with the present species both in the structure of antennae and in the markings of wings, and it is possible they may be all three identical.

Several specimens from Natal.

*N. attenuata* Wlk. occurs not only at the Cape, but also in Sierra Leone ; Wollaston's species *nubigena* from Madeira must be very near it.

#### 89. *Mixochlora alternata* sp. nov.

*Forewings* : deep green, with four pale hoary green fasciae more or less parallel, the second interrupted above by a deep green discocellular lunule ; the first two dark green fasciae not oblique outwards, as in *vittata* Butler ; costa narrowly yellow ; fringe green.

*Hindwings* : with the basal area and two fasciae paler.

Underside pale green, scarcely tinged with yellow. Face and palpi deep velvety green ; vertex and thorax dark green ; abdomen pale green, with dark green markings ; base of antennae white.

Expanse of wings : 45 mm.

One ♂ from North Luzon, 5000 to 6000 feet (Whitehead).

Distinguished from *M. vittata* Butler by the absence of yellow below and by the parallel bands above ; *argentifusa* Wlk. from Sarawak is much more silvery.



**Neurotoca** gen. nov.

Allied to *Euchloris* and *Pareuchloris*, agreeing with the latter genus in having pectinated antennae in the ♀, while the hindwings are rounded as in *Euchloris*: the hindwings without frenulum: distinguished by an abnormal furcation of vein 6 of the hindwings.

Type: *Neurotoca notata* sp. nov.

90. **Neurotoca notata** sp. nov.

*Forewings*: pale green, faintly strigulated with whitish, with a rather thick white line at two-thirds running parallel to hindmargin; fringe whitish.

*Hindwings*: the same, with a semicircular red-brown patch on the middle of inner margin.

Underside whitish. Head, thorax, and abdomen green, the last with red dorsal blotches.

Expanse of wings: 34 mm.

One ♀ from Mpwapwa, East Africa.

**Paraprasina** gen. nov.

♀. *Forewings*: elongate; costa straight, convex before apex; hindmargin curved, oblique.

*Hindwings*: with apex rounded; anal angle square; hindmargin slightly curved.

Thorax and abdomen robust. Palpi porrect, long, reaching well in front of face; tongue absent; frenulum(?) absent; antennae thick, shortly pectinated on the inner side, the pectinations being developed from the base and gradually shortened; serrate at base on outer side, the serrations increasing and becoming at half the shaft pectinations as long as those on the inner side.

*Neuration*: forewings, cell half the length of wing; discocellular angulated; first median at three-fourths, second and third from end of cell; lower radial from a little above the centre of discocellular; 6, 7, 8, 9, 10 stalked, 11 free. Hindwings with the two subcostals stalked.

Type: *Paraprasina discolor* sp. nov.

91. **Paraprasina discolor** sp. nov.

*Forewings*: pale whitish green, without any markings; the fringe concolorous.

*Hindwings*: the same.

Underside white. Face and palpi pale below, dull ferruginous above; vertex, thorax, and abdomen all pale green.

Expanse of wings: 40 mm.

One ♀ from S. Africa.

The only example is much faded, and it is impossible to say what shade of green it may have had when fresh.

92. **Pareuchloris(?) salsa** sp. nov.

*Forewings*: white, dotted with blue-green and with the lines of the same colour; first at one-fourth, second in the middle, joined by the green cell-spot; third

at three-fourths, somewhat bent, to anal angle ; all the lines are diffuse and become obsolete before the costa ; fringe green and white.

*Hindwings* : with a long green mark on discocellular; a curved denticulate postmedian line and narrow submarginal line blue-green ; also the triangular space between veins 2 and 4 ; inner margin and costa white.

Underside white. Face and palpi brown ; forelegs spotted brown and white ; vertex, thorax, and abdomen white.

Expanse of wings : 36 mm.

One ♀ from Sierra Leone.

### **Prasinocyma** gen. nov.

Allied to *Thalassodes* Guen., with which it agrees in neuration and character of scaling ; but while the hindmargin of the hindwings of *Thalassodes* is always angulated, in *Prasinocyma* the hindmargin of both wings is rounded. The species are mainly African.

Type : *Prasinocyma vermicularia* Guen. (*Thalassodes*).

### 93. **Prasinocyma rufitincta** sp. nov.

*Forewings* : bright green, semitransparent, covered with innumerable white sinuous striae, the ♂ with fewer than the ♀ ; costa narrowly white ; base of wing and median nervure marked with dull rufous ; fringe concolorous.

*Hindwings* : like forewings, with no rufous at base.

Underside pale whitish green. Forelegs and antennae red ; head, patagia, and base of abdomen green ; thorax dull rufous ; rest of abdomen greyish white.

Expanse of wings : ♂, 28 mm. ; ♀, 34 mm.

A pair from Lifu.

### 94. **Prasinocyma unipuncta** sp. nov.

*Forewings* : slightly diaphanous, deep green, the paler striae very minute and indistinct ; costa narrowly ochreous ; fringe green ; discocellular marked with darker green ; a small white spot edged externally with brown scales on inner margin beyond middle.

*Hindwings* : similar, with no white spot.

Underside paler. Face, palpi, and forelegs red brown ; vertex white ; thorax green ; abdomen ochreous.

Expanse of wings : 19 mm.

One ♂ from Weenen, Natal, October 1895.

### **Rhomborista** gen. nov.

Allied to *Oenospila* Swinhoe, from which it differs in the hind tibiae of the ♂ having two pairs of spurs. The hindmargin of the hindwings is excised between veins 4 and 6, at each of which there is a conspicuous tooth. The margins of both wings are marked by a diamond-shaped festoon.

Type : *R. devesata* Wlk.

*Phorodesma megaspilaria* Guen. and *Comibaena undiferata* Wlk. also belong here.

95. *Rhomborista semipurpurea* sp. nov.

*Forewings*: deep green; the costa white, with a grey-brown patch at base; discocellular marked with two red-brown spots; first line obsolete; second at two-thirds, irregularly wavy, followed by a dull purplish grey marginal area, of which the central part is paler and the edges reddish brown; a round green subapical patch; marginal line dark brown; fringe reddish ochreous, with dark dashes opposite the veins.

*Hindwings*: green; the discocellular marked with two red spots; a red denticulate postmedian line; the inner margin red; the red marginal line thickened with reddish grey scales at apex and veins 6 and 4; fringe reddish ochreous, with dark dashes at veins 4 and 6.

Underside glossy whitish green; the forewings with a broad dark fuscous band. Head, palpi, and collar reddish grey; vertex white; thorax green; abdomen reddish grey.

Expanse of wings: 34 mm.

One ♀ from Chittagong Hills.

Allied to *R. dervexata* Wlk.

*Syndromodes* gen. nov.

*Forewings*: triangular; costa slightly arched, shouldered at base; hindmargin oblique, faintly curved.

*Hindwings*: with well-rounded hindmargin, the apex rounded, the anal angle rectangular.

Antennae of ♂ pectinated, of ♀ simple; palpi porrect, short; tongue feeble.

*Neuration*: forewings, veins 7, 8, 9, 10 stalked, 11 anastomosing with costal. Hindwings with costal anastomosing with subcostal for two-thirds of cell.

Type: *Syndromodes unicolor* sp. nov.

Like *Lasiochlora* Warr. in neuration, but the antennae of the ♀ are sometimes simple, and the species of much smaller size.

96. *Syndromodes punctilineata* sp. nov.

*Forewings*: pale green, with a sinuous outer line, marked only by red-brown white-edged dots on the veins; this line, which is at about two-thirds of the wing, is outcurved in middle and vertical towards inner margin; fringe with a pale yellowish line at base, then a broad dull red line marked with deeper red spots opposite the veins, the apical half being white.

*Hindwings*: similar.

Underside pale green. Face and palpi green, the vertex paler; thorax and abdomen discoloured, probably green.

Expanse of wings: 18 mm.

One ♂ from S. Africa.

Agrees with *diducta* Wlk. and *zonata* Wlk. in having the costal of hindwings anastomosing with the subcostal for two-thirds of cell.

97. *Syndromodes unicolor* sp. nov.

*Forewings*: wholly green; fringe whitish; costa narrowly white.

*Hindwings*: the same.

Underside pale green. Face pale brown; vertex white; thorax and abdomen green.

Expanse of wings : ♂, 18—22 mm. ; ♀, 24 mm.

Several examples from S. Africa.

I should have referred this species to *incemsta* Wlugin., but in a remark on the nomenclature of his insect he speaks of an *areole*, which the present species certainly has not.

#### 98. *Thalassodes nigripunctata* sp. nov.

*Forewings* : deep green, thicker scaled than usual in this genus, with numerous wavy silvery strigulae ; no transverse lines, but a distinct black cell-spot ; costa finely ochreous white ; fringe green, with no basal line.

*Hindwings* : the same.

Underside uniform pale green ; the costa of forewings ochreous. Face and terminal joint of palpi deep brown-red ; vertex and thorax green ; abdomen cinereous-ochreous, but probably faded.

Expanse of wings : 28 mm.

One ♂ from the Cameroons, West Africa.

#### *Victoria* gen. nov.

♀. *Forewings* : elongate ; costa slightly indented in middle, strongly arched before apex ; apex minutely produced ; hindmargin crenulate, sinuous, elbowed at vein 4.

*Hindwings* : with crenulate hindmargin, toothed at veins 6 and 4.

Antennae of ♀ bipectinate, with a tuft of scales at base ; the short palpi and face hairy ; tongue absent ; pectus hairy ; metathorax and basal segments of abdomen crested ; legs wanting.

*Nervation* : forewings, cell one-half the wing ; first median at two-thirds, second and third from angle of cell ; last four subcostals stalked, first free. Hindwings with the two subcostals stalked ; medians as in forewings.

Type : *Victoria albipicta* sp. nov.

#### 99. *Victoria albipicta* sp. nov.

*Forewings* : green ; the costa fuscous, speckled with rufous ; first line at one-fourth, white, vertical, broadening to inner margin ; second at three-fourths, white and slender, slightly waved, vertical, ending in a triangular white patch before anal angle, with fuscous striae on it, and followed, between veins 5 and 6, by a small square white blotch ; a white blotch at apex ; a thick black crenulate marginal line, partially edged with white ; fringe rufous fuscous ; cell-spot large, occupying the whole length of the discocellular, and marked with reddish scales.

*Hindwings* : whitish at base and along costal third, then pale green, with whitish striae ; a small black cell-dot ; fuscous dots on the four upper veins and on inner margin, indicating a postmedian line ; marginal line and fringe as in forewings.

Underside whitish, green-tinged ; costa and fringes rufous ; the white markings of upperside showing through. Face, palpi, vertex, and collar ferruginous ; thorax and patagia green ; abdomen reddish (probably green when fresh).

Expanse of wings : 45 mm.

One ♀ from Grahamstown, S. Africa.

**Xenochlorodes** gen. nov.

♀. *Forewings*: with costa feebly arched and somewhat bent at two-thirds; apex blunt; hindmargin oblique, faintly curved; anal angle distinct.

*Hindwings*: with hindmargin slightly curved; apex rounded; anal angle square; costa shouldered at base.

Palpi quite short, not reaching front of face; tongue weak; antennae subserrate, thickened with scales towards base; scaling of underside of wings hairlike.

*Neuration*: forewings, cell half the length of wing; discocellular angled, the lower arm oblique; first median at five-sixths, second and third short-stalked; lower radial from above the angulation of discocellular; upper radial stalked with the five subcostals, separating near base shortly after 11; 11 anastomosing with costal; 10 anastomosing with and becoming coincident with 11; 9 out of 8, very short. Hindwings with costal anastomosing with subcostal nearly to end of cell; the subcostals long-stalked; medians as in forewings.

Type: *Xenochlorodes pallida* sp. nov.

100. **Xenochlorodes pallida** sp. nov.

*Forewings*: very pale whitish green, laxly scaled; the costa narrowly white; the lines whitish and slightly waved; first before one-third, edged outwardly with darker green; second from costa at four-fifths, oblique to inner margin at two-thirds, inwardly edged with darker green; fringe whitish green; cell-spot linear, whitish, very faint.

*Hindwings*: with only the outer line, which is a little bent in middle.

Underside white. Face reddish; vertex and antennae white; thorax and abdomen concolorous with wings; legs reddish.

Expanse of wings: 26 mm.

One ♀ from Beirut, Syria.

## SUBFAMILY STERRRHINAE.

101. **Anisephyra aurata** sp. nov.

*Forewings*: deep gilded yellow, with traces of a curved submarginal line marked by brown dots between the veins; ocellus small, edged with brown; fringe deep yellow.

*Hindwings*: the same; the ocellus larger.

Underside yellow, speckled with brown; a curved brown submarginal line, containing a blotch beyond the cell and above inner margin, before which it is much incurved; a marginal line of slender brown dashes between the veins; ocelli distinct. Thorax and abdomen yellow; head wanting.

Expanse of wings: 26 mm.

One ♂ from Kalao, south of Celebes, December 1895 (A. Everett).

102. **Antitrygodes dentilinea** sp. nov.

*Forewings*: whitish, tinged in places with rufous, and with a few scattered dark brown scales; costa narrowly rufous; a curved brown line near base, concave outwards, and not reaching costa; exterior line from costa at three-fourths, angled obtusely on vein 6, and acutely between veins 2 and 3, thence concave to inner



margin some distance *before* the anal angle ; three large roundish green blotches, edged with red-brown in the median area, one in cell before the discocellular, one below it beneath the median, the third and largest beyond the discocellular ; two smaller blotches of purple-brown scales between the origins of veins 2 and 3, and 3 and 4 ; an obscure rufous shade, excurved round them to inner margin near middle : a series of greenish wedge-shaped marks beyond outer line, followed by a waved reddish subterminal line ; veins towards margin marked with rufous ; marginal line red-brown, swollen between the veins : fringe glossy, whitish, varied with rufous, and with dark dashes opposite the veins.

*Hindwings* : the same, but deeper rufous.

Underside whitish, with a faint rufous tint : the exterior and marginal lines rufous. Face and palpi dark red-brown : vertex, thorax, and abdomen pinkish ochreous, speckled with red-brown.

Expanse of wings : 33 mm.

One ♀ from Sierra Leone.

Distinguished from the Indian species by the exterior line not running to the anal angle.

### **Brachycola** gen. nov.

A development of *Anisodes* Guen., characterised by the hind tibiae of ♂, which are quite short, with a tuft of hair from their base, and with three long curved spurs from the extremity : in other respects agreeing with *Perixera* Meyr.

Type : *Brachycola absconditaria* Wlk.

This genus is equivalent to Hampson's *Anisodes*, Section I., to which he gives the name *Perixera* ; but *Perixera* Meyr. is his Section II., with the hind tibiae of ♂ fully developed and the median pair of spurs absent.

#### 103. **Brachycola (?) minorata** sp. nov.

*Forewings* : ochreous, densely irrorated with reddish atoms : first line marked by three dots lying in a curve ; cell-spot red-brown ; a sinuous diffuse grey central shade ; exterior line near and parallel to hindmargin, marked by dark vein-dots ; minute red dots at the ends, and also between the veins ; fringe yellowish.

*Hindwings* : the same : but with the cell-spot larger, formed of raised white scales with a dark edge.

Underside of forewings pale dull rosy, of hindwings white. Palpi rosy above, ochreous beneath ; face deep red : vertex, thorax, and abdomen concolorous with wings.

Expanse of wings : 26 mm.

One ♂, one ♀, from Tenimber, July 1892 (W. Doherty).

The only ♂ has lost its hindlegs ; but it is most likely a *Brachycola*.

#### 104. **Brachycola niveopuncta** sp. nov.

*Forewings* : dull reddish, speckled with darker, and with reddish grey markings ; first line indicated by three dark dots on veins : central shade diffuse, wavy ; exterior line with irregularly placed dark dots on veins : marginal area mostly suffused with reddish grey, with the submarginal line paler : hindmargin crenulated, with dark dots at end of veins ; fringe concolorous.

*Hindwings* : the same ; cell-spots of both wings small oval, white, formed of raised scales.

Palpi and face whitish ochreous below, bright rosy above; antennae white: vertex, thorax, and abdomen reddish grey. Underside dull red, suffused with darker.

Expanse of wings: 32 mm.

Two ♂♂, three ♀♀, from Cedar Bay, Cooktown (A. S. Meek).

### **Chrysolene** gen. nov.

Akin to *Chrysocraspeda* Hmps. n.; the ♂ antennae pectinated; hindlegs not reduced, the tibiae with two pairs of spurs; forewings acute and produced at apex; both wings more or less strongly elbowed in middle; first subcostal of forewings not stalked with the other four, but anastomosing with them to form the areole; hindwings with last two medians from angle of cell or on a short stalk.

Type: *Chrysolene decaria* Wlk. (*Ilyria*).

#### 105. **Chrysolene cruoraria** sp. nov.

*Forewings*: yellow, with blood-red strigulations; basal half of wing from one-third of costa to anal angle, purple, edged with blood-red striae; a similar-coloured blotch at apex, surrounded by blood-red striae; so that the yellow ground-colour is restricted to an oblique fascia from middle of costa to anal angle and along outer half of costa and the hindmargin except at the elbow; fringe yellow.

*Hindwings*: with the whole area except a narrow marginal space purple, edged with blood-red striae; the marginal space yellow, with red striae; fringe yellow; a darker purple cell-spot.

Underside the same, but duller. Face and palpi yellow, edged with red; vertex, antennae, and thorax purple; abdomen yellow.

Expanse of wings: 24 mm.

One ♀ from Cedar Bay, Cooktown (A. S. Meek).

Another ♀ from the same locality has both wings wholly suffused with purple-red, except the hindmargin on either side of the elbow, which is narrowly yellow; abdomen and underside of wings all red.

#### 106. **Chrysolene dilucida** sp. nov.

*Forewings*: with ground-colour yellow; costal area broadly olive-grey, this colour running down as far as the median vein at the end of cell and beyond the outer line, where it runs to the elbow; the inner half of the wing is suffused with deep orange, intersected by the yellow veins; the two lines yellow and broad; the first at one-fourth, angled in the cell, then oblique inwards; second at two-thirds, angled at vein 4, and again bent near inner margin; cell-spot small, black; fringe yellowish.

*Hindwings*: with the centre hyaline, the base and marginal fascia olive-fuscescent, the latter very broad towards inner margin, and containing yellowish patches which appear to indicate a submarginal line; the hyaline space with a grey cloud from costa; fringe yellowish.

Underside pale yellowish, in the forewings tinged in places with red. Face yellowish; vertex and front of thorax grey; thorax and abdomen yellow, dusted with grey.

Expanse of wings: 24 mm.

One ♀ from Sarawak.

Akin to *deviaria* Wlk. The specimen is not in fresh condition ; the antennae are thickened towards base, subserrate, and with thick rough scales along the upper side of the shaft ; both wings bluntly angled at vein 4 ; forewings with a single areole, vein 11 anastomosing with the stalk of 7, 8, 9, 10. In the hindwings 3, 4 and 6, 7 are long-stalked.

107. *Craspedia aggravata* sp. nov.

*Forewings* : ochreous, densely dusted with black atoms ; first line curved, narrow, median shade broad, incurved below middle, both pale fulvous, the first marked also by black dots on veins ; outer line dark grey, thread-like, dentated, the teeth marked by black dots on veins, that on inner margin larger, followed by two somewhat confused grey lines, which also are marked by a darker spot on inner margin ; a marginal row of black dots between the veins ; fringe full, ochreous, with a row of black dots along base opposite the veins ; cell-spot small, black.

*Hindwings* : with antemedian fulvous shade ; postmedian denticulate, and two submarginal lines, all more or less marked with fulvous ; cell-spot larger.

Underside with the outer lines marked, and the basal half of forewings suffused with grey. Face and palpi black ; collar ferruginous ; vertex and shoulders pure ochreous ; thorax and abdomen ochreous, thickly dusted with black.

Expanse of wings : 20 mm.

One ♂ from the Khasias.

The hindwings have the hindmargin slightly waved, and indented opposite the cell.

108. *Craspedia bigeminata* sp. nov.

*Forewings* : bone-colour, dusted with fuscous ; no first line ; a small black cell-dot ; a double fuscous line oblique from middle of inner margin to apex ; a similar double line from near anal angle, joining the other below apex ; a faint single line close before hindmargin ; a black marginal line, swollen between the veins ; fringe ochreous, with dark dusting.

*Hindwings* : the same, the cell-dot on the outer of the two median lines.

Underside much dusted with ochreous fuscous, especially towards base of forewings ; the inner arm of the second double line denticulated. Face and palpi deep red-brown ; thorax and abdomen bone-colour.

Expanse of wings : 24 mm.

One ♂ from Natal (A. J. Spiller).

109. *Craspedia bonaventura* sp. nov.

*Forewings* : white, with fine and sparse dark atoms ; first line fine, ferruginous, often obsolete or marked only by ferruginous dots on median and submedian veins ; cell-spot black ; middle line grey, denticulate, at two-thirds ; outer line ferruginous, wavy, very fine, incurved beyond cell and marked there by two black lunules internally and grey scales externally ; marked also above inner margin by three black lunules, and grey scales externally, these last forming a roundish blotch on inner margin ; an irregular row of dark grey submarginal blotches, the largest on vein 6 ; a ferruginous subapical spot.

*Hindwings* : with two irregular rows of grey blotches beyond the outer line :

cell-spot with a grey ring round it before the central grey dentate line ; fringe of both wings white, with a row of shallow black lunules between the veins.

Underside whitish, sprinkled with dark scales, with the cell-spots and two outer lines distinct. Face and palpi black ; collar ferruginous ; vertex, thorax, and abdomen white.

Expanse of wings : 26 mm.

Common from S. Africa, and also occurring in Abyssinia. The African equivalent of the Indian *nictata* Guen.

#### 110. *Craspedia castissima* sp. nov.

*Forewings* : dull cream-white, with sparse black scales ; a small black dot at base below submedian vein ; first line at one-third, indicated by three black dots, on subcostal, median, and submedian respectively ; a small black cell-spot ; median shade grey, dentate, strongly excurved in upper two-thirds ; outer line at four-fifths, marked by black dots on veins, connected by a fine grey line, the three below costa in a line oblique outwards, the lower five in a curve ; submarginal line of the ground-colour between two grey dentate shades ; a row of large black marginal dots ; fringe white.

*Hindwings* : the same, without first line, the central shade becoming antemedian ; the cell-dot larger.

Underside greyer, with the markings obscured. Palpi above and externally and top of face dark fuscous ; lower half of face, vertex, thorax, and abdomen white ; the abdomen with black dusting ; collar ferruginous.

Expanse of wings : 20 mm.

Several from Cedar Bay, Cooktown (A. S. Meek).

#### 111. *Craspedia deserta* sp. nov.

*Forewings* : pale rufous ochreous, dusted with dark scales ; first line curved, diffuse, from costa at one-third to inner margin at one-fourth ; median line oblique, slightly curved, from costa at two-thirds to middle of inner margin, becoming obsolete towards costa ; outer line from four-fifths of costa to two-thirds of inner margin, curved and concise, blackish, with black dots on veins, followed, except beneath costa, by a dark oblique shade ; submarginal line indistinct ; cell-spot black, distinct ; a row of linear marginal dashes ; fringe concolorous, with a dark grey line before the tips.

*Hindwings* : with the central shade distinct and antemedian, preceding the dark cell-spot ; the outer line minutely waved, followed by two darker shades ; fringe as in forewings.

Underside similar, the lines less distinct. Face, palpi, collar, and forelegs dark ferruginous ; vertex white ; thorax and abdomen concolorous with wings.

Expanse of wings : 24 mm.

In some numbers from Weenen, Natal.

The wings are narrow and elongate, as in *Lycanges* Butler. Some examples are pale ochreous, without any rufous tinge.

#### 112. *Craspedia dissonans* sp. nov.

*Forewings* bone-colour, dusted with grey, and with all the lines grey ; these are all placed almost exactly as in *C. deserta* Warr., but are more diffuse and

coarse ; the first line is bent below costa, and being rather farther from the base approaches the median shade above the inner margin. Both wings are broader and shorter in proportion than those of *deserta* ; and the hindwings are bulged in the middle of hindmargin ; the antennae of the ♂ are thicker, subdentate, with denser fascicles of cilia.

Expanse of wings : 26 mm.

A pair from Weenen, Natal, October 1893.

### 113. *Craspedia laevipennis* sp. nov.

*Forewings* : cream-white, thickly and smoothly scaled, with very fine sparse blackish atoms : costa narrowly ochreous ; the lines ochreous ; first obscure, reaching inner margin nearly in middle ; second at three-fourths, wavy and sinuous, approaching first line on inner margin ; fringe ochreous.

*Hindwings* : with the outer line only ; both wings with minute ochreous cell-spot.

Underside white ; costa of forewings broadly ochreous at base. Face and palpi brown-black ; vertex and collar ochreous ; thorax and abdomen white.

Expanse of wings : 20 mm.

One ♂ from the Cameroons, West Africa.

The wings are short and broad ; hindwings with hindmargin bluntly bent in middle.

### 114. *Craspedia melliflua* sp. nov.

*Forewings* : dull yellow ; the costa narrowly pale brown ; lines pale brown ; first very obscure, at one-third, wavy ; second from costa at three-fourths to inner margin at two-thirds, slightly sinuous ; fringe concolorous ; cell-spot pale brown.

*Hindwings* : with the line central ; no cell-spot.

Underside yellowish ; forewings towards base tinged with rufous grey. Face and palpi blackish ; vertex and collar pale brown ; thorax and abdomen yellow.

Expanse of wings : 24 mm.

One ♂ from Natal (A. J. Spiller).

The hindmargin of hindwings is distinctly elbowed in middle, that of forewings slightly bulged.

### 115. *Craspedia nigrinotata* sp. nov.

*Forewings* : whitish, densely irrorated with black scales ; costa with five black spots, one close to base, second at one-fourth, third beyond middle, fourth at two-thirds, fifth towards apex ; first line from second spot, faintly ochreous, with a dot on median and submedian ; median line curved round cell, ochreous, mixed with grey scales, denticulate ; outer line evenly curved, minutely dentate, blackish ; submarginal cloudy, interrupted opposite the cell and above anal angle ; a marginal row of distinct black lunules ; fringe grey ; cell-spot distinct, black.

*Hindwings* : similar, without first line.

Underside dull grey. Face white, deep black above ; palpi blackish, vertex white ; thorax and abdomen white, speckled with blackish.

Expanse of wings : ♂, 20 mm. ; ♀, 24 mm.

One ♀, two ♂♂ from Zomba, Upper Shire district, May 1895 (Dr. P. Rendall).

The two ♂♂ are much paler than the ♀ ; but, being both much worn, this may



be owing to the loss of the black scales only. The species is closely allied to *fibulata* Guen. and its Indian forms. ♂ antennae with fine fascicles of cilia ; hind tibiae thickened, with a pencil of hairs and without spurs ; ♀ with four spurs ; vein 3 before end of cell.

116. *Craspedia sanguinisecta* sp. nov.

*Forewings* : greyish ochreous, smoothly scaled ; with fine darker dusting only towards base and throughout the marginal area : costa narrowly red ; first line at one-fourth, fuscous, slightly oblique inwards, and bent beneath costa : second from costa beyond middle, acutely angled on vein 6, thence oblique and irregularly sinuous to middle of inner margin ; third from four-fifths of costa, bluntly angled on vein 6, thence oblique inwards, slightly wavel, to inner margin at four-fifths, marked opposite the cell and on submedian fold with blood-red ; marginal area dusted with fuscous, and with an obliquely edged darker fuscous blotch beyond angle of third line ; marginal line concise, blackish ; fringe ochreous ; a grey cell-spot.

*Hindwings* : with antemedian and postmedian lines only, both fuscous : cell-dot minute, deep black.

Underside much more speckled with fuscous ; the two outer lines expressed and much more wavel than above. Face and palpi deep brown ; collar dull ferruginous ; vertex white ; thorax and abdomen concolorous with wings.

Expanse of wings : 26 mm.

One ♀ from Weenen, Natal, March 1894.

117. *Craspedia subperlaria* sp. nov.

*Forewings* : white, with sparse blackish atoms ; exterior line at five-sixths, pale ochreous, denticulate ; a row of black marginal spots, and a small black cell-spot ; fringe white.

*Hindwings* : the same.

Underside white, unspotted. Face and palpi brown ; collar ferruginous ; thorax and abdomen white.

Expanse of wings : 28 mm.

One ♀ from Warri, River Niger, June 1896 (Dr. Roth).

118. *Craspedia sufficiens* sp. nov.

*Forewings* : whitish, sparsely dusted with dark scales ; first line at one-third, nearly touching the brown cell-spot, pale ochreous ; exterior line at five-sixths, strongly denticulate ; traces of a submarginal line : a row of round black marginal dots ; fringe white.

*Hindwings* : the same.

Underside white ; basal half of forewings tinged with rufous. Face and palpi black-brown ; collar ochreous ; vertex, thorax, and abdomen white.

Expanse of wings : 26 mm.

One ♂ from the Cameroons, West Africa.

Hindmargin of hindwings slightly wavy and bent in the middle ; antennae with long ciliations.

**Epicosymbia** gen. nov.

Like *Cosymbia* Hüb., but with different neuration; in the forewings 10 anastomoses with 11, and then with 8, 9, forming a double areole; in the hindwings the two subcostals are stalked; hind tibiae with one pair of spurs.

Type: *Epicosymbia perrufa* sp. nov.

119. **Epicosymbia perrufa** sp. nov.

*Forewings*: dull vinous red, the lines deeper red; first from costa at one-fourth to inner margin at one-third, excurved in cell; a diffuse curved median shade beyond the deep red cell-spot; outer line at four-fifths, curved, dentate outwards on the veins, followed by a red submarginal shade; marginal line purple, interrupted by paler dots at end of veins; fringe vinous red.

*Hindwings*: similar.

Underside paler red; the exterior line simply curved, not denticulate. Face dark red-brown; vertex white; palpi, collar, thorax, and abdomen reddish.

Expanse of wings: 24 mm.

One ♂ from Natal (A. J. Spiller).

**Hemipogon** gen. nov.

*Forewings*: triangular; the costa straight, but strongly convex before apex; hindmargin obliquely rounded.

*Hindwings*: broad, both angles rounded off; the hindmargin strongly rounded.

Palpi slender, porrect; antennae pubescent; hind tibiae of ♂ thickened, with a tuft of hair covering the aborted tarsi, and without spurs; hindwings of ♂ clothed with hair towards inner margin, and with the fringes of inner margin long.

*Neuration*: as in *Ptychopoda* Stph.

Type: *Hemipogon relatina* sp. nov.

To this group probably belongs *Acidalia thricophora* Hmps. from Burma, the type of which, in the Elwes Collection, I have not seen.

120. **Hemipogon nanata** sp. nov.

*Forewings*: ochreous, slightly dusted and suffused with darker; the lines very obscure, brownish; first at one-third, curved towards base; second wavy, in middle, touching a small dark cell-spot; outer line at three-fourths, slightly excurved below middle; marginal area rather darker; fringe concolorous, with a row of minute dark dots along base at the ends of the veins.

*Hindwings*: more dusted with brownish; the outer line very indistinct, marked by a brown spot on costa and inner margin; cell-dot minute.

Underside uniform ochreous, with the cell-spots only marked. Face and palpi dark brown; thorax and abdomen ochreous; the tuft of the hind tibiae is red.

Expanse of wings: 12 mm.

One ♂ from the Tenimber Islands, July 1892 (W. Doherty).

The rough hair on underside of hindwings is confined to the inner-marginal area.

121. *Hemipogon velutina* sp. nov.

*Forewings*: greyish ochreous, the costal region sparsely sprinkled with black atoms; cell-spot dark; an obscure darker waved outer line at three-fourths, and faint traces of a median line: fringe concolorous.

*Hindwings*: with cell-spot, and no trace of any line.

Underside rather paler, without markings; the hindwings are more or less clothed with hair throughout, most thickly along inner margin and towards anal angle. Head, thorax, and abdomen ochreous; face and palpi dark brown.

Expanse of wings: 17 mm.

One ♂ from Batchian, March 1892 (W. Doherty).

The tuft of hair on the hind tibiae is blackish inside.

*Induna* gen. nov.

*Forewings*: ample; costa straight, convex before apex; apex blunt: hindmargin well curved.

*Hindwings*: rather elongate, with fully rounded hindmargin.

Antennae of ♂ pectinated, of ♀ strongly serrate; palpi stout, roughly scaled, porrect, reaching well in front of face; hind tibiae of ♂ fully developed, not thickened, with a terminal pair of spurs.

*Nervation*: forewings, cell half as long as wing; discocellular vertical; subcostal and median veins bent inwards towards extremity; first median at three-fourths, second before end of cell, third from end; radials normal; last four subcostals stalked from before end of cell: first bent down to anastomose with them at a point. Hindwings with subcostals from end of cell; second median before end. Sealing coarse and powdery.

Type: *Induna rufisalsa* sp. nov.

122. *Induna rufisalsa* sp. nov.

♂. *Forewings*: pinkish ochreous, thickly dusted with sandy rufous scales: the costa broadly greyish ochreous, with fuscous atoms; the lines darker: first at one-third, curved below costa, then oblique inwards; middle line at two-thirds, slightly inbent below costa, and angled outward rectangularly on vein 6, then oblique to middle of inner margin: outer line at three-fourths, finely waved, and dentate inwards; submarginal line pale, between darker shades: a small dark cell-spot; a fine dark marginal line, swollen between the veins and interrupted at them: fringe deep, concolorous, with a dark line of scales near base.

*Hindwings*: the same, without first line.

Underside similar, the inner margin of forewings whitish. Face and palpi dark brown; vertex, thorax, and abdomen concolorous; ♀ much paler, with pale ochreous ground-colour and much less red irroration.

Expanse of wings: ♂, 26 mm.; ♀, 28 mm.

A considerable number from Weenen, Natal, March 1894.

*Isoplenia* gen. nov.

*Forewings*: ample; costa evenly curved throughout; apex blunt, nearly rectangular: hindmargin curved.

*Hindwings*: with fully rounded hindmargin.

Palpi short, hardly reaching beyond face. Antennae of ♂ finely pectinated, the pectinations ciliated, slender, and nearly at right angles with the shaft : of ♀ also pectinated, but shorter, the pectinations more oblique and not extending to apex : hind tibiae of ♂ normal, with a terminal pair of spurs : of ♀ with four spurs.

*Neuration* : forewings, cell half the length of wing : the discocellular vertical : the median and subcostal veins both bent inwards towards extremity : first median nervule at four-fifths, second before, third from end of cell : lower radial from a little above the centre of discocellular : upper radial normal : 7, 8, 9 stalked, from before end of cell : 10 and 11 free, from cell : 10 anastomosing with 11 and again with 7, 8, 9, forming a double areole : 7 from apex of areole ; 8, 9, 10 long-stalked. Hindwings with veins 7 and 3 both before angles of cell.

Type : *Isoplenia trisinuata* sp. nov.

### 123. *Isoplenia trisinuata* sp. nov.

*Forewings* : in ♂ brick-red, or brownish red ; in the ♀ duller, greyer, densely sprinkled with red atoms : the lines deep red : first at one-third, bent below costa, thence sinuous to inner margin ; second at two-thirds, angled inwards on subcostal and outwards on vein 6, thence sinuous and vertical to inner margin beyond two-thirds ; third angled outwards on vein 6, thence sinuous and wavy to just before anal angle : a more obscure zigzag subterminal line, its angles joined by reddish streaks between the veins to the marginal line, which is finely red : fringe colorous : cell-spot dark.

*Hindwings* : the same, without first line.

Underside pale pinkish ochreous, with the two outer lines shown. Face and palpi deep brown : vertex and antennae red : thorax and abdomen like wings.

Expanse of wings : ♂, 26 mm. ; ♀, 32 mm.

Three ♂♂, two ♀♀, from Weenen, Natal ; two ♂♂ and one ♀ dated December 1893, the other pair March 1894 ; in both cases the ♂♂ much fresher and in better condition than the ♀♀.

### *Leptacme* gen. nov.

*Forewings* : elongated, the costa straight till close to apex ; apex produced, somewhat acute ; hindmargin slightly sinuous, very obliquely curved below, the anal angle rounded off.

*Hindwings* : slightly protuberant at veins 6 and 4, incurved between.

Palpi and tongue almost obsolete : antennae of ♀ filiform : mid tibiae with one pair of spurs ; hindlegs and abdomen wanting.

*Neuration* : forewings, cell nearly two-thirds of wing : discocellular straight : first median from seven-eighths, second shortly before, third from end of cell : the median nervure itself bent upwards towards the extremity of cell : radials normal : veins 10 and 11 stalked : 7, 8, 9 stalked : the stalks anastomosing, 11, 7, 10, 8, and 9 rising in the order given. Hindwings, with cell two-thirds of wing : the discocellular oblique : the two subcostals on a very long stalk : medians as in forewings.

Type : *Leptacme molescripta* sp. nov.

124. *Leptacme malescripta* sp. nov.

*Forewings* : brick-red, with extremely fine darker red dusting ; a small dark cell-dot : no distinct markings, but traces of a curved darker red fascia parallel and near to hindmargin ; fringe concolorous, with a row of minute black dots at base.

*Hindwings* : the same : the cell-spot larger : traces of an antemedian shade.

Underside like upper. Face and palpi red-brown : vertex pinkish ; thorax concolorous with wings.

Expanse of wings : 17 mm.

One ♀ from Weenen, Natal, March 1895.

125. *Lycauges acuta* sp. nov.

*Forewings* : ochreous, sprinkled with rufous ochreous atoms, the lines rufous or pale brownish ; cell-spot white, edged with rufous ; first line from one-third of inner margin oblique towards the cell-spot : second line a broad diffuse shade from middle of inner margin to costa before apex, where it is joined to a finer line from inner margin before anal angle : fringe dark rufous, with a paler basal line.

*Hindwings* : with diffuse central submarginal rufous shade.

Underside yellow, with the rosy strigulae and lines brighter. Face and palpi brown : vertex and antennae whitish ; thorax and abdomen rufous ochreous.

Expanse of wings : 25 mm.

Two ♀♀ from Natal (A. J. Spiller).

Distinguished by the very acute subfalcate apex and oblique hindmargin.

126. *Lycauges concurrens* sp. nov.

*Forewings* : bone-colour, sprinkled with fuscous atoms : the lines dark grey and very oblique ; first curved, from one-third of costa to near base of inner margin ; median shade thick and diffuse from three-fourths of costa to before middle of inner margin, towards costa recurved and faint : outer line concise, serrate on the veins, from middle of inner margin straight towards apex, recurved and faint from vein 6, followed by two diffuse grey shades, which coalesce in the apex of wing ; a small black cell-spot ; fringe bone-colour, with darker scales intermixed : a fine dark marginal line.

*Hindwings* : more suffused with rufous scales : the markings the same, without first line.

Underside similar, the base of forewings more thickly dusted with dark scales. Face, palpi, and collar dark ferruginous ; vertex whitish : thorax and abdomen concolorous.

Expanse of wings : 26 mm.

One ♂ from Mpeta, Loangwa River, December 1895 (Coryndon).

127. *Lycauges extremata* sp. nov.

*Forewings* : bone-colour, tinged with ochreous and dusted with fuscous ; first line very faint, curved and oblique below, from one-fourth of costa to one-fourth of inner margin ; median shade thick and diffuse from middle of inner margin towards apex, edged externally by the oblique waved outer line, both becoming obsolete before



reaching costa : traces of two dark submarginal shades ; a row of black dots between the veins on margin ; cell-spot black ; fringe concolorous.

*Hindwings* : the same, but the outer line is separated from the central shade by a pale space.

Underside with only the cell-spots shown. Face, palpi, and collar dull brown ; vertex pale ; thorax and abdomen like wings.

Expanse of wings : 24—26 mm.

Two ♀♀ from Akassa, River Niger.

#### 128. *Nobilia nebulosa* sp. nov.

*Forewings* : dull red-brown, with numerous pale wavy somewhat shining striae ; the costa grey-brown, the streak much narrower than in *N. turbata* Wlk. ; an undefined paler pinkish grey central fascia, with the outer edge curved and dentate, but without any distinct line, containing a darker-coloured spot on the discocellular ; a narrow whitish waved line from near costa before apex to hindmargin below vein 4, reappearing as a small triangle on vein 3, and forming a lunule above anal angle, followed above vein 4 by some indistinct grey streaks ; fringe reddish brown ; beyond a dark red marginal line.

*Hindwings* : the same, the submarginal waved line more distinct and less interrupted ; cell-spot elongate, grey, with a dark dot below.

Underside bronzy pink. Head, thorax, and abdomen concolorous with wings.

Expanse of wings : 39 mm.

One ♂ from Amboina, August 1892 (W. Doherty).

Quite distinct from both the common *N. turbata* Wlk. and the other Bornean species *N. strigata* Warr.

#### 129. *Perixera imbuta* sp. nov.

*Forewings* : dull brick-red, with very fine fuscous irroration : the lines dark grey, indistinct : first at one-fourth, angled in cell and on submedian fold, and marked by dark dots on veins ; median shade at two-thirds, denticulate, and incurved below middle ; outer line in the usual place of the submarginal, marked by dark dots on veins ; fringe concolorous ; a double row of marginal blackish dots between and at the ends of the veins ; cell-spot blackish.

*Hindwings* : the same.

Underside dull rosy, the outer line only marked by reddish dots. Palpi, head, thorax, and abdomen brick-red ; face whitish in the lower half, deep red above.

Expanse of wings : 26 mm.

One ♂ from the Khasias, July 1896.

#### 130. *Perixera transversata* sp. nov.

*Forewings* : dull brick-red, dusted with darker atoms : markings dark fuscous : first line at one-fourth, indistinct, angled outwards below costa ; outer line at five-sixths, denticulate, marked by dark dots on the veins, incurved towards inner margin : a small white cell-dot, with dark scales round it ; an oblique diffuse nearly straight dark median shade from costa at two-thirds to beyond middle of inner margin ; fringe concolorous : a row of dark marginal spots between the veins.

*Hindwings* : with the shade central, slightly bent, following the small white cell-dot ; outer line approximated to median on inner margin.

Underside whitish ochreous, in the forewings tinged with rosy. Palpi pale ochreous, tinged with red above ; face whitish, with a red bar at top ; vertex and shaft of antennae white ; thorax concolorous with wings ; abdomen wanting.

Expanse of wings : 33 mm.

One ♂ from Cedar Bay, North Queensland (A. S. Meek).

### 131. *Problepsis auriculifera* sp. nov.

*Forewings* : pure white, the costa fuscous to middle ; discal ocellus distinctly ear-shaped, fulvous, with metallic leaden and black scales all round the margin, and similar linear spots in the centre between the veins ; a round fulvous annulus below it, with similar scales ; some silvery scales along inner margin ; postmedian line smoky ochreous ; the submarginal line formed of blue-grey euneiform spots, the outermost line of blue-grey triangular spots ; marginal line dark blue-grey ; fringe glossy white, with a darker dividing line.

*Hindwings* : with a dark oval ocellus, its margin marked as in forewings, followed by an obscure annulus on inner margin, with silvery scales to anal angle.

Underside white. Palpi and face black above, white below ; vertex black ; collar, thorax, and abdomen white.

Expanse of wings : ♂, 26 mm. : ♀, 32 mm.

A pair, bred, from Singapore.

Distinguished from *deliaria* Guen. by the differently shaped and much darker ocelloid spot.

### 132. *Problepsis digammata* sp. nov.

*Argyris latonaria* var. Wlk. XXIII. p. 897, *nee* Guen.

To Walker's description, which is good as far as it goes, may be added that the discal annulus of the forewings is marked with black scales above, and on the hindwings is wholly silvery ; in these wings the central line is not interrupted by the discal mark, but passes inside it.

One ♀ from Pieter Maritzburg, Natal.

### 133. *Problepsis hemicyclata* sp. nov.

*Forewings* : white, the costa narrowly smoky ochreous ; discal ocellus fulvous, horseshoe-shaped, not reaching below the median vein, edged within on the outer side only by a black curved mark, with some silvery scales in the centre, and with a line of brilliant silvery scales all round, these being continued without closing the ocellus at the bottom along each side of a pale ochreous streak to the inner margin ; postmedian line yellowish ochreous ; submarginal line of blotches smoky grey ; the subterminal line yellowish ochreous, not grey, as in *apollinaria* Guen. ; marginal line also ochreous ; fringe white, with an ochreous dividing line.

*Hindwings* : with a long silver-edged annulus with an ochreous centre ; some irregular silvery marks along inner margin to anal angle.

Underside white. Palpi white, tipped with fuscous ; face white, except the extreme top, which is fuscous ; vertex white, with a fuscous spot in front ; thorax and abdomen white.

Expanse of wings : 38 mm.

Three ♀♀ from Kei Tocai, January to March 1896 (H. C. Webster).

Distinguished at once by the darker tints of the ocelloid spot in forewings not reaching below the median vein. One specimen has traces of a pale ochreous inner line near the base.

134. *Ptochophyle ephyrata* sp. nov.

*Forewings*: pinkish ochreous, thickly irrorated with reddish striae; the lines dull greyish fuscous; first at one-fourth, curved; median shade from two-thirds of costa to beyond middle of inner margin, diffuse, incurved below middle; outer line at five-sixths, wavy, incurved opposite cell, darker marked on the veins; indistinct red dots along margin between and at the ends of the veins; fringe paler, pinkish ochreous; cell-spot hardly visible.

*Hindwings*: with two lines, and the cell-spot large, oval, black-edged, with paler centre.

Underside whitish ochreous, in the forewings tinged with rosy, with all the markings faint. Thorax and abdomen concolorous; head damaged.

Expanse of wings : 26 mm.

One ♀ from the Tenimber Islands, July 1892 (W. Doherty).

Allied to *P. lineata* Warr. from Dili, Timor, but larger, and with all three lines marked.

135. *Ptochophyle* (?) *pulverulenta* sp. nov.

*Forewings*: pinkish, densely and uniformly dusted with brick-red atoms; a dark red cell-spot, and row of similar spots along hindmargin between the veins; fringe concolorous.

*Hindwings*: precisely similar.

Underside pale pinkish ochreous. Head, thorax, and abdomen concolorous; face paler.

Expanse of wings : 20 mm.

One ♀ from Perak.

The antennae, which are subserrate, are much thickened close to base. In the hindwings the two subcostal nervules and last two medians, which typically rise from the ends of cell, are stalked.

136. *Ptychopoda semisericea* sp. nov.

*Forewings*: pale ochreous, finely dusted with grey; the lines grey, oblique and diffuse; the antemedian and median straight; the outer and two submarginal lines waved; cell-spot black, before the median line; fringe ochreous, with a row of minute dark specks at ends of veins.

*Hindwings*: the same; the lines very obscure.

Underside with the markings more distinct; basal half of forewings greyish. Face and palpi blackish; thorax and abdomen ochreous. The tuft of hind tibiae is black inside.

Expanse of wings : 18 mm.

One ♂ from the Khasias, June 1895.

Like *P. actiosaria* Wlk., but much paler; the anal angle of the hindwings slightly produced and rectangular.

137. *Ptychopoda nigrosticta* sp. nov.

*Forewings* : ochreous, dusted with fine blackish atoms ; a distinct dark cell-spot ; first line and median line only indicated by blackish scales on costa ; outer line at three-fourths, curved near costa, and marked by minute dark vein-dots : fringe concolorous, with a pale line at base, followed by a row of comparatively large black dots.

*Hindwings* : the same, but without any distinct line.

Underside yellower ; the forewings with the basal half, except on inner margin, dark brown-grey. Face and palpi dark brown ; thorax and abdomen ochreous.

Expanse of wings : 12 mm.

One ♂ from Weenen, Natal, October 1895.

The cell of forewings is two-thirds as long as wing, of hindwings one-half. In the forewings vein 11 rises very far back, before middle of cell, and is bent down to anastomose with the stalk of the other four subcostals, which also rises well before the end of cell. In hindwings the two subcostals are short-stalked.

138. *Rhodostrophia muricolor* sp. nov.

*Forewings* : greyish mouse-colour ; in the ♂ without any markings : a slight black cell-spot ; fringe paler.

*Hindwings* : paler, towards the costa tinged with ochreous, with traces of post-median and submarginal grey lines.

♀ darker, dusted with fuscous atoms ; an obscure oblique inner line, a faintly double nearly straight postmedian, and slightly sinuous submarginal line, all darker than the ground-colour : cell-spot distinct ; hindwings strongly tinged with ochreous towards apex and paler, with the postmedian and submarginal lines distinct.

Underside more yellowish, with the outer lines marked. Head, thorax, and abdomen concolorous with wings, the abdomen somewhat paler.

Expanse of wings : 26 mm.

A pair from Simla, August 1896.

139. *Somatina figurata* sp. nov.

*Forewings* : whitish, thickly dusted with grey atoms ; the lines dark grey ; first at one-third, vertical and somewhat waved : outer at three-fourths, fine and wavy, parallel to hindmargin, except the costal portion, which runs obliquely outwards ; preceded by a thicker dentate median shade, excurved round cell ; cell-spot an oblique figure of 8, filled up with olive-fuscous and finely edged with metallic scales ; submarginal line pale, waved, between two dark fuscous grey innulate fasciae ; a fine black marginal line, swelling out into spots between the veins and with a larger dark mark opposite the cell ; fringe white.

*Hindwings* : similar, but the cell-spot narrower and elongate.

Underside white, with a submarginal row of dark dots on the veins ; costa of forewings rosy. Palpi, face, and forelegs rosy : lower part of face whitish ; vertex and shaft of antennae white : collar ferruginous ; thorax and abdomen white, the latter with a black mark on anal segment.

Expanse of wings : 34 mm.

One ♂ from Weenen, Natal, December 1893.

140. *Sterrha associata* sp. nov.

*Forewings* : bone-colour, tinged with grey ; the lines dark grey or blackish : first at one-third, curved, from a dark spot on costa ; cell-spot dark ; outer line at four-fifths, curved and fine to the first median, then vertical and thicker, also starting from a dark costal spot ; two dark submarginal fasciae, between which runs the paler submarginal line ; fringe concolorous, with minute dark specks in the basal half opposite the veins.

*Hindwings* : the same ; the marginal dusky area broader.

Underside rather darker. Face and palpi black ; vertex, thorax, and abdomen concolorous.

Expanse of wings : 12 mm.

Two ♂♂ from Weenen, Natal, April 1895.

♂ antennae ciliated : hind tibiae of ♂ fully developed, with a terminal pair of large spurs.

141. *Sterrha obliquiscripta* sp. nov.

*Forewings* : whitish, thickly but finely dusted with fuscous atoms : with five grey oblique lines : the first, very indistinct, at one-third ; the second median passing over the black cell-spot ; the third at three-fourths, with hardly perceptible dark dots on the veins behind ; the fourth thicker and nearer the third on inner margin than on costa ; the fifth subterminal, fine and indistinct ; a marginal row of blackish dashes ; fringe whitish, with a dark middle line.

*Hindwings* : with four lines.

Underside darker, especially in forewings, which towards costa are suffused with grey ; the outer three lines only shown. Face and palpi dark brown ; vertex, thorax, and abdomen whitish.

Expanse of wings : 24 mm.

One ♂ from Weenen, Natal, August 1894.

Antennae of ♂ with fine fascicles of cilia ; hind tibiae simple, short, with terminal spurs only ; vein 3 in both wings before angle of cell : vein 7 of hindwings before upper angle.

142. *Sterrha picta* sp. nov.

*Forewings* : silky white ; the basal region with a pale violet stain, which forms a sharp tooth along the median, and runs out along costa to the middle of the wing, where it becomes deep violet ; first line marked by a deep violet spot on inner margin at one-third on the edge of the violet tint, with another spot of mixed bright ochreous and black scales obliquely above it ; cell-spot black, distinct, consisting of raised scales ; outer line at four-fifths, parallel to hindmargin, bright ochreous, interrupted below middle, and becoming deep violet above inner margin ; a row of deep violet marginal dots : fringe full, pure white.

*Hindwings* : white ; a minute dark cell-spot and row of marginal dots : costa at base and inner margin along middle stained with violet.

Underside of forewings violet-grey, deeper towards costa, with the cell-spot and marginal spots black ; traces of two wavy submarginal lines ; fringe white ; hindwings white, with costa stained with violet ; cell-spot and marginal dots black. Face and fore tibiae and femora deep violet ; palpi and vertex ochreous white ; thorax and abdomen pure white, the latter with reddish dorsal spots.



Expanse of wings : 19 mm.

One ♂ from Weenen, Natal, January 1895.

The antennae of the ♂ are finely ciliated ; the hind tibiae slender, with the terminal pair of spurs only ; veins 6 and 7 of hindwings stalked. At first sight the violet stain suggests an accidental disfigurement of the white ground-colour : but the perfectly symmetrical outline of it on both wings prevents the acceptance of this explanation.

143. *Sterrha punctilineata* sp. nov.

*Forewings* : white, with delicate dark dusting, especially along the costa ; the lines oblique, parallel to hindmargin ; first indicated only by two spots, one on submedian vein at one-third, the other on the median ; a distinct blackish cell-dot ; outer line fine, ochreous, at four-fifths, marked with neat dark dashes on the veins externally ; between it and the cell-dot is an oblique broadish ochreous line or shade, which approaches the exterior line towards costa, where it is somewhat curved ; submarginal line ochreous, indistinct ; a black marginal line, containing dots between the veins ; fringe white, with two lines of fine dark scales.

*Hindwings* : similar, the central shade narrower and passing inside round the cell-spot.

Underside the same ; the forewings somewhat tinged with ochreous. Face, palpi, and collar black ; vertex, thorax, and abdomen white.

Expanse of wings : 19 mm.

One ♂ from Weenen, Natal.

The antennae of ♂ are subdentate, with coarse fascicles of cilia ; hind tibiae short, rather thick, with terminal spurs only ; the tarsi long ; vein 3 in both wings before the angle of cell ; vein 7 of hindwings before the upper angle.

144. *Symmacra carnearia* sp. nov.

*Forewings* : pink, thickly dusted with brick-red scales : the lines brick-red ; first at one-third, bent in cell ; second at two-thirds, irregularly waved and slightly oblique ; third at three-fourths, slightly waved, vertical for two-thirds, then bent in to inner margin near second ; a faint paler waved submarginal line ; fringe concolorous ; cell-spot annular.

*Hindwings* : with two slightly waved and curved red lines, and a pale submarginal line.

Underside dull pink. Face, vertex, and palpi deep red-brown ; collar reddish ; thorax and abdomen pinkish.

Expanse of wings : 21 mm.

One ♀ from Labuan, North Borneo, October 1894 (A. Everett).

145. *Timandra obsoleta* sp. nov.

*Forewings* : pale ochreous, with a slight flesh-coloured tint, and very faintly irrorated with darker ; the oblique line very obscurely pinkish or fuscous, or altogether absent ; submarginal line grey, nearly straight and sometimes obsolescent, but generally finely marked with pink at costa ; fringe ochreous, sometimes pink-tinged, with a fine pinkish marginal line ; cell-dot minute.

*Hindwings* : the same ; the submarginal line, when present, just bent in the middle ; in both wings the area beyond the oblique line is slightly deeper-coloured than the basal half of the wing.

Underside ochreous, in the forewings slightly tinged with pinkish and with distinct dark irroration : the basal fringe-line dark ; the outer line only marked, and that indistinctly, grey. Face and palpi red-brown : thorax and abdomen concolorous with wings ; vertex paler.

Expanse of wings : 27 mm.

Many examples from the Khasias.

This obscurely marked insect appears quite distinct from any of the hitherto described species ; it is, at all events, a good local form.

#### 146. *Timandra ruptilinea* sp. nov.

*Forewings* : yellowish ochreous, speckled with rufous ; the costa dotted with fuscous, more thickly towards base, and with the costal edge from base wholly fuscous ; cell-spot large, diffuse, rosy ; the oblique line obsolete, except at inner margin, where it is reddish and followed by another short reddish line ; submarginal line obscure, grey, very sinuous, marked at apex by a dark dash and two or three dark vein-dots : fringe reddish ochreous, with a reddish line at base.

*Hindwings* : with the oblique antemedian line faint except at costa, where it is distinct and brown, followed by a small brownish red blotch ; postmedian line sinuous : basal area of wing paler than outer area.

Underside deeper yellow, with strong rufous and fuscous irroration : the outer line strongly marked : cell-spots large and reddish. Face, palpi, and collar deep red-brown : vertex, thorax, and abdomen pale ochreous.

Expanse of wings : 24 mm.

One ♂ from the Khasias, June 1896.

#### 147. *Traminda falcata* sp. nov.

*Forewings* : ochreous, suffused with dull rosy and irrorated with red : a reddish oblique line from apex to inner margin beyond middle ; fringe reddish ; cell-spot deep purple-red, with a white centre.

*Hindwings* : with the cell-spot small and inconspicuous, the red oblique line central.

Underside yellower ochreous, with bright rosy striations ; no trace of a submarginal row of spots either above or below. Thorax and abdomen concolorous : head wanting.

Expanse of wings : 25 mm.

One ♂ from Natal (A. J. Spiller).

Independently of the markings, this species is distinguished by the long narrow forewing, more arched costa, subfalcate apex, and sinuate hindmargin.

#### 148. *Traminda glauca* sp. nov.

*Forewings* : glaucous green ; a rather darker green paler-edged oblique line, slightly waved, at two-thirds, followed by a scarcely perceptible line of dark green spots : fringe concolorous ; no visible cell-spot.

*Hindwings* : the same, with white oval cell-spot.

Underside whitish green, the whole of the forewings and costa of hindwings suffused with dull rosy ; both wings with traces of a line of grey spots, parallel and

near to hindmargin. Palpi, face, and forelegs bright red : vertex white : head, thorax, and abdomen green.

Expanse of wings : 34 mm.

One ♂ from Sierra Leone.

In the forewings the costa is convex towards apex, which is subfalcate ; hindmargin oblique, hardly curved : hindwings bluntly肘ed.

Allied to Saalmüller's *decessata* from Madagascar, occurring also in Abyssinia.

#### 149. *Traminda rufa* sp. nov.

*Forewings* : pinkish ochreous, thickly dusted with pink, either bright or greyish : first line at most indicated by three reddish brown dots : second line darker pink or reddish, from costa at three-fourths, below which it is slightly curved, to inner margin beyond middle, followed by a paler shade and a similarly oblique row of reddish dots : cell-spot white, small ; fringe concolorous.

*Hindwings* : the same, but with the cell-spot large and edged thickly with red-brown, touching the oblique line, which is antemedian.

Underside like upper, but with coarser mottlings and no oblique line. Head, thorax, and abdomen pink : the vertex whitish.

Expanse of wings : 26 mm.

Three ♂♂ from Weenen, Natal.

Saalmüller's *decessata* from Madagascar must be very much like this species, but green instead of pink ; and as the species of this group occur of both colours, this may be a local form.

### SUBFAMILY ASTHENINAE.

#### 150. *Agnibesa venusta* sp. nov.

*Forewings* : with the white ground-colour almost wholly hidden by chestnut and grey suffusion ; basal area with three pairs of thick strongly curved chestnut lines, alternating with silvery grey lines, the last of the latter being silvery white ; a broad median chestnut fascia, tinged with orange on costa and towards its inner edge, traversed by a single angled silvery grey line ; marginal area purplish grey, traversed by a narrow indistinct, a broader more distinct, and a still broader more rufous-tinged marginal dark grey band, all bent, correspondingly with the edge of the median fascia, opposite the cell, the interval on each side of the central more distinct band becoming white on the costa : below the submedian fold the median fascia and the outer bands are obsolete, the inner margin becoming white ; fringe rufous grey, white below.

*Hindwings* : white, with a broad antemedian and postmedian and double submarginal olive-grey band.

Underside of forewings dull purple-brown, with the inner margin and some costal blotches whitish : hindwings white. Head and thorax chestnut ; abdomen white.

Expanse of wings : 32 mm.

Two ♂♂ from Sikkim, July 1889 (Pilcher leg.).

## SUBFAMILY TRICHOPTERYGINAE.

151. *Remodes* (?) *confusidentata* sp. nov.

*Forewings* : dull grey-green, with darker green confusedly dentate vertical lines : basal patch edged by a dark green line, and containing two or three less plain lines : inner edge of central fascia formed by a similar dentate line, marked with very dark green on costa, median and submedian veins : the paler green band between the basal patch and central fascia traversed by a fine similarly dentate line : outer band of central fascia consisting of three irregularly dentate dark green lines, the middle of the fascia remaining pale green and containing a small dark green cell-spot : submarginal line dark green, very distinct, irregularly bent and dentate, preceded and followed by a paler green band traversed by a fine green waved line : a marginal row of deep green lunules between the veins, which are pale green : a row of black marginal spots at ends of veins : fringe yellowish green, with a yellowish basal line.

*Hindwings* : brownish grey.

Underside reddish grey. Palpi with the very long second joint straight, pale green, terminal joint black with ochreous tip ; face and vertex pale green : thorax darker green : abdomen cinereous green : antennae ochreous green at base, becoming black in the outer half.

Expanse of wings : 32 mm.

One ♀ from Pieter Maritzburg, Natal.

The hindmargin of the hindwings is decidedly crenulate. This species somewhat resembles *Remodes* (?) *angulosa* Warr. from Amboina : but the dentations of the lines are neither so regular nor so deep, and the lines are nearly vertical throughout. The type being a ♀, the genus must for the present remain doubtful, like that of *angulosa*.

152. *Remodes* (?) *denigrata* sp. nov.

♀. *Forewings* : pale whitish green, the cross lines bright yellowish green : a green spot on costa at base, followed by a broadish diffuse fascia, its inner edge concise and angled on subcostal vein : separated from central fascia by a broad band of the ground-colour, traversed by two green lines, the first denticulate, the second waved : central fascia composed of first a green shade, broad on costa, narrowing to a point on inner margin, next a narrow almost obsolete band of ground-colour, and last a series of three or four waved lines, which at the costa form two green bands : these four lines become purple from vein 6 to the submedian, the inner shade being purple only below the median : following the central fascia comes a band of the ground-colour, traversed by a single denticulate green line and two curved green fasciae, the first the broadest, diffusely waved externally, both concisely edged externally : a row of dark green spots at the ends of the veins : fringe green, the inner half darker.

*Hindwings* : pale grey, with ochreous fringe.

Underside rufous cinereous : forewings in cell and along costa dull olive-green. Face, palpi, thorax, and base of abdomen bright green : abdomen grey, tinged with green : antennae ochreous, becoming dark grey towards tips.

Expanse of wings : 32 mm.

One ♀ from Perak.

Distinguished by the bright yellow-green tint and the total absence of black scaling. It is referred to *Remodes* provisionally.

### **Steirophora** gen. nov.

Allied to *Sauris* Guen. and *Remodes* Guen., but the hindwings in the ♂ are fully developed, as in *Phthonoloba* Warr. ; characterised by a long, horny, scaled, tongue-shaped process from the base of the abdomen in the ♂, lying beneath, and reaching to the end of, the long second segment. Hind tibiae without spurs ; fore tibiae with a long tuft of hair from the femoro-tibial joint. Palpi rostriform, twice as long as head ; antennae ligulate, with pointed apex.

*Neuration* : as in *Sauris*.

*Type* : *Steirophora punctatissima* sp. nov.

Besides the two species now described, I find that the insect named by me *Phthonoloba olivacea*, *Pr. Z. S.* 1893, p. 363, must also be referred to this genus.

#### 153. **Steirophora auratisquama** sp. nov.

*Forewings* : pale silvery grey, more or less suffused with blackish scales ; the veins marked with gilded yellowish green, and often with scales of the same colour suffused over the basal half and along the subcostal region ; a dark line close to base, and two beyond representing the basal fascia, starting from a blackish costal blotch ; central fascia broader on costa than inner margin, its inner edge consisting of two, and its outer of three, wavy lines, more or less marked with blackish, and forming blackish spots on costa ; submarginal fascia curved, narrower, consisting of two lines, also forming a blackish costal blotch, and with a blackish blotch beyond it opposite the cell ; subterminal line consisting of black sagittate marks, often much obscured ; a marginal line of black lozenge-shaped spots ; fringe pale grey, with darker grey blotches on basal half intermediate between the black spots of hindmargin. (In one ♀ there is a total absence of the blackish irroration ; the gilded yellow scales are pale olive-green, and all the markings clearer and more distinct.)

*Hindwings* : dull smoky-grey ; the fringe concolorous.

Face and thorax grey, mixed with yellowish or olive-green scales ; abdomen grey ; antennae annulated, dark and light ; palpi fuscous and ochreous. Underside dull brownish cinereous, with an olive-yellow tinge.

Expanse of wings : ♂, 30 mm. ; ♀, 36 mm.

Java : one ♂, three ♀♀, from West Java ; one ♀ from Bandoug ; two ♀♀ from South Java.

#### 154. **Steirophora punctatissima** sp. nov.

*Forewings* : yellowish green, very finely and thickly powdered with dark scales ; the transverse lines all formed of black more or less wedge-shaped spots on the veins : a double series close to base, and a similar one beyond ; central fascia consisting of two inner and three outer rows ; submarginal fascia also of two rows, with a darker blotch beyond cell ; a marginal line of large black lunules, their convex side outwards ; fringe concolorous ; the pale spaces between the fasciae are also each traversed by a less prominent line of smaller spots or dots.



*Hindwings*: yellowish cinereous, darker towards the hindmargin, with a paler curved fascia at two-thirds: the cell-spot dark.

Underside pale dull cinereous. Head, thorax, and abdomen olive-ochreous; the vertex and thorax mixed with dark green: antennae annulated green and fuscous.

Expanse of wings: 40 mm.

One ♂ from Bonthain, S. Celebes, 5000—7000 feet, October 1895 (A. Everett).

The wings of this species are narrower, the forewings much more pointed, with hindmargin more oblique than in the others.

### 155. *Trichopterigia nigrisculpta* sp. nov.

*Forewings*: creamy white, the costa yellowish: marked simply with black lines and spots; a curved line close to base, from which a black line runs in along inner margin to base: inner line at one-fourth, strongly outcurved in cell: central fascia marked by two sinuous lines, the inner of which is inangulated on subcostal vein before being outcurved in the cell, and the outer is double, both incurved below the middle and approximated, oblique outwards below the submedian vein: submarginal line sinuous, double, interrupted above and below cell, followed by conical patches of black scales between the veins: a submarginal row of horizontal black dashes on the veins, touching pairs of black spots on the margin and followed in the white fringes by black spots: the space before and after the central fascia is traversed by a sinuous line of black dashes on the veins, starting from an oblique costal streak.

*Hindwings*: white: the fringe with faint grey dots at end of veins.

Underside white, with the lines showing through. Face and palpi white, the latter dark grey externally: forelegs mottled black and white: thorax and abdomen white; thorax speckled with grey, and with the outside of the patagia black and ochreous; abdomen with a black dorsal line.

Expanse of wings: 39 mm.

One ♀ from Darjiling, March 1889 (Pileher leg.).

### SUBFAMILY TEPHIROCLYTHINAE.

#### *Aetheolepis papillosa* Warr., Nov. Zool. III. p. 124.

At the time I described the ♂ of this species the ♀ was unknown. It proves to be very much like the ♀ of *Gymnopera rubroviridis*, but without any red scales in the cell.

*Forewings*: ample, pale grey or whitish green: the lines deeper green, especially at the costa: basal patch small, edged by a dark green line and with another line close to base; a similar dark green curved line forms the inner edge of the central fascia: the outer edge is angled on vein 6, and less strongly again on vein 4, below which it is marked only by dark dots on veins: three similarly angled green lines are visible within the fascia: submarginal line double, dark green: a dark green macular line before the margin: the pale bands on each side of the central fascia are each traversed by a fine green line: fringe pale green, chequered with darker.

*Hindwings*: paler, with four curved lines, only the outer two being distinct. Most of the lines on the forewings are marked on the veins with blackish scales.

Underside of both wings dull green, with the markings grey and obscure. Head, thorax, and abdomen pale green : the latter dark at the base and anal segment, and with a black lateral line. The same size as the ♂.

This species occurs also in Sikkim : a ♂ and two ♀♀ are recorded from the Pilcher Collection, taken, the ♂ in April, the ♀♀ in May and July 1889. In this ♂ the underside of the hindwings is pink rather than dull brown.

### **Chloroplintha** gen. nov.

♂. *Forewings* : broad ; costa strongly arched at base, then straight till just before apex, which is produced but bluntly rounded : hindmargin well curved ; inner margin convex and fringed beyond the middle.

*Hindwings* : with both angles and the hindmargin rounded.

Abdomen short and stout ; palpi reaching well beyond forehead, second joint laxly scaled, third short with smooth scales ; tongue and frenulum present, the latter fine ; antennae filiform, the joints minutely angular ; hind tibiae with four spurs.

*Neuration* : as in *Chloroclystis*, vein 11, after anastomosis, becoming coincident with 12 ; the submedian sinuous. The hindwings above are covered with a thick pile in place of scales and at the base with long hairs. On the underside both wings have coarse and mealy scales.

Type : *Chloroplintha velutina* sp. nov.

### 156. **Chloroplintha velutina** sp. nov.

*Forewings* : very pale green : a black curved streak close to base ; inner edge of central fascia distinct, slightly curved and with an angulation on the submedian fold, blackish on costa and inner margin, pinkish brown between ; the outer edge only plain on inner margin, where it is blackish, represented by a double curved row of black dashes on the veins, angled beyond cell, where it is preceded by some pinkish brown scales, and ending in a black costal spot beyond the middle : a curved series of black dashes also represents the submarginal line ; between the black dashes the veins are marked with series of white dashes ; on the inner margin the centre of the fascia is represented by a whitish mark traversed by two fine black lines ; a slightly darker green shade precedes the hindmargin, which has a dark marginal line ; fringe greenish, chequered with darker.

*Hindwings* : dull brownish grey ; the fringe of the same colour, short and curled.

Underside dull rufous grey ; the apical area of forewings green. Head, thorax, and abdomen pale green, the thorax with some dark scales intermixed, the abdomen with a black ring at base.

Expanse of wings : 28 mm.

Two ♂♂ from Bonthain, S. Celebes, 5000—7000 feet, October 1895 (A. Everett).

### 157. **Gymnoscelis coquina** sp. nov.

*Forewings* : sordid ochreous, the irrorations and markings fuscous mixed with rufous, in some specimens with a tinge of olive-green ; basal area with four or five denticulated dark lines, angled below costa, the outermost, which is placed before the middle of wing, forming a strong projection in the cell ; outer line at two-thirds,

denticulate, and bluntly angled in the cell, dark fuscous, preceded by a fuscous shade and obscure transverse lines, which pale off towards the first line, followed by a denticulate pale and another dark line : submarginal line uniformly denticulate, pale, preceded by a fuscous shade, which also grows paler towards the second line : marginal area fuscous : a square pale ochreous or whitish blotch on hindmargin between veins 3 and 4, interrupting the submarginal line ; fringe dark fuscous, with a blackish marginal line at base, interrupted by pale spots at the ends of the veins, which are produced as pale dashes through the dark fringes.

*Hindwings* : with the basal two-thirds reddish fuscous, the outer line thicker and darker than in forewings, followed, as in them, by a pale and a dark line, but the dark line is again followed by a broad pale space : marginal area reddish fuscous, traversed by the denticulate submarginal line and with a pale patch as in forewings ; extreme inner margin marked with reddish and blackish scales, preceded by a longitudinal space along the fold which is pale ochreous and without dark irroration.

Underside dull grey. Head, thorax, and abdomen ochreous, mixed with fuscous : palpi darker towards the tips.

Expanse of wings : 19 mm.

Several examples of both sexes from Cedar Bay, Cooktown (A. S. Meek).

Allied to *G. ectochlora* Hmps. from India.

### 158. *Gymnoscelis pallidirufa* sp. nov.

*Forewings* : whitish, the basal and marginal areas suffused with dull rufous : the median slightly dusted with grey scales, edged with blackish, preceded and followed by a whitish fascia traversed by a rufous grey line ; edge of basal patch and inner edge of central fascia oblique inwards towards inner margin ; outer edge of fascia straight to vein 4, then angled and oblique inwards : submarginal line pale, denticulated ; central fascia crossed by wavy grey lines and tinged along costa with rufous ; fringe grey, with dark spots at base between the veins.

*Hindwings* : like forewings, the submarginal area with a small whitish blotch in the middle.

Underside dull rufous grey, with the markings indistinct. Head, thorax, and abdomen pale grey, with darker scales intermixed.

Expanse of wings : 19 mm.

One ♀ from Bonthain, S. Celebes, 5000—7000 feet, October 1895 (A. Everett).

The antennae are thickened and finely serrate : it is probably akin to *Iramba tibialis* Moore ; in the absence of the ♂ it may be left at present in *Gymnoscelis*.

### *Syncosmia* gen. nov.

Agreeing in the venation of forewings with *Chloroclystis*, of which it is a development. Hindwings of ♂ with the inner margin towards anal angle developed into an ear-shaped lobe, which is folded over flat on the upperside, the margin from the angle to vein 5 being straight : veins 3 and 4 both from the lower angle of cell. The palpi are long, porrect, clothed with long hairs from the base, which wholly conceal the joints ; antennae thickened and ciliated.

Type : *Syncosmia patinata* sp. nov.

159. *Syncosmia patinata* sp. nov.

*Forewings*: mainly greenish; the basal area pinkish ochreous, with a short vertical blackish line near base, some blackish scales, and two curved blackish lines towards the outside; central fascia with its inner edge formed by a thick black band curved like the two lines of the basal patch, the rest green, the outer edge waved, angled at vein 6, and with a bilobed projection below middle, with two waved dark lines within it; a pale similarly waved submarginal fascia with two dark lines through it, and pinkish on the costa, followed on costa by an oblique blackish and rufous blotch; marginal area pure dark green, unmarked; marginal line finely black: fringe ochreous, with dark grey patches opposite the veins.

*Hindwings*: whitish, tinged with grey along the hindmargin; the inner margin, lobe, and fringe ochreous.

Underside of forewings dull cinereous, with the markings indistinct; of hindwings whitish. Palpi green, with the tips black; face, vertex, thorax, and abdomen pinkish ochreous, the two last thickly marked with black.

Expanse of wings: 16 mm.

One ♂ from the Khasias, May 1896.

Closely related to *Chloroclystis trichophora* Hmps., which may perhaps be included in the genus, though the structure of the hindwings appears to differ.

160. *Tephroclystia sagittata* sp. nov.

*Forewings*: pale fawn-colour; the lines starting as black spots on the costa; first line close to base; second in middle, passing over the strongly marked black discal spot, then with a single strong curve inwards running to inner margin beyond middle: third at two-thirds, slightly angled below costa, then curving parallel to middle line and minutely waved into the anal angle; submarginal line very indistinct, indicated by a dark spot on costa and a brownish cloud at anal angle; a thin strong black marginal line at base of the fringes, interrupted by the paler veins; the costa is marked with a black spot beyond the first line and before the second, these being the beginnings of lines which cross the wing parallel to but much fainter than the lines which are visible, and similar faint lines are visible between the second and third lines.

*Hindwings*: paler, with two submarginal lines of black wedge-shaped markings; fringe and basal line as in forewings. Head, thorax, and abdomen concolorous.

Underside paler, with the markings indicated.

Expanse of wings: 25 mm.

One ♀ from Weenen, Natal.

161. *Ziridava xylinaria subrubida* subsp. nov.

Like typical *xylinaria* Wlk. above: the underside dull rosy, with the costa, hindmargin, and broad postmedian fascia smoky black: hindwings with marginal half blackish.

One ♂ from Indrulaman, Bonthain, S. Celebes, 2300 feet, September 1895 (A. Everett).

Walker's type was from Sarawak; in his description he does not mention the underside. Hampson, in *Ill. Lep. Het.* VIII. p. 106, gives the underside as *paler*.

## SUBFAMILY HYDRIOMENINAE.

162. *Epirrhoë latigrisea* sp. nov.

*Forewings*: cinereous, tinged in parts with rufous; inner edge of central fascia from costa before one-third, obtusely bent in cell, then straight to inner margin, whitish, with a dark edge; a similar line limits the basal patch, which contains two dark lines; outer edge of central fascia beyond two-thirds, parallel in the main to hindmargin and slightly projecting above middle, whitish with a dark inner edge; the fascia itself darker than the rest of the wing, and with two dark central lines; central fascia edged by a pale grey space, most distinct on inner margin; marginal area dark fuscous, the submarginal line hardly visible; the apex greyer; fringe fuscous, with dark basal line.

*Hindwings*: similar, without basal markings.

Underside cinereous, with indistinct markings. Head, thorax, and abdomen all cinereous.

Expanse of wings: 26 mm.

One ♀ from Zomba, Upper Shiré River, 3000 feet, December 1895 (Dr. P. Rendall).

163. *Ochyria dispar* sp. nov.

♂. *Forewings*: purplish fuscous, varied with grey and rufous; a dark line close to base; basal area varied with rufous and fuscous, and bounded by a thick curved blackish fascia, which is also mixed with rufous; fascia between basal area and central band very narrow, pale grey, edged finely with whitish, and angled on the submedian fold; median area broad, the outer edge beyond two-thirds of costa, indented opposite the cell and below vein 2, with a bilobed short projection between, dark purplish fuscous, containing three blackish dentate lines, two towards the outer edge dentate inwards, and one towards the inner edge dentate outwards and touching the blackish cell-spot; this fascia is edged with whitish externally along its upper half, and followed by a grey band containing a grey and a black waved line, and marked with rufous opposite the cell; submarginal line waved, grey, followed by short black lunules and preceded by long black blotches, which are laterally joined; fringe purple-fuscous; all the grey lines are slightly metallic.

*Hindwings*: smoky grey, with a black cell-spot and traces of a pale bent post-median band and waved submarginal line; marginal line fine, blackish; fringe fuscous.

Underside dark grey, with cell-specks and three obscure curved dark lines. Head and thorax dark fuscous; abdomen wanting; antennae subdentate, with fascicles of cilia.

♀ with all the grey markings replaced by rufous ochraceous, especially the two pale fasciae that edge the median area; the projection of the median band stronger and the sinuses above and below it deeper. Underside tinged with ochraceous; the costa towards apex and the fringes ochraceous; the lines more distinct; abdomen dark purplish fuscous.

Expanse of wings: 38 mm.

One ♂, two ♀♀, from North Luzon, 5000—6000 feet (Whitehead).



164. *Triphosa corrasata* sp. nov.

*Forewings* : olive-grey, with a flesh-coloured tint : lines double, velvety black, with paler centres, all interrupted ; a dark blotch at base of costa : a double basal line acutely angled on the subcostal vein, ending at the median, whence a faint single line can be traced towards base of inner margin ; edge of basal patch indicated by a much broader double line also angled on the subcostal, marked on median and submedian veins, interrupted in cell and submedian fold : inner edge of central fascia marked by a brown triangle on costa, a blotch on the median, and a small spot on the submedian ; the pale space between basal patch and fascia marked by dots on the veins, indicating a traversing line : cell-spot black, close to the costal triangle ; outer edge of fascia marked by an oblique costal blotch, preceded by a short zigzag line ; submarginal line marked by a double costal blotch, a smaller one beyond cell, and a serpentine streak above anal angle, all these with ferruginous centre ; intervening space marked by a sinuous row of dots on veins ; a row of black marginal lunules : fringe olive-grey.

*Hindwings* : with two dark lines at base ; a black cell-spot ; two faint grey wavy median lines ; a wavy black postmedian line and double waved submarginal line, the latter interrupted between veins 3 and 4, and only distinct below, where it is tinged with ferruginous ; margin and fringe as in forewings.

Underside dull pinkish cinereous, with indistinct markings, black cell-spots, and rows of black dots on veins. Palpi and front of thorax blackish ; face grey, with a black bar above ; vertex brown ; thorax and abdomen pinkish grey, with a few black specks.

Expanse of wings : 58 mm.

Two ♀♀ from the Khasias, May 1896.

165. *Xanthorhoë dissociata* sp. nov.

♀. *Forewings* : greyish ochreous, almost wholly suffused with dull brick-red ; basal area small, brick-red, edged with a brown wavy line oblique inwards, followed by a broad paler band, ochreous and red, containing three irregularly dentate brick-red lines ; central fascia very broad, brick-red ; its inner edge waved like the lines of the preceding band, the outer at five-sixths, slightly indented opposite cell, and more strongly on the submedian fold, with a slight blunt prominence between, containing seven dentate darker red lines, three towards the base and four externally, the inner pair sometimes connected on the median vein : cell-spot black, of slightly raised scales ; the fascia is finely edged with white, followed by a red line and then by two dentate dark lines, on a pale whitish or yellowish ground, before the paler dentate submarginal line : marginal space darker, interrupted by a pale oblique apical streak ; marginal line formed of pairs of black dots : fringe reddish.

*Hindwings* : dull grey, with four sinuous darker antemedian and four postmedian similar lines, the space between the lines slightly paler.

Underside of forewing grey, thickly speckled with red above the median : whitish grey, hardly speckled, below it ; cell-spot distinct : outer line dark, followed by a pale line, both indistinct below the middle : hindwings white, densely speckled with black and slightly with red : cell-spot distinct ; outer line marked. Face pale reddish ; palpi and vertex dark red : thorax and abdomen reddish grey.

♂ with the lines much less prominent : the central fascia only half as wide, the

edges oblique and wavy, white : the red lines of the fascia close together, forming two red bands, embracing a central pale olive-ochreous space ; marginal area greyish, tinged with fuscous towards the edge, the dentate lines indistinct ; a darker costal spot before the pale apical streak ; hindwings with the markings more distinct, and coloured towards inner margin.

Expanse of wings : ♀, 36—38 mm. ; ♂, 32—36 mm.

One ♂, four ♀ ♀, from North Luzon (Whitehead).

Very much like a large *N. ferrugata* ♀.

#### 166. *Xanthorhoe dissociata* ab. *nigrimedia* nov.

In this aberration the transverse lines are nearly all absent ; the basal patch is rufous, edged with white ; the central fascia black-brown, with the dark lines distinct only towards costa, edged by a white line and followed by a pinkish white space in which the lines are marked by a pair of dots on each vein ; the margin suffused with dark fuscous ; the costal spot black-brown. Hindwings and underside as in the type. Abdomen grey, with a bright red basal band.

One ♂ from N. Luzon.

Hardly recognisable at first as being the same species ; but the underside is precisely the same as in the type-form.

#### 167. *Xanthorhoe dissociata* ab. *ruptifascia* nov.

Forewings wholly dull reddish brown, the lines faintly darker ; central fascia shaded with brown towards costa, and with a black horizontal blotch from edge to edge above the median, and a smaller black blotch below submedian, not reaching the outer edge ; apical streak hardly paler : the costal blotch reddish brown.

One ♂ from N. Luzon.

#### 168. *Xanthorhoe everetti* sp. nov.

♂. *Forewings* : dull grey, dusted with darker grey : the markings brownish grey ; basal patch narrow, its outer edge straight, and traversed by two or three straight dark lines ; central fascia with the inner edge curved, the outer slightly bent below costa, and with a blunt prominence on vein 4, formed of two smaller fasciae, which meet on the median, enclosing above it an irregular oval pale space, on the inside edge of which lies the black cell-spot, and above the inner margin two narrow annuli : these fasciae are sometimes marked with blackish suffusion above the median ; submarginal line indistinct, pale, and wavy : both the pale interspaces and the darker fasciae are traversed by numerous wavy darker lines ; marginal line formed of pairs of dark spots ; fringe grey.

*Hindwings* : paler dull grey, with numerous transverse curved lines, which are chiefly visible on inner margin, forming a broadish central and narrower submarginal fascia ; cell-spot black, before the edge of the central fascia.

Underside dull cinereous, with the cell-spots and edges of the fascia blackish. Head, thorax, and abdomen all dull grey, tinged with brownish.

In the ♀ the ground-colour is paler, somewhat tinged with olive, while the dark markings are more decidedly reddish ; all the lines and markings much more concise : the fascia margined on both sides with a narrow black-edged whitish line.

Expanse of wings : ♂, 30 mm. ; ♀, 32 mm.

One ♀, two ♂♂, from Bonthain, S. Celebes, 5000—7000 feet, October 1895 (A. Everett).

Allied to *N. designata* Hufn. : the ♂♂ are somewhat worn, and may possibly, when fresh, have had the markings as distinct as in the ♀.

#### SUBFAMILY OURAPTERYGINAE.

##### 169. *Ourapteryx convergens* sp. nov.

*Forewings* : white ; the markings purple-brown, with purple-grey centres ; costa marked with a few brown spots near base : an irregular oblique blotch from costa near base reaching the submedian fold ; two oblique streaks from costa at one-third and two-thirds converging to anal angle, containing between them a discal streak starting from costa ; an irregular macular submarginal band, broken up near costa, and narrowed to a point before anal angle : a uniformly broad marginal band not reaching anal angle ; the fringe dark along it and white below : a horizontal streak from base along the submedian vein, not quite reaching the first oblique band : a narrower streak along the inner margin itself joining the first band.

*Hindwings* : with the markings duller ; a streak along the submedian vein : another along the median and first median nervule uniting with a curved macular band from middle of costa to form a V-shaped mark : a sinuous submarginal band from costa before apex to anal angle, followed in its upper half by an aggregation of greyish blue strigae ; five black submarginal spots ; fringe rufous, with a fine black marginal line.

Underside like upper. Face and palpi brown ; vertex, thorax, and abdomen white.

Expanse of wings : 54 mm.

One ♀ from Simla, May 1896.

Near to *O. excellens* Butler from Kashmir.

##### 170. *Ourapteryx incaudata* sp. nov.

*Forewings* : white, the costa at base reddish : two faint, pale brown, oblique, and parallel lines at one-third and two-thirds : fringe whitish, with a faintly darker marginal line.

*Hindwings* : with the inner line of forewings continued for two-thirds of wing ; hindmargin bluntly elbowed at vein 4.

Underside white : the costa of forewings yellowish. Face, palpi, antennae, and a streak on each shoulder bright ferruginous ; vertex, thorax, and abdomen white.

Expanse of wings : 56 mm.

One ♀ from Kina Balu (A. Everett).

The tail reduced to a small tooth.

#### SUBFAMILY PALYADINAE.

##### *Lampadopteryx* gen. nov.

*Forewings* : broad and short : costa arched throughout : apex rectangular : hindmargin slightly curved ; anal angle square.

*Hindwings* : very ample, with rounded hindmargin.

Palpi minute ; antennae of ♀ filiform, slender ; abdomen very short, only half as long as inner margin of hindwings.

*Neuration* : forewings, cell not half as long as wing ; first median at three-fourths, second just before lower angle of cell ; radials normal : 7 and 8 stalked : 11 anastomosing with 12 : 9 and 10 absent. Hindwings with 3 and 7 both rising before ends of cell.

Type : *Lampadopteryx scintillans* sp. nov.

#### 171. *Lampadopteryx scintillans* sp. nov.

*Forewings* : velvety brown-black, with eight curved rows of spots of brilliant silvery blue scales—three basal, one antemedian, two postmedian, one submarginal, and one marginal : fringe brown, with a white fleck below apex.

*Hindwings* : with four rows of spots—antemedian, median, postmedian, and submarginal : hindmargin becoming white ; the fringe white, brown at apex, where there is a single spot of the marginal row of scales.

Underside brown in forewings : the costa tinged with bluish white : a median fascia of white spots between the veins. Hindwings pale bluish white, with three interrupted brown fasciae—one median, one postmedian, the third submarginal, forming a blotch at apex, and followed at anal angle by a short marginal line. Face brown, with four white spots : vertex brown, with a white spot on each side : thorax and abdomen brown, with scattered lustrous scales.

Expanse of wings : 28 mm.

Two ♀♀ from Sandakan, N. Borneo, July 1893.

The spangles vary from blue to silvery, and the ground-colour from brown to brilliant garnet, according to the incidence of light.

#### 172. *Tasta chalybeata* sp. nov.

Like *T. micaceata* Wlk. from Borneo, but the metallic scales are steel-blue and silvery, not gilded : in the pale olive submarginal space of the forewings there is a row of separate steel-blue spots between the veins, not a confused shade. In the hindwings the elliptic ocelloid spot has its shorter axis towards the base of the wing ; in *micaceata* the reverse is the case.

A pair from Bua-Kraeng, South Celebes, 5000 feet, February 1896 (Fruhstorfer).

The examples from the Khasia Hills agree with the Celebes form, not with the Bornean.

### SUBFAMILY DEILINIINAE.

#### 173. *Aplochloa invisibilis* sp. nov.

*Forewings* : dull mealy green, with a dark linear cell-mark and the fringe green.

*Hindwings* : the same, with small obscure dark green cell-spot.

Underside paler, somewhat glossy, with an obscure dark submarginal fascia on each wing. Head, thorax, and abdomen concolorous.

Expanse of wings : 26 mm.

One ♀ from Akassa, R. Niger.

#### *Eugnesia* gen. nov.

A development of *Parasynegia* and *Syntaracta* : distinguished by the perfectly simple antennae of the ♂ ; both wings more elongated and narrow ; the legs very

long ; hind tibiae of ♂ with four spurs. Forewings without fovea : the retinaculum a tuft of hairs.

Type : *Eugnesia correspondens* sp. nov.

174. *Eugnesia* (?) *aurantiaca* sp. nov.

*Forewings* : dull yellow, with dull orange-red specklings and markings ; costa paler, dotted with black ; cell-spot deep orange-red ; first line hardly marked, except by a blotch on inner margin at one-third ; second line diffuse and broad at two-thirds, outcurved above and bent in on the submedian fold, its outer edge denticulate : some submarginal blotches in place of a line : a row of small blackish marginal dots between the veins ; fringe concolorous.

*Hindwings* : the same.

Underside paler and duller. Head, thorax, and abdomen mottled, orange-red and yellowish.

Expanse of wings : 32 mm.

One ♀ from Geraldton, near Cairns, Queensland (A. S. Meek).

I refer this ♀ to *Eugnesia* in consequence of the length of the antennae and the bulging of the hindmargin of the hindwings in the middle.

175. *Eugnesia correspondens* sp. nov.

*Forewings* : ochreous yellow, thickly sprinkled with orange speckles, which often become confluent ; costa and lines grey or dark grey ; the first at one-third, the second at two-thirds, the first preceded, the second followed by black dots on veins, the one thereby becoming dentate inwards, the other dentate outwards : submarginal variable, sometimes simply orange or orange mixed with grey, partially interrupted, irregularly wavy, more or less connected with dark blotches below apex, in middle and above anal angle : a blackish cell-spot, and row of black marginal spots, these last variable in size and sometimes obsolete : fringe yellowish, chequered with dark.

*Hindwings* : the same.

Underside pale ochreous, the markings grey. Face, vertex, thorax, and abdomen yellow, dotted with orange : the abdomen in ♂ with dark dorsal spots.

Expanse of wings : 35—39 mm.

One ♂, two ♀, from N. Luzon (Whitehead).

176. *Eugnesia correspondens* ab. *concurrentis* nov.

In this example the costa of forewings and all three lines are dark purplish grey, thick and diffuse : the space between the second and third lines from inner margin to vein 4 is entirely filled up with purplish grey or blackish, and connected with similar-coloured blotches on hindmargin below apex and in the middle : the abdomen also has a purplish grey blotch at base.

One ♂ from N. Luzon (Whitehead).

177. *Eugnesia correspondens* ab. *suffusa* nov.

Wings almost wholly suffused with orange, overspread with grey ; the hindmargins only remaining pale yellow, with orange speckles.

One ♂ from N. Luzon.



178. *Eugnesia sanguinata* sp. nov.

*Forewings*: pale yellow, overrun with deep blood-red, leaving only isolated patches of the ground-colour, viz. one at the base, one before and one after the red cell-spot, and a larger one on the submedian fold in the centre; a narrow interrupted oblique first line and a slightly curved and interrupted outer line, neither reaching the costa; submarginal line denoted by a few pale specks; costa yellowish, with numerous short blackish strigae; fringe yellow, chequered broadly with dark brown at the ends of the veins.

*Hindwings*: with the blotches representing the outer and submarginal lines more developed, and with four large irregular blotches in basal half, that at the end of the cell the largest; fringe yellow, preceded by a narrow paler yellow space along hindmargin, containing deep red-brown spots at the ends of the veins.

Underside dull rosy, with the paler spots faintly indicated. Palpi blood-red, with the tips of all the joints yellow: face red, with the centre yellow; thorax and abdomen blood-red, varied with yellow.

Expanse of wings: 32 mm.

One ♂ from Roon I., Dutch New Guinea (W. Doherty).

The hindwings have the rounded hindmargin slightly produced in the middle.

179. *Heterostegane aridata* sp. nov.

*Forewings*: pale yellow, irrorated with darker yellow: the costa ferruginous throughout, darker from base to middle, with minute dark striae; an irregularly waved brown line in middle, starting from a dark costal spot, and touching a small black cell-dot: a similar but more obscurely marked line at three-fourths: traces of a submarginal line near costa only: fringe yellow, with no dark basal line.

*Hindwings*: with black cell-dot, and faint curved antemedian and postmedian lines.

Underside yellow, with the cell-dots black, and the basal half of forewings, as far as the submedian fold, brown. Thorax and abdomen yellow: face, palpi, and collar yellow, marked with ferruginous.

Expanse of wings: 19 mm.

One ♂ from Weenen, Natal, October 1895.

180. *Heterostegane indularia* Gnen. ab. *calidata* nov.

Gnenée's type of *Stegania indularia* was from Abyssinia: the species occurs also in S. Africa, but appears to be very variable in the strength of the markings. The extreme form here described might well be mistaken for a separate species. Instead of the pale yellow ground-colour of the type, its ground-colour is deep yellow: the ferruginous markings of the type are intensified, and, besides, the other three lines, basal, median, and exterior, are all marked, wavy and denticulate, in ferruginous, the costa being deep ferruginous throughout. The difference is not sexual, both sexes occurring from Natal agreeing with the type-form and with the aberration.

181. *Hydatocapnia fumosa* sp. nov.

*Forewings*: ashy grey, dusted with darker, becoming purplish grey beyond the outer line: costa purplish grey; cell-spot black, distinct; first line obscure, at

one-fourth ; second line at two-thirds, irregularly waved and somewhat dentate dark purplish, to inner margin just before anal angle ; a row of blackish marginal spots ; fringe concolorous.

*Hindwings* : the same, but with a small cell-spot.

Underside paler, with a smoky purplish grey marginal fascia. Head, thorax, and abdomen dark grey, mixed with paler ; vertex and shaft of antennae whitish grey.

Expanse of wings : 26 mm.

Two ♀♀ from Warri, River Niger, February 1896 (Dr. Roth).

## 182. *Orthocabera conspicua* sp. nov.

*Forewings* : milk-white ; the costa bronzy ochreous, striated with fuscous : a fuscous dot on the subcostal vein just before the origin of vein 6 ; an orange-red dot at middle of discocellular, with some scattered scales of the same colour beyond it along vein 5 ; a curved single orange-red streak from the discocellular dot to base of inner margin ; a ferruginous oblique line from costa before apex to middle of inner margin, widening downwards, in its lower course consisting of three lines, ferruginous, yellowish, and lilac-grey, bent below costa above and beneath vein 7 ; followed by a ferruginous line starting from a ferruginous spot on vein 7, succeeded by an irregularly waved fine rusty line ; fringe pale ochreous, without any marginal line.

*Hindwings* : with an antemedian triple-coloured line, a thick ferruginous postmedian line, followed by a regularly waved rusty line ; fringe ochreous, with some rust-coloured scales at base towards apex only.

Underside white. Thorax, abdomen, and lower half of face white ; palpi, upper half of face, and vertex bright ferruginous.

Expanse of wings : 48 mm.

One ♀ from Toli-Toli, North Celebes, November 1895 (Fruhstorfer).

## 183. *Parasynergia convergens* sp. nov.

*Forewings* : yellowish ochreous, with coarse red and grey speckles : the lines reddish grey ; first at one-fourth, forming two curves, and marked with three black dots on the veins ; second from three-fourths of costa to beyond middle of inner margin, strongly dentate ; the teeth marked by black dots on veins, markedly sinuate inwards beyond cell and in the submedian fold, preceded by an indistinct inner line, which rises from inner margin near first line, as in *P. complicata* Warr. ; marginal area marked with irregular blotches below apex, in middle, and above anal angle ; a row of deep red marginal spots between the veins ; fringe yellowish, with reddish grey spots opposite the veins.

*Hindwings* : with grey basal line, denticulate middle line, with blackish dots on the teeth, and preceded by a greyish shade, and denticulate, partially double, sub-marginal line ; cell-spots on both wings small, blackish.

Underside straw-colour, with the markings grey. Palpi fuscous ; face, head, thorax, and abdomen yellowish ochreous, the face brownish above : the markings stronger in ♀ than in ♂.

Expanse of wings : 32 mm.

A pair from the Khasias, July 1896.

Distinguished from *P. complicata* by the different markings of hindwings, and by the yellow, *not white*, vertex. It may prove to be a well-marked form of *P. atomaria* Warr.

184. *Parasyntegia nigriclavata* sp. nov.

*Forewings*: pale yellow, with orange speckles and lines; the lines of forewings much as in *P. convergens*, but less denticulate: a black spot at base of costa, and a black dot at base of cell; first line with a large black spot on the subcostal, smaller ones on the other veins; cell-spot large, black; teeth of second line black: two black spots obliquely below apex: some angular contorted markings in middle velvety black: marginal dots black: fringe yellow, with a black spot at apex and in middle.

*Hindwings*: with an orange-grey basal line, a partially double orange central line running to costa well beyond middle (in *convergens* this line curves into the middle of costa), with a black spot on inner margin and costa, and a black lunule from vein 6 to 7: submarginal line nearly straight from anal angle to apex, with a black spot on inner margin, a black lunule from 6 to 7, and a black streak beyond running into the fringe.

Underside with the black markings showing through. Palpi dark brown: face yellow, with two black spots in middle: head, thorax, and abdomen yellow, the last with a black orange-edged ring at base.

One ♂, one ♀, from the Khasias, June 1896.

*Peratostega* gen. nov.

*Forewings*: ample, triangular: costa straight, till just before apex, which is slightly depressed and produced; hindmargin entire, rounded, faintly sinuate above.

*Hindwings*: with rounded hindmargin; anal angle squared: submedian fold strongly developed, the inner-marginal area folded beneath.

Palpi porrect, slender; tongue weak: antennae of ♂ pubescent, subdentate: hind tibiae with four spurs.

*Nervation*: forewings, cell half as long as wing; discocellular vertical: first median at three-fourths, second just before angle of cell; lower radial from centre of discocellular, upper from upper angle: 7, 8, 9 stalked from before angle; 10 and 11 coincident. Hindwings with veins 7 and 3 both before angle of cell.

Type: *Peratostega coctata* sp. nov.

185. *Peratostega coctata* sp. nov.

*Forewings*: dull brick-red: costa dotted with blackish; the lines obscurely darker: first line not marked: median nearly vertical, passing over the black cell-spot: outer line at three-fourths, diffusely fuscous; towards the anal angle and along the hindmargin the wing is tinged with fuscous; fringe concolorous, beyond a deeper basal line.

*Hindwings*: the same.

Underside paler, pinkish fulvous, glossy, without any markings. Face and palpi rather bright reddish: vertex darker; abdomen reddish; thorax paler, pinkish grey.

Expanse of wings: 32 mm.

One ♂ from Pulo Bai, N.E. Borneo, June 1894 (Cator).

**Pristostegania** gen. nov.

Allied to *Stegania* ; veins 10 and 11 of forewings coincident ; antennae of ♂ serrate ; forewings of ♂ with a fovea ; the lower radial decidedly above middle of discocellulars.

Type : *Pristostegania trilineata* Moore.

**186. Pristostegania (?) bilineata** sp. nov.

*Forewings* : pinkish ochreous, finely irrorated with fuscous ; the costa yellowish ; first line at one-third, slightly oblique outwards, yellowish ; second line beyond two-thirds, slightly oblique inwards, yellowish ; the space between the lines somewhat darker, especially towards each line ; cell-spot hardly darker ; fringe concolorous, with a reddish basal line.

*Hindwings* : with no first line ; the cell-spot prominently darker ; outer line from three-fourths of costa to inner margin just above anal angle, before which it is bent, yellowish, internally with a darker shade ; fringe as in forewings ; the hind-margin is elbowed at vein 4.

Underside duller, with outer line and cell-spot marked with fuscous, especially on the veins. Face, palpi, vertex, and antennae pale ferruginous ; thorax and abdomen concolorous with wings, the thorax rather paler.

Expanse of wings : 38 mm.

One ♀ from Sandakan, North Borneo.

**187. Pristostegania flavata** sp. nov.

*Forewings* : yellowish, flushed with deeper yellow ; costa at base brown ; the basal area darker ; the lines slender, ferruginous ; first at one-fourth, bent below costa, then oblique ; second line straight, in the middle ; third at five-sixths, slightly curved ; fringe concolorous, beyond a very fine marginal line.

*Hindwings* : with only two lines.

Underside paler, thickly dusted with reddish brown ; the lines reddish. Face and palpi reddish brown ; vertex yellowish ; collar dark brown ; thorax and abdomen yellow.

Expanse of wings : 26 mm.

One ♂ from Weenen, Natal, February 1894.

**Prochasma** gen. nov.

Allied to *Stegania*, veins 10 and 11 of forewings being coincident ; distinguished by the fully pectinated antennae of the ♂, and the strong metallic metathoracic tuft.

Type : *Prochasma mimica* sp. nov.

In the type-species the cell of forewings is half the length of the wing.

**188. Prochasma mimica** sp. nov.

*Forewings* : ochreous, overrun with dark fuscous strigae, which along costa and inner margin become confluent ; a white curved band near base, and an irregularly edged white band at two-thirds, parallel to hindmargin ; a wavy interrupted white submarginal line ; some pale scales at apex ; a yellowish horizontal streak from first

line to hindmargin along the median : cell-spot large, blackish : a marginal row of black dashes : fringe chequered ochreous and fuscous.

*Hindwings* : whitish, tinged with yellowish, with sparse fuscous strigae ; cell-spot large, dark : a fuscous postmedian line from inner margin above anal angle to lower angle of cell : marginal area fuscous, much broken up by the paler ground-colour.

Underside the same, but duller. Head, thorax, and abdomen ochreous, speckled with fuscous ; metathorax with a tuft of metallic scales.

Expanse of wings : 24 mm.

A pair from the Khasias, May 1896.

The cell half as long as wing. Superficially this insect is extremely like my *dentilinea*, wrongly referred to *Psiluleis*, *P. Z. S.* 1893, p. 431, but the neuration differs, and the outer line does not approach the inner.

### 189. *Chiasmia radiata* sp. nov.

*Forewings* : straw-colour, tinged with ochraceous ; covered with black transverse strigae, which tend to become laterally confluent, the ground-colour only showing as a curved inner band at one-fourth and an oblique irregularly edged band at three-fourths : the central fascia contains a large dark cell-spot, and is edged, especially externally, by a line of dark spots on the veins, those on costa and inner margin being blotches ; marginal third black, broken up by two radiating streaks of ground-colour from the outer band—one oblique to apex, the other below vein 4—and by the interrupted submarginal line, so that there are formed two costal blotches, the outer one quite small, a central triangular blotch, and a square blotch at anal angle ; fringe straw-colour, chequered with black, and almost wholly black beyond the base of the triangular blotch.

*Hindwings* : the same, but without the dark base, the central fascia blacker, the outer area interrupted in the middle only.

Underside similar, but darker. Head, thorax, and abdomen ochreous, intermixed with blackish, especially at base and apex of abdomen.

Expanse of wings : 26 mm.

A pair from the Khasias, May 1896.

## SUBFAMILY BRACCINAE.

### *Arycanda* Wlk. VII. p. 1775 (1856).

This generic name must supersede Guenée's *Panaethia*, published a year later.

Type : *Arycanda maculosa* Wlk. from Sumatra.

### 190. *Arycanda absorpta* sp. nov.

Like *A. maculosa* Wlk. from Sumatra ; but the marginal row of black streaks all separated from each other by the paler veins, not blotched at the apex : the central streak bent outwards and absorbing the cell-spot.

One ♀ from Lawas, North Borneo (A. Everett).

An example from Nias, also a ♀, is paler blue than the Bornean insect : the central streak is still more strongly bent, and on the underside the cell-spot is quite distinct, with two black bands on each side, whereas in *absorpta* it is still adjacent to the bent band.



191. *Arycanda discata* sp. nov.

*Forewings*: pale slate-colour, the markings black; two black spots close to base, above and below the median: another pair just beyond: first line curved from one-fourth of costa to near base of inner margin, marked by three spots on the costa, median, and submedian respectively; cell-spot round, velvety black: three post-median lines, the first much curved round cell, the second less curved, the third nearly straight, all formed of spots on the veins, which above the middle become confluent: a marginal band of horizontal streaks between the veins; fringe concolorous.

*Hindwings*: with a spot at base and a straight line before the black cell-spot; two lines of spots beyond, those of the first line rounded, of the second lunate and semiconfluent; marginal streaks as in forewings.

Underside with very large black cell-spots, obscure outer line, and marginal streaks. Face, head, and thorax slate-colour; abdomen yellowish, with basal segment slate-colour, bearing a pair of black spots.

Expanse of wings: 52 mm.

One ♂ from Bunguran, Natuna Islands, October 1894 (Hose).

Like *georgiata* Guen., but the cell-spot is clear of the lines.

192. *Arycanda omissa* sp. nov.

Like *absorpta* Warr. in having the marginal streaks separated, but with only five black bands, the central one being absent: the cell-spot quite distinct and separate; the basal bands blurred, with a deeper purplish shade round them; on the underside there is only one diffuse black band between the spot and the base, and in the hindwings hardly a trace of any spots at all at base. Both wings beneath much more suffused with dark purplish.

One ♀ from Sarawak.

193. *Arycanda subfumosa* sp. nov.

Smaller than *maculosa* Wlk. and its allies, with the transverse lines much narrower and more resolved into separate spots, as in *georgiata* Guen., but the cell-spot is quite separate between the fourth and fifth bands; in the hindwings the three bands are entirely composed of spots, the central band being very thin and inconspicuous. On the underside the outer half of the forewings is dull smoky black.

One ♀ from Lawas, N. Borneo (A. Everett).

This form occurs also in Sumatra.

194. *Bordeta longimacula* sp. nov.

*Forewings*: black, with three cream-coloured spots, smaller and more concise than in *B. tricolor* Warr., but in the same relative positions; the first oblique, from subcostal vein before middle towards anal angle, not quite reaching the submedian fold, pointed at the lower end and with the outer edge slightly bent: the other two in a line parallel to the first half-way towards apex.

*Hindwings*: orange, with the margins all black, but the hindmargin interrupted in the middle by the orange ground-colour, which nearly reaches the margin.

Underside the same. Head black; collar and pectus ochreous; antennae black, with the cilia ochreous; thorax black; abdomen orange, with a black dorsal stripe except on first segment, which is orange: the ♂ with the base of anal segment also yellow.

Expanse of wings: 58 mm.

A pair from Sattelberg, near Finschhafen, German New Guinea.

#### 195. *Bursada septemnotata* sp. nov.

*Forewings*: dull black, with three pale yellow spots—one at base, traversed by the dark subcostal vein, a larger oval oblique one in the middle, and a reniform one towards apex.

*Hindwings*: with four yellow spots—a large one at base, a subquadrate one of the same size in middle, a small oval one towards apex, and one still smaller on inner margin above anal angle; fringes of both wings unicolorous.

Underside as upper. Palpi, vertex, and antennae black; face and collar yellow; thorax black, with a yellow lateral spot between the wings; abdomen wanting; forelegs black, with base of coxae yellow.

Expanse of wings: 32 mm.

One ♂ from Kina Balu, N. Borneo.

Akin to *B. maculifera*; the wings narrow and elongate: all the yellow spots smaller: the tip of the forewings black.

#### 196. *Bursada trispilata* sp. nov.

*Forewings*: brown-black, with three yellow spots: first longitudinal, near base, beneath the median vein; second transverse, narrow, with irregular edges, from subcostal at middle towards anal angle; third elongated, with curved edges towards apex.

*Hindwings*: deep yellow, with all three margins black.

Underside the same. Head, thorax, and abdomen black: a small yellow spot in front below each shoulder.

Expanse of wings: 36 mm.

One ♀ from Moroka, British New Guinea, 3500 feet, October 1895 (Anthony).

#### *Hymenocharta* gen. nov.

Allied to *Agirpa*, with which it agrees in neuration, but of stouter build; the thorax and palpi and inner margin of hindwings hairy; antennae of ♂ thicker, with coarser pectinations and blunt apex; antennae of ♀ also pectinated; palpi twice as long as face; hindmargin of hindwings indented below vein 2.

Type: *Hymenocharta triplagiata* sp. nov.

#### 197. *Hymenocharta triplagiata* sp. nov.

*Forewings*: black, with two oblique shining white hyaline patches: first near base, oblique, diffusely edged, not touching costa or inner margin; second towards apex, from subcostal to near hindmargin above anal angle, the lower part swollen.

*Hindwings*: with a white fascia of uniform width from second quarter of costa to near hindmargin, running parallel to inner margin.

Underside similar. Face, palpi, head, thorax, and abdomen all brown-black : pectus, hind half of abdomen below, and whole of the anal segment orange.

Expanse of wings : 36 mm.

Two ♂♂, two ♀♀, from Dar-es-Salaam, German East Africa.

### **Mesomima** gen. nov.

*Forewings* : elongate, narrow; the costa straight for three-fourths, then curved; apex blunt, rounded and not produced in the ♂, slightly produced and rectangular in the ♀; hindmargin obliquely curved.

*Hindwings* : narrow, the hindmargin strongly rounded from apex, slightly curved towards anal angle.

Antennae pectinated in both sexes; palpi short, pointed; tongue and frenulum present. Forewings with an elongate fovea between the submedian fold and the submedian vein, the latter bent downwards at base and sinuous; this fovea is visible, though not nearly so strong, in the ♀.

*Neuration* : forewings, cell two-thirds of wing; the subcostal and median veins strongly incurved towards extremity; first median at two-thirds, second close before end, third from end of cell; radials normal; 7, 8, 9 stalked from the bend in the subcostal; 10 and 11 stalked, 11 united with the costal by a bar. Hindwings with costal only shortly approximated to subcostal; the first subcostal nervule and second median from well before the ends of cell; no radial.

Type : *Mesomima albifrons* sp. nov.

Akin to *Agirpa*; distinguished by the long fovea, and the absence of a bar between veins 9 and 10.

### 198. **Mesomima albifrons** sp. nov.

*Forewings* : fulvous red; the apical third black, containing an oblique variable-shaped white blotch; the hindmargin black to anal angle.

*Hindwings* : with hindmargin narrowly black, stronger in the ♀ than in the ♂, its inside edge irregularly crenulate or rounded.

Underside the same. Vertex and antennae black; face snow-white; thorax fulvous red; abdomen cinereous, with white dorsal spots on each segment.

Expanse of wings : ♂, 39 mm. : ♀, 45 mm.

A pair from Kniilu, French Congo, 1892 (Moequerys).

This species is almost an exact facsimile of *Paraptychodes tenuis* Butler; that, however, has the costa of forewings black, and the hindmargin of hindwings spotted, not margined with black; the abdomen yellowish white, with blackish segmental rings.

### 199. **Tigridoptera radiolata** sp. nov.

*Forewings* : dull slaty blue, with the inner margin buff below the submedian fold for two-thirds from base; a buff streak beyond cell; a black spot below costa at base; two more just beyond, one obliquely below the other, followed by a curved black line which is interrupted at the submedian fold and marked by a black dot on submedian vein; a black cell-spot, followed by three curved black lines, the first touching the cell-spot and parallel to the basal line; the second less curved, the outermost curved outwards at costa; all three interrupted at the fold and marked

by a black spot on the submedian vein ; marginal area marked with long black rays between the veins ; fringe concolorous.

*Hindwings* : with the three outer lines and cell-spot, and the radiating lines beyond ; buff streaks along cell and beyond it, and along the submedian fold, and a smaller one below the costal vein.

Underside slaty grey, with three central blackish symmetrically bent lines, the two outer ones diffuse ; diffused blotches on the outer lines ; the cell-spots deep black ; a black streak from costa of forewings near base. Head slate-colour ; thorax slate-colour, mixed with buff ; patagia and shoulders each with a black spot ; abdomen buff.

Expanse of wings : 60—65 mm.

Two ♀ ♀ from Palawan.

### **Xanthomima** gen. nov.

*Forewings* : with costa straight, apex blunt : hindmargin curved.

*Hindwings* : with rounded hindmargin.

Forewings of ♀ as well as ♂ with fovea.

*Nervation* : as in *Tigridoptera* H.S. and allies, but the veins are much finer, and the whole insect of weaker build. Wings without markings, yellow with black margins.

Type : *Xanthomima cyanoxantha* Meyr. (*Tigridoptera*).

*Panaethia atrimargo* Warr., Nov. Zool. III. p. 298, from Fergusson Island should be referred here.

### 200. **Xanthomima seminigra** sp. nov.

*Forewings* : orange, this colour being limited to a semicircular space from base to middle of inner margin, with its upper edge rather irregular ; the rest of the wing velvety black, with all the veins slightly paler, the black running along costa and narrowing to the base.

*Hindwings* : with the basal area orange, within a slightly curving line from middle of costa to a little above the anal angle.

Underside similar, the black running up along costa of hindwings, but not reaching base. Face, palpi, legs, pectus, antennae, vertex, and shoulders black ; thorax and abdomen orange.

Expanse of wings : 46 mm.

One ♀ from Kei Toal, March 1896 (H. C. Webster).

### SUBFAMILY ABRAXINAE.

### 201. **Abraxas discata** sp. nov.

*Forewings* : white, the costa and hindmargin broadly and unevenly smoky black : the costal border for three-fourths of cell reaches to the median vein ; a large round black cell-spot touches the costal border and is generally connected with hindmargin by a horizontal blackish streak of varying thickness ; the hindmarginal border generally has a small white apical spot ; this spot sometimes is much developed and interrupts the inner edge of the marginal border along the veins, and in these cases a fine whitish line appears above the anal angle.

*Hindwings* : with the costa narrowly and the hindmargin broadly black ; cell-spot variable in size, sometimes all but obsolete.

Underside the same. Face and collar yellow ; thorax and abdomen yellow, spotted with black.

Expanse of wings : 34—40 mm.

A good series from Pulo Laut, south of Borneo, May 1891 (W. Doherty).

Related to *A. subhyalinata* Röh., but larger and without any yellow markings.

## 202. *Abraxas invasata* sp. nov.

Like *A. maculicincta* Wlk., but with two series of black submarginal spots instead of one ; the marginal row partially confluent with those of the outer submarginal, while the inner or postmedian row is nearer the base of the wing ; apical third of forewings wholly black, but containing a single triangular or hook-shaped white spot ; a black costal curved spot close to base, nearly confluent with a thinner one on inner margin ; a large black costal blotch at one-third, with irregular black spots below it ; cell-blotch large, sometimes connected above with some small subcostal spots ; base of both wings with several small irregular black spots and streaks.

One ♂, one ♀, from Kina Balu, North Borneo.

## 203. *Abraxas moniliata* sp. nov.

*Forewings* : cream-white, with smoky blackish markings ; the basal area yellow, limited by a broad curved black line, dentate outwardly on the median and submedian veins, and crossed by a similar curved line following a black basal spot ; the cell occupied by a diffuse blotch, connected above with a median costal blotch, and throwing off below a narrow sinuous mark, sometimes double, to the inner margin ; an exterior fascia of confluent round spots, bent opposite the cell ; a similar submarginal fascia, its inner edge curved, its outer crenulate, confluent below with the exterior fascia, and followed below by three or four blotches, which are also sometimes confluent ; a marginal row of dark lunules blackish, like the fringe.

*Hindwings* : with the base, an antemedian fascia, swollen in cell and on inner margin, a postmedian curved double fascia of confluent spots, and a marginal series of lunules with the fringe blackish.

Underside the same. Legs, palpi, face, and antennae black ; vertex yellow ; thorax and abdomen yellow, with numerous black spots.

Expanse of wings : 58 mm.

A pair from Bua Kraeng, South Celebes, 5000 feet, February 1896 (Fruhstorfer).

## 204. *Abraxas pleniguttata* sp. nov.

*Forewings* : white, with basal patch fulvous, edged with blackish brown and interrupted below the median ; central area with a double dark grey spot on inner margin, a large round one on the submedian fold, two more obliquely above it, a large cell-blotch, and costal blotch above it ; in the darker examples these are all more or less confluent ; exterior line formed of two sinuous rows of round grey spots, divergent towards costa, confluent and purple-tinged mixed with fulvous below ; in the dark specimens the outer row becomes a line, and the spots become laterally confluent ; an irregular row of spots follows ; a row of marginal spots, sometimes confluent, with one submarginal on vein 4.



*Hindwings* : with a spot at base : a double spot on costa and inner margin in the central area ; outer series as in forewings, but less developed.

Underside the same. Thorax and abdomen yellow, with the ordinary black spots.

Expanse of wings : 58 mm.

One ♂, two ♀ ♀, from N. Luzon (Whitehead).

#### 205. *Genusa simplex* sp. nov.

Wings wholly dull mealy white : a slight tinge of yellow close to apex : a black dot on subcostal of forewings near base, and traces of three or four small grey dots below costa just beyond. Head, thorax, and abdomen all concolorous, without dots. Palpi above faintly tinged with fuscous : pectinations of antennae pale fuscous.

Expanse of wings : 45 mm.

One ♂ from Bongao Island, Sulu Archipelago (A. Everett).

#### 206. *Ligdia interrupta* sp. nov.

*Forewings* : white : a basal patch of mixed fuscous and ochreous scales, its edge curved and wavy from one-fourth of costa to one-fourth of inner margin, the fuscous costal striae continued nearly to the outer fascia, the inner edge of which is concise and indented beyond cell, the outer diffuse and broken by a partly dentate and partly lunulate white line, accompanied by black spots ; marginal area white, with an irregular and smoky blotch on hindmargin opposite the cell, and some scattered striae above anal angle : marginal spots black ; fringe white, fuscous opposite the cell : cell-dot large, black : the costal area and a wavy line down the outer fascia marked with shining leaden scales.

*Hindwings* : with the base narrowly dark, the white fascia therefore twice as broad as in forewings.

Underside like upper. Face, palpi, head, and thorax dark fuscous : abdomen white.

Expanse of wings : 24 mm.

Three ♂♂ from Natal (A. J. Spiller).

#### *Nothabraxas* gen. nov.

*Forewings* : with costa straight or slightly indented in middle : apex blunt : hindmargin obliquely rounded : anal angle obtuse ; inner margin somewhat convex.

*Hindwings* : with hindmargin and both angles rounded.

Antennae of ♂ plumose, the tips simple ; palpi porrect, short ; hind tibiae with a pair of spurs : in the forewings veins 10 and 11 are stalked.

Type : *Nothabraxas commaculata* sp. nov.

Differing from *Negeta* Wlk. in having the margins of the wings simple, not angulated.

#### 207. *Nothabraxas commaculata* sp. nov.

*Forewings* : pale straw-colour, almost white ; the markings grey-brown ; costa with irregular brown spots : a larger one at one-fourth, the origin of the first line, which is curved and preceded by a line of small dark spots on veins : cell-spot oval, connected with a costal spot above it ; a broad oblique irregular-edged fascia from

costa before apex to inner margin before anal angle, connected along the submedian area with the first line, and beyond the cell with a marginal fascia, which does not quite reach either apex or anal angle ; fringe grey-brown, except at apex and angle.

*Hindwings* : straw-colour, with a round cell-spot, a postmedian line of grey spots, and a few on the margin, the last not symmetrical.

Underside duller. Face fuscous ; shoulders and thorax straw-colour, with black tips ; abdomen yellow, with black segmental rings.

Expanse of wings : 42 mm.

One ♂ from Mwapwa, East Africa.

#### 208. *Percnia longimacula* sp. nov.

Distinguished from *P. belluaria* Guen., with which it agrees in size, by all the spots being elongate and narrow ; the two middle rows approximated to each other, the spots of the outer one linear : the second spot of inner row, which in *belluaria* is round and at the junction of vein 2, is double, on the median and vein 2 beyond the origin of the latter ; veins 6 and 7 of the hindwings are shortly stalked.

One ♀ from Kulu.

#### 209. *Potera albiquadrata* sp. nov.

*Forewings* : black ; a few yellowish and one small white spot near base ; a white spot in middle of cell ; a broad sinuous white fascia, its top straight, from subcostal to middle of inner margin, where it is marked by some black spots ; a slender white dash parallel to and just beyond its upper extremity ; a row of five white elongated quadrate spots between the veins before the hindmargin.

*Hindwings* : white ; the costa and inner margin broadly smoky black ; hindmargin with broad black fascia containing five quadrate white spots ; a dark spot in the cell.

Underside like upper. Palpi and antennae black ; face and vertex yellow ; patagia yellow, their tips black ; thorax yellow, with black bands ; base of abdomen with a black ring ; rest of abdomen yellow, with saddle-shaped black dorsal blotches on each segment, and a pair of spots on the first two.

Expanse of wings : 52 mm.

One ♂ from Batchian, March 1892 (W. Doherty).

Allied to *P. albiplaga* Warr. from S. Celebes, but sufficiently distinct.

#### 210. *Rhodophthitus* (?) *simplex* sp. nov.

*Forewings* : wholly pale pinkish ochreous, at the base tinged with bright rosy.

*Hindwings* : whitish ; fringe concolorous.

Underside dull whitish ; the hindwings also tinged with rosy at base and along costa. Face brown ; collar ferruginous ; thorax pinkish grey ; patagia bright rosy ; abdomen ochreous, with the segmental rings rosy ; legs rosy.

Expanse of wings : 48 mm.

One ♀ from the Songive Valley, Lake Nyassa.

The insect is considerably wasted, and the above must consequently be taken as only an approximate description ; there are no traces of markings.

## SUBFAMILY SCOTOPTERYGINAE.

211. *Scotopterix lignicolor* sp. nov.

*♂. Forewings* : reddish brown, with dense fuscous striation ; the lines black and thick ; first at one-fourth, waved and slightly oblique, preceded by a pale space of ground-colour ; second line at three-fourths, waved and incurved below the middle, followed near the costa by a paler shade ; submarginal shade diffusely dark ; marginal line crenulate, black ; fringe concolorous, with darker mottlings.

*Hindwings* : similar, without the first line ; both wings with distinct black cell-spot.

♀ with ground-colour bright straw-colour, suffused and dotted with red-brown and fuscous, the pale ground-colour apparent after the second line, at the apex, and along the costal region.

Underside rather duller. Head, thorax, and abdomen all brownish.

Expanse of wings : 44 mm.

A pair from Lawas, North Borneo (A. Everett).

## SUBFAMILY BISTONINAE.

212. *Cusiala malescripta* sp. nov.

*Forewings* : silvery white, with sparse coarse grey speckles ; the lines formed of aggregations of grey and black scales, much interrupted ; first at one-fourth ; median line touching the black linear cell-mark, approximated on inner margin to the outer line, which above the middle is outcurved and waved ; submarginal line fairly continuous, thicker than the other lines, outcurved beyond cell ; black marginal dots between the veins ; fringe white.

*Hindwings* : the same, without the basal line, the submarginal more sharply excurved opposite the cell.

Underside with the dark speckles less scattered ; marginal area suffused with dark grey ; a blackish submarginal fascia, broad at the costa ; discal spot thick and black ; hindwings almost white. Face whitish, with a broad velvety black bar above and a fine black line at top ; vertex, thorax, and abdomen white, with scattered fuscous atoms.

Expanse of wings : 52 mm.

One ♀ from Kalao I., south of Celebes, December 1895 (A. Everett).

213. *Eubyja crenulata* sp. nov.

*Forewings* : dark grey, speckled and suffused with dark brown, and with rufous in places ; first line strongly curved near base and running to the base at inner margin ; outer line at three-fourths, black, strongly but bluntly angled opposite cell, then concave outwards to inner margin before anal angle ; cell-spot blackish ; a dark brown shade along cell running out to hindmargin, with a rufous submarginal patch above it ; fringe concolorous, with a black crenulate basal line.

*Hindwings* : with a dark central shade and cell-spot, and a twice-angled black postmedian line.

Underside fuscous brown, the lines indistinct. Head, thorax, and abdomen concolorous ; the latter with the basal segment paler.

Expanse of wings : 36 mm.

One ♀ from Natal (A. J. Spiller).

214. *Eubyja grisea* sp. nov.

*Forewings* : dull grey, dusted and striated with darker : the lines dull blackish ; first at one-fourth, curved and indistinct ; second at three-fourths, forming a marked prominence opposite the cell, then strongly concave outwards to inner margin shortly before anal angle ; fringe grey, with a dark basal line.

*Hindwings* : paler, with a sinuous outer line and traces of an antemedian line on inner margin ; both wings with dark cell-spot.

Underside dull grey, the cell-spots larger. Face and palpi dark fuscous ; head, thorax, and abdomen grey.

Expanse of wings : 45 mm.

One ♀ from Zomba, British Central Africa, April 1895 (Dr. P. Rendall).

215. *Eubyja subpunctata* sp. nov.

*Forewings* : pale grey, with a faint lilac tinge, sparsely varied with black scales ; the costa dotted with black ; the lines black, distinct ; first at one-fourth, starting from a black costal spot, sharply angled on the subcostal, then oblique and twice bent to inner margin close to base ; outer line at two-thirds, oblique outwards and bluntly angled opposite the cell, oblique inwards to the submedian fold, then vertical to inner margin at two-thirds ; central line from a black spot at middle of costa, still more oblique outwards and more sharply angled than the outer line, running parallel and near to it at inner margin ; submarginal line obscure, shown up by a diffuse dark denticulate shade preceding it ; marginal line black, subcrenulate, swollen into spots between the veins, from which dark streaks run towards the submarginal : fringe grey.

*Hindwings* : with curved and somewhat interrupted black antemedian and postmedian lines, with a large round black cell-spot between them ; submarginal line indistinct except at inner margin.

Underside whitish, with the costal blotches, the cell-spots, and a series of smaller spots representing the two lines, all strongly black. Palpi and collar black ; face whitish, with a black bar across middle ; vertex white ; thorax and abdomen grey, marked with black : abdomen at base with a black streak laterally.

Expanse of wings : 36 mm.

One ♂ from Weenen, Natal.

216. *Eubyja trisecta* sp. nov.

*Forewings* : pale or dark grey, dusted with darker and tinged with rufous in basal and marginal areas ; the lines black : first at one-third, strongly and regularly curved ; second at two-thirds, oblique and forming a sinus beyond the cell ; cell-spot black ; costa dotted with ochreous ; fringe dark grey beyond a thick black basal line.

*Hindwings* : with inner line absent. Sometimes the whole wing is suffused with fuscous or dark grey, and the rufous tints are obscured ; in other examples the central area of forewings and inner two-thirds of hindwings are paler, and the rufous areas distinct.

Underside dark rufous grey, with the outer line brown ; in the paler specimens with inner two-thirds of both wings paler. Thorax, face, palpi, and pectus very hairy ; all as well as abdomen fuscous cinereous ; the thorax often darker ; antennae with the shaft white and the pectinations black.

Expanse of wings : 44 mm.

Six ♂♂ from Natal (A. J. Spiller).

The costa of forewings is concave and produced in front ; the hindmargin strongly curved.

217. *Synopsia* (?) *octopunctata* sp. nov.

*Forewings* : grey, dusted and suffused with darker ; the lines dark grey or blackish, oblique ; first from a dark spot at one-third of costa, acutely angled in cell, then oblique to inner margin close to base, preceded by a diffuse dark shade ; outer line at three-fourths, excurved beyond cell, then oblique, slightly sinuous to middle of inner margin, followed by a dark shade ; cell-spot round, diffuse, of black and grey scales ; a central line rises from a dark spot above the cell-spot, is doubly dentate beyond cell and obliquely sinuous inwards to inner margin just before outer line ; submarginal line pale, euneiform, edged internally with dark grey and followed by dark grey suffusion ; a marginal row of black spots between the veins ; the dark shade beyond the outer line is diffused beyond the cell to the hindmargin ; fringe grey.

*Hindwings* : with antemedian and postmedian dark lines, the latter followed by a thick dark shade ; a wavy pale submarginal line, with dark edges ; cell-spot as in forewings.

Underside shining whitish grey ; both wings with round cell-spot and macular apical spots velvety black. Palpi dark ; face fuscous, with a fine white line above and below ; head, thorax, and abdomen grey, speckled with darker.

Expanse of wings : 45 mm.

One ♀ from Weenen, Natal.

Easily distinguished by the black spots of the underside. In the forewings veins 11 and 12 are stalked : 10 free, but anastomosing with 11 : 7, 8, 9 stalked.

SUBFAMILY ASCOTINAE.

218. *Ascotis selenaria* Hüb. ab. *fasciata* nov.

*Forewings* : with the ground-colour and markings as in the type-form ; but the whole outer half of wing beyond the median line suffused with rufous fuscous, leaving a grey blotch at apex and two whitish grey blotches below the middle and above anal angle, the large discal spot, which is tridentate, remaining also unsuffused ; the basal area is likewise faintly tinged with rufous.

*Hindwings* : the same, but with the hindmargin beyond the double postmedian line whitish from anal angle to vein 6.

Underside white, with the submarginal line in both wings blackish, in the forewings connected with hindmargin by a large subapical black blotch ; cell-spots black, that on the forewings very large and with the middle tooth prolonged outwards.

Expanse of wings : 58 mm.

One ♀ from Grahamstown, S. Africa, sent along with two ordinary white ♂♂ expanding 45 mm.

Although at first sight this insect appears to be quite a distinct species, yet on closer examination the only real difference, apart from the fuscous suffusion, between it and typical *selenaria* Hüb. lies in the size and shape of the cell-spot of forewings.



219. *Chogada betularia* sp. nov.

*Forewings*: white, thickly peppered with black scales, especially along the costa; first line near base, diffuse and double; outer line at two-thirds, finely denticulate, not excurved round cell, but incurved below middle; submarginal line cloudy, interrupted below middle; a marginal row of black spots between the veins; fringe mottled, white and grey; cell-spot large, blackish, with white scales in the centre; traces of a median line touching it; all the lines starting from dark costal blotches.

*Hindwings*: with straight antemedian line; dentate postmedian strongly out-curved round cell, and followed by a dark grey shade; the rest as in forewings.

Underside white, with large black cell-spots and a blackish patch at apex of forewings containing an apical white spot; traces of outer line on forewings and submarginal on hindwings. Head, thorax, and abdomen whitish, peppered with dark grey.

Expanse of wings: 45 mm.

Two ♂♂ from South Africa.

Quite distinct from *C. acaciaria* Boisd., without any ochreous or fuscous tints whatever.

220. *Diplurodes indentata* sp. nov.

*Forewings*: dull brownish grey, dusted with fuscous; the lines blackish; first at one-fourth, curved from costa to submedian, and there slightly angled; cell-spot linear, blackish; central line from a dark costal spot above it, slightly curved, and bent on the submedian; exterior line blackish, and with black dots on the veins, sinuous, forming a sinus outwards beyond cell and again below middle, sharply angulated inwards on the submedian fold, the angle nearly touching the middle line; followed by a dark fuscous shade; submarginal line of the ground-colour, irregularly dentate, marked by darker shades on each side; fringe concolorous, with dark dots along the margin at base.

*Hindwings*: the same, but the inner line straight and prominently black on inner margin.

Underside greyish white, with the cell-spots and central lines marked; outer third dark fuscous, its inner edge uniformly curved, the extreme margin becoming pale before the fringes. Head, thorax, and abdomen concolorous; tufts of abdomen largely developed, dark grey.

Expanse of wings: 26 mm.

One ♂ from Penang, N. E. Borneo, December 1893 (Gator).

221. *Ectropis nigripunctata* sp. nov.

*Forewings*: ochreous grey, coarsely irrorated with fuscous; the lines blackish, starting from dark costal spots and marked with dark dashes on the veins; first from one-fourth of costa to near base of inner margin; median excurved round cell to inner margin before middle; outer at two-thirds, angled on vein 6, then oblique inwards, again bent on vein 3 to middle of inner margin, touching median line on the submedian fold; submarginal line pale, waved, preceded by dark lunules; a row of black dots between the veins before the hindmargin, preceded by obscure dark dashes; marginal line finely black, interrupted by pale spots adjacent to the black ones; fringe grey; cell-spot blackish.

*Hindwings* : with a black mark at base ; a blackish antemedian line and waved postmedian and submarginal lines, the last with a blackish blotch on costa.

Underside whitish, shining : the forewings slightly smoky-tinged and finely freckled with darker, with black cell-spot and subapical costal blotch ; hindwings whiter, with smaller cell-spot and roundish black apical blotch ; head, thorax, and abdomen grey, the latter dark at base.

Expanse of wings : ♂, 34 mm. : ♀, 32 mm

A pair from Warri, River Niger, February 1896 (Dr. Roth).

## 222. *Ectropis sabulosa* sp. nov.

*Forewings* : pale whitish ochreous, dusted with yellowish ochreous and grey scales, especially along the costal region and beyond the outer line : the usual lines very distinct, except the exterior denticulated line ; the blotch beyond it at middle dark ochreous ; fringe whitish ochreous, with a row of rather large black marginal spots at base.

*Hindwings* : with less suffusion.

Underside the same, without markings : the costal half of forewings darker. Head, thorax, and abdomen concolorous.

Expanse of wings : 38 mm.

One ♂ from Amboina, February 1892 (W. Doherty).

Paler and smoother, not so yellow, as *burmitra* Wlk.

## 223. *Lepiodes ocellata* sp. nov.

♂. *Forewings* : grey, smoothly and rather thinly scaled ; first line blackish, at one-third, angled or curved beneath costa, then obliquely bent inwards to base of inner margin ; outer line at two-thirds, oblique outwards to lower radial, then inwards to inner margin in middle, with a sinus inwards between first median and submedian veins ; a diffuse dark denticulate submarginal line, often very obscure : apex generally darker : cell-spot round, dark-edged, with raised grey scales in the centre ; in some examples a very faint central line is traceable ; fringe paler, with dark basal line.

*Hindwings* : with three transverse lines, the cell-spot touching the central one. In the ♀ the lines are more curved, less abruptly bent. The first line is generally preceded, and the second followed, by a diffuse dark shade.

Underside pale whitish, with the veins thickly marked with orange scales and in the ♀ freckled with blackish scales ; the cell-spots large, velvety black ; the forewings with an apical black blotch, the hindwings with a submarginal curved blackish fascia, often limited to the apex only. Palpi ferruginous, mixed with fuscous ; face, vertex, thorax, and abdomen whitish or greyish.

Expanse of wings : 24—26 mm.

Five ♂♂ from Mpeta, Loangwa River, an affluent of the Zambesi, November and December 1895 (Corryndon) ; one ♀ from Bathurst, S. Africa.

As stated above, the lines in this ♀ are curved, not angled or bent, as in the ♂♂ : the forewings beneath have a marginal black fascia throughout, the fascia of the hindwings being also marginal. When more examples are obtainable for comparison, the Bathurst insect will probably be found to be a constant local form.

224. *Medasina javensis* sp. nov.

*Forewings*: red-brown, suffused with darker, and with dark red-brown striations; costa striated with black, but without black spots at origin of lines; first line hardly expressed, except at inner margin by a short streak; median line forming an oblique brown-black streak above inner margin, obsolete above; the discal spot hardly marked; exterior line as in *M. parisnettei* Wlk., excurved at vein 6 and there nearly obsolete, red-brown below, edged with paler, and almost touching median line above inner margin; followed by a darker brown fascia from inner margin to vein 5, where there is a horizontal dark streak; submarginal line rufous, irregularly waved, with a paler patch in middle; a row of slender black funules along hindmargin; fringe rufous fuscous.

*Hindwings*: with basal third deep blackish brown, with an antemedian blackish line, a curved and deutate postmedian line, edged, as in forewings, with paler, and followed by a deeper shade as far as submedian. Veins of both wings pale reddish ochreous, dotted with fuscous.

Underside smoky brown, with the median line and submarginal fascia blackish; marginal area whitish, fuscous speckled, interrupted by a black shade opposite the cell and above anal angle; in the hindwings the exterior line also is shown, and the paler margin is only interrupted opposite cell. Head and thorax red-brown; abdomen deep cinereous, with a black ring at base; anal segments becoming rufous.

Expanse of wings: 65 mm.

One ♂ from Java.

*Mnesigea* gen. nov.

*Forewings*: broad; the costa nearly straight, convex just at apex, which is blunt; hindmargin obliquely rounded below, straighter above.

*Hindwings*: broad, both angles rounded, the hindmargin waved, and with a rounded incision opposite cell.

Palpi porrect, quite short; antennae (♂) very slender, the pectinations fine and at right angles to the shaft, ciliated themselves; forewings without fovea; hind tibiae slender, not thickened, with four spurs.

*Neuration*: forewings, cell half as long as wing; discocellular straight, rather oblique; median vein strongly bent upwards towards its extremity; first median nervule at three-fourths, second at seven-eighths, third from end of cell; lower radial above middle of discocellular, approximated to upper; 7, 8, 9 stalked; 10 and 11 coincident or stalked.

Type: *Mnesigea sinuata* sp. nov.; *excursaria* Guenée will better come into this genus.

225. *Mnesigea sinuata* sp. nov.

*Forewings*: grey, powdered with blackish scales, and partially tinged with pale brownish; first line strongly curved, near base, fine, with black spots on veins; second line sinuous, from costa at three-fourths to inner margin before middle, preceded by distinct black wedge-shaped dashes on the veins; median line also sinuous, passing through the dark cell-spot and a black dash at base of vein 2, and followed by a second fine line, sinuous like itself; the exterior line is followed by a pale, and that by a fuscous, line containing a dark spot between veins 3 and 4; marginal area darker, with an obscurely waved submarginal pale line; fringe

concolorous, beyond a fine slightly crenulate marginal line with dots between the veins.

*Hindwings* : with antemedian and postmedian slightly curved lines, the latter followed by a pale brownish shade ; an oval cell-spot ; submarginal line and fringe as in forewings.

Underside of forewings brownish grey ; of hindwings whitish, with grey suffusion. Face and palpi dark brown ; vertex, thorax, and abdomen like wings.

Expanse of wings : 32 mm.

One ♂ from Parkside, South Australia.

### **Nesalcis** gen. nov.

In Nov. Zool. Vol. III. p. 131, I described the ♂ of *Alcis* (?) *fuscibrunnea* from Jamaica, and gave the neurulation of the forewings. It would be more correct to say that veins 9, 10, 11 are stalked, 11 anastomosing with the costal and 9 with 8. I now find that the ♀ has antennae almost as strongly pectinated as the ♂, which, together with the neurulation, must separate the species from *Alcis*, and I propose the above generic name for it.

### 226. **Poecilalcis subtinecta** sp. nov.

*Forewings* : pinkish grey, thickly dusted with fuscous atoms, in parts with a rufous suffusion ; fovea in ♂ exaggerated, reaching from near inner margin to near median, which is slightly bent upwards and runs at a distance of only one-third from the costa ; first line at one-third, curved, blackish, darker on the veins, touching fovea on inner margin ; outer line at two-thirds, slightly curved outwards to vein 6, then vertical to vein 5, thence concave inwards to vein 2, and again from vein 2 to inner margin beyond middle ; submarginal line blackish, indented from vein 5 to 4, edged with whitish opposite the cell and more strongly above anal angle ; the outer line is followed by a rufous shade, and a rufous patch is on the hindmargin in the middle ; cell-spot linear, blackish, connected with a black costal spot above it ; fringe fuscous, beyond a subcrenulate marginal black line.

*Hindwings* : pinkish grey, with sparser irroration ; cell-spot larger ; an interrupted curved postmedian line, black on inner margin ; submarginal line whitish, uniformly dentate and edged inwardly by a blackish shade, becoming obsolete on costal half.

Underside of forewings dull ochreous, suffused with fuscous and much irrorated ; the marginal area towards apex brownish ; hindwings yellowish ochreous, with sparse dusting. Face, palpi, and collar dark fuscous ; thorax pinkish grey ; abdomen cinereous, the basal segments with pairs of black spots.

Expanse of wings : 32 mm.

Several ♂♂ from North Luzon, 5000—6000 feet (Whitehead).

### **Pseudalcis** gen. nov.

Agrees with *Medasina* Moore in that vein 11 of forewings rises out of 12, but in scaling and markings almost exactly like *Dryocoetis* Hüb. ; the ♂ antennae are plumose ; in the forewings vein 10 is sometimes shortly stalked with 7, 8, 9 ; sometimes free from the cell.

Type : *Pseudalcis catorinata* sp. nov.

227. *Pseudalcis catoriata* sp. nov.

*Forewings*: whitish grey, irrorated with olive-fuscons striae; the lines olive-fuscons; first at one-fourth, twice outwards curved, to inner margin near base; median line thick, sinuous; outer line at two-thirds, dentate and incurved opposite cell, followed by a diffuse olive-fuscons shade; submarginal line pale, indistinct, preceded and followed by a series of dark blotches, interrupted between veins 3 and 4, and darker opposite the cell; a marginal row of squarish black spots between the veins; fringe olive, with the tips white, and white throughout at the ends of the veins; cell-spot olive, with thick black edges, tridentate.

*Hindwings*: like forewings.

Underside dull stone-grey, with the apex dull blackish; costa spotted with black; cell-spots indistinct. Palpi and face dark olive; two white dots on lower part of face; the upper third, fillet, vertex, and basal joint of antennae white; thorax and abdomen whitish, mixed with olive scales.

Expanse of wings: 50 mm.

Several ♂♂ and one ♀, the latter much worn, from Pulo Lant, S.E. of Borneo, May 1891 (W. Doherty).

Closely allied to *Pseudalcis cinerascens* from the same locality; smaller and paler, and differing in neurulation: in *cinerascens* vein 10 is shortly stalked with 7, 8, 9; in *catoriata* it is free from the cell.

228. *Pseudalcis cinerascens* sp. nov.

*Forewings*: fuscons grey, with darker irroration; the costa with black strigae; first line at one-fourth, blackish, wavy, and partially double; a sinuous crenulate central line touching the base of the dark-edged ocelloid cell-spot; exterior line at two-thirds, evenly curved and strongly dentate, edged with paler and followed by a diffusely lunate shade; submarginal line pale, denticulate, preceded by a dark denticulate shade and followed by an obscure row of dark patches, except on the third median; a row of blackish marginal lunules between the veins; fringe fuscons.

*Hindwings*: with no basal line; the central line becomes antemedian, touching the cell-spot as in forewings; postmedian dentate line strongly marked, and followed generally by a much darker and broader shade than in the forewings.

Underside stone-grey, with broad blackish margin to the forewings, narrowed to the anal angle; the hindwings with a submarginal dark fascia bent at the cell and thence nearly obsolete; forewings with oblong black cell-spots. Face and palpi dark fuscons, mixed with ochreous; head, thorax, and abdomen fuscons grey.

Expanse of wings: 62 mm.

A series of ♂♂, but no ♀, from Pulo Lant, May 1891 (W. Doherty).

229. *Pseudalcis(?) pectinata* sp. nov.

*Forewings*: whitish, suffused and coarsely striated with dark grey; first line from one-fourth of costa to near base of inner margin, blackish; second line at two-thirds, excurved round cell, strongly concave and incurved to the submedian vein, where it is angled outwards; submarginal line whitish, waved, and dentate, preceded by a dark shade; a row of black marginal spots; fringe grey; cell-mark lunular, edged with black.



*Hindwings*: with central line excurved round cell, and marked with black dots on veins; cell-spot and marginal area as in forewings.

Underside wholly smoky brown, blackish towards hindmargin. Palpi blackish at the tips; thorax and abdomen dark grey; vertex and antennae pale grey.

Expanse of wings: 45 mm.

One ♀ from Warri, River Niger, February 1896 (Dr. Roth).

Agrees with *Pseudalcis* in neuration, but the antennae of the ♀ are pectinated.

### 230. *Psilocerea apicata* sp. nov.

*Forewings*: fawn-colour, with a rufous tint: the veins dull rust-colour: the whole surface finely dusted with blackish atoms: lines pale ochreous, edged with ferruginous: basal line forming a strong angle outwards on the median, thence sinuous inwards to the inner margin, its outside edge ferruginous: exterior line from apex of forewing to middle of inner margin of hindwing, internally edged with ferruginous: cell-spot small, black: extreme apex before the exterior line darkened with blackish scales: marginal area beyond exterior line rather paler than rest of wing, with an indistinct cloud running vertically upwards from anal angle.

*Hindwings*: with basal half darker than outer half, which has a smoky shade along its centre. Head, face, thorax, and abdomen pale fawn.

Underside much paler, with coarse black atoms and an iridescent pearly tinge: exterior line and cell-dots alone faintly indicated: apex of forewing darkened.

Expanse of wings: 48 mm.

One ♂ from Natal.

### 231. *Psilocerea nigromaculata* sp. nov.

*Forewings*: ochreous, suffused and dotted with fulvous, and in places with coarse black mottlings: costa grey at base: the lines oblique, fulvous: the first at one-third, angled beneath costa, and with coarse black dots in the upper part: exterior line oblique from apex to middle of inner margin, thicker below, preceded by a finer oblique fulvous line: some black subapical costal blotches: submarginal line indistinct, but marked by two black blotches between veins 2 and 4: a black cell-spot: fringe concolorous.

*Hindwings*: the same, without the first line.

Underside pale straw-colour, with coarse black speckles: costa of forewings much marked with black: the blotches of the submarginal line black, and a central black fascia on hindwings: cell-spots black: apical blotches of forewings marked with brown. Palpi ferruginous: head, thorax, and abdomen ochreous, spotted with fulvous.

Expanse of wings: 39 mm.

One ♂ from Madagascar.

### 232. *Racotis boarmiaria rufaria* subsp. nov.

Like *R. boarmiaria* Gnen., but with the upperside of both wings strongly tinged with rufous. The pale underside much dusted with fuscous atoms.

One ♀ from Moroka, British New Guinea, 3500 feet, October 1895 (Anthony).

233. *Scioglyptis lithina* sp. nov.

*Forewings* : cream-colour, tinged with grey; a dark spot on costa before middle indicates the origin of the first line; a small dark brown cell-spot; second line from a dark mark just before apex runs obliquely to middle of inner margin, marked only by brown linear spots on veins; towards inner margin there are traces of a brown line before it and parallel to it; beyond the cell a brownish blotch runs from outer line to hindmargin, crossed by the submarginal line, which there is whitish, but scarcely distinguishable below; a row of small dark marginal spots; fringe concolorous, spotted with brown below the apex.

*Hindwings* : with two brown straight central lines, one on either side of the discal spot, which is black; a wavy indistinct subterminal and submarginal line.

Underside yellower, with the markings black; both wings with black cloud towards apex. Face grey-brown; palpi white below, grey above; thorax and abdomen pale greyish.

Expanse of wings : 34 mm.

One ♀ from Mackay, Queensland.

234. *Scioglyptis semifascia* sp. nov.

*Forewings* : pale ochreous or bone-colour, with scattered dark fuscous atoms; the lines very indistinct: first at one-fourth, curved, brownish; second from costa at three-fourths, curved inwards to inner margin beyond middle; submarginal line dentate, more distinct; the space between the last two lines filled in with fuscous from the third median to inner margin; a marginal row of dark spots, preceded by an indistinct fuscous shade; fringe ochreous.

*Hindwings* : like forewings.

Underside the same, the markings only showing through. Head, thorax, and abdomen all pale ochreous.

Expanse of wings : 36 mm.

One ♂ from Humboldt Bay, Dutch New Guinea, October 1892 (W. Doherty).

## SUBFAMILY FIDONIINAE.

235. *Aspilates tricolor* sp. nov.

*Forewings* : pale pink, with two broad jet-black oblique streaks, one from inner margin close to base towards apex ending in a point at three-fourths, the other from middle of inner margin towards apex slightly bent and broadened above anal angle and not quite reaching apex; the space between them pale cream; the second is followed by a dull olive shade containing a black blotch at anal angle; fringe pink, with broad jet-black marginal line.

*Hindwings* : pale yellowish cream-colour, with the fringe and some scales near anal angle pink.

Head, thorax, and abdomen pinky yellow. Underside bright red, with a few scattered fuscous scales; the inner margin of both wings pale yellow; markings of forewings showing through.

Expanse of wings : 36 mm.

One ♂ from Weenen, Natal.

A very striking and beautiful insect.

**Aspilatopsis** gen. nov.

Allied to *Hebdomophruda* Warr. gen. nov., but with vein 11 missing instead of vein 7; 7 and 8 stalked from before upper angle of cell; 9 and 10 stalked shortly before them; 9 anastomosing with 7 and 8 to form the areole, which is much shorter; the two subcostals of hindwings from angle of cell. Wings broader, as in *Aspilates*; antennae of ♂ plumose, with long pectinations.

Type: *Aspilatopsis punctata* sp. nov.

**236. Aspilatopsis punctata** sp. nov.

*Forewings*: fulvous ochreous; first line at one-third, marked by two brown spots, one in cell, the other on submedian fold; the latter much nearer the base than the former; cell-spot distinct, blackish; an oblique brown line from costa just before apex towards inner margin at two-thirds, before which it becomes obsolete; the ground-colour before this line is slightly darker; fringe with basal half red-brown, apical half whitish.

*Hindwings*: pale ochreous towards base, deeper and freckled with reddish towards hindmargin.

Underside deep rosy; the inner half of hindwings paler. Face, thorax, and abdomen like wings; palpi and forelegs tinged with rosy.

Expanse of wings: 34 mm.

Two ♂♂ from Weenen, Natal.

**237. Fidonia strigosata** sp. nov.

*Forewings*: whitish, ochreous-tinged, and uniformly and thickly dusted with fuscous dots and striae; the lines fuscous, somewhat interrupted; first at one-fourth, nearly vertical; outer line at three-fourths, parallel to hindmargin, formed of brown lunules between the veins, followed by a parallel row of brown spots between the veins; a row of fuscous brown marginal spots; fringe whitish, with two faint grey lines; cell-spot brown.

*Hindwings*: without first line; the cell-spot minute; the outer line continuous, not formed of lunules or followed by a line of spots; veins of both wings ochreous.

Underside much more tinged with yellowish, especially along costa of forewings; the markings indistinct. Head, face, thorax, and abdomen white, speckled with fuscous.

Expanse of wings: 32 mm.

One ♀ from North Luzon, 5000—6000 feet (Whitehead).

This must be allied to the species from West Java described by me as *Fidonia albigrisea*.

**Hebdomophruda** gen. nov.

*Forewings*: elongate, narrow; costa straight, somewhat bent upwards and convex before apex, which is slightly produced but blunt; hindmargin strongly curved.

*Hindwings*: with apex rounded and anal angle well marked.

Antennae of ♂ pectinated throughout; forehead slightly tufted; palpi roughly scaled, porrect, the terminal joint drooping; hind tibiae with two pairs of approximate spurs.

*Neuration* : forewings, cell three-fifths of wing : discocellular strongly curved : first median at four-fifths, second just before the end, third from the end of cell : radials normal : vein 7 absent : veins 10 and 11 stalked from three-fifths : veins 8 and 9 stalked from just before end of cell : 10 anastomosing with 8 and 9 at a point, forming a very long areole : 11 from near the end of areole : 8 and 9 on a short stalk from the end. Hindwings, costal approximated to subcostal for three-fourths of cell : the two subcostals stalked : the discocellular inangulated : the second median well before angle of cell, nearer to the first than to the third.

Related to *Prosopolopha* Lecl.

Type : *Hebdomophruda curvilinea* sp. nov.

### 238. *Hebdomophruda apicata* sp. nov.

*Forewings* : pale wood-brown, suffused and mottled with fuscous ; costa dotted with brown, and darker towards base : a thin black line from one-third of inner margin to near apex, curved upwards beyond the middle, edged on both sides with a brownish shade : a black oblique streak from apex : a small black cell-spot : a faint brown slightly waved line from near base of inner margin to below cell-spot, there angled, and becoming obsolete : traces of dark and pale longitudinal lines above it : marginal line finely brown : fringe concolorous.

*Hindwings* : pale brownish, mottled with fuscous : the inner margin darker : traces of three curved dark lines towards hindmargin, most distinct towards the inner margin.

Underside cloudy ochreous, speckled with dark fuscous. Head, thorax, and abdomen pale brownish ochreous, speckled with darker.

Expanse of wings : 32 mm.

One ♂ from Weenen, Natal, April 1894.

In this species veins 8 and 9 of forewings are on a longer stalk from apex of areole than in *curvilinea* : vein 11 from near its apex.

### 239. *Hebdomophruda curvilinea* sp. nov.

*Forewings* : brownish ochreous, with a few coarse brown speckles ; a diffuse brown-black shade in cell below the subcostal : a similar but more diffuse shade along inner margin : a thick brown-black oblique line from middle of inner margin to apex, slightly outcurved beyond middle : hindmargin suffused with brown-black : fringe with the inner half concisely brown-black, the outer half whitish.

*Hindwings* : whitish, with a faint brownish tinge, especially towards the anal angle.

Underside paler, tinged with yellowish, with the markings as above : hindmargin of forewings and costa of hindwings bright rosy. Head, thorax, and abdomen concolorous with wings : the thorax usually paler ; the forehead and palpi tinged with brown or reddish.

Expanse of wings : 34 mm.

Four ♂♂ from Weenen, Natal : two dated March and two August 1894 ; the August captures in much better condition than the others.

## SUBFAMILY SELIDOSEMINAE.

### 240. *Anonychia diversilinea* sp. nov.

*Forewings* : pale wood-brown, finely dusted with fuscous ; the costa dotted with fuscous ; first line oblique outwards, from costa at one-fourth to inner margin at

quite one-third, broadly diffused with red-brown externally; outer line at three-fourths, strongly angled outwards opposite the cell, deeply concave above and below, with a diffuse broad red-brown inner shade; cell-spot blackish, with a brown costal spot above it; a brown subapical costal spot; hindmargin hardly darker, never with the distinct grey-brown shade that appears in *grisea* Butler; marginal line red-brown, distinct; fringe concolorous.

*Hindwings*: paler brown, with small cell-spot and red-brown postmedian line, distinct on inner margin and becoming obsolete beyond the cell.

Underside reddish ochreous, with distinct red-brown striae; forewings with black cell-spot and costal edge of outer line; hindwings with a strongly bent submarginal brown line. Head, thorax, and abdomen concolorous.

Expanse of wings: ♂, 32 mm.; ♀, 35 mm.

Several from Sikkim (Pilcher *leg.*).

Distinguished from *A. grisea* Butler by the browner tint and stronger markings, and especially by the direction of the first line.

#### 241. *Anonychia pallida* sp. nov.

*Forewings*: whitish ochreous, with a pink tinge, and dusted with dark grey; first line vertical, faintly curved, brown, edged outwardly with rufous; second line brown, angled outwards beyond cell towards hindmargin, and concave above and below, as in *A. grisea* Butler, with a broad internal shade of olive-fusces; a small black cell-spot, and a fuscons spot on costa beyond it; hindmargin with an ochreous grey suffusion, containing dark horizontal streaks between the veins connected with the black marginal line; fringe greyish fuscons.

*Hindwings*: paler, with a pale brown postmedian line, bent in the middle and not reaching costa; traces of a bent and waved submarginal line; cell-spot grey; area within line and before hindmargin tinged with pale brownish grey; marginal line waved, dark brown; fringe pale grey.

Underside yellowish, dotted with brown; inner-marginal area of forewings pearly white; a brown submarginal line, most distinct towards costa. Head, thorax, and abdomen concolorous with wings; face more whitish; palpi ferruginous.

Expanse of wings: 28 mm.

One ♀ from Simla, April 1896.

#### *Arctoscelia* gen. nov.

*Forewings*: elongate; costa curved throughout; apex blunt; hindmargin obliquely rounded, subcrenulate.

*Hindwings*: long, both angles and hindmargin rounded.

Antennae simple in both sexes, lamellate; forehead hairy; palpi porrect, short, densely hairy; a tuft of long hair from abdomen at base of hindwings; femora and tibiae of hindlegs clothed with enormous tufts of hair, as long as the tarsi, and with four spurs. Underside of hindwings wholly woolly. The ♀ is without any hairs except on pectus.

*Neuration*: forewings, cell more than half as long as wing; discocellular vertical; first median at three-fourths, second before end, third from end of cell; radials normal; veins 7, 8, 9 stalked; 10 and 11 stalked; 11 anastomosing with the costal. Hindwings with first subcostal and second median both before the end of cell.

Type: *Arctoscelia onusta* sp. nov.



242. *Arctoscelia onusta* sp. nov.

♂. *Forewings*: smoky black, with slight pale striations; the lines deeper black, accompanied by pale dots on the veins; first line at one-fourth, angled outwards in cell and on submedian fold; second line at three-fourths, curved parallel to hindmargin and outwards above inner margin, dentate inwards between the veins, the outward teeth on the veins followed by whitish spots, that on costa large; submarginal line wavy, obscure, finely pale; a large diffuse cell-blotch on the discocellular; fringe concolorous, suberemulate; costa in places speckled with paler.

*Hindwings*: smoky brown, darker towards hindmargin; fringe dark brown, paler at base, with a dark marginal line.

Underside of both wings smoky brown, the hindwing woolly. ♀ somewhat paler and browner; the underside with the cell-spots and curved postmedian line blackish. Face, palpi, and thorax blackish, very hairy; abdomen cinereous brown. Tufts of the legs in ♂ rufous fuscous.

Expanse of wings: 44 mm.

One ♂, two ♀ ♀, from N. Luzon, 5000—6000 feet (Whitehead).

243. *Arctoscelia onusta* ab. *mutata* nov.

A pair from the same locality differ sufficiently to deserve a separate description. Ground-colour olive-ochreous, thickly dusted with fuscous, the veins ferruginous; costa ferruginous ochreous, thickly dotted with black; the lines black, distinct and denticulate, with faint whitish dots on veins; the discal mark a black ring with pale centre; submarginal line preceded by a coarse black shade, interrupted between veins 3 and 4; fringe ferruginous, mottled with dark fuscous. Hindwings smoky brown, as in the type. Underside of wings, head, and thorax smoky brown, not so dark as in the type. The yellow veins of the forewings are dotted with black, the intervals being filled up with smoky fuscous, powdered with fine whitish scales. Although so different in appearance, there can be no doubt of their being a form of *onusta*.

244. *Petelia strigata* sp. nov.

*Forewings*: mouse-colour, with numerous dark fuscous striae; the lines brown: first near base at one-fifth, slightly curved; second similar, before middle, followed by a distinct dark cell-spot; third at three-fourths, oblique; a short oblique black streak from apex, continued vertically, then running inwards and denticulated along the outer line, which it nearly touches; the space between them brownish; a pale grey triangular blotch below apex; fringe concolorous.

*Hindwings*: with antemedian and median curved brown lines; the cell-spot white; hindmargin darker.

Underside glossy cinereous, with dark speckles. Face and palpi brown; vertex white; thorax and abdomen concolorous with wings.

Expanse of wings: 26—28 mm.

Three ♂♂ from Weenen, Natal.

245. *Petelia strigata* ab. *pallida* nov.

Ground-colour paler, ochreous grey; the markings all more distinct; the submarginal line black and denticulate throughout; the triangular pale spot diffuse and inconspicuous; underside much paler.

Three ♂♂, one ♀, from Natal, collected by A. J. Spiller.

This is probably merely a local form. The ♀ has the specklings much coarser; one ♂ is much suffused in the forewings with rufous brown.

#### SUBFAMILY SEMIOTHISINAE.

##### 246. *Acadra fulvisparsa* sp. nov.

*Forewings*: white, thickly sprinkled and suffused with purplish grey; the lines dark purplish brown; first line from just before the middle of costa to inner margin near base, starting from a costal patch; second line from the same patch, acutely angled outwards towards apex, then straight and oblique to inner margin close to first line; third line from costa at two-thirds, also acutely angled outwards near hindmargin, then straight and oblique, geminated, to inner margin at middle; two straight submarginal lines from inner margin before anal angle, coalescing and running into hindmargin beyond the angle of third line; a whitish grey-speckled patch at apex, with dark spots on costa and hindmargin; costal space beyond third line fulvous, this colour being irregularly diffused below towards the hindmargin and along the median nervules; a small dark cell-dot beyond the first line; a thick purplish brown marginal line; fringe white, much suffused and mottled with purplish brown.

*Hindwings*: with a dark basal line, a thick antemedian line, double postmedian and submarginal lines, all straight, purplish brown; the broad central area white, almost unspeckled, with a black cell-spot; hindmargin from tooth to anal angle narrowly white; marginal line from apex to tooth thick, purple-brown, the fringe dark; from tooth to anal angle fine, with the fringe white.

Underside with the markings all suffused dark purplish brown, the fulvous costal patch large and well defined; head, thorax, and abdomen purplish grey, mixed with whitish.

Expanse of wings: 36 mm.

One ♀ from Warri, River Niger, February 1896 (Dr. Roth).

The hindmargin of forewings is oblique outwards from apex to vein 7, then oblique inwards, with a shallow double excision between veins 7 and 4.

##### 247. *Azata mutabilis* sp. nov.

*Forewings*: brown, with darker speckles and striae; the lines ferruginous, marked with dark brown or black; first close to base, angled beneath costa; second wholly ferruginous and obscure, passing over the cell-spot; outer line at two-thirds, minutely waved, and curved below costa, sometimes marked with brown-black, followed by a dull lustrous line and again by a dark shade which contains a black spot between veins 3 and 4; marginal area darker; an interrupted brown-black marginal line; fringe concolorous.

*Hindwings*: without the black spot, and with a submarginal ferruginous curved line.

Underside bright fulvous, with black speckles to the outer line, then dark brown, with the margin again becoming fulvous. Face, palpi, and vertex dark brown; thorax and abdomen grey.

Expanse of wings: ♂, 22 mm.; ♀, 24—26 mm.

One ♂, 2 ♀ ♀, from Penunghah, N.E. Borneo, December 1893, January 1894 (Cator).

The ♂ shows hardly a trace of concavity below the apex of forewings; one ♀ has a slight incision; the other and larger example has it distinct from vein 7 to 4, the marginal line being wholly black within it. The hindwings are crenulate, with a blunt angulation in the middle.

248. *Azata sororcula* sp. nov.

*Forewings*: dull wood-colour, with darker brown irroration; the lines darker brown, at one-fourth, one-half, and two-thirds respectively, all slightly bent below costa, then minutely waved to inner margin, parallel to one another; marginal area suffused with darker, with a rather large blackish blotch in the middle adjacent to the outer line; cell-spot and marginal line dark brown; fringe brown, chequered with darker, with a pale base and dark median line.

*Hindwings*: with the cell-spot large; an antemedian and postmedian line; marginal area darker, but without the black blotch.

Underside whitish, with coarse coalescent brown and ochreous speckles; the veins ochreous; marginal area brown, towards the hindmargin freckled with white in the lower half of wing. Head, thorax, and abdomen concolorous.

Expanse of wings: 26 mm.

One ♀ from Zomba, Upper Shiré District, May 1895 (Dr. P. Rendall).

The hindmargin of forewings is slightly bent at vein 4, hardly indented above and more oblique below: of hindwings subcrenulate, with a perceptible tooth at vein 4.

*Chorodnodes* gen. nov.

*Forewings*: ample; the costa straight for five-sixths, then strongly arched and depressed to vein 8; hindmargin bluntly elbowed at vein 4, the anal angle strongly marked.

*Hindwings*: with the hindmargin excised below apex and forming a large bluntly bidentate prominence at the ends of veins 6 and 7, and a deep almost semicircular excision between 6 and 4, thence running nearly straight to anal angle, which is obscurely lobed.

Palpi correct, moderate; antennae simple (♀).

*Neuration*: forewings, cell not half as long as wing; discocellular bent, the lower arm oblique; first median at two-thirds, second close before end of cell, third from the end; radials normal; 7, 8, 9 stalked; 10 and 11 stalked. In the hindwings the subcostals and last two medians rise close together from the ends of cell.

Type: *Chorodnodes rothi* sp. nov.

249. *Chorodnodes rothi* sp. nov.

*Forewings*: ochreous whitish, with a dull olive tinge, and speckled with olive and fuscous; first line at one-sixth, starting from a brown costal spot, running out along, and bent rectangularly on, the subcostal, and incurved from the median; second line at two-thirds, incurved at costa, then straight to near inner margin before anal angle; followed by a smoky olive-brown suffusion, the space immediately

succeeding the line being paler and edged by a line of dark teeth, diffuse above and becoming black-brown and more distinct towards inner margin, where the line ends in a dark blotch : submarginal line pale, wavy, edged by brown triangular blotches, excurved above towards hindmargin : cell-spot large, curved, brown with black edges, covering the whole of the discocellular and merged in a brown costal spot above ; a narrow brown marginal line just before the actual margin, which is of the pale ground-colour : fringe rufous fuscous, pale below the apex and at vein 3.

*Hindwings* : with a black cell-spot, preceded by a forked antemedian brown line : the pale ground-colour becomes smoky olive towards the hindmargin, and contains a dark brown submarginal line from costa before apex, bent in the middle and incurved and obsolescent towards inner margin : a curved whitish line from anal angle to hindmargin opposite cell : subapical projection with a large brown white-edged blotch : marginal line deep brown, leaving, as in forewings, a fine pale space beyond it, and from costa to vein 7 edged internally by a pale line ; fringe from apex to projection and in the excision opposite cell dark, the rest pale.

Underside whitish, with coarse olive-fuscous speckles ; a broad brown submarginal fascia, its inner edge crenulate, and extending in forewings to hindmargin opposite the cell, in hindwings filling up the prominence and irregularly broken below. Head, thorax, and abdomen pale ochreous white, speckled with darker.

Expanse of wings : 58 mm.

Two ♀♀ from Warri, River Niger, April 1896 (Dr. Roth).

This very conspicuous insect is named in honour of the collector.

#### 250. *Gonodela commixta* sp. nov.

*Forewings* : whitish, this ground-colour almost entirely hidden, except towards apex and hindmargin, by purplish grey and brownish suffusion ; costa yellowish ochreous, with fuscous striae ; the three lines dark brown, at one-third, one-half, and two-thirds respectively, all bent below costa, then oblique and parallel ; a dark, somewhat irregular, marginal line ; fringe dark grey, with a paler base.

*Hindwings* : with slightly waved antemedian, postmedian, and submarginal lines : both wings with black cell-spot.

Underside whiter, much freckled with fuscous ; a broad submarginal fuscous fascia : forewings with a white subapical spot : hindwings with the inner-marginal area whiter : head, thorax, and abdomen fuscous.

Expanse of wings : 32 mm.

One ♂ from Warri, River Niger, February 1896 (Dr. Roth).

The hindwings have the hindmargin produced in the middle, and somewhat convex on either side : antennae filiform, hardly pubescent.

#### 251. *Gonodela distinguenda* sp. nov.

*Forewings* : whitish, uniformly dusted with fuscous atoms : the marginal area suffused with pale purplish grey, which sometimes extends along the inner margin and pervades the basal area ; costa grey, mixed with ochreous : first line at one-fourth, outcurved from costa, bent above the median, and oblique inwards ; median line generally diffuse, curved just below costa, touching the cell-spot, and incurved so as to approximate to the inner line below the middle ; outer line bluntly angled on vein 6, thence minutely waved to inner margin at three-fourths ; submarginal line obscure, pale grey or whitish, preceded at costa by a triangular fuscous blotch,

and below the middle by some irregular-shaped blackish patches ; a pale grey apical blotch ; fringe fuscous, mottled with darker, and with a darker central line ; marginal line blackish, variable in intensity.

*Hindwings* : with thick antemedian line, including the cell-spot, slightly waved postmedian and pale submarginal line, following a blackish shade.

Underside whiter, thickly dusted with darker ; all the veins ochreous : the lines and shades browner, distinct in the ♀, paler and mixed with ochreous in the ♂♂. Face, palpi, and collar dark brown ; vertex and abdomen pale grey ; thorax fuscous grey.

Expanse of wings : ♂, 33 mm. ; ♀, 34 mm.

Two ♂♂, one ♀, from Weenen, Natal.

A well-marked species, distinguished by the uniform striation and purplish grey suffusion.

## 252. *Gonodela duplicilinea* sp. nov.

*Forewings* : greyish white, dusted with dark grey, and partially suffused with fuscous ; the lines brown, at one-fourth, one-half, and two-thirds ; all angled on the subcostal, then oblique, slightly waved inwards, the first and second thickened on costa ; the third double, each arm marked by a black spot at the angle, and by two on veins 3 and 4 respectively, the upper of the two outer ones being small or obsolescent, the lower prominent ; a brown costal triangle beyond outer line and a fuscous cloud on hindmargin opposite cell ; cell-spot and marginal dots black ; fringe fuscous, with a dark central line and pale base.

*Hindwings* : similar, but the second line nearly central, followed by a broad brownish fascia.

Underside whitish, with the fascia and veins ferruginous. Head, thorax, and abdomen cinereous.

Expanse of wings : 30—32 mm.

Four ♀♀ from Weenen, Natal, October 1893.

## 253. *Gonodela impar* sp. nov.

♀. *Forewings* : white, with scattered fuscous scales ; the costa yellowish, with dark striae ; first line obscure, curved, close to base ; median line bent at costa, then vertical, touching the black cell-spot, with a blotched inner shade adjacent ; exterior line at two-thirds, brown, sharply angled outwards on subcostal vein, then vertical and slightly waved to inner margin at two-thirds ; marginal area suffused with purplish grey ; a blackish costal streak touching angle of outer line, followed by two pale blotches, the lower one oblong, distinct, and white ; a triangular whitish space on hindmargin below middle : blackish blotches beyond outer line between veins 3 and 5, and on the submedian fold ; a crenulate dark grey marginal line ; fringe white, chequered with grey at ends of veins, altogether grey opposite the cell.

*Hindwings* : with thick double antemedian line preceding the black cell-dot, and wavy subdentate postmedian line ; marginal area as in forewings, with one black blotch between veins 3 and 4.

Underside white, fuscous-speckled, with the markings deep brown : the cell-spots large. Head, thorax, and abdomen greyish ochreous.

♂ with both wings suffused with dark purplish grey, mixed with olive-ochreous



scales, the marginal area deepest ; all the markings can be obscurely traced ; underside exactly like that of the ♀ ; head, thorax, and abdomen all dark grey.

Expanse of wings : 36 mm.

One ♂, one ♀, Warri, River Niger; the ♂ dated February, the ♀ June, 1896 (Dr. Roth).

The forewings of the ♂ are much narrower and more elongate than those of the ♀, the hindmargin more oblique and not convex ; the hindwings more rounded, the tooth at vein 4 not so prominent as in ♀. Though taken at different dates, and so dissimilar at first sight in appearance, I feel sure they are sexes of the same species.

The ♀ is very much like the ♀ of *G. distinguenda* Warr. from Natal.

#### 254. *Gonodela multistrigata* sp. nov.

*Forewings* : white, densely striated with fuscous, and with the basal and marginal areas more or less suffused with fuscous and ochreous scales ; the lines black ; first at one-fourth, curved below costa, shortly indented on the median vein, then obliquely curved inwards ; median line also curved below costa, then oblique, sometimes preceded by a dark line in the lower half, sometimes thick and diffuse throughout ; exterior line outcurved from costa, forming a narrow rectangular projection beyond cell, then irregularly waved to inner margin at two-thirds, followed below middle by a thick fuscous shade, which leaves two or three spots of white beyond the line : this shade becomes black between veins 3 and 4 ; submarginal line obscurely paler, preceded on costa by a dark blotch ; a dark black-streaked cloud on hindmargin opposite the cell ; cell-spot black, distinct : all the lines thickened on costa, the exterior line followed on costa by an ochreous or white spot : fringe mottled, dark and light fuscous, with a pale base beyond a line of black marginal lunules.

*Hindwings* : with a dark, sometimes diffuse, antemedian line and a dentate postmedian one : submarginal line pale, preceded by a dark fascia containing black blotches in the middle ; fringe as in forewings.

Underside white, with coarse dark speckles : middle and exterior lines partially double, the latter followed by a fuscous fascia, which is diffused to hindmargin opposite the cell in both wings, and in the forewings is extended to the apex : the cell-spots black. Head, thorax, and abdomen cinereous, mottled with fuscous.

Expanse of wings : ♂, 30 mm. : ♀, 32 mm.

Six examples of both sexes from Weenen, Natal.

#### 255. *Gubaria fluidata* sp. nov.

*Forewings* : purplish grey ; the basal area browner, edged by a sinuate brown line, and containing the basal line, which is angled below costa ; second line brown, only slightly angled below costa, the angulation filled up by the purplish grey shade, which protrudes somewhat above the median vein ; the white central fascia has therefore its edges both irregularly curved, instead of straight ; a broad blackish fascia beyond second line, forming a *square* black blotch on costa, edged by the paler but indistinct submarginal line ; marginal area purplish grey ; a dark marginal line ; fringe purplish, flecked with white below apex and above anal angle ; the white fascia is much freckled with brown towards costa and contains the black cell-spot.

*Hindwings* : with the basal area short, not reaching beyond the middle of inner margin, the white fascia therefore running to the margin just beyond middle and

not narrowed off; outer line partly double : the black markings set in yellow scales : a small white blotch on hindmargin below the angle.

Underside with the basal area yellow, edged irregularly with brown : the marginal dark brown area including more than half the wing in the hindwings, with the white marginal blotch distinct. Palpi ferruginous : head, thorax, and abdomen above purplish grey : anal segment of abdomen, sides, and underneath yellow.

Expanse of wings : 36 mm.

One ♀ from Penungah, N.E. Borneo, December 1893.

256. **Gubaria umbrata** sp. nov.

*Forewings* : whitish, irrorated and, except along the space between middle and outer lines, suffused with dull brown : first line at one-fourth, obscure, bent below costa, then oblique : middle line diffuse, passing over the dark cell-spot : outer line bluntly angled on vein 6, then incurved to inner margin at two-thirds : the brown marginal area marked with blackish blotches beyond the line, above inner margin, between veins 3 and 4, and beyond the angulation : from this last blotch a pale mark starts towards the apex : fringe brown, with paler base, beyond a dark brown marginal line.

*Hindwings* : with broad diffuse antemedian shade, distinct black cell-spot, and strongly sinuous brown postmedian line : the dark brown outer third with two blackish blotches.

Underside whiter, with the same markings : thorax and abdomen concolorous : head wanting.

Expanse of wings : 32 mm.

One ♂ from Natal (A. J. Spiller).

The hindmargin of forewings is slightly bent at vein 4 : of hindwings crenulate, more strongly above the tooth at vein 4.

257. **Luxiaria taeniata** sp. nov.

*Forewings* : ochreous, dusted with reddish and fuscous scales : the lines parallel to hindmargin : first at one-fourth, bent on subcostal, brownish, interrupted : median shade diffuse, from a dark grey costal spot : outer line marked by distinct red-brown spots on the veins, bent at vein 6, and sinuate above inner margin, followed by a broad grey clearly dentated fascia, which is again succeeded by a more obscure and narrow dentate shade : fringe ochreous, with a fine reddish subcrenulate marginal line at base, preceded by distinct reddish dots between the veins : cell-spot linear, grey, obscure.

*Hindwings* : the same, but the cell-spot black, round, and distinct.

Underside whitish straw-colour, with the markings deep brown : a dentate submarginal fascia, touching the margin beyond the cell, and preceded by the dotted outer line : cell-spot and lower part of median shade expressed. Face and palpi ferruginous : vertex, thorax, and abdomen ochreous.

Expanse of wings : 38 mm.

One ♀ from Warri, River Niger, June 1896 (Dr. Roth).

**Peridela** gen. nov.

The species referred to this genus bear to *Gonodela* the same relation that *Tephрина* Dup. does to *Tephirinopsis* Warr., the antennae of the ♂ being pectinated instead of simply pubescent. At present they are all African insects.

Type: *Peridela crassata* sp. nov.

**258. Peridela crassata** sp. nov.

*Forewings*: greyish white, thickly dusted with fuscous atoms, the marginal area suffused with grey and fuscous; the lines darker; first from one-fourth of costa to inner margin near base, curved below costa; middle line from nearly two-thirds of costa to inner margin before middle, nearly straight and much thickened below middle; outer line at three-fourths, black, slightly curved below costa, oblique and irregularly waved to two-thirds of inner margin, finely edged externally with paler, and followed by a dark fuscous shade, which is black at costa and between veins 3 and 4, and is edged by pale grey scales forming the submarginal line: cell-spot black; veins towards hindmargin ochreous; fringe fuscous, with a pale base, and a line of blackish lunules along margin.

*Hindwings*: with thick antemedian and wavy postmedian blackish lines: a black blotch between veins 3 and 4 in the dark marginal area. In the ♂ the central area between the middle and outer lines is decidedly paler than the rest of the wing: in the ♀ the difference is scarcely perceptible.

Underside paler, with the markings more distinct. Head, thorax, and abdomen fuscous grey.

Expanse of wings: 32 mm.

One ♂, one ♀, from Mpeta, Loangwa River, December 1895 (Coryndon).

**259. Peridela curvifascia** sp. nov.

*Forewings*: whitish, speckled and suffused with fuscous and brown, except a curved and sinuous pale fascia between the middle and outer lines, which is speckled only; a dark dot near base; a curved and wavy first line at one-third; a sinuous oblique median line from costa beyond middle to inner margin rather before middle; outer line similar, but broken, followed by a diffuse dark brown shade: the apex paler; a black cell-spot.

*Hindwings*: similar, without first line: fringes mottled whitish and brown, with a dark crenulate basal line.

Underside similar, but duller. Head, thorax, and abdomen dark fuscous.

Expanse of wings: 26 mm.

One ♂ from Mpeta, Loangwa River, December 1895 (Coryndon).

**260. Peridela interrupta** sp. nov.

*Forewings*: white, with pale brown suffusion, and dusted with fuscous: the markings dark brown and blackish, distinct: costa suffused narrowly with fuscous; first line at one-fourth, bent below costa; median line shortly beyond it, curved: both starting from a dark brown costal spot; outer line from an oblique costal streak, sharply pointed at its extremity, interrupted by the pale ground-colour below subcostal: its lower two-thirds curved, dark brown, followed on costa by a brownish

triangular spot with dark brown outer edge, and below by a thick blackish and fuscous shade, which forms an acute tooth outwards below vein 4 : a small dark spot before apex, and a brownish triangular eloud on hindmargin below apex : fringe fuscous, with pale basal line.

*Hindwings* : with dark brown antemedian and postmedian lines, nearly straight and approximating on inner margin ; the space between them white, with a clear dark cell-spot ; postmedian line followed by a broad fuscous shade containing a narrow black blotch in middle : submarginal shade white : marginal area striated with fuscous.

Underside the same, but less distinct. Face and palpi dark brown : thorax and abdomen fuscous.

Expanse of wings : 30 mm.

Three ♂♂ from Weenen, Natal.

#### 261. *Peridela triumbrata* sp. nov.

*Forewings* : whitish ochreous, with thick and coarse fuscous strigulation : the costa and veins tinged with yellowish : the lines thick and diffuse, dark brown ; first at one-fourth, angled on the subcostal vein, then oblique to inner margin near base, much thickened below the median ; second from middle of costa, which it does not appear to touch, to inner margin just beyond first line ; outer line from costa at two-thirds, finer, angled outwards on vein 6, then oblique to inner margin beyond middle, followed on costa by a brown blotch, and below the angle by a brown shade, which broadens to the inner margin and is bounded by the pale indistinct submarginal line ; marginal line dark brown, crenulate ; fringe ochreous, with dark mottlings ; cell-spot brown, touching middle line.

*Hindwings* : with single antemedian, double postmedian, and waved submarginal brown lines : cell-spot distinct, blackish.

Underside with the markings all paler. Face, palpi, collar, and vertex brown, with ochreous scales ; thorax and abdomen ochreous, with brown scales intermixed.

Expanse of wings : 29 mm.

One ♂ from Penang.

Much resembling *P. interrupta* from Natal, but without the strong black outer tooth.

#### 262. *Petrodava* (?) *nigripuncta* sp. nov.

*Forewings* : yellow, suffused with deeper yellow or dull orange : costa minutely dotted with purplish ; a purplish black costal spot before apex, accompanied by three or four black striae : fringe deep yellow.

*Hindwings* : wholly yellow. Both wings with deeper yellow cell-spot.

Underside wholly yellow. Head, thorax, and abdomen all yellow.

Expanse of wings : 26 mm.

One ♀ marked simply Australia.

A species of very doubtful location until the ♂ is known.

#### 263. *Rhinodia* (?) *sordidata* sp. nov.

*Forewings* : dull ochreous grey, with dark grey striations ; an indistinct central shade, passing over the dark cell-spot : a diffuse curved dark shade at five-sixths running to anal angle ; a dark marginal line : fringe grey.

*Hindwings* : the same.

Underside paler, ochreous dusted with brown ; the submarginal shade brown and much more distinct. Face and thorax brownish grey : palpi and antennae paler ; abdomen wanting.

Expanse of wings : 26 mm.

One ♀ from Natal (A. J. Spiller).

The antennae are thick and slightly subserrate : palpi porrect. as long as in *Rhinodia* Guen., to which genus, in the absence of the ♂, it may be provisionally referred.

#### 264. *Semiothisa parallacta* sp. nov.

*Forewings* : sandy ochreous, thickly dusted with olive-fuscous, and with a darker tint towards hindmargin : costa dotted with black, and with a black spot at origin of inner and outer lines, and two more before apex : lines olive-fuscous, all angulated below costa, then oblique and parallel to hindmargin, at one-fourth, one-half, and three-fourths respectively : the outer line more strongly angled beyond cell, and marked with blackish above and below the angle, the angle itself partially obliterated by a pale streak towards apex : submarginal line waved, indistinct : a line of brown dashes along hindmargin between the veins, which are paler : cell-spot faint, brown : fringe ochreous grey, with a paler basal line.

*Hindwings* : with antemedian line curved round the black cell-spot, wavy postmedian line, and two submarginal dark shades, the inner one with some black scales or spots upon it.

Underside straw-colour, thickly mottled with brown : the veins and costa yellow, the latter striped with black : forewings with an interrupted brown marginal fascia : lines brown, interrupted. Head and thorax like wings : abdomen paler ochreous.

Expanse of wings : 27 mm.

One ♂ from Zomba, Upper Shiré River, 3000 feet, December 1895 (Dr. P. Rendall).

Hindmargin of forewings entire, of hindwings bluntly toothed.

#### 265. *Tephрина deerraria* Wlk. ab. (?) *dissocia* nov.

All the markings much less varied and distinct than in the type : the outer line less sinuous ; the marginal area beyond it uniformly fuscous : the two inner lines obscure, and often obsolete.

One ♂, two ♀♀, from Weenen, Natal, January to March 1894.

A much neater-looking form than the type, and possibly distinct.

#### 266. *Tephрина furcata* sp. nov.

♂. *Forewings* : sandy ochreous, dusted with darker ; the three lines oblique, and distinct only towards inner margin, at one-fourth, one-half, and three-fourths respectively : the first and third brown towards inner margin, the first edged internally, and the third externally, with paler : the middle line diffuse, dark ochreous ; the outer line is bent before apex and retracted to costa, the angle marked by two small black spots, and throwing off to hindmargin below apex a pale oblique streak : the outer line is followed by a darker ochreous shade, edged by the obscurely paler nearly straight submarginal line : fringe concolorous : the marginal line finely brown, with darker dots at ends of veins.



*Hindwings* : with a straight brownish, externally pale-edged, line from inner margin before anal angle to costa at two-thirds, before which it is retracted : a small black cell-spot.

Underside duller, with the outer line and shade alone marked.

♀ paler, towards the hindmargin dusted with blackish scales : first and second lines nearly obsolete : third more curved, pale ochreous throughout, on the inner margin edged inwardly with black scales, and with a black spot on each side between veins 3 and 4 : the black spots at the angle plainer.

Head, thorax, and abdomen concolorous with wings.

Expanse of wings : 32 mm.

One ♂, one ♀, from Weenen, Natal, October 1895.

The hindmargin of forewings is almost imperceptibly indented at vein 7, thence curved obliquely to anal angle. In the hindwings the hindmargin is nearly straight from anal angle to vein 4, where it is faintly bent, and slightly crenulate between 4 and 6, 6 and 7, at which last vein it is again bent.

#### 267. *Tephрина geminata* sp. nov.

*Forewings* : ochreous, finely dusted with fuscous ; the costa brownish : first line at one-fourth, brown, curved below costa, then oblique : outer line oblique from before apex to beyond middle of inner margin, followed by a brownish fascia, marked with darker opposite the cell : an indistinct double submarginal streak ; a row of dark marginal spots between the veins : fringe ochreous and fuscous.

*Hindwings* : with the outer lines much paler ; both wings with a small black cell-spot.

Underside the same, but much paler. Face and palpi brown : thorax and abdomen ochreous.

Expanse of wings : 26 mm.

Two ♂♂, one ♀, from Weenen, Natal, October 1893.

#### 268. *Tephрина inconspicua* sp. nov.

*Forewings* : very pale sandy ochreous, with darker ochreous irroration ; costa dotted with pale fuscous ; first line at one-fourth, second at two-thirds, faintly darker, both bent below costa, then straight and slightly oblique, the second followed by a slightly darker fascia : marginal line pale brown ; fringe concolorous ; cell-spot ochreous.

*Hindwings* : with cell-spot minutely black, the outer third of wing beyond the faint postmedian line darker.

Underside still paler, with the markings faintly visible. Head, thorax, and abdomen concolorous ; shaft of antennae white.

Expanse of wings : 26 mm.

One ♂ from Weenen, Natal.

#### 269. *Tephrinopsis congener* sp. nov.

*Forewings* : whitish ochreous, thickly irrorated with dark ochreous ; the costa narrowly brown ; traces of a curved brown line at one-fourth : a dark linear cell-spot : outer line at five-sixths, slightly curved below costa, thick, brown, followed by a fine indistinct line : area beyond suffused with deeper ochreous ; a fine brown marginal line ; fringe ochreous.

*Hindwings* : similar : the outer line thinner, and obsolescent above middle.

Underside yellower : the veins ochreous ; marginal area tinged with rufous. Face, palpi, and collar dark brown ; vertex, thorax, and abdomen like wings.

Expanse of wings : 26 mm.

One ♂ from North Luzon, 5000—6000 feet (Whitehead).

## 270. *Tephrinopsis marmorata* sp. nov.

*Forewings* : pale ochreous or bone-colour, varied with fuscous striae and atoms ; the lines dark fuscous or blackish : first at one-fourth, bent below costa, then oblique ; second central, straight and oblique ; third blackish, at two-thirds, angled beyond cell, then incurved to inner margin at two-thirds, followed by a brown shade-marked with black patches, which is again edged by the pale ochreous submarginal line, which ends in a pale triangular apical patch ; the margin beyond it darker, with thicker striae ; marginal line concise, brown : fringe pale fuscous, except at extreme apex, where it becomes ochreous.

*Hindwings* : with cell-dot and postmedian line brown, the latter followed by a pale brown shade, sometimes marked with dark spots.

Underside duller. Face, vertex, and collar dull brown ; thorax and abdomen ochreous, spotted with brown.

Expanse of wings : 34 mm.

Both sexes from Weenen, Natal, October 1893 to January 1894.

The species varies much.

The above description was made from a dark specimen: the palest aberration, for which I propose the name *pallida*, is yellowish ochreous, with all the markings faintly fulvous, and no dark dusting whatever, and all intermediate forms occur. The fringes vary from fuscous to ochreous, or ochreous chequered with darker.

## 271. *Tycoonina natalensis* sp. nov.

♂. *Forewings* : olive-ochreous, striated and suffused with rufous and fuscous, the whole marginal area being ferruginous brown : first line at one-fourth, bent below costa, rufous, starting from a fuscous costal mark ; median shade diffuse, including the small black cell-spot : outer line at two-thirds, indented basewards beyond cell and on submedian fold ; submarginal line wavy, indistinct, the marginal area within it deeper coloured than that beyond it ; a dark blotch at anal angle : fringe rufous, pinkish white towards apex.

*Hindwings* : similar : the median line less diffuse : the submarginal marked by black blotches below apex.

Underside bright yellow, with fuscous striations : forewings with some red scales in the submedian area ; marginal area bright ferruginous, tinged with yellow on costa, and with a whitish smear below apex : in the hindwings with a yellow patch in middle of hindmargin. Face and palpi dull brown ; thorax and abdomen like ground-colour of wings.

♀. Pale yellow, finely speckled with brownish ; the lines all fine, only the outer one distinct, and without the indentations that are visible in the ♂ : marginal area hardly darker, suffused and speckled with dark towards apex and anal angle : fringe yellow.

Underside yellow, with the marginal area pale ferruginous along the outer line : the head, thorax, and abdomen all yellow.

Expanse of wings : 38 mm.

One ♂, one ♀, from Natal (A. J. Spiller).

The hindwings are slightly truncate at apex, the hindmargin bluntly crenulate in its upper half. In *Petrodava albosignata*, from the West Coast of Africa, the upper half of hindmargin is strongly dentate, with deep incisions between the teeth.

The forewings of the ♂ have a long double fovea between the submedian fold and vein, partially visible above ; the cell in both sexes more than one-third as long as wing.

#### SUBFAMILY ENNOMINAE.

##### 272. *Azelinopsis brunnea* sp. nov.

*Forewings* : ochreous, tinged with ferruginous, thickly dusted and, except towards apex and costa, nearly entirely suffused with fuscous brown ; a diffuse oblique blackish first line at one-third, and a still more diffuse reddish brown shade in middle just beyond an angulated hyaline mark on the discocellular ; outer line finer, nearly straight and oblique at three-fourths, bluntly angulated below and retracted to costa, followed by a black spot between veins 3 and 4 ; fringe concolorous.

*Hindwings* : similar ; but the central shade *before* the tritid hyaline cell-mark, which is closely followed by the straight and double outer line ; the black spot further from the line than in forewings.

Underside much paler, with fulvous suffusion and fuscous speckling. Head dark rufous ; thorax and abdomen deep brown.

Expanse of wings : 32 mm.

One ♂ from Assaba, River Niger (Dr. Crosse).

Much smaller, but in shape and markings agreeing well with *Azelinopsis externa* Warr. from Mackay, Queensland. This ♂ has the antennae armed with short thick pectinations.

##### *Cenoctenucha* gen. nov.

Like *Odontopera* Stph., but with simple, not pectinated antennae, in the ♂.

Type : *C. similaria* Moore.

##### 273. *Cenoctenucha imitata* sp. nov.

Almost exactly like *Odontopera bilinearia* Swinh., but the ground-colour slightly yellowish ; the lines dark grey ; first at one-third, curved and bent on the median and submedian veins ; the second faintly dentate and evenly curved from costa to inner margin ; the first preceded and the second followed by pale spots on the veins ; a straight oblique dark grey submarginal shade beyond second line ; this submarginal shade is distinct on the underside, but is wanting in *bilinearia* : the ♂ antennae being simple and not pectinated will serve to distinguish it. *Cenoctenucha similaria* Moore has two deep excavations in the hindmargin between the apex and central angle ; *C. lentiginosaria* Swinh. has the same portion of the hindmargin perfectly straight : the present species shows two faint curves with a slight tooth between them, exactly as in *O. bilinearia* Swinh., with which it also agrees in size.

A few examples from the Khasias.

**Cophophlebia** gen. nov.

*Forewings* : with costa nearly straight, curved slightly at base and towards apex ; apex rectangular ; hindmargin oblique to vein 3, where it is faintly elbowed and more oblique below.

*Hindwings* : with apex subtruncate, slightly elbowed at veins 7 and 3, and produced at anal angle.

Palpi porrect, short ; tongue minute ; antennae of ♂ strongly bipectinate ; hind tibiae flattened and slightly thickened, with four spurs.

*Neuration* : forewings, cell three-fifths of wing ; discocellular vertical above, concave below ; first median at five-sixths, second and third from end of cell ; lower radial from above the centre of discocellular, upper from upper end of cell ; veins 8 and 9 stalked from before end of cell : 7 missing ; 10 and 11 stalked and anastomosing shortly with the costal. Hindwings with first subcostal and second median both before ends of cell : radial from above centre of discocellular.

Type : *Cophophlebia olivata* sp. nov.

**274. Cophophlebia olivata** sp. nov.

*Forewings* : yellowish olive-green : costa pearl-grey ; the lines deeper green ; first at one-third, bent below costa, then oblique inwards, edged internally with pearl-grey ; second at four-fifths of costa, angled outwards above vein 6, then oblique inwards, slightly sinuous to submedian vein, where it curves more obliquely to inner margin near middle ; it is edged outwardly with pearl-grey, and preceded by a fainter sinuous green line : traces of an oblique median line ; submarginal line hardly visible ; some dark striae above anal angle ; fringe green, becoming brown at anal angle.

*Hindwings* : with straight diffuse median line : fine slightly wavy postmedian line, edged with pearl-grey ; some dark striae towards base of wing.

Underside much yellower, the markings dark green ; marginal area tinged with grey. Head and thorax olive-green ; abdomen (apparently) more ochreous.

Expanse of wings : 34 mm.

One ♂ from Zomba, Upper Shiré River, 3000 feet, December 1895 (Dr. P. Rendall).

Superficially somewhat resembling the species of the Indian genus *Mimochroa* Warr.

**275. Corymica immaculata** sp. nov.

*Forewings* : yellow, with very faint, hardly darker, irroration ; costa minutely dotted with brown, and with a brown streak from base to second line ; the three lines distinct, ferruginous : first at one-fourth, bent in cell ; second before middle of costa, strongly bent, or angled outwards beyond the small black cell-spot, and oblique inwards to before middle of inner margin, where it ends in a small white spot ; third line from before apex, where it is narrowly forked, to two-thirds of inner margin, sinuous ; fringe yellow, with the base brownish and tips whitish ; no dark spots on inner margin.

*Hindwings* : with antemedian and postmedian pale ferruginous lines ; a small black cell-spot ; marginal area rather deeper coloured.

Underside yellow, with numerous ferruginous striae ; the lines ferruginous, the

outer one thickened : upper half of marginal area with ferruginous striae massed together, and also below the lower end of cell. Palpi and lower half of face yellowish ; upper half of face and vertex shining white ; collar ferruginous ; thorax and abdomen yellow.

Expanse of wings : 32 mm.

A pair from Sikkim, April and May 1889 (Pilcher *leg.*).

Distinguished by the distinct lines, and the sinuous *uncrenulated* margins of the wings.

### **Eurythecodes** gen. nov.

*Forewings* : broad, the costa arched throughout ; apex slightly produced ; hind-margin bluntly elbowed at vein 4, oblique below, slightly concave above ; anal angle blunt.

*Hindwings* : with a small tooth at vein 4, the margin somewhat convex on either side ; both angles well marked.

Palpi porrect, rough beneath, hardly reaching beyond face ; antennae of ♀ shortly and evenly pectinated.

*Neuration* : forewings, cell very broad, about half as long as wing ; discocellular with lower arm oblique ; first median at two-thirds, second well before end, third from end of cell ; radials normal ; veins 7, 8, 9 stalked ; 10 and 11 coincident, anastomosing at a point with costal, and not separating till near costa.

Type : *Eurythecodes nigricola* sp. nov.

Akin to *Spilopera* and its allies.

#### 276. **Eurythecodes nigricola** sp. nov.

*Forewings* : pale ochreous, thickly dusted with rust-coloured atoms, the basal and marginal areas darker ; first line at one-third, rectangularly bent on the subcostal vein and vertical to inner margin ; second line from two-thirds of inner margin, curved towards apex, but retracted to costa, and joined at the angle by a short oblique streak from apex ; this line is edged outwardly, and the first inwardly, by a diffuse brown shade ; a minute dark cell-spot ; fringe concolorous.

*Hindwings* : with the dark line central, preceded by the small cell-spot.

One of the two examples is wholly suffused with fuscous grey, having the outer line bent as well as curved, and the marginal area much darker, showing traces of a paler waved submarginal shade between darker clouds towards inner margin.

Underside paler, with the line of the hindwings doubled towards costa. Head, thorax, and abdomen concolorous with wings.

Expanse of wings : 30—32 mm.

Two ♀♀ from Warri, River Niger, February 1896 (Dr. Roth).

#### 277. **Eurythecodes straminea** sp. nov.

*Forewings* : straw-colour, dotted with rufous and fuscous scales ; costa spotted with dark ; first line at one-third, obscure, plumbeous, bent outwards, with ferruginous marks on the veins on its outside edge ; outer line from two-thirds of inner margin, straight and oblique towards apex, angled on vein 7 and retracted to costa, plumbeous, preceded by a row of red dots on veins ; some fuscous and rufous dots forming a shade from apex to angle of this line ; a vertical greyish streak from inner margin before anal angle ; fringe grey ; a minute black cell-dot.



*Hindwings* : with an angulated median line, plumbeous, edged inwardly by a thin rust-coloured line, and preceded by a black cell-spot : marginal area somewhat clouded with darker, with traces of a dark blotch beyond the angle of the line.

Underside less speckled, the lines obscurer. Head, thorax, and abdomen straw-colour.

Expanse of wings : 36 mm.

One ♀ from Warri, River Niger, February 1896 (Dr. Roth).

278. *Fascellina aurifera* sp. nov.

*Forewings* : dull purplish brown, striated in parts with darker, and with paler ochraceous tints : an oblique dark line at one-third, bent at costa ; an oblique diffuse dark median shade : costa between these two lines with a shallow pinkish grey patch, irrorated with dark ; some gilded ochreous scales below it ; a wavy dark brown outer line from inner margin at two-thirds, retracted to costa and acutely angled outwards below apex ; the costa beyond it pinkish grey ; a broad gilded ochreous submarginal shade : margin itself and fringe brown ; the excisions on outer and inner margins very shallow and inconspicuous.

*Hindwings* : brownish ochreous, with scattered dark striae ; a very wavy dark postmedian line, preceded by a dull burnished central fascia ; an obscurely wavy dark submarginal line : margin and fringe deep brown.

Underside of forewings ochreous and yellow, thickly covered with fine purple striae ; the costa yellow ; the central band vinous red : outer line and marginal area red-brown : submarginal shade gilded yellow : hindwings deep yellow, with purplish striae along costa, and two wavy and interrupted postmedian purplish lines, coalescing towards inner margin : hindmargin irregularly purple. Pectus and basal half of abdomen below yellow. Face and palpi red-brown ; thorax black-brown, paler in front : abdomen cinereous, becoming very deep fuscous towards apex.

Expanse of wings : 38 mm.

One ♂ from Mount Mulu, North Borneo (Hose).

279. *Heterolocha spurcata* sp. nov.

*Forewings* : yellowish ochreous, with numerous dark fuscous transverse strigae : first line from a large costal blotch at one-third to inner margin at one-fourth, dark fuscous ; second line from five-sixths of costa to inner margin at two-thirds, with a large dark fuscous and black blotch beyond it between veins 2 and 4.

*Hindwings* : with a dark curved submarginal line.

Underside the same. Head, thorax, and abdomen concolorous.

Expanse of wings : 28 mm.

One ♀ from Weenen, Natal.

The only example is very much worn, and the description is necessarily somewhat deficient.

280. *Heteromiza unilinea* sp. nov.

*Forewings* : fawn-colour, with fine fuscous irroration ; an oblique exterior pale line, edged internally with red-brown and marked by minute dark dots on the veins, simply curved below costa, not angulated as in *H. castanearia* Moore, from costa shortly before apex to inner margin at two-thirds, produced across hindwings as a median line ; fringe of both wings concolorous : no cell-spots or inner line.

Underside of both wings paler, with a curved brown line beyond middle ; hindwings with a largish brown cell-spot. Head, thorax, and abdomen concolorous ; abdomen below whitish.

Expanse of wings : 39 mm.

One ♀ from Lompa-Battan, South Celebes, 3000 feet, March 1896 (Fruhstorfer).

The venuration of forewings differs from that of *H. castanearia* Moore ; veins 10 and 11 both rise from cell, 10 anastomoses with 11 and again with the stalk of 8, 9.

#### 281. *Hyposidra albifurcata* sp. nov.

*Forewings* : dull smoky black, with deep black cell-spot ; at two-thirds of costa a white fascia rises, widening downwards to vein 3, and there bifurcating to inner and hindmargin : tip of wing white ; fringe black, except at end of the white streak.

*Hindwings* : with the streak beginning broader, its edges diverging uniformly to either side of anal angle, so forming a conical fascia, with two or three black spots near anal angle.

Underside duller. Head, thorax, and abdomen all black.

Expanse of wings : 42 mm.

One ♂ from Bongao, Sulu Islands.

#### 282. *Hyposidra prunicolor* sp. nov.

*Forewings* : purplish grey, tinged in parts with brown ; the markings indistinct ; traces of a darker basal patch, edged by a bent pale fascia ; a shining greyish denticulate curved line at two-thirds : marginal area with a diffuse dentate-edged shining grey fascia, narrowing towards anal angle.

*Hindwings* : with a dark diffuse antemedian line, a pale waved and curved postmedian line, and a pale grey cloudy fascia from costa close to this last line and running to anal angle.

Underside dull purplish brown, with the lines dark brown. Head, thorax, and abdomen concolorous : the face darker brown.

Expanse of wings : 70 mm.

One ♀ from Stephansort, German New Guinea (Cotton and Webster).

Forewings with the apex not so much produced, but the projection deeper vertically : the hindmargin simply incurved, not excised, below vein 6, and bowed to anal angle.

#### 283. *Hyposidra variabilis* ab. *siccifolia* nov.

*Forewings* : brownish ochreous, with dark brown transverse striae, the base suffused with fuscous ; a straight, inwardly oblique, dull red-brown streak across centre of wing : an indistinct curved dark brown exterior shade ; some brown clouds towards apex and anal angle.

*Hindwings* : with diffuse dark brown curved antemedian and postmedian bands ; marginal area broadly dark brown ; both wings with black cell-spot ; fringes dark brown.

Underside like upper, with the markings less distinct ; apex of forewings pale grey. Head, face, and thorax dark brown : abdomen paler.

Expanse of wings : 70 mm.

One ♀ from Cedar Bay, south of Cooktown, Queensland (A. S. Meek).

284. *Nothomiza costalis* Moore ab. *intensa* nov.

All the yellow tints of both wings are replaced by pink, except in the centre of the costal blotches : the rest of the wings is filled by dark grey scales, the veins remaining pink.

The example is a ♂, taken in the Khasias, dated May 1896.

285. *Omiza chlorophora* sp. nov.

*Forewings* : pale pinkish drab, towards hindmargin suffused with darker, and sprinkled throughout with numerous striae of contiguous blackish atoms ; centre of wing occupied by an olive-green fuscate fascia ; the inner edge strongly curved outwards from one-fourth of costa to middle of inner margin, the outer irregularly sinuate from costa at four-fifths to inner margin at two-thirds, the fascia thus being very narrow on inner margin (and still more constricted on the submedian fold) and very wide on costa ; this costal portion containing a triangular space of the ground-colour, which almost interrupts the outer fork by a streak from its apex ; the space immediately round the fascia is paler and not striated ; fringe ochreous grey.

*Hindwings* : with costal area ochreous ; two small roundish green blotches in middle between median vein and inner margin ; fringe yellowish.

Underside uniform bright orange-fulvous. Face fuscous ; thorax and abdomen concolorous with wings.

Expanse of wings : 32 mm.

One ♂ from Wetter, May 1892 (W. Doherty).

286. *Omiza informis* sp. nov.

*Forewings* : reddish fawn-colour, speckled with black ; first line absent ; second obscure, and shown mainly by the difference of colour, from nearly two-thirds of inner margin towards apex, where there is a pale spot : the central area is rather deeper coloured than the basal and marginal areas, especially towards the costa ; just beyond the oblique line is a faint wavy line, which diverges from the second line towards inner margin ; cell-spot black ; fringe deeper red.

*Hindwings* : with costal area pale ochreous : a postmedian bent line, darker on the inner half, followed between veins 2 and 3 and 3 and 4 by small pale spots edged outwardly with darker.

Underside paler, brighter pink mixed with yellowish, freckled with fuscous and reddish ; the cell-spots black ; forewings with inner margin whitish, and a yellowish fascia from inner margin beyond outer line as far as vein 4. Face and palpi deep red ; thorax and abdomen like wings ; vertex paler.

Expanse of wings : 28 mm

One ♂ from Chandkhira, Sylhet.

This must be very closely related to *O. muscivolor* Warr. from the Karen Hills, the type of which is a ♀ in Mr. Elwes' collection, but I can scarcely think them identical.

287. *Platycerota crinita* sp. nov.

*Forewings* : reddish testaceous, speckled with black ; lines red-brown ; first at one-fourth, vertical, slightly waved and bent at costa ; second from apex to middle of inner margin, straight and oblique, followed by two white or whitish oval

spots obliquely beneath each other at apex ; a small black cell-dot ; fringe concolorous, the basal half darker, beyond a fine dark marginal line.

*Hindwings* : with minute black cell-spot and central red-brown line ; the marginal half paler, less reddish.

Underside the same, but paler and duller. Face, palpi, and vertex red-brown, as is the base of costa of forewings ; thorax and abdomen concolorous with wings.

Expanse of wings : 36—39 mm.

Two ♂♂ from North Luzon, 5000—6000 feet (Whitehead).

The two species placed together by Hampson under *Platyceerota* (*Faun. Brit. Ind. Moths*, Vol. III, p. 155) differ from each other in the neurulation, and the present species differs from both : vein 11 of forewings anastomoses with 12 ; 7, 8, 9, 10 are stalked together ; 10 anastomoses with 11 after its anastomosis with 12, and again anastomoses with 8 and 9. A further point of difference consists in the presence of a tuft of hair on the submedian nervure of the forewings of the ♂ on the underside.

### **Procypha** gen. nov.

*Forewings* : elongate, with costa straight till near before apex, then suddenly deflexed ; apex square, bluntly subfalcate (there being a small tooth at the end of vein 7, below which the hindmargin, which is shortly vertical above it, is faintly incurved), bulged below middle, and again rather incurved before anal angle ; inner margin sinuous, convex at base and anal angle, with a long concavity between ; the anal angle lobed.

*Hindwings* : with costa sinuate ; strongly shouldered near base, then concave, and convex again to end of the costal vein, from which to vein 7 it is strongly concave, the apex at vein 7 being acutely prominent ; the hindmargin below it like that of forewings.

Palpi porrect, hairy, the third joint short ; antennae of ♀ moderately pectinated.

*Neurulation* : forewings, cell about half as long as wing ; discocellular vertical above, oblique below ; first median at five-sixths, second only just before end of cell, third from the end : radials normal ; last three subcostals stalked ; first two coincident and free. Hindwings with costal approximated to subcostal for but a short distance, then abruptly curved away ; the two subcostals and last two medians from the ends of cell ; discocellular strongly inangulated. Ovipositor of ♀ exerted.

Type : *Procypha maculosata* sp. nov.

Allied to *Proboloptera* Meyr. from Australia.

### 288. **Procypha maculosata** sp. nov.

*Forewings* : dull brick-red, with a few scattered black scales ; costa grey at base ; first line blackish, but obscure and interrupted, from costa at one-third to inner margin at one-fourth, angled in cell, thence oblique, with dark dots on veins ; exterior line at two-thirds, starting from a black blotch, angled on vein 6, thence oblique to inner margin beyond middle, with two confluent black blotches on it, one on each side of vein 3 ; submarginal line denoted by two black blotches on either side of vein 6 and a large blotch at anal angle.

*Hindwings* : without lines ; with a few dark atoms, and a large black blotch beyond cell ; fringe of both wings brighter red.

Underside the same. Face, palpi, and abdomen above reddish ; thorax and abdomen below paler.

Expanse of wings : 52 mm.

One ♀ from the Cape of Good Hope.

289. *Sirinopteryx rufivinctata* Wlk. ab. *interfascata* nov.

In this example the cell of forewings and the interspaces between the veins beyond the middle of both wings are neatly filled up with fawn-coloured scales, the veins themselves remaining broadly yellow: the fringe also is fawn-coloured beyond the yellow basal line. This suffusion is rather more extensive in the left forewing than in the right, whereas in the hindwings the reverse is the case. Underside equally suffused with the upper.

One ♀ from the Khasias, May 1896.

An example of the common *Rumia crataegata* Linn., now in the Tring Museum, affords another illustration of this individual development of coloration.

290. *Zamarada auratisquama* sp. nov.

*Forewings*: semihyaline, densely striated with transverse grey-green scales; the costa gilded yellow, with fuscous marks; marginal area bright red-brown on a yellow ground, its inner edge pale yellow and much waved, and with a paler yellowish submarginal wavel line; fringe yellowish, chequered with red-brown and blackish; a dark streak on discocellular.

*Hindwings*: the same.

Underside more strongly iridescent; the marginal area yellowish, with a red-brown submarginal fascia. Face and palpi ochreous; thorax dull green; abdomen greenish, with pinkish grey dorsal patches.

Expanse of wings: 30 mm.

One ♂ from Warri, River Niger, February 1896 (Dr. Roth).

291. *Zamarada flavicosta* sp. nov.

*Forewings*: pale iridescent green, with no basal dark scales; a small black cell-dot; a few dark scales on the veins towards and on inner margin; costa yellow, with a few dark scales; marginal area pinkish grey, separated from the hyaline space by a crenulated yellow-edged black line, sinuate outwards between veins 2 and 4, and traversed along its centre by a straight row of five red-brown triangles; two more above the anal angle; fringe yellow, with two dark marks below apex and three above anal angle, wholly yellow opposite the cell; marginal line subcrenulate, reddish brown.

*Hindwings*: the same, but with only three reddish triangles below the costa towards apex.

Underside with the marginal area dark purplish fuscous, almost black. Face, palpi, thorax, and abdomen ochreous; the last tinged with reddish grey.

Expanse of wings: 30 mm.

One ♂, two ♀♀, from Warri, River Niger, February 1896 (Dr. Roth).

One of the ♀♀ has the sinus in the forewings bilobed and shallow: the ♂ and the other ♀ show a deep and broad angulation; but this is probably only an accidental difference.

292. *Zamarada nasuta* sp. nov.

*Forewings*: pale yellowish green, iridescent and transparent: the costa yellowish; a red-brown patch at base; hindmargin purplish grey, with darker specks, bounded by a dark line from three-fourths of costa to three-fourths of inner



margin, but forming a deep sinus between veins 2 and 4 nearly reaching to hindmargin: a submarginal wavy iridescent line, denticulate below costa and inwardly edged by a red-brown shade; marginal line finely black, interrupted at the veins: fringe bright rufous: a small black cell-dot.

*Hindwings*: the same.

Underside like upper, but the fringes yellower. Head and thorax red-brown: body wanting.

Expanse of wings: 17 mm.

One ♀ from Lokoja, River Niger (A. Cook).

#### 293. *Zamarada protrusa* sp. nov.

*Forewings*: pale translucent green; the costa reddish ochreous, spotted with black; a black cell-dot; outer line black, from subcostal at two-thirds, waved to vein 4, then suddenly outcurved and rounded near margin, returning along vein 2 and reaching inner margin at two-thirds; marginal area dull brick-red, dusted with black scales, traversed by an interrupted row of brighter red lunules; basal line of fringe dark brown; fringe reddish.

*Hindwings*: the same.

Underside vitreous; marginal area blackish, except apex of forewings, which is ochreous. Face, palpi, thorax, and abdomen reddish grey.

Expanse of wings: 26 mm.

One ♀ from Akassa, River Niger.

#### 294. *Zamarada undimarginata* sp. nov.

*Forewings*: very faintly greenish hyaline, the costa bronzy brown; marginal third nearly uniformly dark brown, with an obscurely darker denticulate shade traversing the middle, edged internally by a wavy black line with lustrous outer edge, the line forming two rather more prominent sinuses between veins 2 and 4; fringe brown, with a thick darker line at base.

*Hindwings*: with the brown margin narrower, the dark line less regularly waved and between veins 2 and 4 approaching the margin, forming a bilobed broad sinus; no cell-spots.

Underside exactly the same. Face, palpi, and antennae dark brown; thorax and abdomen concolorous with wings; anal segment of abdomen brown.

Expanse of wings: 38 mm.

One ♂ from Akassa, River Niger.

#### 295. *Zamarada vulpina* sp. nov.

*Forewings*: pale iridescent green; the costa, base, inner margin, and broad marginal area bright rufous; the latter with a deeper rufous internal edge, forming a rounded sinus between veins 2 and 4; a yellowish wavy submarginal line; fringe and small cell-spot rufous.

*Hindwings*: the same.

Underside with the marginal area gilded yellow; a red-brown irregular fascia along its inner edge. Head, thorax, and abdomen all rufous.

Expanse of wings: 22 mm.

One ♂ from Warri, River Niger, February 1896 (Dr. Roth).

## SUBFAMILY PROSOPLOPHINAE.

**Arcina fulgorigera** Wlk. XXVI. p. 1744.

This species and genus were overlooked by Mr. Meyrick in his paper on the *Silidosemidae*, published in the *Proceedings of the Linnean Society of N. S. Wales*, 1891 (II. 6). The genus is allied to *Chlenias*—not *Chesius*, as Walker states—but is scarcely identical. The antennae of the ♂ are *strongly* pectinated: Walker says “very slightly” pectinated; but his type is a ♀, not, as he made it, a ♂. In the forewings veins 10 and 11 are free, 7, 8, 9 stalked, 6 being also shortly stalked with them. The thorax is strongly crested, as in *Chlenias*. The ♂ now before me (labelled N. S. Wales) shows no *silvery* edging to the lines; it should rather be described as pale grey.

**Euomoea** gen. nov.

*Forewings*: elongate; the costa faintly sinuate, arched towards base, and slightly incurved before apex; apex rectangular; hindmargin strongly curved and oblique below, the anal angle obtuse.

*Hindwings*: with fully rounded hindmargin.

Antennae of ♂ bipectinated to apex; palpi porrect, rather decumbent, reaching a little before forehead; tongue present.

*Neuration*: forewings, cell three-fifths of wing; the median vein upcurved towards extremity of cell; discocellular vertical: first median at three-fourths, second shortly before end, third from end of cell; radials normal: first and second subcostals stalked; third, fourth, and fifth stalked; second anastomosing with and becoming coincident with stalk of third and fourth. Hindwings with costal approximated to subcostal for half the cell: subcostals from top end of cell.

Type: *Euomoea unilineata* sp. nov.

Related to *Prosoplopha* Led.

296. **Euomoea unilineata** sp. nov.

*Forewings*: yellowish ochreous, with numerous short brown striae and atoms; some patches of dark brown scales from base along the submedian fold; a minute brown dot in cell, and a black cell-spot at the end; a brown straight oblique line from apex to beyond middle of inner margin, not marked below the submedian vein; fringe rather darker than the ground-colour.

*Hindwings*: except hindmargin, paler, with a dark cell-spot.

Underside deeper yellow, with only the cell-spots marked; the dark oblique line showing through. Palpi and forelegs brown; face, head, thorax, and abdomen concolorous with wings.

Expanse of wings: 32 mm.

One ♂ from Zomba, Upper Shiré River, 3000 feet, December 1895 (Dr. P. Rendall).

**Microligia** gen. nov.

*Forewings*: very long and narrow; the costa straight, slightly indented beyond middle; apex produced, blunt; hindmargin well curved.

*Hindwings*: ample, the hindmargin slightly indented opposite cell and protuberant in middle.

Abdomen in ♂ long and slender, the anal tufts prominent : forehead rounded : palpi porrect, squamous, rostriform : antennae of ♂ with short thick pectinations : hind tibiae thickened, with four spurs.

*Neuration* : forewings, cell quite two-thirds of wing : the subcostal and median veins bent inwards towards their extremity ; first median at three-fourths, second before end, third from the end of cell : radials normal : last three subcostals stalked, second anastomosing with the stalk of the next two to form the areole, first free. Hindwings with costal approximated to subcostal for half the length of cell : first subcostal and second median from before the end of cell.

Type : *Micrologia dolosa* sp. nov.

#### 297. *Micrologia dolosa* sp. nov.

*Forewings* : silky whitish, with very fine grey irroration : a rather large dark grey cell-spot, and a dark grey oblique apical streak just reaching the lower angle of cell : fringe whitish.

*Hindwings* : silky whitish, without darker dusting.

Underside of forewings dull grey, of hindwings whitish. Head, thorax, and abdomen all white.

Expanse of wings : 26 mm.

One ♂ from the Cape of Good Hope.

### FAMILY PYRALIDAE.

#### SUBFAMILY PYRALINAE.

#### 298. *Angenora subochracea* sp. nov.

*Forewings* : ochreous, thickly sprinkled with rusty ochreous and more sparsely with dark fuscous scales ; first line at one-third, blackish, curved : second at two-thirds, parallel to hindmargin, approaching first line at inner margin, followed by a pale ochreous line which is edged outwardly with a blackish shade : cell-spot distinct, black : costa dotted with black and pale ochreous between the lines : fringe grey, with thin black line at base.

*Hindwings* : rather paler, with two curved dark lines, and suffused with rusty ochreous towards hindmargin ; fringe as in forewings.

Head, thorax, and abdomen concolorous with wings. Underside dull ochreous, dusted with fuscous, especially along costa of forewings ; a thick dark central line to both wings.

Expanse of wings : 26 mm.

One ♂ from Weenen, Natal.

#### 299. *Hypsopygia sanguinalis* sp. nov.

♂. *Forewings* : brilliant rosy : the two lines pale yellow, at one-third and two-thirds, starting from triangular pale yellow costal spots : the first vertical, the second slightly bent, to inner margin close before anal angle : costa and hindmargin deeper red ; fringe yellow, with red basal line.

*Hindwings* : the same, with two fine curved and wavy pale yellow lines : the basal half of wings suffused with deep orange-red.

Head, thorax, and abdomen concolorous with wings. Underside duller rosy, with the markings faint.

Expanse of wings : 18 mm.

One ♂ from Weenen, Natal.

Differs from *costalis* Fabr. in being pure red without a trace of darker scales, the red running through to hindmargin without a yellow border, in the fringes having a red basal line, and in the much smaller size of the triangular costal spots.

### 300. *Peucela zonalis* sp. nov.

*Forewings* : rufous grey, finely dusted with black atoms ; costa somewhat coarsely dotted with blackish ; first line at one-fourth, indistinct on costa, thick towards inner margin, dark brown, slightly waved ; second line at three-fourths, pale, edged with dark brown on either side, minutely wavy, and forming a short angle inwards below the subcostal and above the inner margin, between which it curves slightly outwards ; a row of dark marginal dots ; fringe rather paler, with two darker lines ; cell-spot indistinct.

*Hindwings* : redder, with two dark curved lines, approximated on inner margin, the outer somewhat dentate and edged outwardly with paler, the inner edged inwardly with paler ; fringe and margin the same as in forewings.

Head, thorax, and abdomen reddish grey ; the segments of the latter with darker edges, and with a black ring near base and in the ♂ also before apex, which is paler. Underside dull reddish, mottled with fuscous ; both wings with dark outer line.

Expanse of wings : ♂, 22 mm. ; ♀, 20 mm.

Both sexes from Weenen, Natal.

One ♀ is much paler than the ♂, having very few dark scales on an ochreous rufous ground-colour. On the other hand, a second ♀ has the whole marginal area and the lower half of the central area of the forewings strongly brown-black, leaving the basal area and costal portion of central area dirty ochreous, while the anal region of the hindwings is also broadly blackish. This form may be called *ab. obscurata*. The black belt at base of abdomen will, however, always serve to distinguish the species.

### 301. *Pyrallis dissimulans* sp. nov.

*Forewings* : greyish fuscous ; the basal and marginal areas dull chocolate-brown ; costa dotted with white from base to outer line ; the edge of the dark basal patch at one-third, oblique, parallel to hindmargin, followed by a white line and a diffuse whitish patch, neither reaching the costa ; a darker cloud beyond the cell ; outer line at five-sixths, white, curved outwards in middle, and ending at the anal angle ; fringe grey, with a broad dark grey basal line, the tips whitish below the apex.

*Hindwings* : grey ; the central area whitish grey, edged by paler lines with dark margins ; fringe as in forewings.

Head, thorax, and abdomen fuscous grey. Underside much paler, dusted with fuscous, and with the markings all more or less represented ; the hindwings with the two curved lines well marked, broad and diffuse.

Expanse of wings : 20 mm.

One ♂ from Weenen, Natal.

This species reminds one of small examples of *farinalis* Linn. and *domesticalis* Zell. ; the straight edge of the basal patch will at once distinguish it. The patagia are well developed, reaching well behind the thorax.

302. *Scotomera tripartita* sp. nov.

*Forewings* : pale reddish brown over the basal, dark brown in the central, and pale reddish grey in the marginal area ; first line before one-third, dark brown, outwardly oblique and slightly wavy, reaching inner margin in the middle, edged towards the base with pale ; second line at three-fourths, dark brown, edged outwardly with pale, oblique inwards parallel to hindmargin as far as the first median, then vertical to inner margin before anal angle ; the central area thus twice as wide on costa as on inner margin ; costa between the lines dark, dotted with whitish ; a dark cell-spot ; the pale marginal area reddish along costa ; a marginal row of black spots ; fringe reddish grey, with darker line near base.

*Hindwings* : dull whitish, with traces of a dark postmedian line from costa, which vanishes in middle of wing ; a dark marginal line before the fringe, which is paler towards anal angle.

Head, thorax, and abdomen reddish grey. Underside pale straw-colour, with the darker central portions showing through ; costa of both wings thickly dusted with reddish fuscous scales ; marginal dots and fringe as above : a cell-spot on hindwings.

Expanse of wings : 20 mm.

One ♂ from Weenen, Natal.

The only example has no tongue visible, but in all other respects it agrees so exactly with *Scotomera* that I have no doubt this is an accidental mutilation.

***Sphalerosticha* gen. nov.**

*Forewings* : with costa straight or incurved ; apex blunt ; hindmargin slightly oblique and curved ; anal angle well marked.

*Hindwings* : triangular, the hindmargin nearly straight, the inner margin long.

Vertex and patagia densely and coarsely scaled ; ocelli absent ; tongue well developed ; labial palpi obliquely porrect, squamous, the third joint distinct ; maxillary palpi invisible ; antennae (♂) quite shortly ciliated, the shaft thickened towards base, the basal joint inflated.

*Neuration* : forewings with cell half as long as wing, the discocellular nearly vertical ; first median from a little before lower angle, second and third from the angle ; lower radial just above it ; upper radial well below upper angle of cell ; last subcostal from the upper angle, *free*, and slightly curved downwards, as is likewise the upper radial ; third and fourth subcostals stalked from the angle ; second from close before the angle, first some distance before it. Hindwings with the discocellular very oblique below ; the costal *free* ; the two subcostals from upper angle of cell ; first median at three-fourths, second shortly before the angle, third and radial from the angle.

Type : *Sphalerosticha oblunata* sp. nov.

The neuration in the forewings is abnormal, the fifth subcostal being free, as in the *Pyraustinae* ; but instead of curving upwards close to the fourth, it is bent downwards away from it.

303. *Sphalerosticha oblunata* sp. nov.

*Forewings* : greyish white, evenly powdered with dark scales ; costa exceedingly minutely dotted with black ; first line indistinct, blackish, before one-third, vertical



and slightly wavy : second line at five-sixths, blackish, evenly concave outwards, followed by a pale whitish line which expands along costa to apex ; marginal space filled in with chocolate-brown and with a row of small black marginal dots ; fringe reddish, with a fine pale basal line ; cell-spot blackish.

*Hindwings* : whitish, rather glossy, with a dark cell-spot, and faint sinuous line from beyond middle of costa to inner margin above anal angle ; a marginal row of black spots : fringe whitish, tinged with reddish towards apex.

Head, thorax, and abdomen concolorous with forewings. Underside whitish : forewings with some dark scales in the cell, and with the veins pale over the chocolate marginal space : hindwings with dark cell-spot, a small spot beyond it, another on costa at beginning of the sinuous line, and a short mark below the first median within the sinuous line.

Expanse of wings : 24 mm.

One ♂ from Weenen, Natal.

### **Sphinctocera** gen. nov.

*Forewings* : with costa straight : apex rectangular ; hindmargin vertical above, oblique below the middle.

*Hindwings* : broad, with hindmargin well curved and both angles rounded.

Ocelli present : tongue fairly developed : labial palpi long, rostriform, decumbent, thickly scaled, the third joint not distinguishable from the second : maxillary palpi minute, filiform : forehead with diffuse tuft of hairs ; antennae in ♂ thick, lamellate, somewhat flattened ; the basal joint long and thick, the shaft articulated to it, and bearing a small tooth on the upperside at a distance equal to the length of the basal joint.

*Neuration* : forewings, cell half as long as wing ; the discocellular angulated ; first median at three-fourths, second at five-sixths ; third and lower radial close together from lower angle of cell ; upper radial and last subcostal from upper angle : third and fourth subcostals shortly stalked out of the fifth ; first and second free. Hindwings with the two subcostals shortly stalked, the first anastomosing shortly with the costal.

Type : *Sphinctocera crassisquama* sp. nov.

### 304. **Sphinctocera crassisquama** sp. nov.

*Forewings* : glossy dark grey, the scales coarse and broad, dark grey with pale tips : first line at one-fourth, bent in middle, diffuse, dull red ; second line at three-fourths, parallel to hindmargin, dull red, with a whitish dash on costa and a few white scales above inner margin ; cell-spot dull whitish : the whole central area is slightly sprinkled with reddish scales ; marginal area and fringes wholly dark grey.

*Hindwings* : dull ochreous whitish, with dark grey fringe and a dark discal spot : towards the hindmargin the wing is dusted with greyish, and there is a faint trace of a paler curved submarginal line.

Head, thorax, and patagia dark grey, with a sprinkling of red scales ; abdomen greased, probably pale like the hindwings. Underside dingy fuscous grey, the hindwings more ochreous : outer line of forewings pale, of hindwings reddish edged with pale.

Expanse of wings : 26 mm.

One ♂ from Weenen, Natal.

## SUBFAMILY ENDOTRICHINAE.

305. *Callinaia flavimargo* sp. nov.

*Forewings* : snow-white ; a black dot at middle of base, and another at base of costa ; a double curved orange line at one-third, with a black costal dot on the outer arm and a black dot below the median on each ; second line also double, orange and oblique outwards to beyond cell, curved inwards below, and rusty brown-black, slightly wavy, crossed by a horizontal orange dash from discocellular to hindmargin ; marginal space below it darkened with fuscous scales ; extreme hindmargin narrowly orange, slightly broader at the apex, where it is edged inwardly by a thin curved black line ; fringe with basal half yellowish, apical half white.

*Hindwings* : with the first double line blackish, not orange, nor reaching the costa ; the second from anal angle, with the outer area diffuse, the inner formed by a short black streak and a succession of wavy dots ; marginal space and fringe as in forewings, but with no black apical line.

Head, thorax, and abdomen white, the last with a black dot on back of second segment ; labial palpi with a black spot externally at apex of third joint ; maxillary with one at apex of second. Underside whitish, with traces of a curved subterminal line on both wings outside the line of the upperside ; a dark dot on costa between the two on the upperside, and a dark spot on hindwing to represent the inner line.

Expanse of wings : 19 mm.

One ♀ from Weenen, Natal.

306. *Endotricha brunnea* sp. nov.

*Forewings* : pale grey, dusted and suffused with rusty brown ; costa uniformly dotted with black and pale ochreous, the pale interspaces geminated ; first line at one-third, oblique, parallel to hindmargin, black, followed by a silvery white line ; these lines are slightly crooked at the median vein and do not quite reach the costa ; second line close to hindmargin, bent outwards in middle and faintly edged with blackish ; central area with a blackish shade, which forms a more conspicuous spot below the median vein ; the veins towards hindmargin pale ; a series of black marginal spots ; fringe grey, with thick dark line towards base.

*Hindwings* : paler, less brown, with two thick dark lines, close together on inner margin and wide apart at costa ; each line with a paler centre ; marginal spots and fringe as in forewings.

Head, thorax, and abdomen concolorous ; the latter with a black ring corresponding to the inner line of hindwings. Underside pinkish grey, dusted with darker ; the costa blackish, with the pale spots larger ; hindwings with two coarse black lines.

Expanse of wings : 17 mm.

One ♂ from Weenen.

The patagia only of average length. Possibly a form of *E. consobrina* Zell.

## SUBFAMILY PYRAUSTINAE.

307. *Lygropis impunctata* sp. nov.

*Forewings* : deep yellow, glossy, without markings of any kind.

*Hindwings* : the same.

Head, thorax, abdomen, and underside all yellow.

Expanse of wings : 26 mm.

A few from Weenen.

Nearest to *nigricornis* Hmps. from Abyssinia, but that species has the antennae black.

SUBFAMILY SCHOENOBIINAE.

308. *Cirrhochrista argentiplaga* sp. nov.

*Forewings* : pale yellow, with orange-red suffusion along costa at base and before apex, and less strongly in the marginal area; a large irregular-shaped oblong silvery blotch in the disc, bordered by the orange-red lines; the first from costa beyond one-third, straight and inwardly oblique to below the submedian vein, then bent at a right angle to inner margin before middle; second from two-thirds, oblique outwards to beyond cell, then parallel to hindmargin, forming a sinuous curve as far as the submedian fold, thence straight to inner margin near first line; the costal portion of this blotch is suffused with yellow ground-colour, and on the discocellular is a yellowish blotch mixed with orange-red scales; fringe yellow, with a broad bright orange-red line at base, and a duller red line in the centre.

*Hindwings* : yellow, suffused with dull smoky fuscous as far as a curved dull brown submarginal line, beyond it unsuffused; fringe pale yellow, with a red basal spot just opposite the cell.

Face, palpi, and antennae orange-red; thorax and abdomen yellow, washed with orange, especially the shoulders and front of thorax. Underside glossy straw-colour; the disc of both wings suffused with reddish fuscous.

Expanse of wings : 34 mm.

One ♂ from Weenen, Natal.

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## NOTES ON PALAEARCTIC BIRDS AND ALLIED FORMS.

By ERNST HARTERT.

THESE notes, which I hope to be able to continue at some future time, are only in a few cases intended to settle questions finally—as far as this is possible at all. They contain suggestions for future work. They will, I hope, show that a great deal remains yet to be done in Palaearctic, and even European, ornithology. Some of these notes are chiefly intended for British ornithologists, because it seems that many of our friends on this side of the Channel have not lately paid the same attention to the interesting geographical subspecies of our birds which a number of Continental ornithologists have recently bestowed on them. Very few species of European birds are so thoroughly studied in *every* direction that nothing remains to be found out, to be corrected, to be modified, or to be completed, may it be in their distribution, their local subspecies, their nidification, their habits, their food, their nomenclature and classification, or their anatomy and structure. This may be keenly admitted, notwithstanding all the admirable works written on European ornithology, from Naumann and Macgillivray, from the commencement of Dresser's great work and others, up to our days, when we find "observers" and egg-collectors everywhere, but very few collectors of skins! Or can any one deny the truth of my statement, if he bears in mind that British ornithologists have not hitherto understood the different forms of the nut-crackers and tree-creepers, if in a recent meeting of the B. O. C. there were different opinions about the tree-creepers having a song or not, if widely different opinions are dilated on about the question whether a bird can or cannot alter its colour without a moult? On the other hand, I must also admit that often questions about the habits and notes of birds would not be discussed if the opponents had read what Naumann wrote on the question. Many "peculiarities" of habits, migration, different colorations and proportions would be explained if the local forms of birds were more accurately studied; but this must chiefly be done in their breeding-places, not on migration, when the birds are far away from their often unknown homes. If we know the differences between all the local forms, then we shall often be able to say whence a bird shot on migration came, but otherwise not. What is chiefly wanting, even in the largest collections, is a good material of skins from *all* the different countries. Without good series from *all the different* localities, the questions of the various subspecies cannot be settled.

## THE GENUS NUCIFRAGA.

Although some of the old authors had already recognised differences in the bills of the European nut-crackers, C. L. Brehm was the first to clearly distinguish between the stout-billed and the slender-billed form, and to give names to them. He named them *Nucifraga brachyrhynchos* and *Nucifraga macrorhynchos*, in 1823. Very little attention has generally been paid to these forms for a long time after, and one of the reasons for this is, I believe, the bewildering number of names afterwards bestowed on nut-crackers by C. L. Brehm, who, in addition to his *N. brachorhynchos* and *N. macrorhynchos*, subsequently named a *N. platyrhynchos*,

*hamata*, *minor*, *arquata*, and *alpestris*. Of these *arquata* and *alpestris* are "nomina nuda" without any use. *hamata* and *minor* seem to refer to somewhat aberrant specimens of the slender-billed form, *platyrhynchos* is evidently a thick-billed bird. Most of these are named from single birds, evidently shot on migration or when astray, so that even their home is quite uncertain. With regard to the proper home of *N. brachyrhynchos* and *N. macrorhynchos*, C. L. Brehm was also quite uncertain, but his descriptions are so clear that we cannot be in doubt about the meaning of his names. In spite of Brehm's puzzling multiplication of forms in later years, there were always clear-headed ornithologists who had material enough to recognise the differences between the two forms first separated in 1823. In 1845 Monsieur de Selys Longchamps separated two forms, but he evidently did not have the two before him, his alleged differences being individual aberrations.

In the same year (1845) Mr. R. Fisher figured and described both forms very well in the *Zoologist*, but it must be admitted that nothing like a series from breeding-places was known at the time.

The year to bring them to the front once more, and effectually, was 1887. In that year Professor Rudolf Blasius wrote an excellent monograph on the European forms of *Numenius* in the *Ornis*. The great immigration into Europe of the slender-billed form in 1885 evidently gave rise to this valuable work. In the same year appeared my article on the "Birds of East Prussia" (*Mittheilungen des Ornithologischen Vereins in Wien*), in which I very distinctly distinguished between "*N. caryocatactes brachyrhyncha*," the resident form breeding in East Prussia, and "*N. c. macrorhyncha*," the Siberian form, occurring in East Prussia and other parts of Germany as a migrant from autumn to spring. In my article on *N. c. brachyrhyncha*, however, is a mistake, the home of *N. caryocatactes macrorhyncha* being said to be the Alps. The somewhat contradictory remark under "*N. c. brachyrhyncha*," however, points to its being a *lapsus calami*. My differentiation between the two forms is also repeated in *Ibis*, 1892, pp. 369, 370. I collected a large series in East Prussia in the breeding-places, where I also found nests and eggs, and all the specimens from No. 50 to No. 60 mentioned on pp. 480-483 in *Ornis*, Vol. II., were shot and skinned by me, though no mention of it is made.

Both Professor Blasius' work and my remarks on the nut-crackers were unfortunately burdened with most unnecessary synonyms. We both considered Brehm's names *brachyrhynchos* and *macrorhynchos* (meaning short-billed and long-billed) not very appropriate, because it is the stoutness and slenderness rather than their shortness and length that distinguishes them, and Professor Blasius substituted and used for them the more fitting terms *pachyrhynchus* and *leptorhynchus*, meaning stout-billed and thin-billed. I suggested mildly that the names *crassirostris* and *tenuirostris* were more appropriate; but I did not (even worse!) use them in the headings of my articles, nor at any time afterwards. It is needless to say that neither of our names can be used.

Since 1887 it may be said that German ornithologists generally have recognised the two forms, and in English works on ornithology I find two notes—that is, one of Seebohm in *Ibis*, 1888, pp. 236-241, and one in his *Birds of the Japanese Empire*, p. 99. Seebohm there declares that there is, in his opinion, not a western and an eastern form, but an arctic and a temperate form, and he unites the Japanese form with the European one (the *brachyrhynchos* of Brehm), while Blasius said it was the same as the Siberian one, *i.e.* Brehm's *macrorhynchos*. Certainly the latter statement is wrong, but it cannot either be united with the European form,



as will be shown hereafter, nor can one form be said to be more arctic than the other. In 1888 a very elaborate article on the *Nucifraga* of Tschusi-Schmidhoffen appeared in the *Verh. zool. bot. Ges. Wien*.

It is somewhat surprising that, in spite of all these more or less accurate statements, British ornithologists have not yet all accepted the two forms. But in 1894 Professor Newton (*Dictionary of Birds*, p. 647) repeated his former statement that, "as in the case of the Huia (*Heterolocha acutirostris*), the considerable differences in the form and size of the bill of examples of this species are now supposed (*sic*) to depend on the sex—that of the cock being stout and short, while in the hen it is long and thin." This statement is absolutely wrong. I have now before me a fine series collected by me in East Prussia for the Homeyer collection, now in Braunschweig, and kindly lent me by Professor Wilhelm Blasius, and a number of Siberian nut-crackers, and in neither of the two forms is there any remarkable difference in the size of the beak in the sexes. Perhaps Professor Newton had before him the two species, *i.e.* a *male* of the European one and a *female* of the Siberian one, or the differences which he noticed were such slight individual differences as are always found in birds.\*

Again in the same year (1894) Dr. Sharpe, in *A Handbook to the Birds of Great Britain*, Vol. I. p. 17, says: "Two forms of nut-cracker in Europe are recognised by many naturalists, *N. caryocatactes*, and a short-billed form, *N. brachyrhynchus*, the supposed differences between which we have never been able to appreciate." Be this as it may, the nomenclature might have been right (*N. caryocatactes* and *N. brachyrhynchus* being the same thing), but in fact *they differ at a glance* by the form and size of the bill, the extent of white on the tips of the rectrices, and general size. The reason why ornithologists have found it so difficult to recognise the two is, I believe, that the one often invades the countries inhabited by the other. Therefore in museums we find, or should find, *both* forms from Germany, parts of Russia, Austria, France, etc. When, however, clear-headed field-ornithologists collect and observe them, it will be found that the stout-billed form *alone* breeds in Scandinavia, Lappland, Bornholm, the Russian Baltic provinces, and East Prussia, as well as, in a very slightly differentiated form, the Alps, the Carpathian and Sudetic Mountains, and perhaps the Pyrenees. This bird is not a migrant. In East Prussia it never leaves its home, and is not even, as a rule, found out of the very forests where it breeds. In the Alps it descends to lower hills if too deep snow covers its haunts; but also there it can on no account be called a migrant. On the other hand, the slender-billed form is an inhabitant of Siberia, where it breeds, and whence it wanders far and wide. Single individuals of the latter form are very often observed in Europe, and it is probable that many wander so far every year, but in certain years, notably 1754, 1802, 1844, 1856, 1859, 1864, 1885, 1896, they appeared in extraordinary numbers.

The natural history of these two forms of *Nucifraga* clearly shows that many problems regarding species and subspecies in ornithology cannot be solved by the cabinet-ornithologist alone. It further shows the importance of exact labelling, still (incredible, but true!) neglected by some collectors. In fact, labels like "Germany, 1866," are entirely insufficient. We may, and sometimes must, be content with tradeskins without exact locality, such as Japanese, Bogotá, and New Guinea skins; but, though they may be very valuable at the time, they are only

\* See also Stevenson, *Birds of Norfolk*, p. 284, and the comment to it by A. G. Butler in *British Birds, their Nests and Eggs*, London, 1897, p. 143 and footnote!

meagre substitutes for the properly labelled examples, which every museum official should try to acquire in their places in time. In fact, it is most important that collectors should add either on the labels or in a diary, besides the exact localities, dates, sexes, and colours of bare parts, which are generally seen on proper labels, whether the birds were breeding or appeared in flocks as migrants, whether they frequented the pine- or fir-woods, the beech-woods or the parks and gardens, etc., or that they should publish such observations as they had the fortunate opportunity to make.

I have hitherto only spoken of two forms, namely, the thick-billed form, the *N. caryocatactes* (L.), afterwards renamed *N. brachyrhynchos* by Brehm, and the slender-billed, *N. macrorhynchos* of Brehm. This is not far wrong indeed, but in 1889 Dr. Reichenow called attention to the fact that the majority of specimens from Scandinavia, Lappland, and East Prussia were paler on the back and head than those from the Central European Mountains, and he therefore named the latter *N. relicta*. Dr. Reichenow also said that the Alpine form had smaller white spots on the back, but I find that this is not generally the case, but merely an individual character. Also the paler coloration varies a good deal, but northern specimens are always rather pale above, while those from Switzerland and from the Carpathian Mountains are very seldom so pale. It is therefore advisable to keep the latter apart under Reichenow's name *N. relicta*, though the form is only recognisable if a good series is compared, and not always constant, and though the "nomen nudum" *N. alpestris* of C. L. Brehm might have been accepted for it, to simplify the already encumbered synonymic list. The two other forms are mostly very constant. I have not yet seen an intermediate one from Europe, as far as the size of the beak goes; but occasionally the white tips on the tail vary, and some Asiatic examples vary also very much in the size of the beaks. The alleged difference in the size of the white spots above and below, which I have not yet mentioned, is very variable.

As I said before, the Japanese form of nut-cracker has been considered by Seebohm to be the same as the European thick-billed form. Stejneger, however (*Proc. U. S. Nat. Mus.* 1888, pp. 425-432), declares that the Japanese birds belong to the slender-billed form. The author also differs from Seebohm in considering that the slender- and stout-billed forms are eastern and western, and cannot be called "arctic" and "temperate." Though in this latter statement Stejneger is undoubtedly right, he is exactly as wrong as Seebohm, who unites the Japanese form with the European form, if he unites it with the Siberian bird. It is true that Stejneger's view is more sensible with regard to the distribution of these birds, and that he already mentioned the possibility of somebody separating the Japanese form in future as a further subspecies. This latter course is undoubtedly the only right one. The Japanese nut-crackers have the beaks midway between those of the two other forms, though often more resembling those of the thick bills. In all other characters, however, except the form of the bill, the Japanese form is closest to the Siberian form: the white tips to the rectrices are large: the upper tail-coverts, which are mostly uniform in *N. caryocatactes caryocatactes* and nearly always finely spotted with white in *N. c. macrorhynchos*, are mostly finely spotted with white in

#### ***N. c. japonicus* subsp. nov.,**

as I name the Japanese form. The spots below are very large in *N. c. japonicus*, and mostly with a creamy tinge, the brown colour above very dark.

There is no doubt that these three forms must be kept separate, for to say that they are alike is wrong. It is, however, possible, and even probable, that several more local forms exist in Central Asia, where enormous mountain-ranges remain unexplored, or in parts of Northern Asia. In the Seeböhm collection, now in the British Museum, is a skin labelled as being found in the Tian Shan, which has a long wing (185 mm.) and a stout and powerful bill, though only 38 mm. long from the frontal feathering to the tip. It belongs very likely to a local thick-billed mountain-form. Then there is a skin from the Kurile Islands which I take to belong to *N. c. japonicus*. Its wing is short, only 173 mm. One from Peking has the wing 178 mm., the bill only 35 mm. long, and not thicker than in Siberian examples. I have not been able to examine specimens from the Pyrenees, where it is said to breed !

I append a synopsis of the old-world species and subspecies of the genus *Nucifraga*, as far as established at present. With regard to the nomenclature used here, I refer my readers to my article in No. 523, 1897, of the *Zoologische Anzeiger*. With regard to the gender of the name *Nucifraga*, Brisson, who founded the genus, certainly used it as a feminine word, and this *modus* has generally been followed, though C. L. Brehm used it as a masculine, and this seems to be right, as it is clearly a masculine noun, such as *agricola* and many others. However, what are we to do, to follow the (often erroneous) usage of the founder of a generic name, or use it in its grammatically proper gender? The first would be preferable, as in cases of new and not classic words the gender may be uncertain. There now arises another question: are we modern purists in priority of nomenclature quite logical and consequent in adopting all names in their original spelling and yet altering the gender of the specific name to bring it in uniformity with the generic term? A difference exists already between some authors and others: some alter also the gender of nouns, such as *piscator*, *sibilotrix*, into *piscatrix*, *sibilotrix*; others alter only the gender if the names are true adjectives, if necessary, so as to bring them into conformity with the genus. I believe that all this is still a remainder of bygone times, when zoological nomenclature was entirely ruled by philological and etymological pretensions, and not by common sense and practical requirements alone, and when a "classisch gebildetes" word was often thought to be of greater merit than a new observation, and a "nicht classisch gebildetes" word a greater crime than an erroneous statement. I believe that if we only try to use all specific names (as well as generic ones) ENTIRELY UNALTERED, we shall find it less trouble and more convenient, and in no way illogical or against our classical feelings, if we simply regard them as names and not as adjectives—which is much preferable, as less than two-thirds of our specific terms are adjectively formed—see for example all the dedication-names and many others.

#### **Nucifraga** Brisson, 1860.

1. Rump and upper tail-coverts centred with the same large white patches as the back: *N. multipunctata* Gould. (Kashmir and Western Himalayas to Kumaon.)
2. Rump and upper tail-coverts, as well as middle of throat, lower abdomen, and sides of body, without white spots; lateral rectrices white for their apical half: *N. hemispila* Vig. (Himalayas, from the Sutlej Valley to Bhutan.)
3. Rump and upper tail-coverts with few and smaller white spots than the

back ; middle of throat, lower abdomen, and sides of body spotted like the breast : *N. caryocatactes* (L.).

- a.* Beak very stout : white tips to rectrices small ; upper tail-coverts mostly unspotted ; colour of upper parts generally very pale : *N. caryocatactes caryocatactes* (L.). (Scandinavia, Bornholm, Lappland, Russian Baltic provinces, and eastern parts of East Prussia.)
- b.* Beak, tail, and upper tail-coverts as in *a* ; colour of upper parts generally deeper brown : *N. caryocatactes relicta* (Rehw.). (Central European Mountains—Alps from west to east, Carpathians, Sudetic Mountains, Harz Mountains, ? Pyrenees.)
- c.* Beak slender and thin ; white tips to rectrices much larger ; upper tail-coverts mostly with fine white spots : *N. caryocatactes macrorhynchos* (C. L. Brm.). (Siberia, migrating into Europe—and perhaps parts of China ?)
- d.* Beak not so stout as in *a* and *b*, but stouter than in *c* ; upper tail-coverts and tail as in *c* : white spots below generally a little larger : *N. caryocatactes japonicus* Hartert. (Northern Japan, Kurile Islands.)

Besides the literature discussed at some length before, I wish once more to call special attention to Herr von Tschusi-Schmidhoffen's articles in *Ornis*, Vol. V. pp. 130-148, Tab. II., and in *Verh. zool. bot. Ges. Wien*, 1888, pp. 407-506, Tab. XI. These (and Professor Blasius' article) have provided us with such excellent notes and such *careful measurements* that I saw no need to repeat them here. Neither of the two authors thought it advisable to separate the Alpine form from the North-European one, and they are indeed hardly separable, though a good series shows in the mean the lighter colour of the former, and many of the Scandinavian birds have also larger beaks, though not always.

#### THE GENUS CERTHIA.

A much hunted ground, and yet not fully exhausted ! Since C. L. Brehm separated the German creepers into two species, one being *C. familiaris*, the other *C. brachydactyla* (which he always considered as a species and not as a subspecies), there has been, among Continental ornithologists, much controversy about these forms. The great Naumann strongly opposed Brehm's opinion about the creepers, and up to recent times the Continental ornithologists who recognised the two forms were very much in the minority, but quite recently I myself (since 1887 in print), Rudolf Blasius, Flöricke, Kleinschmidt, Deichler, Prazak, and others have recognised *C. brachydactyla*, and thus in Germany the truth is rapidly gaining ground. The truth is that the two are quite distinct, though the name "*brachydactyla*" is misleading, the coloration being, in my opinion, the principal character, and not the hind-toe but the *hind-claw* differing in length. *C. familiaris*, probably the same as the Scandinavian bird, is almost universally found in North-East Germany. In East Prussia I have frequently found the latter. In Hinterpommern E. von Homeyer never found *C. brachydactyla*, though he knew it from Vorpommern, where both occur (Homeyer *in litt.*). However *C. brachydactyla* has been found in East Prussia, but it is there very rare indeed, and specimens are, I think, not quite so typical as western ones, nor are western *C. familiaris* quite so pronounced as eastern ones. Near Wesel, on the Lower Rhine, I have shot many specimens, and they were *all C. brachydactyla*, as well as all the specimens I ever saw from Holland, including several skins kindly sent to the Tring Museum by Mr. Blaauw of 's Graveland. In most



parts of Germany, however, both forms occur near each other, as, for example, in Saxony and Hessen. In these countries the *C. familiaris* is chiefly found in the pine- and fir-woods, and in higher elevations, while *C. brachydactyla* is mostly met with in the valleys, on the oaks, willows, etc., and in the gardens. Kleinschmidt, Flöricke, and Deichler are convinced that *C. familiaris* is the bird of the pine- and fir-woods, while *C. brachydactyla* is the form of the leafy woods, parks, and gardens. On the whole they seem to be quite right in their conclusions, but this difference in the haunts of the two forms must not be considered to be an unchangeable law. *C. brachydactyla* was met with near Wesel in woods of pine and fir as well as in gardens; *C. familiaris* is often found among the beeches, and in East Prussia I have also shot it in mixed woods and gardens. On the whole *C. brachydactyla* is a more western bird, and it seems not to occur in high altitudes. Intermediate forms are evidently rare, but they occur. C. L. Brehm, E. F. von Homeyer, Kleinschmidt, and others have declared that the two forms can easily be distinguished by their call-notes. I have not had the opportunity to hear them, as they have had, close together, therefore I dare not speak on this point with confidence, nor is my ear musical enough to remember the exact height or depth of such a fine note many days afterwards, so as to exactly compare it with that heard on the later occasion, but I have a notion that the British creeper's note differs a little from that of any I have ever heard on the Continent. I recommend this for observation to those who have very fine musical ears. It would also seem, from the doubts that have been cast on the British creepers being able to sing, that they do not so often utter their feeble little though pretty song as their Continental cousins do. In any case the creepers sing everywhere in the spring, beginning in January or February, as all field-ornithologists must know.

Unfortunately I have not enough material of South-European *Certhiæ* to say whether only one or two forms occur there. However I have not seen typical *C. brachydactyla* from South Europe. All the *C. familiaris* I have seen from South Europe seem to have a little darker brown ground-colour above, but otherwise are not different from typical *C. familiaris*. They seem to agree with birds from Switzerland and from the mountain-ranges in Southern Germany. If it were possible to separate them, they would have to be called *C. familiaris costae* (Bailey) (1847). Brehm's name, *C. macrodactyla* (*Handb. Vog. Deutschl.* p. 208, 1831), is, like so many of Brehm's names, somewhat uncertain, and cannot reasonably be used for it, though Stejneger (*U. S. Nat. Mus.* 1887, p. 607) claims priority for it. *C. nattereri* Bonaparte (1838) is a *nomen nudum*, and when used again in 1850 it was preceded by *C. costae* of Bailey.

Crossing the Channel we find in Great Britain a form which is very closely allied to *C. brachydactyla*, but differs in being above darker, with the rump much more tawny rufous, and in having on an average distinctly shorter bills. They are, sometimes, not easy to distinguish from Dutch specimens, but if a series is compared the differences are evident.

Proceeding from the west to the east, we find in Siberia a form which is very near to Swedish *C. familiaris*, but which has more white above. It is known under the name of *C. scandulaca* of Pallas, and probably extends as far west as East Prussia.

Proceeding farther eastwards still, to Japan, we find again two forms: in the northern island Yezzo one said to be the same as *C. familiaris scandulaca*, and in the southern parts one in which the light markings above are smaller and tinged with tawny, and in which the under tail-coverts and lower abdomen are tinged with



tawny buff. These have been united with the typical *C. familiaris* of Europe by Seebohm and by Stejneger, in the latter author's explicit and valuable article in *U. S. Nat. Mus.* 1887, pp. 606-610. Although I have not seen very many examples (the Tring Museum possesses only two at present) I cannot unite the Hondo form with the North-European form. The ground-colour of the back is deeper brown, the rump of a deeper tawny; the under tail-coverts seem to be more strongly suffused with tawny, and the beak and wing on the whole decidedly shorter.

This form (type from Northern Hondo, in Mr. Rothschild's Museum) I must separate as

***C. familiaris japonica* subsp. nov.**

Neither this, nor *C. scandulaca*, *brachyductyla*, *britannica* (spelt thus by the author), are species, for all their characters are variable, and intermediate forms between most of them seem to occur. The same may be said of the various North-American forms. It is only in the Himalayas, and in Turkestan and Kashmir, that we meet with a number of well-defined species. There are now six recognised species in these mountains and one subspecies.

The following is a very condensed review of the different forms, as far as they are now, in my opinion, sufficiently established. It contains seven species, and one of them is divided into ten, another into two subspecies.

***Certhia* L., 1758.**

1. { Tail distinctly barred throughout : 2.  
    { Tail not barred, or with obsolete bars : 3.
2. { Above more brown; beak shorter : 1. *C. himalayana* Vig.  
    { Above more grey; beak longer : 1A. *C. himal. taeniura* (Sev.).
3. { Flanks and lower abdomen ferruginous; centre of breast and abdomen fulvous;  
       chin and throat white : 2. *C. stoliczkae* Brooks.  
    { Whole lower surface earthy brown; axillaries and under wing-coverts white;  
       under tale-coverts pale ferruginous : 3. *C. discolor* Blyth.  
    { Chin, throat, and breast buff; remainder of under surface earthy brown :  
       4. *C. manipurensis* Hume.\*  
    { Lower surface whitish or pure white : 4.
4. { Fourth primary with a very pale fulvous mark in the middle of the outer  
       web : 5. *C. familiaris* with its subspecies.  
    { Fourth primary with no fulvous mark in the middle of the outer web : 5.
5. { Lower abdomen suffused with pale fulvous brown; above much darker; tail  
       always without an indication of bars : 6. *C. nipalensis*.  
    { Lower abdomen paler; above much lighter; tail mostly with obsolete bars  
       near the tip : 7. *C. hodgsoni*.

Of *C. familiaris* the following forms are at present, I believe, tenable; but more will be discovered, as large countries are unrepresented in creepers even in the British Museum and other large collections.

1. *C. familiaris familiaris* L. North, ? Central, and ? Southern Europe. Distribution not yet definitely understood.

2. *C. familiaris scandulaca* (Pall.). Siberia to East Europe. More white above than 1.

23. *C. familiaris costae* (Bailly). Central and South Europe. Doubtful form, but probably nearest to *C. familiaris familiaris* and a little darker above.

4. *C. familiaris brachydactyla* (Brehm). Central Europe, chiefly the western parts. Differs from *C. familiaris familiaris* in having the rump much darker tawny rufous, the light parts of the feathers of the upper surface less in extent and not so whitish, the bill generally longer, the hind-claw in the mean shorter. Breast and abdomen never of such a clear satiny white as in *C. familiaris familiaris*, but this character is often overrated, as the under parts of western birds are nearly always soiled, the trees in these thickly populated countries being sooty. Flanks rusty.

5. *C. familiaris britannica* (Ridgw.). British Islands : England, Scotland, Ireland, Isle of Man. This is evidently the only form of creeper found in the United Kingdom. Mr. Rothschild and his brother, Mr. Charles Rothschild, have brought together an already nice series from England, Scotland, Ireland, Isle of Man : but more are still desirable, especially from North Scotland and other *less populated* districts, where they are *clean*, those from the thickly inhabited countries being almost black below, from their constant creeping on the always dirty stems of the trees. The British creeper differs from *C. familiaris brachydactyla* of West Europe in the orange-tawny colour of the rump being more extended and slightly more orange, the whole aspect of the upper surface being more rufous, the beak averaging decidedly shorter, the hind-claw longer.

6. *C. familiaris japonica* Hartert. Island of Hondo or Nippon. Beak as short as or shorter than that of *C. familiaris britannica*, wing averaging shorter ; breast purer satiny white, the light markings of the upper surface more white. Much deeper brown, and with less whitish markings than *C. familiaris familiaris*, and generally smaller.

7. *C. familiaris americana* (Bp.). Eastern North America. Very much like *C. familiaris britannica*, but the light markings on the upper surface more white. Very much like *C. familiaris familiaris* and *C. familiaris costae*, but the rump deeper tawny. The tail sometimes shows obsolete cross-markings.

8. *C. familiaris occidentalis* Ridgw. Pacific coast regions from California to Alaska. Darker and more rusty than *C. familiaris americana*, also smaller. (Cf. Ridgw., *Manual N. Amer. B.* p. 558.)

9. *C. familiaris montana* Ridgw. Rocky Mountains. Much greyer, the tawny of the rump more distinctly contrasted with the colour of the back.

10. *C. familiaris alticola* (Miller). Southern and Central Mexico and Guatemala. (Might stand as *C. familiaris mexicana*, as the *C. mexicana* of Gmelin is certainly not a *Certhia* !). Below not so white as all the other above-named American forms : very dark above ; rump deep ferruginous, almost chestnut.

11. *C. familiaris albescens* (Berlp.). N. W. Mexico and Arizona. Tinge of light markings above more whitish and a little more extended ; rump lighter tawny ferruginous, more white below (*Auk*, XIII. p. 316, 1896).

To illustrate in a sufficient manner all forms of *Certhiæ* a material of over five hundred skins might just be sufficient. The Tring Museum possesses now about a hundred, and for this article I have examined about a hundred and sixty or more.

The form marked with an asterisk is the principal desideratum of the Tring Museum ; all the others are, although some very poorly, represented in Mr. Rothschild's collection.

## THE GENUS AMMOMANES.

For many years it has been customary among ornithologists to unite the little *Ammomanes* with black-tipped rectrices from the Cape Verde Islands, Algeria, Egypt, and Arabia under one name, and this is also the verdict of Sharpe, *Cat. B. Brit. Mus.* XIII. pp. 644, 645. Nevertheless it is hardly correct, for though one *specific* name might embrace them all, those from different countries differ conspicuously in colour. The birds from the Cape Verde Islands are as different from those of Algeria and Tunis as Sharpe's *Ammomanes algeriensis* (*Cat. B. Brit. Mus.* XIII. p. 645) is from *A. deserti* Licht. I have seen many specimens from Algiers and Tunis, collected by Koenig and Spatz, and some procured from Schlüter. All these are most distinctly paler than the specimens from the Cape Verde Islands, which are very rufous and very dark. Were it not that most larks are known to differ in colour in different localities, often in harmony with the general appearance of the soil and surroundings, I would, especially in view of the insular habitat of the Cape Verde form, gladly allow it specific rank; but judging from analogies of other *Alaudidae*, this does not seem wise, and I am quite contented to give it subspecific rank. The mischief done in uniting the palaearctic forms of the *Ammomanes* with a black-tipped tail (for a mischief it is undoubtedly, as it serves to conceal from the view of the truth-seeking naturalist the most interesting facts of local differentiations, by informing him that forms are "identical," while in fact they differ conspicuously) started long ago (Henglin, Dohrn, etc.), and it was sanctioned and spread by Dresser (*B. Europe*, IV. p. 336), who, however, acknowledged the differences between the N. African and Cape Verde birds, but denied their having "specific" value, as he never admitted the importance of subspecific forms, and consequently never separated them, a method in which he—unlike many others—always has shown reasonable consistency. Sharpe, in 1890, who should have separated *A. cinctura* of the Cape Verde Islands from the North African forms if he separated *A. algeriensis* from *A. deserti*, had only one skin from Egypt and one from Persia (!) to compare in the British Museum, and therefore had not much material to form an opinion on. As it is, the dark and red Cape Verde bird must bear the oldest name, *A. cinctura* (Gould), 1841. The next name available for any of the North African forms is *A. arenicolor* (Sundev.), 1850. I have not his article before me to consult, but have to trust the authorities whose books are before me, and who assert that Sundevall's name applies to a form with a black-tipped tail. The question now is, whether the Nubian birds are exactly like the Algerian ones. I have only been able to compare two, and they are certainly strikingly more greyish brown than the North-West African birds. I have no doubt that this is a constant character of the North-East African birds, and that they must be separated subspecifically. If my surmise is right, the North-East African bird must bear the name *arenicolor*, and that of Algeria and Tunis the name *regulus*.

A similar difference as between the North-West African and the North-East African form of *A. cinctura*, only more obvious, is found in *A. deserti*, and therefore Sharpe, who, it seems, first noticed their differences, named the former *A. algeriensis*. There are, however, slight variations of shade of colour found in the same districts, and therefore I do not believe that these forms are more than subspecies, nor do I think that *A. phoenicuroides* is more than a subspecies. If all the countries between Tunis and Nubia on one side, and between Abyssinia, Egypt, and the Persian Gulf

on the other side, are thoroughly explored, we shall no doubt find intermediate forms between all these forms. A series of Persian examples would be desirable to compare them, as they may slightly differ again.

Accepting my views as correct, we shall have to complete and to alter the key of the genus *Ammomanes*, as limited by Sharpe in the *Cat. B.* XIII., as follows :—

**Ammomanes** Cab., 1851.

1. { Tail rufous or isabelline, with broad black band at the tip : 2.  
 Tail brown or deep blackish brown, except the central pair of rectrices and the outer webs or edges, which are pale or whitish, as is often the base : 4.
2. { Primaries deep brown, with chestnut-rufous inner lining : 1. *A. phoenicea* (Frankl.). (India from Cutch to the Ganges and to Coimbatore.)  
 Primaries greyish, slightly tipped with white, margined with sand-colour on the outer webs, the inner lining greyish : 2. *A. grayi* (Wahlb.).\* (S. W. Africa.)  
 Primaries isabelline, with blackish tips : 3.
3. { Much more rufous : 3. *A. cinctura cinctura* Gould.\* (Cape Verde Islands.)  
 Paler and more sandy isabelline : 4. *A. cinctura regulus* (Bp.). (Algeria and Tunis.)  
 Like *A. c. regulus*, but tail and wing darker, above slightly more sandy brownish and rufous, perhaps the spots on the chest less distinct : 5. *A. cinctura arenicolor* (Sundev.). (Synonyms : *A. pallida* Cab., 1851 : *elegans* Brehm, 1855.) (S. Egypt, Nubia, Arabia, and ? Persia.)
4. { Under wing-coverts and inner lining of wing isabelline : 5.  
 Under wing-coverts and inner lining of wing ashy or leaden grey : 6.
5. { Above sandy vinous, most of the outer webs of primaries rufous isabelline : 6. *A. deserti algeriensis* (Sharpe).  
 Above of a more ashy sand-colour; only the upper tail-coverts vinous; outer webs of primaries as in *A. d. algeriensis* : 7. *A. deserti deserti* Licht. (Synonyms : *A. isabellina*, *fraterculus*.) (Egypt, Nubia, Abyssinia, Palestine; those from the last-named two localities perhaps subspecifically separable.)  
 Above almost mouse-brown; outer webs of primaries with very little rufous isabelline; bill shorter and stouter : 8. *A. deserti phoeniceuroides* (Blyth). (Synonym : *A. lusitana parvirostris* Hartert.) (Punjab, Sindh to the Persian Gulf.)
6. { Larger, chestnut above : 9. *A. ferruginea* (Sm.). (Plains south of the Orange River.)  
 Smaller, light rufous above : 10. *A. erythroclunys* (Strickl.). (Transvaal to Damaraland.)

The forms marked with an asterisk are special desiderata of the Tring Museum.



## THE GENUS GALERIDA\* BOIE.

The crested larks, it will be admitted by all ornithologists, are very difficult to distinguish, as many of the various forms run into each other in a puzzling manner. This, however, is certainly no reason to treat them with contempt and neglect, but on the contrary makes them highly interesting, as being an instructive example to what an extent local modification is sometimes effected by natural causes.

The splendid opportunity which Sharpe had in 1890, when writing the thirteenth volume of the *Catalogue of Birds*, was not much used for defining the various subspecies of *Galerida*, as the frequent occurrence of intermediately coloured individuals influenced Dr. Sharpe so much that he did not allow even subspecific rank to most of the forms. It is true that he enumerated the specimens in the Museum in four groups or "races," but most of them are mixtures of different forms. The occurrence of intermediate specimens has often been the reason for Dr. Sharpe to disregard the most marked subspecies. There is therefore, in fact, not much difference between this author's species and his subspecies, and it is more out of a kind of "feeling," effected by his unparalleled experience in ornithology, that this eminent naturalist has sometimes made use of the method of creating or allowing "subspecies." In the genus *Galerida*, on the other hand, he gave full specific rank, besides *G. cristata*, to three forms, *i.e.* *G. theklae*, *G. malabarica*, and *G. isabellina*, which are not more different from several of the forms of *G. cristata* than are, for example, the dark form of the Nile Delta and the pale, desert-like-coloured, long-billed *macrorhyncha* of Tunis and Algeria, or several others—only Sharpe did not come across intermediate forms, and therefore gave them full specific rank. There is, however, not a single character found in those three supposed good species which is not found or indicated in one or the other form of *G. cristata*, and intermediate forms may be discovered any day; therefore it is evidently not wrong to enumerate them also as subspecies of *G. cristata*.

Another species, *G. deca*, has by many authors been separated generically, under the name of *Spizalunda deca*, but it has no characters that can be regarded as more than specific, if we study other groups of larks. Oates (*B. of India*, II.) has therefore done well in reuniting it with *Galerida*; but it is apparently a very well marked species, standing more alone than any of the other forms.

A number of articles on members of the genus *Galerida* have already been written since the appearance of Vol. XIII. of the *Catalogue of Birds*. This is, in my opinion, a good sign for the activity of ornithologists. Soon after the appearance of Sharpe's work (in fact most of it was written, but not printed, before his volume appeared) I enumerated the specimens in the Senckenbergian Museum at Frankfurt, calling one form *G. cristata*, another *G. cristata macrorhyncha*, and describing a third as a new species, calling it *G. rüppelli* (*J.f. O.* 1890, pp. 102, 103; *Kat. Vogelsamml. Mus. Frankf.* p. 40, 1891). I believed for some time that there was a possibility of my *G. rüppelli* being the same as *Mauda praetermissa* Blanf. (which would probably better be placed in the genus *Galerida* [cf. Salvadori, *Ann. Mus. Genova* (2) 1, 1884, p. 168; (2) 6, 1888, p. 266] as it has a longer first primary than any

\* This is the original spelling of the name. It has afterwards by many authors been altered into *Galerita*, but this correction is not acceptable, as the name *Galerita* is that of a very well known genus of *Coleoptera*, which was established long before 1828, when Boie created *Galerida*.



proper *Alauda* \*), or as the same author's *Galerita arenicola* var. *fusca* (*Geol. and Zool. Abyssinia*, p. 387), which Sharpe declares to be identical with *A. praetermissa* (mark the genus!), but the measurements do not agree! As, however, this is a question which can only finally be settled by a comparison of the different types, I will leave it out of consideration for the present time.

Most excellent field-notes, descriptions of nests, eggs, etc., of the Algerian forms by Koenig are found in the *Journal f. Ornithologie*, 1895, and remarks of great clearness and correctness by Whitaker in the *Ibis*, 1895 and 1896, where a new name for a form, *G. cristata pallida*, from Tunis, is created.

The "typical" *Alauda cristata* L., which I would call *Galerida cristata sensu strictiore*, or *Galerida cristata cristata* L.,† is found all over Europe. Specimens from Sweden, Germany, Holland, Austria, France, Servia, Hungary, Turkey, S. Russia (Sarepta), also one shot at Athens in January by Elwes, do not differ in any obvious way, so that no subspecies can be made out of them. Of course they vary individually, but I have not been able to trace any locally modified groups among them. Two from Attica, shot in March, are a little paler grey above, but more specimens would be necessary to decide whether this is characteristic for the birds breeding in that country. One of them is very small, the other not! Both are said to be *females*!

In Southern Spain and Morocco there must be, according to Sharpe, two very different forms. If this is correct they must inhabit different parts of the countries in which they are found. This is confirmed by Alfred Brehm and others. The one which is like the Senegambian one is found in the sandy plains, the little dark *G. theklae* on the mountains and among the black rocks. One Sharpe says is "absolutely identical" with specimens from Senegambia. I have no such birds before me just now, but that does not matter, as it is clear that we have here another form, which is closely allied to *G. cristata cristata* of Europe, and of similar dimensions, but altogether much more reddish, paler, and sand-coloured; perhaps the beak also, in the mean, a little larger, but sometimes even smaller.‡ Its exact distribution is not clear; but it is certain that it breeds in Senegambia and the Western Sudan, as Sharpe mentions nestlings from the River Gambia, and I met with it in the northern dry parts of Hausa-land, where it was in full song in February and early in March. One skin which I shot at Jassaura, a town discovered by me not very far from Sokoto, in a country which during the dry season was very dry, sandy, and almost desert-like, I sent to E. von Homeyer, who professed to be an authority on larks, in the hope that I should get a useful opinion on this form for my article in the *J. f. O.* 1886 (see p. 582, No. 19), but he only sent me a sweeping remark (*l.c.*), which was not even quite correct. This bird is still in the Homeyer collection, now in Braunschweig, and is before me, thanks to the kindness of Professor W. Blasius. It is distinctly the *G. senegallensis* (P. L. S. Müll.).

The other South Spanish form is *G. theklae* (thus spelt, not *thecklae*, as Sharpe writes). It is very small, very black, the breast with numerous broad blackish

\* This brings us to the difficult question of the genera of the *Alaudidae*. How many can be made? and is there a sharp line between *Alauda* and *Galerida*? I am not prepared to answer this now, and I believe it is not so easy as it seems. According to Sharpe's key (pp. 512, 513), they would seem to run into each other.

† Form *a.*

‡ Form *b.*

shaft-stripes, and Sharpe regards it as a good species.\* It, or a form between it and *G. cristata cristata*, is also found in the coast region of Algeria and Tunis. In the interior of these countries, however, we find an interesting number of forms. Besides the just-mentioned dark form on the coast, we meet all over the stony plateaus of the desert very long-billed forms, one of them darker and larger, *G. cristata macrohyncha* (Tristr.), more on the dark stony tracts in the middle of the desert, and the other paler and little smaller form, *G. c. arenicola* (Tristr.), more on the margin of the true sandy desert, the Sâhel,† while on the very sand itself they are replaced by the wonderfully pale sandy isabelline *G. c. isabellina* (Bp.).‡ Besides these Mr. Whitaker describes (*Ibis*, 1895, p. 100) an *Alouda cristata pallida*,§ found in the southern parts of Tunis, where the soil is more arid and more bare, but not yet true desert. It seems that Koenig found the same near El Kantara and Biskra in Algeria, but he calls it *G. arenicola* Tristr., which name applies to the pale long-billed form.

Leaving Tunis we come east of it to Tripolis, Barka, the Libyan Desert, etc., all countries hitherto ornithologically entirely unexplored. The next form of crested lark we meet in the Delta of the Nile, whence the Tring Museum possesses a series from Alexandria, Damietta, and Cairo. It differs from *Galerida cristata cristata* of Europe in being considerably darker above, the black centres of the feathers being more extended, the brown edges darker, wings and tail darker, more blackish. The breast is marked with bolder, broader, very dark blackish brown longitudinal spots, giving it a striking appearance. Throat white : abdomen buffy or isabelline, and with some ill-defined brown shaft-stripes : sides of body heavily streaked. Wing 102—106 mm. ; bill 16, a little more tapered than in *G. cristata cristata*. This very distinct subspecies has no name : I therefore name it

***Galerida cristata deltae* subsp. nov. ||**

Proceeding farther up the Nile crested larks must occur everywhere, but to which forms they belong I cannot say at present. The next form I am acquainted with is a large-billed isabelline form, which the Tring Museum possesses from Khartoum, collected by Petherick and J. W. von Müller. It resembles *G. c. senegallensis*, but is more yellowish above ; the breast-spots are more brownish isabelline ; the bill is a little bigger. It resembles pale specimens of the long-billed Algerian form, but the rectrices are more reddish isabelline, the upper aspect more reddish, the breast-spots not so frequent and not so dark. It is *G. flava* of

\* Form *c*.

† Forms *d*, *e*.

‡ Form *i*.

§ Form *f*.

Unfortunately C. L. Brehm has already named a *Galerida cristata pallida* from Spain ; it is therefore necessary to replace Whitaker's name by a new one. I call it

***G. cristata superflua* nom. nov.**

While this article was in print D. G. Elliot's article on the birds collected by him in Somaliland appeared in the Field Columbian Museum's Publications. There, on p. 38 of Publication 17, he describes a new species of *Galerida*, unfortunately again calling it *G. pallida* ! As this name, as shown above, cannot be used, there being two *pallida* already, and as the discovery of an evidently very distinct form of crested lark in Somaliland is of special interest, I name it

***Galerida ellioti* nom. nov.,**

but it may also be a subspecies of *G. cristata*.

| Form *g*.

Brehm.\* Ascending the mountains of Shoa and Abyssinia we have evidently several forms, which I cannot fully discuss at present.†

In an article in *J. f. O.* 1873—which is meant to unravel mysteries, but causes only more confusion—E. von Homeyer describes a form from Abyssinia as *G. myroristata* (*sic*, not *microcristata*, as would be grammatically correct). This name is possibly synonymous with *Alauda praetermissa* Blanf., of which Homeyer evidently knew nothing, but there are contradictory statements in the description. Besides this form Homeyer mentions a *G. abyssinica* “Rüppel” (*sic*), but Rüppel never used that name in his publications. However it must not be supposed that Homeyer’s *G. abyssinica* “Rüppel” is Bonaparte’s *abyssinica*. Homeyer declares that, although Bonaparte gave this name to a yellow sand-coloured form, it should be used for a small dark mountain form, because that was the real Abyssinian bird! Similar nomenclatural eccentricities and illogical conclusions are often found in this article, but it must be admitted that they are only a step more in the way of certain ornithologists who will not accept strict priority in nomenclature. According to my own statement in *Kat. Senckenberg. Vogelsamml.* p. 40, note 78, the bird on which Homeyer founded his “*G. abyssinica* Rüppel” is “*G. cristata*,” a statement which probably requires modification.

Wandering farther eastwards we come again to a large country—Arabia—whence I do not know the crested larks. In Turkestan and Yarkand, and perhaps down to the Persian Gulf, is again found a large long-billed form, *G. magna*,‡ which resembles *G. c. macrorhyncha* so much that I am not able to give distinguishing characters. It seems also to vary in darkness and lightness of colour, almost as much as *G. c. macrorhyncha* and *G. c. arenicola*. Very close to *G. c. magna*, if at all separable, is the North Chinese *G. c. leautungensis*.§

A very distinct form inhabits North-West India. It is very small, very grey above, below not at all isabelline, the crop-region richly marked with blackish brown spots.|| How it came to be constantly confounded with others is difficult to understand. The names *chendoola* and *boysii* evidently both refer to this form.

Now to the nomenclature of all these forms.

*G. cristata* (L.) (Ed. X. p. 166, 1758) of course applies to the North-European form, *a*. Linnaeus’ distribution “Habitat in Europae viis” is excellent, and quite to the point. Synonymous with it are undoubtedly *Alauda cochevis* P. L. S. Müll., *A. gulerita* Pall. (? partim), *G. viarum* Brehm, *Heterops cristatus* Frankl.

*La Coquillade* of Daubenton and Montbeillard (not *Coquillarde*, as quoted in the *Cat. B.*) seems a curious bird, and it is by no means certain whether it is a distinct form of *G. cristata* or a mere “aberration.” Therefore the names *A. matutina* Bodd., *A. undata* Gm., and *A. plumata* P. L. S. Müll., *Linna. Natursyst. Suppl.* p. 137 (not quoted in *Cat. B.*), which are all based on the “*Coquillade*,” must all be quoted with a query, not without, among the synonyms of *G. cristata*.

*A. senegallensis* (spelt thus!) P. L. S. Müll., based on the “*Cochevis du Sénégal*” of Daubenton and Montbeillard, belongs of course to form *b*.

*Alauda chendoola* Frankl. and *Certhilauda boysii* Blyth must, I think, both belong to the little grey N.W. Indian form, form *o*.

\* Form *h*.

† Evidently at least two forms, *k*, *l*.

‡ Form *m*.

§ Form *n*.

|| Form *o*.

*Galerita randonii* Loche of 1858 is a *nomen nudum*, though we know from his later works that it is the same darker long-billed form (*d*) which meanwhile, in 1859, had been described as *G. macrorhyncha* by Tristram.

*Alauda leautungensis* Swinh. pertains to the North-Chinese form (*n*), which is hardly, if at all, separable from *Galerida cristata magna*.

*Galerita brachyura* Tristr. (*P. Z. S.* 1864, p. 435) is a Palestine form, probably somewhat closely allied to *G. c. magna*, but nearer to *G. c. cristata*. It was afterwards suppressed by the describer himself. In his *Flora and Fauna of Palestine* he did not even mention the name, and in the catalogue of his collection he placed it as a synonym under *G. cristata*.

*Galerita arenicola* Tristr. is a long-billed form. It must, therefore, be transferred from the synonyms of *G. isabellina*, where it is placed in the *Cat. B.*, to the group of *G. cristata*, and it is nothing else than the paler desert-like-coloured near ally of *G. macrorhyncha*, my *G. cristata arenicola* (Tristr.), form *e*.

*G. cristata caucasica* Tacz., *Bull. Soc. Zool. France*, 1887, p. 621 (not *P. Z. S.*, as quoted in *Cat. B.*), is not known to me, but, judging from the author's description, peculiar.

*G. cristata coreensis* Tacz., *P. Z. S.* 1887, p. 603 (not *Bull. Soc. Zool. France*), is long-billed, and evidently allied to *G. magna* and *leautungensis*, but unknown to me.

*Galerida abyssinica* Bp. (1859) is said by Bonaparte to be the *Galerida cristata ex Abyssinia* of Rüppell. But Rüppell's Abyssinian specimens were not at all "*colore deserti*." Therefore I have named them *G. rüppelli*, although they would seem to be the types of *G. abyssinica* Bp., but this can hardly be so, as they entirely disagree with his diagnosis.

*G. isabellina* is not very much better, though a little better characterised than *G. abyssinica*, but there is no need to deviate from the generally accepted custom of using this name for the short-billed North African true desert-form, *i*.

*G. flava* Brehm (*A. E. Brehm, J. f. O.* 1854, p. 77, deser. nulla—only the colour vaguely mentioned; C. L. Brehm, *Naumannia*, 1858, p. 209) is, without doubt, a long-billed form, *h*, and not a synonym of *G. isabellina*. *G. lutea* C. L. Brehm, *Naumannia*, 1858, p. 210, is evidently the same as *G. isabellina* Bp., and, in fact, better and with more certainty referable to what we now call by Bonaparte's name. I may here mention that it will be necessary to compare a *series* from Egypt with a series from Tunis and Algeria, as they may differ from each other.

*G. cristata nigricans, major, vulgaris, pagorum, tenuirostris* of C. L. Brehm (*Naumannia*, 1858, pp. 207, 208) are evidently all individual or accidental varieties of *G. cristata cristata*.

*G. cristata karinthiaca* and *planorum* id. iid. must be compared, but belong probably also to *G. cristata cristata*.

*G. cristata pallida* and *gallica* are doubtful. Perhaps the former belongs to *G. c. senegallensis*, and the latter may be the *Coquillade* of Montbeillard (*v. antea*), *G. c. angustistriata* (Spain, Greece, and Nubia!), *G. c. maculata* (Nubia and Spain!), *G. c. altirostris* (Egypt, Nubia, Spain!), and *G. c. rufescens* (S. Spain) must remain doubtful, and cannot, from their generally poor descriptions, be finally defined without a study of the types.

In conclusion, I will again enumerate all those forms of *Galerida* which I believe can be recognised as subspecies, those specially wanted in Mr. Rothschild's Museum being marked with an asterisk.

## Galerida Boie.

1. *G. cristata* L.

- a. *G. cristata cristata* L. Europe generally.
- \*b. *G. cristata senegallensis* (P. L. S. Müll.) Senegambia, Hausaland ; according to Sharpe, to South Spain, etc.
- c. *G. cristata theklæ* (C. L. Brehm). South Spain, Morocco ; according to Whitaker, to Tunis (coast), where, however, evidently not typical, but more pointing to a.
- d. *G. cristata macrorhyncha* Tristr. Algeria, Tunis.
- e. *G. cristata arenicola* Tristr. Algeria, Tunis. (Details of distribution, see Koenig, Whitaker.)
- \*f. *G. cristata superflua* Hartert. Tunis, Algeria. (Not known to me, but evidently a good form. Name with regard to the overflowing richness of forms in Tunis and Algeria.)
- g. *G. cristata deltae* Hartert. Nile Delta.
- h. *G. cristata flava* (C. L. Brehm). Nubia.
- \*i. *G. cristata isabellina* (Bp.). Egypt, Tunis, and Algeria.
- \*k.l. Evidently two mountain forms in Abyssinia, of which more knowledge is required. Synonyms at present doubtful to me.
- m. *G. cristata magna* (Hume). Distribution probably wide, not yet quite worked out. (Extremely close to d.) (?)
- \*n. *G. cristata leatungensis* (Swinh.). North China. (Perhaps not separable from *G. magna*.) (?)
- o. *G. cristata chendoola* (Frankl.). North-West India.
- p. *G. cristata malabarica* (Scop.). South India.
- \*q. *G. cristata caucasica* Tacz. Caucasus. (Unknown to me.)
- \*r. *G. cristata coreensis* Tacz. Corea. (Unknown to me.)

2. *G. dera* (Sykes). India, Cutch to Etawah and Madras.

We have thus two species, one of them divided into thirteen to seventeen subspecies—more to be discovered by-and-by.\*

\* While these words were in print there appeared Elliot's description of a new form from Somaliland. *A. ellioti* Hartert. It is probably a subspecies of *G. cristata* (see *antea*, p. 144).



## NOTES ON HUMMING-BIRDS.

By ERNST HARTERT.

## ERIOCNEMIS.

THROUGH the kindness of Herr Dr. A. B. Meyer, I have been able to study the type of his *Eriocnemis aurea*, described in the *Auk*, 1890, p. 315. It is, in my opinion, not possible at present to decide finally about this bird, but it is probably a *female* of *E. cupreiventris*. Some of the supposed specific differences are those of the *female* from the *male* of the latter species. The white cross-bands on the breast-feathers and the smaller size are the characters of the *female*. Mr. Salvin, in the *Catalogue of Birds*, says that the sexes of *Eriocnemis cupreiventris* are alike, but dissected skins from Merida, Venezuela, show that the *female* differs from the *male* in having white cross-bars to the feathers of the throat and breast, and in being a little smaller. Also the under tail-coverts are less bright. I have not, as a rule, much faith in the golden bronze tinge as a specific character, but the certainly differently coloured upper tail-coverts, combined with the other characters given in Dr. Meyer's description, must at present make it doubtful whether the specimen in question is a variety of an adult *female* of *E. cupreiventris*, or a distinct species. It may be added that Mr. Salvin (*loc. cit.*) only gave Colombia as the home of *E. cupreiventris*, only having Bogota trade-skins before him. However it is equally common in the Andes near Merida in Venezuela, whence the Tring Museum received eight specimens. Specimens from Merida are also in Boncard's, Berlepsch's, and Simon's collections. Mr. Boncard, *Humm. B.* 1892, p. 78, and *Gen. Humm. B.* p. 257, described as a new species an *Eriocnemis albigularis*, it being distinguished by a white throat. He adds that it "may possibly turn out to be a case of semi-albinism." Any unbiassed ornithologist who throws only a glance at the bird will agree with me, that it is undoubtedly an albinistic variety of *E. cupreiventris*, and I may add that it is evidently a *female*.

## PETASOPHORA.

The measurement of the wing of the *male* of *Petasophora delphinac* (2.6 in.) is given too small in *Cat. B.* XVI. p. 112. It is 71—76 mm. in the adult *male*, but in the *female* it is 66—68. The *female* is similar to the *male* in colour, but it is smaller. The wing is shorter in the *females* of all species of *Petasophora*! I cannot, from all I have seen, appreciate the alleged differences of *P. cabanidis*, and cannot separate the Central American specimens even subspecifically.

## THALURANIA.

It is Mr. Boncard's habit to propose names for specimens "if they should prove different species." This "proposing" names for doubtful forms is, in our opinion, a very bad practice, although it has been followed by many distinguished ornithologists. It is the more objectionable as it is generally done in the midst of the letterpress or in footnotes, instead of in a different paragraph or under a conspicuous heading, thus being more easily overlooked. So Mr. Boncard has (*Gen. II. B.*

p. 102, 1893) proposed the name of *Thalurania valenciana* for specimens of *Th. columbica* from "Valencia in Columbia," in which "the shining emerald-green of the throat covers only the throat and upper part of the breast, while the neck, back, and rump are all green, without the bronzy tinge constant in *Th. columbica*." The female, he says, is also different in having the flanks and abdomen green. As far as I can see, the colour of the neck, back, and rump of the type of Boucard's *T. valenciana* does not differ more than many Bogota skins I have seen vary from others from the same locality, and the extent of the green colour of the throat seems only different because the skin is differently prepared. The supposed female I consider to be an immature male, which always has the flanks and abdomen green! *Th. valenciana* can therefore only be regarded as a synonym of *Th. columbica*.

Mr. Boucard further described (*Grn. II. B.* p. 107) as a new species *Th. boliviana* from Bolivia, but his types are *Th. jelskii* Tacz., a species which Boucard did not know and which he placed as a synonym of *T. nigrofasciata*. Mr. Salvin (*Cat. B. XVI.* p. 84) also did not know *Th. jelskii*, as he expressly says; but he had before him eight skins of it from Bolivia, which he enumerated as skins of *Th. tschudii*, though (p. 83) he noticed some differences between them and his real *Th. tschudii* from Peru. *Th. jelskii* is, I think, more distinct than *Th. tschudii*, which comes somewhat close to *Th. nigrofasciata*.

The three forms *Th. furcata*, *furcatoides*, and *refulgens* are somewhat puzzling. The first two especially are very closely allied, and even Boucard, who can hardly be called a "lumper," has united them. Although *Th. furcatoides* from Brazil is pretty constant, this cannot be said of *Th. furcata* from Guiana and Cayenne, specimens from both these countries varying greatly in measurements, and especially in those of the tail, some being found that are hardly distinguishable from *Th. furcatoides*. *Th. refulgens* is generally at a glance to be distinguished from *Th. furcata* by its much larger size, and especially the longer, broader, and more forked tail, as well as by the generally pure steel-blue under tail-coverts. The size, however, is not absolutely constant, an approach to large specimens of *Th. furcata* being found now and then; and there are also specimens with narrow white borders to some of the under tail-coverts. The three forms, nevertheless, are recognisable if a series is compared, and the consequence is that they must be treated as subspecies.

As the locality of *Th. refulgens* the island of Trinidad alone is generally given, but we really do not know where the numerous trade-skins in all our collections, which are said to be from Trinidad, are shot. Even admitted that most of them really are from Trinidad, it is most likely that either *Th. refulgens* or *Th. furcata* inhabits the countries between British Guiana, and almost certain that the specimens approaching *Th. furcata* are not from the same place as the more typical *Th. refulgens*. Boucard therefore most cautiously adds a query to the locality Trinidad.

With regard to *Th. columbica* and *Th. venusta*, I cannot help observing that Central American specimens are mostly recognisable by the rather wide extent of blue on the back, and that nearly all of them have also longer beaks. There is, therefore, reason enough to separate this species into two forms, *Th. columbica typica* and *Th. columbica venusta*.

Mr. Eugène Simon has described one more species of *Thalurania* from Yungas in Bolivia, which he named *Th. balzani*. Its most striking characters are the pure white under tail-coverts and its rather short wing. The type-specimens are evidently fully adult birds. They have the throat of a golden green. Their nearest ally, however, is *Th. jelskii*. There is no black band between the green colour of

the throat and that of the abdomen. *Th. balzani* is evidently a distinct species. The Tring Museum has received it from the Beni River in East Bolivia, where Mr. A. Maxwell Stuart shot it.

### CHLOROSTILBON.

Besides the forms included in the genus *Chlorostilbon* in the *Catalogue of Birds* I must, without hesitation, unite with it the members of the so-called genus *Panychlora*. The colour of the tail alone can certainly not serve for generic separation, and the interramal space is not in *all* the species of *Panychlora*, as far as I can see, more feathered than in all the forms of *Chlorostilbon*, besides that this slight difference is hardly of generic value. Genera are, in my opinion, made for the convenience, and not for the inconvenience, of systematic workers, and therefore, granted that colour alone cannot serve for generic separation, *Chlorostilbon* and *Panychlora* are better united. The species of these groups are often very closely allied, and some of them must be split into several subspecific forms, which here and there pass into each other. Thus the Mexican *Chl. canireti* is slightly modified towards the south, the specimens from Guatemala having a less deeply forked tail, those from Costa Rica a still less deeply forked tail, besides other slight differences (see *Cat. B.* XVI. p. 47), and, as a rule, specimens of the three forms can well be distinguished, though occasionally it seems impossible to classify certain individuals. Therefore it is not possible to separate them *specifically*, as stated by Salvín, *l.c.*, but they may stand as subspecies.

Mr. Salvín, *Cat. B.* XVI. p. 56, says: "With typical specimens of *C. daphne*, *C. napensis*, *C. brevicaudatus*, and *C. subfurcatus* before me, I am unable to distinguish between them or to separate them from *C. prasinus* of Cayenne." It is certainly true that these forms are closely allied, and at first, when looking at them on a dark winter day in the British Museum, I did not notice much of the supposed differences, except the different length of the bills. When, however, I had studied the material in the collections of Mr. Rothschild, Count Berlepsch, Mons. Eug. Simon, and in the Paris Museum, I found that specimens from Cayenne do not possess the blue tinge on the throat and foreneck, which is very strong (not only faint) in those from Upper Amazonia and from the Roraima Mountains. The tail in Cayenne birds is about square, the central rectrices being *very* little shorter than the others, the outer ones slightly shorter than the rest, while in *C. subfurcatus* Berlp. from Roraima the tail is distinctly subfurcated, the outermost rectrices being longest, the central ones decidedly shorter. Moreover *C. subfurcatus* has the beak about two millimetres shorter, but the wing is not constantly longer, though Count Berlepsch states it to be longer. *C. subfurcatus* is, I have no doubt, specifically distinct from *C. prasinus*, but it is so very much like *C. daphne*, and in fact only distinguished from it by a two millimetres shorter beak, slightly shorter wing, and a little more deeply forked tail (but not by a less blue throat), that it is best considered as a subspecies of *C. daphne*, some skins of the latter from Peru being hardly distinguishable from *C. subfurcatus*. We thus have two species, one only known from the low country of Guiana, the other an inhabitant of the Upper Amazon and the eastern parts of the Andes, which occurs in a slightly modified form in the Roraima Mountains.

*C. brevicaudatus* is the name given by Gould to the bird of Cayenne, the very one we call now *C. prasinus*. It is true that Lesson's figure and description are not exact enough to define with absolute certainty one of our present subspecies:

and, moreover, he leaves the locality doubtful ("espèce qui paraît habiter le Brésil!"); but there seems to be no other species to which we can refer his name: it seems too small for *C. daphne*, the tail not emarginate enough for *C. subfurcatus*, the beak differently coloured from that of *C. pucherani*. I therefore agree with Elliot, Salvin, and others that the name of Lesson should stand for the species under consideration. Very few are the specimens in collections from Brazil. The specimen from Barcellos on the Rio Negro (*Aglytrix meliphila* Natt., in *Pelz. Orn. Bras.* pp. 29, 57) has a bluish throat, and therefore would belong to *C. daphne*. A skin in Count Berlepsch's collection which is probably from the middle parts of the Amazons, though its locality is not known with certainty, belongs to *C. prasinus*, and has not at all the more forked tail of *C. subfurcatus*, but it is slightly more bluish on the breast than other *C. prasinus* usually are. It is almost certain that in some parts of Brazil intermediate forms between *C. daphne* and *C. subfurcatus* are found, and they may even be enough localised to make them into another intermediate subspecies. It is also not impossible that connecting links exist between *C. subfurcatus* and *C. prasinus*, but at present we do not know them. Specimens from Pern (*C. daphne*) are perhaps generally a little smaller, with shorter beaks, than those from Ecnador (*C. napensis*), but they seem rather variable, and I have not enough evidence to separate these two forms conscientiously.

There has always been some uncertainty about *Chlorostilbon* (*Panychlora*) *euchloris*, which is the same as *P. poortmani major* Berlepsch. I have, therefore, studied Count Berlepsch's types and many other specimens in the collections at Berlepsch, Tring, London, and Paris. There is no doubt that the skins from Encaramanga in the state of Santander, the typical *C. euchloris*, are very different from typical *C. poortmani*, especially in their long beaks: but in Bogota collections we find, besides a vast number of typical *C. poortmani*, certain skins forming complete intergradations between the two forms, and some typical *C. euchloris* as well. *C. euchloris* must therefore be degraded to subspecific rank.

Boncard, in the *Humming-Bird*, 1892, p. 79, and *Gen. Humm. B.* p. 122, described a *C. speciosus*. The type, with its dull oily, somewhat bluish or greyish underside, is a very distinctly and curiously coloured Bogota skin, agreeing in its dimensions with *C. angustipennis*. It is at present impossible to say whether it belongs to a different species, or whether it is a dark-coloured variety of *C. angustipennis*. Boncard, *Gen. Humm. B.* p. 120, described also a *C. wiedi* from Brazil. It is exactly like *C. pucherani*, but a little less bluish on the throat than most skins of *C. pucherani*, and more golden above. The less strong blue tint on the throat seems to be of no consequence, as it varies considerably in the species, and there are undoubted skins of *C. pucherani* which have as little blue as Boncard's *C. wiedi*. The more golden hue is, in my opinion, not a specific character, but due to age of plumage. When in the Dutch West Indian Islands, Aruba, Curacao, and Bonaire, my wife and I collected a large series of *C. caribaeus* (the *C. atala* of the *Catalogue of Birds*). They were mostly glossy golden green, as we see them in every collection, but a few freshly moulted birds shot in the last time of our stay showed a most surprisingly strong golden sheen on the abdomen and above, and the crown was really pure shining gold. Most of these had a few old feathers left, but one in just perfected plumage is faultless and of great beauty. In view of this experience of my own I cannot attach any specific value to a more golden gloss in single individuals from no distinct locality, and I regard *C. wiedi* without the slightest hesitation as merely a synonym of *C. pucherani*.



For similar reasons I cannot see anything but an individual variation, as it is found in almost every species of which any series are to hand, in Boucard's *C. panamensis*, which he "proposes" for a single *mule* of *C. assimilis* "if it should prove new."

## ON A NEW *CATHARSIUS* FROM WESTERN AUSTRALIA.

By JOHN W. SHIPP.

### *Catharsius australiae* sp. nov.

Black, subnitid. Head semicircular, with the posterior angles acute; clypeus marginate and disc raised; a transverse carina extends from near the inner margin of the eyes across the disc, rather elevated in the centre. A fine carina crossing from each side of clypeus meets the transverse carina just in front of the inner margin of the eyes. Head rugosely granulate, the granulations being transversely elongated on the disc, but more rounded and closer together at the sides.

Thorax with the anterior angles slightly acute. Sides of thorax rounded. Lateral margins strongly emarginate. Posterior angles obsolete, the posterior margin being evenly rounded. A deep cicatrix on each side of thorax just behind the middle. Disc with a very short transverse obsolete carina towards the anterior margin, with the middle slightly impressed. Densely granulate, with the exception of two smooth lobes on each side of the longitudinal obsolete depression close to the posterior margin, which is deeply marginate.

Elytra longer than broad, furnished with seven punctured striae between the humeral or eighth stria and the suture. The humeral stria is furnished with a strongly raised carina, which is evanescent towards apex. Interstices sparingly punctured with minute punctures, which are thicker at the apex and round the margins. Lateral margins strongly sinuated and marginate.

Pygidium broader than long, thickly punctured, and with a small smooth median impunctate line towards the base.

Underside, with the exception of the legs and abdomen, covered with a reddish brown pubescence. Abdomen smooth, very finely punctured on disc, thickly and coarsely punctured at sides. Metasternum with a deep longitudinally impressed impunctate line in centre, sides rather thickly punctured and pubescent, disc very sparingly punctured with minute punctures.

Anterior tibiae three-dentate, with a raised longitudinal carina running down the entire centre, and with three small transverse carinae branching off to the apex of the dentations. A fine sinuated carina runs round the entire length of the exterior margin.

Anterior femora swollen towards the base, simply bicarinate both on the under-side and also on the exterior margin; sparingly punctured and slightly pubescent.

Intermediate and posterior tibiae truncated, and three-dentate on exterior margins, the basal dentation being very small. Undersides of femora very finely and sparingly punctured with minute punctures. Intermediate tibiae with two apical spurs, posterior tibiae with one apical spur.

Long. corp. 28 mm.: lat. 16 mm.

*Hab.* Darling Range, West Australia.

Type: one ♀ in the Tring Museum.

This is the only *Catharsius* from Australia with which I am acquainted.



## MR. WILLIAM DOHERTY'S BIRD-COLLECTIONS FROM CELEBES.

By ERNST HARTERT.

### INTRODUCTION.

**A**FTER his most successful trips to Java, Bali, Lombok, Sambawa, and Sumba, of which a short account is given and the birds enumerated in the last number of this journal, Doherty left the Sunda Islands for Celebes. The ornithological results from Celebes are, of course, less important than those from the Lesser Sunda Islands, as Celebes is, for the most part, much better known than those islands: but the birds are, nevertheless, of much interest.

Doherty first went up to Bonthain Peak. He says of the birds from there: "About half of them came from Bukampaliang or Kampaliang, about 5000 feet high, above Lokka, which is above Bonthain (Bantaing), high up on the 'Bawa Karaing,' as the peak is there called. They were taken in four days. We did not make a long stay at Bonthain, but immediately started up the hill with packhorses, the Raja superintending. As early as eight o'clock in the morning (butterflies are rarely out till at least nine, as you know) we got some good butterflies—a ♂ of an *Leias* new to me, though I think I have seen it mentioned somewhere, a ♀ of the very rare *Ergolis merionoides*, and several of *Nychitona dione* and *Appias ithome*, of which we had only got one in the Makassar country. The vegetation was astonishingly different from that at the north of Makassar—rather poor—and we had seen very fine forest three miles from Bonthain. So, finding insects very scarce in the high country, we, in our disappointment, returned too soon to Bonthain town, and spent half of our short trip near that place, where we found none of the fine things we expected."

The shortness of the Bonthain trip, and the very short stay in the higher altitudes, were the reasons that the Bonthain birds are of comparatively little interest; and as Everett and the Sarasins had collected there before, they are all species already known to occur there. Nevertheless I thought it would be worth while to give a complete list, as we know so little of the exact distribution of Celebes birds in higher altitudes, as some of the species call forth certain remarks, and especially as most of them have good details on the labels.

There is then a small collection from the low country north of Makassar, which, though small and for the greater part consisting of common birds, contains great rarities, as a skin of a young male of *Phlegoenas bimaculata* Salvad., the female of *Monuchalcyon capucinus* Mey. & Wigl., only known from the type, a male, and a pair of *Siphia rufigula*, which was of special interest to us.

After a short stay at Makassar, that great emporium of the easternmost trade in the Dutch West Indies, Doherty proceeded to Palos Bay, in the middle of the west coast of Celebes, where he collected for a short time, unfortunately under very difficult and hindering circumstances.

The following passages from a letter dated Ternate, September 27th, 1896, and written during a bad attack of remittent fever—in a temperature of from 95° to 110° Fabr.—refer to this expedition, and may be of interest, if only to show that

collecting in the East, although one of the most fascinating occupations of a naturalist, is not always like wandering on paths strewn with roses :—

" I send three tins of butterflies and five of birds from Palos Bay. They are partly taken south or south-west of the bay, at *Dongala*, and partly north of the entrance of the bay, at *Tawaya*, all being from low country up to 2500 feet, my desperate attempts to reach high country on Mount *Loli*, and again on Mount *Tumba* (or *Tuba*), just failing by a hair's breadth. We had a very bad time. My idea was to reach the neck of the isthmus between *Tawa'li* and *Parigi*, where, at a height of 3000 feet or more, I might have made interesting collections. Usually, I think, there would have been no great difficulty in attempting this ; but just as I came to the port of *Dongala* war broke out. The *Tawa'li* people burnt *Kayu Maluwa* ; the fugitives fled partly to *Tawaya* (north), partly to *Palu* (*Palos*) (south). The people of *Dongala* guarded their houses night and day with guns in their hands, and no praus for love or money would venture to go out. I went over to *Tawa'li*, on the south coast of the bay, and got some butterflies, including a curious form of *Cethosia myrina* (at 2500 feet), and tried to reach Mount *Loli*, about 8000 feet high, but the *Raja* interfered. The western side of the mountain, all forest, belongs to the Sultan of *Palos*, and it is impossible to go there without going to *Palos* for permission, which was impossible during the war. The eastern side close to *Palos* belongs to the Sultan of *Benawa*, the greatest of all these chiefs, and my very good friend. Unfortunately, however, this side is absolutely bare up to 5000 or 6000 feet—a remarkable thing for a place so near the equator—and quite uninhabited. The Sultan of *Benawa* advised me to try *Tawaya*, which he said belonged to him. As a matter of fact the *Tawayans* had some years ago kidnapped his son and held him as a hostage, doing just what they liked. The dear little boy afterwards often came to see me at *Tawaya*, with a large armed guard. Finally I got, at great expense, a prau to take me to *Tawaya*. The passage was fearful. We were nearly swamped, lost an outrigger, and thought we were lost, when suddenly, by amazing luck, the wind changed and the sea went down, enabling us to reach the shore. The men, who were in fear of pirates all the way over, put my things ashore a long way from the village, and fled for their lives. I left my men, all armed, in charge of the things, and went only with my butterfly-net to *Tawaya*. On arriving at the place I was mobbed at once, the people, who speak only *Kaili*, not *Malay*, supposing that their town was to be attacked, and they tried to kill me, one young man from *Kayu Maluwa* actually wounding me in the breast, though but slightly, because the old men caught hold of his arms. By great good fortune an old Buginese, *Haji Abdul Fatha*, who has been three times to *Mecca*, but was nevertheless a good man, came just in time, and after I had given him the signet-ring of his son *Nazir* at *Dongala*, whom I knew well, but who had been afraid to accompany us, he explained everything, and our troubles were over for this time. The *Tawaya* people, however, remained sullen and hostile for some days. The neighbouring villages were deserted, the people having taken to the woods ; and though the *Raja's* sons often came to see me, he himself never came near his capital during my stay. What he was afraid of I cannot say. I soon got on friendly terms with the *Alfuro* (*Toraja* they say in *Celebes*), or heathen people of *Tumba* ; and as *Tawaya* was utterly parched up and dry, I did my best to go to *Tumba*, and twice got coolies, and twice they ran away. The third time they came and were ready to take us to *Tumba* (fully 4000 feet high, I think, on a mountain which is about 7000), but that day there were three of us down with fever, and a

few days later we had to go back to Dongala to catch the steamer. If I had stayed I could easily have reached Tumba and got many good things, but considering what the Sarasins have done in Celebes, I hated to waste time that might be better spent in other islands.\*

"The country near Palos Bay was actually drier than Makassar, while in Toli Toli (Tontoli), only 200 miles beyond, the climate is like that of Singapore—rain every day, and a pleasant flora, I hear, like that of the Minahassa. Though now the steamers stop at Dongala—formerly a little rendezvous of Buginese pirates—nobody at Makassar knew anything about the place. That is the trouble of going to new places !

The insects and birds seem to be a mixture of the well-known Menado and Makassar forms. . . ."

I shall give a complete list of the birds from north and south of Palos Bay, as it will be not without value for the knowledge of the exact distribution of the Celebes birds.

# 1. BIRDS COLLECTED IN AUGUST 1896 ON BONTHAIN PEAK.

1. *Merula celebensis* Büttik.—♂ ♀, 6000 to 7000 feet. "Iris dark brown; feet ochreous brown; bill orange-ochraceous, duller above."
2. *Pratincola caprata* (L.).—From the lower hills to 6000 feet. "Iris of ♂ chestnut."
3. *Phyllergates riedeli* Mey. & Wigl.—♂ ♀, 3000 and 6000 feet. "Iris ♂ pale umber, ♀ greyish brown; feet pale brown or olive-brown; maxilla blackish; mandible reddish ochreous." The young *male* is coloured like the adult *female*.
4. *Cisticola cisticola* (Temm.).—♂, 5000 feet. "Iris pale brown; feet pale brown; bill blackish; mandible pale, except on tip."
5. *Trichostoma fuscchi* Wald.—Only met with in the low country. "Iris pale red-brown; feet pale purplish; maxilla blackish; mandible bluish horn-colour."
6. *Androphilus everetti* Hartert.—♀, 6000 to 7000 feet. Wing 58.2 mm. "Feet dark fuscous; bill nearly black."
7. *Acemonorhynchus aurcolimbatus* (Wall.).—Only met with in the low country at the foot of Bonthain Peak. "Iris red-brown; bill and feet black."
8. *Dicaeum celebecum* Müll. & Schleg.—Low country and 1000 feet. "Iris of ♂ ad. dark brown; bill and feet black." One young *female* from 4000 feet seems to belong to this species, though I am not quite sure about it. "Its iris is deep brown; feet blackish; maxilla black; mandible at base and gape dull orange." This specimen is not *D. nehrkorni*, as the bill is too stout for that species, though in colour it is like young specimens of it.
9. *D. nehrkorni* W. Blas.—4000 to 6000 feet.
10. *Cinnyris frenata dissentiens* Hartert.—Both sexes and pulli from the lower hills up to 6000 feet. "Iris deep brown; feet and beak black."

\* We are sorry to say that we cannot agree with our friend's calculation. The Sarasins were neither specialists in ornithology nor in entomology, and collecting birds and lepidoptera was by no means their principal object during their travels in Celebes. A longer stay in the higher country of Tumba (or Tuba) would no doubt have been of some use for Mr. Doherty. Only a longer stay can result in really good collections, unless totally unknown islands are visited, whence everything is of interest, and such are rare now; and even there a too much hurried stay is regrettable. E. H.

After once more reading Professor Blasius' discussion on "*Cyrtostomus frenatus* (S. Müll.) var. nov. *Plateni*" in *Zeitschr. f. ges. Ornith.* II. pp. 289-291, and comparing the figures on Plate XII. with my birds from Bonthain Peak, it became to me very doubtful whether it would be possible to separate the form of the Bonthain Peak from that of Makassar. When I named my *dissentiens* I compared it with a good series of North Celebes specimens, which were named by Dr. A. B. Meyer, who no doubt has of all ornithologists the greatest knowledge of the Celebensian avifauna, *C. frenata plateni*. So it came that I took them to be typical *plateni*, nor had I any special reason to doubt the correctness of this view, as Professor Blasius had bestowed the name *plateni* on southern as well as on northern examples. Professor Blasius now has been kind enough to lend me his type of *C. frenata plateni*, which, as his article clearly shows, is the South Celebes bird, with which, however, he united the North Celebes birds, although stating some slight differences. I find now, from a study of Blasius' type and one *male* from Makassar in the British Museum, that the Makassar birds are quite unlike the Minalhassa form, being much paler yellow below, and more olive with very little of a green tinge above. Nevertheless they are not exactly like our birds from Bonthain Peak, but still a little darker below, and with a slight greenish tinge above, while my Bonthain form has *none at all*. Therefore it would be most desirable to compare a *series* of Makassar birds with those from Bonthain, of which I have a good material before me now, to finally decide whether the Bonthain birds are constantly different from those of Makassar; but at present I must suppose, and I believe that this will be found to be quite right, that there are three forms in Celebes:—

- (1) A bird with dark yellow under parts and greenish upperside, inhabiting Northern Celebes.
- (2) A bird with paler underside, darker olive-brown and much less greenish upperside, found in the low country in South Celebes.
- (3) A bird with still paler underside and still less greenish deep olive-brown upperside, known to occur on the Bonthain Peak.

The first of these three, which is *undoubtedly* different from No. 2, has no name, and I wish to name it

***Cinnyris frenata meyeri* subsp. nov.**

in honour of Dr. A. B. Meyer.

No. 2 is *C. frenata plateni* (W. Blas.), sensu strictiore.

No. 3, if different from No. 2, is *C. frenata dissentiens* Hart.

*C. f. meyeri* is the nearest form of the three to *C. frenata frenata*.

To make matters still more interesting, though more complicated again, I am enabled, with my good series of Bonthain birds for comparison, to state that the difference between the latter and those from Saleyer, viz. the still paler underside of the Saleyer form, is well marked and apparently constant, and therefore I cannot hesitate any longer to distinguish it as

***Cinnyris frenata saleyerensis* subsp. nov.**

*Cinnyris formae C. frenata dissentiens dictae persimilis, sed subtus valde pallidior.*



*Hab.* Insula Saleyer dicta.

Typus in Museo Rothschildiano asservatur.

11. *Cinnyris porphyrolaema* (Wall.).—Low country only.
12. *Myzomela chloroptera* Walden.—4000 to 6000 feet.
13. *Melilestes celebensis meridionalis* Mey. & Wigl.—♂, 6000 feet. “Bill black; feet dark brown; soles dull ochreous.”
14. *Zosterops anomala* Mey. & Wigl.—This interesting species, which truly deserves the name *anomala*, was found at 3000 and 4000 feet. The “iris is pale brown; the feet pale bluish grey; beak black; base of mandible pale.”
15. *Z. sarasinorum* Mey. & Wigl.—Two *males* from 5000 feet. As remarked before, in my article on the birds collected on Bonthain Peak by Mr. Everett, I have not seen *Z. sarasinorum* from North Celebes, but Dr. A. B. Meyer has been good enough to compare some of my Bonthain Peak skins with his *Z. sarasinorum*, and declares them to be the same. The authors, when describing this species, did not compare it with its nearest ally at all, nor did I when I first mentioned it, as I had no specimens of *Z. citrinella*. Now, comparing *Z. sarasinorum* with *Z. citrinella*, I find that they are very similar to each other, in fact so much that they might be merely subspecies. *Z. citrinella*, however, is a little larger, with longer wing and beak, and has the sides of the breast and abdomen more strongly washed with greyish brown, and the middle of the breast and abdomen is lighter and more washed with pale yellow in *Z. sarasinorum*. *Z. palpebrosa* and allies differ at a glance in the *grey* sides of breast and abdomen.
16. *Z. intermedia* Wall.—In the lower parts and at about 3000 feet. “Iris pale sepia; feet pale bluish grey; maxilla deep brown; mandible pale corneous.” Specimens from the Lesser Sunda Islands, as said before in this journal, are mostly distinctly larger, with slightly larger beaks, and it might be possible to separate them subspecifically from *Z. intermedia* of Celebes.
17. *Z. squamiceps* (Hartert).—I greatly doubt now, the more I see of *Chlorocharis emiliae* and my *Chl. squamiceps*, that either of them can with satisfaction be separated from the genus *Zosterops*, as long as *Orcozosterops* and other aberrant forms are united with it, which I do not wish to separate (see Nov. Zool. III. pp. 70, 153). Also my *Lophozosterops dohertyi* (Nov. Zool. III. p. 568) is most closely allied to these large aberrant forms of *Zosterops*, but the elongated head-feathers, forming a conspicuous crown in both sexes, may warrant its generic separation. The beak of *Lophozosterops*, too, is rather strong and stout for a *Zosterops*. *Z. squamiceps* (Hart.) was found to be common in heights of about 5000 and 6000 feet above the sea. “The iris is dark chestnut or dark brown; feet dark bluish grey, soles ochreous; beak black.”
18. *Munia molucca* (L.).—Met with in the low country only. Celebes examples are not, I think, separable from *M. molucca typica*, while *some* of the Saleyer and Kalao specimens approach the *M. molucca propinqua* of the Lesser Sunda Islands. This latter subspecies is indeed very little differentiated, but I quite agree with Mr. Sharpe that it deserves a name. *Systematic work is scientific only if it is exact*; if not it is either useless, or doing harm instead of good.
19. *Artamus monachus* Bp.—One ♂, shot at 6000 feet above the sea. Quite like specimens from North Celebes. “Iris deep red-brown; feet and claws



blackish, powdered with white; beak pale blue, tip and fore-part of commissure blackish."

20. *Calornis minor* Bp.—At 4000 feet.
21. *Oriolus celebensis meridionalis* Hart.—Low country.
22. *Streptocitta albicollis* (Vieill.).—3000 feet.
23. *Pachycephala bonthaina* (Mey. & Wigl.).—Met with from 6000 to 7000 feet. "Iris scarlet; bill black; feet blackish." (Nov. Zool. III. p. 155.)
24. *P. meridionalis* Büttik.—3000 to 6000 feet high. "Iris deep chestnut-brown; feet dark purplish, claws black; beak black."
25. *Graucalus leucopygius* Bp.—♀ shot at 500 feet on the foot of the Peak. "Iris yellowish white; feet and beak black." Wing 153 mm.
26. *Lalage timoriensis* (S. Müll.).—One ♂ from the foot of Bonthain Peak. "Iris deep chestnut; feet blackish; beak black."
27. *Muscicapula westermanni* Sharpe.—A ♀ ad. and a ♂ juv. from about 6000 feet. ♀. "Iris grey; feet blackish; beak black."
28. *Muscicapula hyperythra* (Blyth).—♂, 6000 feet. Wing 65 mm.!
29. *Siphia omissa* Hartert (Nov. Zool. III. p. 71).—Three adult *males* and a young *male* from 4000 and 6000 feet. They bear out my former conclusions as to the distinctness of the Celebes form, although the *males* are not so easy to distinguish. It may be considered by some as merely a subspecies of *S. bangumas*. ♂ ad. "Feet pale purplish; bill black." ♂ juv. "Feet pale reddish." Wings of adult *males*: 78—81 mm.
30. *Siphia bonthaina* Hartert.—One specimen, marked ♂, from 6000 feet. It fully agrees with the type, described Nov. Zool. III. p. 157. "Iris deep chestnut; feet slaty grey, soles pale reddish; bill black." Wing 66 mm.; tail 49; culm. 13.5; tars. 19.
31. *Gerygone fluceola* Cab.—One ♀, 6000 feet. "Iris reddish chestnut; feet and beak blackish." Wing 54.9 mm.
32. *Hypothymis puella* (Wall.).—From the foot of Bonthain Peak. ♂. "Iris dark chestnut."
33. *Rhipidura teysmanni* Büttik.—Two *females* from 3000 and 5000 feet. "Iris very dark chestnut-brown; feet pale purplish; beak blackish, pale at base of mandible."
34. *Calicicapa helianthea* Wall.—Met with at 6000 feet. "Feet pale reddish brown, blackish in front; beak blackish above, reddish below."
35. *Cryptolopha sarasinorum* Mey. & Wigl.—In heights of 4000, 5000, and 6000 feet. "Iris dark chestnut; feet slaty grey, soles ochreous; beak deep blackish brown, base of mandible paler." Wing 54—56 mm. Sexes alike in colour and size.
36. *Stoparola meridionalis* Büttik.—A series from 5000 to 6000 feet. "Iris deep chestnut; feet black; beak black."
37. *Haleyon chloris* (Bodd.).—A ♂ from the foot of the mountain, very blue everywhere above; wing 112 mm. Two ♀ ♀ from 4000 feet, much more greenish above; wings 110 and 112 mm. "Iris deep chestnut."
38. *Microstictus wallucei* (Tweedd.).—On the foot of the Peak. ♂ ♀. "Iris very pale canary-yellow; feet dull bluish with some sordid brownish scales, claws bluish horn-colour; bill black."
39. *Myzopithecus temminckii* (Mall.).—Two *males* from 4000 feet. "Iris dull crimson; feet dirty olive-green, claws pale brownish grey."

40. *Eurystomus orientalis* L.—A *female*, more like *E. orientalis orientalis* than *E. orientalis australis*, but not quite typical, from the low country of Bonthain.
41. *Trichoglossus ornatus* (L.).—♂ and ♀. not differing from each other, from 3000 and 5000 feet. “Iris salmon-colour; feet dull greenish. claws pale grey-brown; beak orange.”
42. *Ninox punctulata* Quoy & Gaim.—Two *females* from the foot of the mountain. “Iris deep chestnut.” No bars above, only whitish spots, but these inclined to be bar-like in one. This latter specimen has also one pure white feather on the crown.
43. *Spilornis rufipectus* Gould.—At 4000 feet. ♀ not quite ad. “Iris ochreous: feet deep ochreous orange.”
44. *Spilospizias trinitatus haesitandus* Hart.—One ♀ juv., one ♀ ad., Bonthain, 1000 and 4000 feet. I am not aware that the young bird of the southern form differs from that of *Sp. trinitatus trinitatus*, and the adult *female* sent by Doherty does not show the characters of *haesitandus* very well, which is after all a poor subspecies.
45. *Tinnunculus moluccensis occidentalis* Mey. & Wigl.—Three specimens from 6000 feet.
46. *Malia grata* Schleg. Three skins from 6000 feet. “Iris two shades of brown, separated by a black line; feet and claws dull ochreous brown; beak blackish, commissure and mandible dull ochreous.” One evidently younger bird is much duller below, the under tail-coverts brownish.

## II. ON SOME BIRDS COLLECTED IN LOW COUNTRY NORTH OF MAKASSAR IN JULY 1896.

Among half a hundred birdskins collected there are only a few which require mention here, the majority belonging to very well known common species.

1. *Trichostoma finschi* Wald.—This species outnumbered all others sent; it must therefore have been very common near Makassar.
2. *Siphia rufigula* (Wald.).—An adult *male* and an evidently adult *female*, without any details on the labels. The *male* agrees with the description. The wing measures 64 mm. The *female* closely resembles *Siphia bonthaina*, but differs in the following points:—
  - (1) The wing is decidedly shorter, measuring only 57 mm.
  - (2) The upperside is not brownish olive, but ashy, with a faint brown tinge. The edges to the wing-quills are paler and not so rufous.
  - (3) The rectrices and upper tail-coverts are not so chestnut rufous, but duller. The tail does not show any rufous colour at all from below, while in *S. bonthaina* it is distinctly so even from below.
  - (4) The tarsus is much shorter: 16 mm. (19 to 20 in *S. bonthaina*).
3. *Oriolus celebensis meridionalis* Hart.—Three skins, beautifully showing the characters of this very well pronounced southern form.
4. *Streptocitta albigollis* (Vieill.).—Several skins from the Chamba-Maros country north of Makassar. Doherty says that “this bird seems to be a mimic of *Gazzola typica*, the two looking very much alike at a distance.” It must

be admitted that the distribution of the colours in these two birds is strikingly similar, but why should one mimic the other?

5. *Gazzola typica* Bp.—This interesting little crow, which is still rare in collections, and of which we know hardly anything but a few skins in collections, is said by Doherty to be common enough north of Makassar and on Bonthain Peak, although he sent us only one *male*.
6. *Alceao ispida moluccana* (Less.).—This is the proper nomenclature of this form, which is generally called *A. moluccensis* or *A. ispidoides*. It is connected with *A. ispida bengalensis* by intermediate forms. Doherty sent three skins from Makassar. "Iris very deep brown; feet bright orange, claws blackish." Celebes specimens resemble entirely the typical Moluccan form.
7. *Monachalcyon capucinus* Mey. & Wigl.—*M.c.*, Meyer & Wiglesworth in *Abh. und Ber. Mus. Dresden*, 1896-97, No. 2, p. 12 (1896). The authors described their species from one example, evidently an adult *male*, from Tonkean in the Eastern Peninsula of Celebes. It is therefore of remarkable interest that the same species should now turn up near Makassar. Not being quite sure about the identity of the bird, I sent it to Mr. Wiglesworth, who kindly compared it with the type in the Dresden Museum, and he found that the differences between it and the type are just the same as those between the sexes of *M. monachus*. Of course *males* from Makassar and *females* from Tonkean are still desirable for future investigations.\* In our bird the crown is greenish black: a superciliary line, a few feathers on the forehead, all the under parts (except the chin and throat, which are rufous white) and under wing-coverts are rusty ochraceous; the sides of the head and neck mixed blackish green and ochraceous; upperside dull green, with a brownish rusty tinge. Beak bright orange; iris brownish grey; feet orange-brown. Beak 48 mm.: wing 147; tail 120; tars. 19.
8. *Phlegocnas bimaculata* Salvad.—An immature *male* of this rare bird was shot in low country near Makassar. The purple-violet spots on the sides of the upper nape are not developed, but just indicated; the breast has some brown feathers edged with rust-colour; the upper wing-coverts have rusty edges. "Iris deep chestnut; feet reddish; beak dull blackish."
9. *Chalcophaps stephani* Rehb.—From the neighbourhood of Makassar. The distribution of this species is very peculiar.
10. *Carpophaga paulina* (Temm.).—From Makassar. Exactly like specimens from North Celebes.
11. *Phoenicophaes calorhynchus meridionalis* Mey. & Wigl.—Several skins from Makassar are distinctly this subspecies.
12. *Pyrrhocentor celebensis rufescens* Mey. & Wigl.—Two skins, shot in the low country north of Makassar, agree entirely with typical examples of *P. c. rufescens* from Tonkean, while skins from Bonthain Peak (Nov. Zool. III. p. 160) agree much more with *P. celebensis celebensis* from North Celebes. This is difficult to understand, for the two forms seem to be distinct, unless the differences are due to age or season, which is not probable, as the authors and I have seen large series of the northern form.

\* See remarks under *Monachalcyon monachus intermedius*, described hereafter.

### III. LIST OF BIRDS COLLECTED AT TAWAYA AND DONGALA, NORTH AND SOUTH OF PALOS BAY, IN WEST CELEBES, IN AUGUST AND SEPTEMBER 1896.

Although the species enumerated here are mostly more or less common, I thought it best to give a complete and critical list of all of them, as this must be of interest for the details of the distribution of the Celebes birds, and as it is valuable to know whether the northern or the southern forms are found north and south of Palos Bay, since we know that so many of them are different. For the localities and the nature of the country see Introduction, p. 154.

1. *Geocichla erythronota* Sel.—One male and two females from Tawaya. "Iris very deep brown; feet slaty blue; beak pale slate-colour; tip and commissure whitish; basal two-thirds of maxilla black. The same in both sexes." The females before me are smaller than the male (wing 110—112 against 120 in the male), the beak shorter, but otherwise there is no material difference between the sexes. This rare thrush was originally described from Makassar.
2. *Pratincola caprata* (L.).—Old and young birds from Tawaya.
3. *Trichostoma (Turdinus) celebensis* (Strickl.).—Dongala and Tawaya. "Iris dull orange; feet dark brown; beak black; mandible greyish horn-colour." It is this northern form, and not *T. finschi* of South Celebes, which is found near Palos Bay.
4. *Acmonorhynchus aureolimbatus* (Wall.).—Tawaya and Dongala.
5. *Dicaeum celebicum* Müll. & Schleg.—Tawaya and Dongala.
6. *Cinnyris frenata meyeri* Hart.—From Dongala (and also from Gorontalo). The Dongala birds agree fully with typical *C. f. meyeri* Hart. (see *antea*, p. 156) from Menado.
7. *Cinnyris porphyrolaema* (Wall.).—Dongala.
8. *Aethopyga flavostriata* (Wall.).—One skin, marked ♀, in the plumage of the bird described and figured as *Ae. beccarii* by Salvadori.
9. *Anthreptes maluccensis celebensis* (Shell.).—Tawaya and Dongala.
10. *Zosterops atrifrons* Wall.—Tawaya. Specimen agreeing with one from Gorontalo.
11. *Zosterops intermedia* Wall.—Specimens from Tawaya, agreeing with those of South Celebes.
12. *Cisticola exilis* (Vig. & Horsf.).—Tawaya.
13. *Munia atricapilla brunneiceps* (Wald.).—Tawaya and Dongala.

#### 14. *Munia subcastanea* sp. nov.

*Munia* species *M. pallida* nominatae similis, sed abdomine subcaudalibusque brunneo-castaneis, concoloribus, pallio saturatiore, nigricantiore.

*Hab.* Celebes, circum sinum Palos.

Three skins, two males and one female, of a *Munia* from Dongala and Tawaya are unlike any other species. They are of the size and general appearance of *Munia pallida* Wall., but differ considerably.

Top of the head whitish, washed with pale ashy brown; intercapulium, back, wings, and wing-coverts deep ashy brown; rump and upper tail-coverts golden

maroon; rectrices deep brown, with brownish golden edges; sides of head and neck, chin, throat, and chest white, with a faint pearly greyish tinge; breast, abdomen, and under tail-coverts deep brownish chestnut, under wing-coverts a little paler. "Iris dark brown; feet blackish; beak bluish grey; commissure corneous." L. t. ca. 100 mm., a. 51—54, c. 40, t. 14, r. 9.

The skin marked "♀" is like those of the *males*, but the rump, upper tail-coverts, and edges of central rectrices lighter and more yellowish.

So little did I expect a new *Mania* at Palos Bay, that I had the skins in the Museum for several months before I paid any attention to them.

15. *Scissirostrum dubium* (Lath.)—Tawaya.
16. *Dierurus leucops* Wall.—Dongala. "Iris white; feet and beak black."
17. *Oriolus celebensis* (Wald.).—A number of orioles from Tawaya and Dongala belong to the northern form *O. celebensis celebensis*, and not to *O. c. meridionalis*. The black band is always more or less conspicuously interrupted on the nape and narrower than in *O. c. meridionalis*, in which it is broader and quite continuous.
18. *Streptocitta torquata* (Temm.).—Dongala. "Iris very dark brown; feet and beak black." Again the northern and not the southern species. The throat of the one *male* is mixed black and white. I see an occasional white feather on the throat in many specimens in the Tring Museum: but I do not know whether this is, as I think, due to immaturity.
19. *Graucobus leucopygius* Bp. ♂ ♀, Dongala. ♀. "Iris yellowish white; feet and beak black."
20. *Artamides bicolor* (Temm.).—♂ ♀, Tawaya. ♂. "Iris dark amber; feet black; bill pale blue; commissure darker." ♀. "Iris dark amber; feet blackish; bill pale blue; commissure paler."
21. *Volocivora morio* (S. Müll.).—Two adult, or nearly adult, *males* and two fully adult *females* from Tawaya. The two *females* are rufous below, narrowly barred with black from the chin to the under tail-coverts, the latter only having some narrow irregular bars at the bases, being quite uniform towards the tips; under wing-coverts narrowly barred with black. A *female* from Indralaman (Nov. Zool. III. p. 156) (? probably immature) is very much paler below, being only in the middle of the abdomen buff or rather pale rusty rufous; the under wing-coverts with a few not very conspicuous bars: the under tail-coverts much paler than in those from Tawaya. Another specimen (marked *female*) is evidently immature, and apparently closely resembles the one described in *Abh. und Ber. Mus. Dresden*, 1896, p. 10, from South-West Celebes. *Males* from South Celebes do not seem to differ materially from northern examples, though I have not seen such a black one from the south; but that is merely a sign of age. The *males* from Tawaya do not seem to differ from northern *males*. ♂. "Iris deep chestnut; feet black, soles whitish; bill black." ♀. Bare parts as in ♂.
22. *Lalage leucopygialis* Wald.—♂ ♀, Tawaya.
23. *Hypothymis puella* (Wall.).—Several *males* from Tawaya. "Iris chestnut; feet dark blue; beak blue, tip black."
24. *Gerygone flarcola* Cab.—Dongala and Tawaya. "Iris crimson or red-brown; beak black: in one, evidently younger, bird the base of the mandible is pale." It is possible that the study of a series of good skins from Saleyer



will result in the subspecific separation of that form. While the wings of six Celebes skins before me are from 51 to 55 mm. in length (the *females* not always smaller, unless there are wrongly sexed birds among them), the wings of the two Saleyer birds (see Nov. Zool. III. p. 171) are 49 to 50 mm. long, and they are slightly paler, though this latter character is probably due to their being in old plumage.

25. *Pitta celebensis* Forsten.—Seven skins from Tawaya. Some are adult birds, some in the spotted plumage of the young, with some red feathers just appearing. “Iris of old birds very dark chestnut or deep brown, of young ones deep greyish umber; legs of a somewhat silvery grey; beak black.” I consider the interesting *P. palliceps* as merely a subspecies.

26. *Caprimulgus affinis* Horsf.—♂ in moult and ♀ from Tawaya.

27. *Cyclopsis fallax* (Schleg.).—Both sexes from Dongala and Tawaya. The *females* are of a much darker and less rufous brown above. “Iris deep brown in both sexes.”

28. *Alcedo ispida moluccana* (= *ispidoides*) (Less.).—Dongala.

29. *Pelargopsis melanorhyncha* (Temm.).—Three *males* and a *female* from Tawaya.

“Iris very deep brown; feet and claws black, soles dark orange; beak black.” In some skins there is a small red spot at the base of the maxilla; but in a large series of this species there is not a specimen that approaches the recently described very interesting *P. diehrorhyncha* Mey. & Wigl. from Peling (cotypes before me), which resembles *P. melanorhyncha* very much, but has a larger and partly red beak. The sexes do not seem to differ in any way.

30. *Vittura cyanotis* (Temm.).—♂ ♀, from Tawaya. “Iris crimson; bare skin before eyes scarlet; feet dark vermilion, claws black; beak dark vermilion.”

*C. sanghirensis*, which Doherty sent from Sanghir, has the “iris purplish pink; feet scarlet, claws blackish; beak dark vermilion.”

### 31. *Monachaleyon monachus intermedius* subsp. nov.

A male *Monachaleyon* from Tawaya differs conspicuously from *M. monachus monachus* of North Celebes in having the head of a much deeper blue and with a distinct, though faint, greenish tinge. The tail is a little less washed with blue. It differs from *M. capucinus* Mey. & Wigl. in having the head deep blue, not black, and the tail not quite without a bluish wash. The breast and abdomen of the Tawaya bird are a shade lighter than in most *males* of *M. monachus monachus*, the beak apparently a little thicker. I have before me twelve skins of *M. monachus monachus*, but I know the type of *M. capucinus* only from the description in *Abh. und Ber. Mus. Dresden*, 1896, pp. 12, 13. Probably *M. capucinus* is also a subspecies of *M. monachus*, the *M. m. intermedius* bridging the gap over. *Antea*, p. 160, I have given the statement of Mr. Wigglesworth, who compared the *female Monachaleyon* from Makassar with his type of *M. capucinus*; but now I think that it is almost as possible that it belongs to *M. m. intermedius*, as the crown is not pure black, but very deep bluish black with a greenish tinge. It would thus seem that Celebes has (besides the very different *M. cyanocephalus*\*) three forms: *M. monachus monachus* with a bright blue cap in N. Celebes, *M. m. intermedius* with a deep greenish blue cap in W. Celebes, *M. m. capucinus* with a

\* So called in the *Cat. B. XVII.*, though its proper name seems to be *princeps* Rehb.

black cap in E. Celebes. The type of *M. m. intermedius* has the "iris deep number; feet reddish; claws dark; beak scarlet." Wing about 142 mm. (moulting); tail about 127; beak 50.

32. *Merops ornatus* Lath.—♂ ♀, Dongala.

33. *Penelopides exarhatus* (Temm.).—Both sexes from Tawaya. The males, when freshly moulted, have the throat and sides of the head golden yellow: but the yellow disappears in time, and thus the feathers become white, as they are described in *Cat. B.* ♂. "Iris crimson, eyelashes black, orbit bright crimson; feet black, soles ochreous; bill pale horn-colour, casque dull ferruginous." ♀. "Iris dull crimson."

34. *Lichtensteinipicus wallacei* (Tweedd.). It is this form and not the northern *M. fulvus* of which Doherty sent two pairs from Dongala. The name *Lichtensteinipicus*, although not a well-formed one, is the oldest, as it was fixed on the *Picus funebris* Valenc., and it must therefore be accepted, instead of *Microstictus* Harg.

35. *Cacomantis virescens* (Brügg.).—Tawaya.

36. *Cacomantis merulinus* (Scop.).—A very pale male from Tawaya.

37. *Pyrhocentor celebensis rufescens* Mey. & Wigl. (?).—Two skins from Dongala resemble very much the two eotypes of *P. c. rufescens* Mey. & Wigl. in the Tring Museum, though they are a little paler below, and less rufous above, where they look more like *P. c. celebensis*. When mentioning our birds from Indralaman in South Celebes, p. 160 in Nov. Zool. III., I stated that they did not belong to *P. c. rufescens*, and they were certainly more greyish above and less reddish rufous below; on the other hand, they are more rufous below than any of our Minalassa specimens. The two we received from Makassar (Doherty) are hardly different from *P. c. rufescens* at all (*antea*, p. 160). A third skin, a male, from Dongala differs considerably from any one I ever saw before. It has the hind-neck and inter-scapulium of the same rather bright though light rusty (somewhat like ochraceous buff) colour as the breast. Whether this is an accidental variety I am unable to say.

38. *Phoenicophus calorhynchus meridionalis* (Mey. & Wigl.).—One female from Dongala belongs to the southern form of this bird. In fact it is even still paler on the head than any of those from Indralaman and Makassar before me, but this is no doubt due to the very old plumage it is in. It is also rather pale on the back and breast. "Iris crimson; feet purplish black."

39. *Eudynamis melanorhyncha* S. Müll.—Two males from Tawaya and Dongala. "Iris red; feet and beak black."

40. *Tanygnathus mülleri* (Müll. & Schleg.).—Dongala, female. "Bill dirty whitish horn-colour."

41. *Cacatua sulphurea* (Gm.).—A male from Dongala and a female from Tawaya. "Iris crimson; feet and bill black."

On p. 176 in Nov. Zool. III. I mentioned that two females from Djampea had very small beaks. I now find that Celebes birds have always larger bills, and as the two females from Djampea are totally alike in the size of their beaks, I do not hesitate any longer to separate them subspecifically, calling them

*Cacatua sulphurea djampeana* subsp. nov.

In separating this form I have been aided by Mr. L. W. Wiglesworth, the co-author of the forthcoming work on the birds of Celebes, who kindly gave me some measurements of specimens of *C. sulphurea* in the Dresden Museum.

The measurement I gave, *loc.*, was taken in a straight line from the outer margin of the cere, where maxilla and mandible meet, to the tip. It is in the two, as I said, 24 mm., in one hardly more than 23.5. In Celebes *females* (which are considerably smaller than *males*!) this is 27 mm. The width of the mandible is about 3 or 4 mm. less in *C. s. djampeana* than in the smallest Celebes *female*; the maxilla is considerably smaller and narrower.

There are thus three closely allied subspecific forms :—

*C. sulphurea sulphurea* from Celebes.

*C. sulphurea djampeana* from Djampea, exactly like it, only with a smaller beak.

*C. sulphurea parvula* from the Lesser Sunda Islands, exactly like *C. sulphurea sulphurea* and of about the same dimensions, not smaller, with the beaks as a rule as powerful as in any from Celebes, but the ear-coverts paler and much less yellow.

42. *Trichoglossus ornatus* (L.).—Dongala and Tawaya. “ Iris pink.”
43. *Loriculus stigmatus* (Müll. & Schleg.).—Both sexes from Tawaya and Dongala, where they must have been common. “ Iris pale yellow; feet orange, claws blackish; bill black; cere pale orange.”
44. *Spilospizius trinotatus* (Bp.).—Several examples from Tawaya and Dongala, belonging distinctly to the northern form.
45. *Accipiter rhodogaster* (Schleg.).—Dongala, *male*.
46. *Astur griseiceps* Schleg.—This rare species was shot at Dongala. ♂. “ Iris orange; feet ochreous, claws black; maxilla black; mandible grey; cere dull yellow.”
- 47, 48. *Osmotreron wallacei* Salvad. and *O. vernans* (L.).—Both from Tawaya and Dongala.
49. *Ptilinopus melanopsilus* (Salvad.).—Tawaya and Dongala.
50. *Ptilinopus gularis* (Q. & G.).—Tawaya. “ Iris orange-scarlet; feet carmine, claws pale brown; bill bright orange-ochreous.”
51. *Turtur tigrinus* (Temm.).—Dongala.
- 52, 53. *Chalcophaps stephani* Rehb. and *C. indica* (L.).—Tawaya and Dongala.
54. *Myristicivora luctuosa* (Temm.).—Dongala and Tawaya. “ Iris deep brown; feet slaty blue; bill slaty blue, tip yellow.”
55. *Carpophaga paulina* (Temm.).—A pair from Dongala.
56. *Turacoena manodensis* (Quoy & Gaim.).—One pair from Dongala.
57. *Macropygia albicapilla* Bp.—A *female* and a very young bird from Dongala.
58. *Oenolimnas isabellina* (Schleg.).—Of this rare rail we received a *female*, shot at Tawaya, in September 1896. It is evidently adult. The iris was crimson; feet dark brown; bill all pale green.
59. *Amaurornis phoenicea* (Forst.).—Two young examples from Dongala.
60. *Rallina minahasa* (Wall.).—One adult *female*, Dongala, August 1896. “ Iris bright orange, eyelids ochreous; feet dark grey; bill below bright green, above black, tip pale corneous.”

61. *Hypotaenidia celebensis* (Q. & G.).—Two adult *females*, Dongala and Tawaya. “ Iris scarlet : feet brownish black : bill nearly pure black.”
62. *Dendrocygna arcuata* (Horsf.).—Tawaya.
63. *Megapodius cumingi* Dillwyn.—Tawaya, old *females* and pullus.
64. *Turnix ruflatas* Wall.—Both sexes from Tawaya. The *males* are decidedly smaller than the *females*, the black borders to the throat-feathers are very narrow, the chin almost pure white, the wing-coverts have more white, the scapulars rather less, not more rust-colour. ♀ ad. “ Iris whitish : feet ochreous, joints greenish : bill ochreous.”
65. *Turnix maculosa* (Temm.) (?).—One *male* and one *female* from Dongala. The *male* is somewhat paler above, and much paler below, than an Australian one before me : the *female* has the wing about 7 mm. shorter than four Australian *females* before me, the rufous collar seems to be narrower, the back more blackish and with more rusty buff edges to the feathers. As, however, it is doubtful whether the *female* is quite adult, I am unable to decide whether these differences are of specific or subspecific value or not ; and we must await further materials before we finally decide whether the little *Turnix* from Celebes differs from the Australian *T. maculosa* (Temm.) (*Cat. B.* XXII. p. 546).

A few of the common shore birds have not been mentioned, as their occurrence was of no interest.

The list shows that the ornith of Palos Bay is chiefly a mixture of northern and southern forms, the former perhaps prevailing.

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## ON DIFFERENCES BETWEEN GÜLDENSTADT'S REDSTART AND ITS EASTERN ALLY.

By THE HON. WALTER ROTHSCCHILD.

HAVING recently received, through the agency of Mr. Schlüter, three *males* and one *female* of *Ruticilla erythrogastra* from the Caucasus, I was much struck by their very dark and intense coloration. On comparing them with my large series from Tsaidam and Gansu in China, Eastern Turkestan, the Issyk Kul, and Gilgit, received from the Petersburg Museum, Tancre's collectors, and in the Elwes collection, the following differences are obvious :

The red of the rump, abdomen, and upper tail-coverts is much darker and more chestnut than in the Asiatic birds. The tail is very much darker and washed with blackish brown, while it is pale rusty red in the Eastern bird. The *female* is darker and more ashy grey all over, and the tail also is darker and less washed with grey.

In looking up the synonymy of these two birds, I find that in every book where these birds are mentioned, except in Pleske's and Lorenz's writings, the two forms are mixed up. Lorenz and Pleske, however, noticed the differences, but unfortunately the former bestowed a fresh name on the Asiatic bird, which had two already. I do not agree with Pleske in considering these two forms as "varieties," for I cannot find any mention of nor have I myself seen any connecting links ; on the contrary, I am convinced they are very distinct species with different habitats. The names of the two species must stand as :—

1. *Ruticilla erythrogastra* (Güld.) for the Caucasus bird.
2. *Ruticilla grandis* Gould for the Asiatic bird.

The synonymy is as follows :—

1. *Motacilla erythrogastra*, GÜLDENSTADT in *Nor. Com. Petrop.* XIX. p. 469, pls. 16, 17 (1775) (Caucasus) ; *Chestnut-bellied Warbler*, Latham, *Synopsis*, II. pt. 2, p. 424 (1783) (Caucasus) ; *Sylvia erythrogastra*, Latham, *Ind. Orn.* II. p. 513 (1790) (Caucasus) ; *Motacilla ceraunia*, Pallas, *Zoogr. Rosso-As.* I. p. 478 (Caucasus) ; *Ruticilla erythrogastra* of modern authors (*partim*—when referring to birds from the Caucasus ! Plate : Dresser, *B. Europe*, II. pl. 46).
2. *Ruticilla grandis*, GOULD in *Proc. Zool. Soc.* 1849, p. 112 (Afghanistan and Thibet) : "*R. tricolor*, Gould, *Proc. Zool. Soc.* 1849" (*sic*), Bonaparte, *Consp. Ac.* I. p. 296 (As. centr.) (This is evidently a *lapsus calami*, no such name being published) ; *R. rigorsi*, Moore in *Proc. Zool. Soc.* 1854, p. 27, pl. LX. (N. India !) ; *R. erythrogaster* n. var. *sewerzowi*, Lorenz, *Beitr. z. Kenntn. d. orn. Fauna d. Nords. d. Kaukasus*, p. 23 (1887) (Central Asia) ; *R. erythrogastra* var. *ssewerzowi*, Pleske, *Wissensch. Result. Przewalski's Reis. II. Vögel, Lief.* 1, p. 58 (1889) (Central Asia) ;



*R. erythrogastra*, Blyth, Jerdon, Blanford, Oates in *Fauna Brit. India*, *Aves*, II. p. 97, and others (Himalayas)—*nec* *Güldenstädt*! [*Phoenicurus reevesi* Blyth. *Journ. As. Soc. Beng.* XII. pt. II. p. 963 (1843), is quoted by Dresser, *B. Europe*, II. p. 305, as referring to this species; but it is clear, from the description, that it has nothing to do with our bird.]

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## DESCRIPTION OF A NEW HILL-WREN FROM FLORES.

By THE HON. WALTER ROTHSCHILD.

### *Pnoepyga everetti* sp. nov.

DIFFERS from both *P. squamata* (Gould) (= *P. albiventris* Hodgs.) and *P. pusilla* Hodgs. of India in the remarkable fact that the sexes are not conspicuously different, while in the two Indian species the *male* is of a white ground-colour below, the *female* bright fulvous. The bill is larger in my new species than even in the large Indian species (*P. squamata*). The colour is very much like that of the *male* of *P. pusilla*, and the secondaries and wing-coverts have even larger and more conspicuous bright fulvous spots at the tips, the back and rump are more conspicuously spotted with fulvous, but the head is darker and more blackish, the feathers of the sides of the body have darker and more blackish edges. The nearest ally is evidently *P. rufa* of Sharpe from Java, in which the sexes are also said to be alike in colour; but as that species is said to be "everywhere more rufous than *P. pusilla*, especially on the lores, forehead, ear-coverts, and spots of the wings," it cannot possibly be the same as my Flores birds, although I have no specimen before me to compare. The total length of *P. everetti* is about 85—90 mm.: wing 52—54; tail 16; culmen from base of forehead 15—16, exposed part of culmen 10; tarsus 20—21. Mr. Everett sent a series of this interesting bird from South Flores, shot at elevations of about 3000 to 3500 feet.

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1 MAY 1937





J. G. Rehnert del. et lith.

LOPHOZOSTEROPS LUTHERI Har  
LOBOPARADICEA SERICEA Rothsch.

Marten Bros. 1899

## ON THE FIGURES ON PLATE II.

BY THE HON. WALTER ROTHSCHILD.

(Plate II.)

THIS plate shows the most remarkable little bird of Paradise described by me under the name of

**Loboparadisea sericea**

on p. xv. of No. XL. of the *Bulletin of the British Ornithologists' Club*. I have there characterised the bird as follows :—

“The type of this new genus differs from all others in having two wattles, which entirely cover the basal half of the beak, except a narrow ridge on the culmen. Size small; bill very broad at base, and short. Feathers of under parts and rump decomposed and with a strong satiny gloss. No lengthened ornamental plumes. Tip of tail rounded.

“Head brown; hind-neck and back rufous chestnut, with a slight olive tinge; rump bright yellow, with a beautiful silky sheen. Wings and upper wing-coverts ruddy chestnut; primaries broadly tipped with blackish brown, shafts brick-red; tail and upper tail-coverts reddish chestnut. Underside bright yellow and with a beautiful silky gloss. Thighs olive-brown. Under wing-coverts and underside of wings brownish cinnamon. Bill with two large wattles reaching half-way down from the base, dull blue with yellow tips. Total length about 170 mm.; wing 91; tail 58; bill 21.”

It may be added that the colour of the wattles is guessed from what they look in the dried skin, which is said to have been bought from natives at Koeroedoe on the northern coast of Dutch New Guinea. This place Koeroedoe is not to be mistaken for Korrido in Geelvink Bay. The tarsus of *Loboparadisea sericea* is 34 mm. long.

The other figure on the plate depicts the pretty crested *Zosterops* described by Mr. Hartert on pp. 567, 568, 575, of Vol. III. of this journal under the name of

**Lophozosterops dohertyi.**

It is found in Sambawa and Satonda, while a closely allied form has recently been discovered by Mr. Alfred Everett in South Flores.

DESCRIPTIONS OF SEVEN NEW SPECIES OF BIRDS AND  
ONE NEW SUBSPECIES FROM FLORES, AND OF  
ONE NEW SUBSPECIES FROM DJAMPEA,

ALL COLLECTED BY MR. ALFRED EVERETT.

By ERNST HARTERT.

1. *Brachypteryx floris* sp. nov.

♂. Above dull indigo-blue; forehead and crown with a brown shade, which may be a sign of immaturity, as it is well pronounced in one, but not very perceptible in the other specimen. From the base of the bill to above the eyes a faint grey line, continued in a pure silky white concealed line above the eye, as we find it in other species of the genus. Lores and ear-coverts dark brownish ashy. Primaries and secondaries blackish brown, edged with the colour of the back, in the younger *male* with brown. Throat and middle of abdomen greyish white; under wing-coverts, chest and sides of abdomen, thighs and under tail-coverts ashy. Wing 70—73 mm.; tail 60—63; exposed culmen 13; tarsus 34.

♀ ad. Above of a warm brown; crown darker; back, rump, and upper tail-coverts strongly washed with rufous. Wings deep brown; outer webs edged with rufous brown. The same concealed white superciliary line as in the *male*. Lores ashy brown; ear-coverts brown, the shafts of the feathers light. Chin, throat, and middle of the abdomen white; chest and sides of abdomen pale ashy grey; lower flanks and thighs brown. Under wing-coverts and under tail-coverts light rufous. Total length about 145 mm.; wing 69—70; tail 58—60; tarsus 34.

At and above 3500 feet in South Flores.

2. *Orthnocichla everetti* sp. nov.

♂ ad. Head and hind-neck russet (a little more reddish than fig. 16, Pl. III., in Ridgway's *Nomencl. Col.*), an indistinct paler stripe over the eyes; sides of the head brownish buff. Back, rump, upper tail-coverts, and tail brown (nearest to "raw number," fig. 14, Pl. III., Ridgway's *Nomencl. Col.*, but darker). Quills deep blackish brown, their inner lining greyish buff; outer webs much like the back, but lighter and brighter, and with a slight greenish tinge. Under parts whitish; breast grey, lighter in the middle; flanks grey, with a brownish tinge; thighs brownish olive-grey. Under wing-coverts grey; iris dark brown; maxilla sepia-brown; mandible ochreous yellow. Legs very pale olive-brown. Total length about 90—95 mm.; wing 53—56; tail 18—19; tars. 22—23; culm. from base 16.

♀ ad. Like *male*, but slightly smaller. Wing 50—52 mm.  
*Hab.* South Flores.

3. *Microeca oscillans* sp. nov.

♂ ad. Forehead, crown, and nape dark brown, with an olive tinge; back similar, but lighter; rump with a rufous wash; upper tail-coverts rufous. Wings deep brown, inner lining rufous buff, outer webs pale russet (between figs. 16 and 19 on Ridgway's Pl. III.). Tail chestnut-brown; shafts of rectrices lighter and more



ferruginous. Throat grey; chest a little darker grey; sides of abdomen pale brown; middle of abdomen greyish white. Under tail-coverts and under wing-coverts light buff. Total length about 135 mm.; wing 76 in three skins marked "♂," 78 in one marked "♂," 81 in one marked "♂," and 75.5 in one marked "♀"; tail 58—61; exposed part of culmen 11; tarsus 18. The *female* does not differ from the *males*.

At elevations of from 3000 to 3500 feet in South Flores.

More about this form, the exact position of which is difficult to determine, will be said in future.

#### 4. *Cryptolopha montis floris* subsp. nov.

A number of skins of a *Cryptolopha* from the hills of South Flores are hardly distinguishable from *C. montis* from Mount Kina Balu in North Borneo; but the dark brown stripes, starting from above the eyes and running backwards to the nape in *C. montis* from Borneo, are less conspicuous in the Flores birds, not being so broad and only starting from behind the eyes, so that, while they are conspicuous if looking straight into the face of *C. montis montis*, they are not visible from right in front in *C. montis floris*.

It is very interesting to find in Flores a form so closely allied to one known from the mountains of North Borneo, Sumatra, and Palawan, and it is a further proof of a certain similarity between the Highland fauna of the great mountains of various islands of the Eastern Archipelago.

#### 5. *Pachycephala nudigula* sp. nov.

*Pachycephala*, cujus mas differt ab omnibus speciebus descriptis nuda plaga rubra in medio gutturis nigri. Capite toto nigro. Corpore supra olivaceo-viridi. Remigibus nigris, pogoniis externis tergi colore, internis basin versus albidis, cauda et supracaudalibus nigris. Pectore abdomineque flavo-viridibus, abdomine imo in medio, ventre subcaudalibusque flavis. Long. tot. ca. 195 mm.; al. 101—108; caud. 80—85; rostr. 16—18; tars. 23.5—25.5. Femina plaga nuda minore, capite supra cinereo. Guttare griseo-albido. Pectore virescente-flavo, abdomine toto subcaudalibusque flavis. Dorsio, uropygio, supracaudalibus, pogoniis externis remigum, cauda olivaceo-viridibus. Al. 90 mm.; caud. 73; tars. 23; rostr. 14—15.

*Hab.* Flores meridionalis.

This remarkable bird will be figured in one of the future numbers of this journal.

#### 6. *Lophozosterops* (an potius *Zosterops*) *subcristatus* sp. nov.

A series of skins from 3000 to 3500 feet from the hills of South Flores closely resemble my *Lophozosterops dohertyi* of the mountains of Sambawa, but they are easily distinguished by the ear-coverts being lighter and sulphur-yellow like the abdomen, while in *L. dohertyi* they are olive. In consequence of this the pale yellow line behind the eye is more conspicuous in *L. dohertyi*, less so in *L. subcristatus*. The crest-feathers are shorter; the forehead is paler brown; the guttate spots in the centres of the feathers of the crown are dirty whitish, and very much less sharply defined and less conspicuous in the Flores bird. Although these differences are very obvious, it may be left doubtful whether *L. subcristatus* is much more than a well-marked subspecies of *L. dohertyi*. Unfortunately this new form bridges, to a certain degree, over from *Lophozosterops* to *Zosterops*, thus making the value of my poor genus very doubtful. More about this will be said on another occasion.

7. *Zosterops crassirostris* sp. nov.

♂ ad. Feathers of forehead yellowish white; those of crown blackish brown, with broad whitish margins, which become more brownish and less conspicuous towards the nape, where they have vanished altogether. Lores, feathers in front of the eye, a narrow superciliary line, and feathers under the eye black, the latter fading into dark brown towards the ear-coverts. Eyelids bare, with only a very narrow ring of tiny scaly feathers of a blackish colour round the eyes: behind the eyes a large naked spot. All the rest of the upper parts of a pale olive colour, with a greenish wash. Quills deep brown, with a very pale buff inner lining and light olive-brown outer edges. Tail-feathers brown, with olive outer margins. Entire under-surface whitish buff: sides of breast and flanks with a brownish wash. Thighs brown. "Iris Naples-yellow; bill lead-grey; legs flesh-colour; nails grey." Total length about 136 mm.; wing 71; tail 56; culmen from base 19; bill from end of feathering 14.3; tars. 20—21. ♀ like ♂.

*Hab.* South Flores.

8. *Zosterops superciliaris* sp. nov.

♀ ad. Crown greenish olive, with a dark brown wash. Utmost base of forehead just above the nostrils and lores pale sulphur-yellow: superciliary line from lores over eyes to end of head sulphur-yellow. The usual Zosteropine white ring round the eyes conspicuous and broad: sides of head olive-grey, with a silvery gloss. Rest of upper surface olive-green, brighter green on back and rump. Quills dark brown: inner lining very pale yellow; outer edges light olive-green. Below sulphur-yellow: sides of breast, flanks, and thighs with an olive-green wash. Total length about 127 mm.; wing 67—69; tail 52—53; culmen from base of forehead 16; exposed part of culmen 12; tarsus 19.9.

♂ ad. like ♀.

*Hab.* South Flores.

9. *Trichoglossus forsteni djampeanus* subsp. nov.

In Vol. III. of the *NOVITATES ZOOLOGICAE*, p. 176, when speaking of the series collected by Mr. Everett in Djampea, I already mentioned some slight differences between the birds from Djampea and the one from Sambawa in the Tring Museum. Again on p. 572 I mentioned that two birds sent from Bima in Sambawa, whence the type of *T. forsteni* in the Leyden Museum came, agreed with the one collected in Sambawa and not with those from Djampea. Now we have received, with some other birds from Sambawa, from Mr. Everett, five more skins of typical *T. forsteni* from Sambawa, and they dispel all our doubts as to the differences between the two forms.

In *T. forsteni forsteni* from Sambawa the forehead is not so deep blue as in *T. forsteni djampeanus*, the wing is shorter, the band behind the yellowish green ring on the neck is never so distinctly and pure purple, and never so broad as in all the birds from Djampea.

The wings of *T. forsteni forsteni* measure 131—135 mm., those of *T. forsteni djampeanus* 141—145 mm. Young Djampean birds are very much like adult ones from Sambawa: young birds of the latter have the hinder part of the crown more or less green, the middle of the abdomen mixed with green, the red breast-feathers margined with dull dark edges, no indication of a blue band on the hind-neck.

SOME NEW *ANTHRIBIDAE* IN THE TRING MUSEUM.

By K. JORDAN, Ph.D.

1. *Hypselotropis rosenbergi* sp. nov.

Niger, sordide griseo-viridi tomentosus, fusco variegatus, infra medio glaber.

Rostrum et caput ut in *H. batesi* fere structa, ille autem infra laeve singulis punctis notatum atque in medio impressione levi longitudinali rugulosa; hoc carina frontali altiore instructum. Antennae breves, elytrorum basin parum superantes, sat crassae, medio levissime compressae, articulis 8° apice et 9° basi albis, 2° tertio dimidio brevior, 3°—7° longitudine fere aequalibus, 3<sup>io</sup> paulo longiore, 4° parum brevior, 10° latitudine vix, 9° decimo duplo, longiore.

Prothorax latior quam in *batesi*, linea mediana cariniformi ut in specie *Tribotropis pustulosus* dicta; carina antebasali medio interrupta.

Elytra subparallela, postice vix angustiora, apice fortius quam in speciebus *batesi* et *annulicornis* rotundato-declivia, plagis fuscis majoribus quam in illis speciebus.

Prosternum singulis punctis grossis instructum, medio longitudinaliter parum depressum, sine fossa transversa. Segmentum anale medio late leviterque depressum, pilis nigris vestitum. Tarsorum articuli 2 et 3 toti nigri.

Long. rostr.  $3\frac{3}{4}$ ; proth.  $4\frac{1}{2}$ ; elytr.  $11\frac{1}{2}$ ; lat.  $5\frac{1}{2}$  mm.

*Hab.* Cali, Columbia (W. Rosenberg leg. 1895): 1 ♂.

The short and stout antennae, the raised median line of the pronotum, together with the absence of a deep transverse groove from the prosternum, distinguish this form from its allies.

2. *Gymnognathus germaini* sp. nov.

Rostrum longitudine duplo latius, inclinatum, nigrum, basi duabus maculis contignis albo-luteis in frontem prolongatis utrinque lineam superciliarem formantibus signatum. Caput brunneo-testaceum, convexum, genis macula albo-lutea notatis, absque carina mediana. Antennae nigrae.

Prothorax brevis, postice longitudine dimidio latior, disco transverse parum convexus, carina dorso fere recta paululo flexuosa utrinque in angulo rotundato fere recto antorsum fracta parte laterali  $\frac{1}{2}$  mm. longa instructus, quinque vittis parallelis luteis ornatus: media recta antorsum angustata, lateralibus ad marginem apicalem conjunctis parum flexuosis.

Elytra ut in *G. clathrato* structa, interspatiis alternis angustis, striis griseo-pubescentibus, macula parva laterali basali lutea.

Pygidium latitudine longius, apice subtruncatum angulis rotundis, luteo-pubescentibus vitta mediana brunnea angusta notatum.

Prosternum basi apiceque, macula laterali mesosterni, altera metasterni major, fasciae transversae abdominis, lateribus dilatatae, luteo-griseae. Segmentum anale apice rotundatum, inerme. Pedes nigri.

Long. rostr.  $\frac{3}{4}$ ; proth.  $1\frac{1}{2}$ ; elytr.  $3\frac{1}{2}$ ; lat.  $2\frac{1}{2}$  mm.

*Hab.* Cochabamba, Bolivia (St. Germain *leg.*) ; 1 ♀.

Agrees with *G. clathratus* and *robustus* in the short and robust body, but differs from all the allied species of *Gymnognathus* in the very short rostrum, the convex front of the head, which is devoid of keels, the non-dentate end of the abdomen, and in the pattern of the upperside. The colour of the head is in *germaini* nearly as in *clathratus*, *bohlsi*, and *ornatus*; these three species have, however, a longer and obviously carinate rostrum, and a bidentate pygidium and bidentate ventral anal segment.

### 3. *Gymnognathus daguanus* sp. nov.

Caput rubrum, utrinque supra et infra oculum albo-vittatum, fronte irregulariter multicarinata. Rostrum apicem versus dilatatum, latitudine dimidio vix longius, punctato-rugosum, carina mediana laevi in impressione sita; hac impressione in basi sat profunda utrinque carina determinata; lateribus carinula instructis, pone acetabulum antennarum dilatatis, ante dilatationem setis densis vestitam sinuatis.

Antennae ♂ prothoracis basin attingentes, articulis 1°—7° tenuibus, apicibus parum incrassatis, 1° et 2° subaequalibus, 3° longo septimo plus dimidio longiore, 8° dilatato complanato septimo brevior: clava lata infra hirsuta ut in *dorsonotato* fere structa: ♀ prothoracis medium superantes, articulis 2° tertio dimidio vix brevior, 7° et 8° brevibus, hoc latitudine paulo longiore, clava hand hirsuta.

Prothorax latitudine parum longior, subtilissime transverse rugulosus: carina dorso insensim flexuosa lateraliter medium hand attingente, angulo ejus oblique vix rotundato; vitta tenui mediana pone carinam guttiformi, duabus lineolis obliquis brevibus antebasalibus ad carinam cum vitta mediana connexis: vitta laterali ad angulum basalem prothoracis ubi latiore incipiente, oblique versus medium disci ducta, subarenata, ad carinam lateralem tenuiter dilatata, griseo-albis signatus.

Elytra dorso sat late depressa, interspatio quinto postice subcariniformi, plaga communi triangulari basali scutellum hand tangente e lineolis composita, in interspatio tertio et in sutura interrupta, in interspatio quinto subinterrupta: lineola posthumerali in stria septima, linea longa submediana in quinta, anguloque communi postmediana in sutura interrupta apice versus basin directo, griseo-albis, plaga basali parum lutesca.

Pygidium apice truncatum, basi utrinque macula minutissima (saepe absente) alba notatum.

Prosternum vitta laterali obliqua griseo-alba: mesosternum macula laterali griseo-alba: metasternum duabus maculis (basali et apicali) sat magnis flavidis. Abdomen utrinque serie macularum lateralium, altera serie versus medium sita macularum obsoletiarum griseo-albarum signatum. Segmentum anale fortiter bispinosum. Pedes nigri, sparsim griseo-pubescentes.

Long. rostr. 2; proth. 3; elytr.  $5\frac{1}{2}$ ; lat. 3 mm.

*Hab.* R. Dagua, Columbia (W. Rosenberg *leg.*) ; 2 ♂♂, 2 ♀♀. Type ♂.

This form must probably be separated generically from the other species standing under *Gymnognathus* on account of the peculiar structure of its rostrum. The latter is laterally behind the antennae deeply sinuate, and the portion behind this sinus is clothed with stiff short hairs which project into the sinus. The antennae vary in length in the two males before me. The lateral oblique band of the pronotum is anteriorly somewhat dilated and rounded.

4. *Gymnognathus vitticollis* sp. nov.

Rostrum latitudine quarta parte longius, apice nonnihil angustius quam basi, supra antennas parum rotundato-dilatatum, rugoso-punctatum, carinula basali in frontem ascendente laevi, duabus vittis dorsalibus approximatis luteis in oeciput prolongatis cum vittis dorso-lateralibus prothoracis continuatis luteis, notatum. Caput longitrorsum rugulosum, lineola utrinque in genis sita luteo-alba signatum. Antennae nigrae, basi rufae, prothoracis medium vix attingentes.

Prothorax conicus, minutissime granulatus, sub lente moderato laevis, carina dorso recta utrinque in angulo recto nonnihil rotundato antrorsum fracta instructus, tribus vittis griseo-luteis notatus: mediana latiore, lateralibus tenuibus postice hand dilatatis prothoracis margini laterali parallelis.

Elytra ut in *G. vicino* structa; plaga communi a basi trans medium extensa utrinque stria tertia determinata, angulis posticis oblique ad striam sextam productis, pone basin utrinque leviter sinuata guttam brunneam suturalem antemedianam includente, lineola humerali in stria quinta, gutta laterali antemediana, angulo apicali versus basin directo ad suturam interrupta, luteo-griseis signata.

Pygidium griseo-luteo pubescens, linea tenni mediana brunnea, apice bispinosum, latitudinis parum longius.

Infra luteo-griseo tomentosus; segmentum anale inerme. Pedes nigri, brunnescentes, griseo-pubescentes.

Long. rostr. 1; proth.  $1\frac{2}{3}$ ; elytr. 3; lat. 2 mm.

*Hab.* Cochabamba, Bolivia (St. Germain *leg.*); 1 ♀.

The short rostrum which is not triangularly dilated at the tip, the dentate pygidium which is greyish yellow and has a brown middle line, the non-dentate last ventral segment, the three pronotal lines which are not abbreviated in front, and the absence of a short transverse spot before the declivous apex of the elytra, distinguish this species from its allies.

5. *Gymnognathus femoralis* sp. nov.

Rostrum apicem versus triangulariter dilatatum,  $1\frac{3}{4}$  mm. longum, fortiter rugoso-punctatum, carina mediana forti in frontem prolongata instructum, duabus vittis approximatis angustis juxta oculos in oeciput ascendentibus albo-griseis notatum. Frons longitrorsum rugato-strigosa. Genae linea griseo-alba longa notatae. Oculi oblongi, fronte latiores. Antennae prothoracis medium vix attingentes.

Prothorax conicus, latitudine dimidio fere longior, transverse subtilissime rugulosus, carina dorso recta, in angulo recto antrorsum fracta parte laterali trans medium ducta; vitta mediana tenni postice latiore, altera utrinque in latere sita submaculari valde obliqua infra angulum basalem prothoracis incipiente et carinam lateralem ante angulum transiente versus disci medium ducta, griseo-albis signatus.

Scutellum griseo-album. Elytra ut in *G. decorato* structa et signata, sed spatio circumsentellari subeordiformi brunneo, absque gutta antemediana suturali brunnea.

Pygidium apice truncatum, angulis subspinosus, vitta tenuissima mediana albo-grisea.

Prosternum utrinque vitta griseo-alba obliqua, mesosternum macula laterali, metasternum macula laterali basali altera minuta apicali atque tomento marginis apicalis, abdomen vitta laterali, griseo-albis signata. Segmentum anale bidentatum. Femora rufa.



Long. rostr.  $1\frac{3}{4}$ ; proth.  $2\frac{3}{4}$ ; elytr. 4; lat.  $2\frac{1}{2}$  mm.

*Hab.* Rio Dagna, Columbia (W. Rosenberg *leg.*); 4 ♂♂.

Differs from similarly coloured species especially in the long lateral carina of the prothorax and in the position of the lateral macular band of the latter.

#### 6. *Straboscopus armatus* sp. nov.

Niger, fusco pubescens, lutoso variegatus. Rostrum ut in specie *St. tessellatus* (descripto in *Rev. Zool.* 1839, p. 265) fere structum, supra punctatum, linea glabra abbreviata parum impressa mediana instructum, lutoso pubescens, infra medio late elevatum punctatum parum rugatum hand carinatum. Oculi valde obliqui, oblongi. Caput punctatum, lineola mediana occipitali lineaque superciliari tenui postice dilatata atque genis lutosi. Antennae brunneo-nigrae, sine tomento, articulo 3<sup>o</sup> omnium longissimo, 4<sup>o</sup>—8<sup>o</sup> gradatim decrescentibus, 8<sup>o</sup> apice setis vestito, clava fere ut in *tessellato*.

Prothorax latitudine hand longior, lateribus rotundatus, maxima latitudine mox ante medium ubi carina lateralis a supero visa parum angulariter prominens desinet; carina dorsali  $\frac{2}{3}$  mm. a basi separata regulariter leviterque concava in angulo laterali valde rotundato antrorsum curvata; disco medio ante carinam atque utrinque versus latus gibbosus, fere tri-tuberculatus: lutoso variegatus, pube lutosa antice in lateribus densiore, macula lutosa antescutellari rectangulari.

Elytra a supero visa fere parallela, postice rotundata, dorso planata, multi-tuberculata: tribus tuberculis majoribus dorsalibus, basali, mediano, postmediano: duobus approximatis sat altis in apice declivi; uno parvo in angulo suturali; interspatiis 5<sup>o</sup> et 7<sup>o</sup> tuberculis parvis armatis; interspatio 9<sup>o</sup> subcarinato. Fusco et lutoso variegata, plaga subcordiformi communi e maculis composita ad et ante tuberculum postmedianum sita lutosa.

Pygidium latitudine longius, apice valde rotundatum, fusco-lutoso pubescens.

Infra lutosus, lateribus fusco notatus, medio subglaber; prosternum et metasterni latera punctis magnis instructa; abdomen lateribus laeve, medio punctulatum, in ♂ segmento anali medio subcarinato. Femora ante apicem, tibiae ante medium et in apice annulo lutoso ornatae; intermediae tibiae calcare apicali armatae; tarsorum articuli basi apiceque lutoso pubescentes.

Long. rostr.  $1\frac{1}{2}$ ; proth.  $3\frac{1}{2}$ ; elytr. 7; lat. 5 mm.

*Hab.* Rio Dagna, Columbia (W. Rosenberg *leg.*); 4 ♂♂.

#### 7. *Apatenia batjanensis* sp. nov.

*A. viduatae* colore et statura similis, parum major. Rostrum latitudine longius, medio profundius quam in *A. viduata* impressum, carinatum. Caput longitudinaliter rugulosum, medio hand carinatum. Prothorax a supero visus pone medium subangulatus; ante scutellum lineola ochracea ornatus; carina antebasali dorso in medio parum retrum flexa, lateraliter valde rotundata. Elytra pone medium tuberculo cariniformi paulo elevato nigro-velutino instructa.

*Hab.* Batjan (W. Doherty); 2 ♂♂.

Though in general appearance closely resembling *A. viduata* from the larger Sunda Islands, this species is more nearly related to *A. immaculata* (Nov. Zool. 1894, p. 633) from New Guinea in the rounded carina of the prothorax, in the presence of a postmedian tubercle on each elytron, and in the deeper median impression of the rostrum; but is easily distinguished from *immaculata* by the much less raised basal gibbosity of the elytra and the much feebler and more elongate postmedian tubercle.

8. *Apatenia scelesta angulicollis* subsp. nov.

Rostrum parum longius quam in *scelesta*; prothorax a supéro visus lateraliter dente mediano armatus; elytra dorso magis depressa, tuberculo postmediano multo altiore instructa, interspatii 6° et 8° tuberculis minutis distinctioribus ante apicem notatis.

*Hab.* Mount Alexander to Mount Nisbet, British New Guinea, February 1896 (Anthony); several ♂♂ and ♀♀. Type ♂.

The specimens of *scelesta* from Humboldt Bay, Dutch New Guinea, stand intermediate between *scelesta angulicollis* and typical *scelesta scelesta* (from Mysol), having the shorter rostrum and the less elevated elytral tubercle of the latter, and the distinctly tubercled sixth and eighth elytral interspaces of the former form. They represent, perhaps, a third subspecies separable from *scelesta scelesta*.

## TROIS ESPÈCES NOUVELLES D'EUCNÉMIDES DE LA COLLECTION DU MUSÉUM DE TRING.

PAR E. FLEUTIAUX.

1. *Ceratus rothschildi* sp. nov.

♂. 11½ mill. Corps allongé, convexe, d'un ferrugineux brunâtre, couvert d'une pubescence jaune. Tête convexe à ponctuation assez forte, serrée et non rugueuse; front légèrement déprimé tout à fait en avant. Epistome peu rétréci à la base, aussi large que l'espace compris entre lui et l'œil. Antennes ferrugineuses longues, dépassant légèrement la moitié du corps, longuement flabellées à partir du quatrième article. Pronotum atténué en avant en arc de cercle, très déprimé au milieu de la base, marqué d'un léger sillon médian effacé en avant; ponctuation assez forte, serrée, à peine rugueuse sur les côtés, effacée sur un petit espace brillant à la base, de chaque côté du sillon. Elytres parallèles, atténués en arrière dans le tiers postérieur, fortement striés; intervalles bien distinctement ponctués. Dessous plus clair; ponctuation légère, très superficielle sur l'abdomen, plus forte et moins serrée sur le propectus. Saillie prosternale peu atténuée en arrière. Epipleures de élytres sillonnées, très rétrécies en arrière. Episternes métathoraciques parallèles. Hanches postérieures très largement dilatées en dedans. Dernier segment abdominal atténué et terminé en pointe. Pattes ferrugineuses.

*Hab.* Moroka, N. Guinée Brit. Un seul exemplaire.

Cette espèce a tout à fait l'apparence du *C. doriai* (♂, Fleut., *Not. Mus. Leyd.* XVIII, p. 143); cependant sa forme est moins atténuée en arrière, sa ponctuation générale beaucoup moins forte, et à peine rugueuse seulement sur les côtés du pronotum, ce dernier plus gibbeux.

2. *Arrhipis sumatrensis* sp. nov.

4 à 5 $\frac{3}{4}$  mill. Corps allongé, peu convexe en dessus, d'un brun ferrugineux ; pubescence jaune fine, plus apparente sur les côtés. Tête très fortement ponctuée. Epistome court, rétréci à la base, mais cependant beaucoup plus large que l'espace compris entre lui et l'œil. Antennes ferrugineuses, ne dépassant pas la base du prothorax ; troisième article aussi long que les deux premiers réunis ; quatrième à dixième courts triangulaires ; dernier oblong. Pronotum aussi long que large, parallèle sur les côtés, rétréci en avant seulement tout près du bord antérieur ; ponctuation très forte et serrée. Elytres atténués en arrière dans leur tiers postérieur ; stries très peu apparentes ; ponctuation rugueuse, moins marquée vers la moitié. Dessous fortement ponctué ; carène marginale inférieure du pronotum peu apparente. Pattes ferrugineuses.

Deli, N.E. Sumatra.

Espèce très voisine de *albertisi* ; en diffère par le troisième article des antennes proportionnellement plus grand, le pronotum moins long, nullement sillonné au milieu, à ponctuation plus serrée.

3. *Galba nigra* sp. nov.

9 $\frac{1}{2}$  mill. D'un noir profond peu brillant, couvert d'une pubescence grise à peine visible. Tête carénée au milieu, rugueusement ponctuée. Pronotum plus large que long, largement arrondi et un peu élargi en avant, fortement et rugueusement ponctué ; sillon médian limité de chaque côté par un bourrelet angulé formant un losange dont la partie postérieure est plus longue ; tubercules latéraux comme dans *funbris*. Elytres atténués en arrière ; stries bien marqués ; intervalles convexes et fortement rugueux. Dessous à ponctuation forte sur le propectus, légère sur le métasternum, très fine sur l'abdomen ; pubescence plus serrée et plus apparente. Cuisses noirâtres ; tibias d'un brun obscur ; tarses ferrugineux.

Kiriwini, Iles Trobriand, 1895 (A. S. Meek). Un exemplaire.

Cette remarquable espèce, à cause de sa carène frontale, est voisine de *tomentosa*, mais elle a un grand rapport avec *funbris*. On la reconnaîtra à sa couleur d'un noir profond à peine brillant, à sa pubescence presque nulle, à ses élytres profondément striés et grossièrement rugueux.

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## DESCRIPTIONS OF SOME NEW SPECIES AND SUBSPECIES OF *LEPIDOPTERA*.

By THE HON. WALTER ROTHSCCHILD.

### *Troides tithonus* De Haan.

THIS species was first described by De Haan in Temminck, *Verh. Nat. Gesch. Ned. overz. bez.* p. 18. t. 1. f. 1 (♂), in the year 1840, and he states on pp. 3 and 19 that it came from South-West New Guinea. Since then the only specimens of *T. tithonus* we have received came from the island of Waigen, but lately Mr. William Doherty sent me a ♂ and two ♀♀ from the mainland of New Guinea, near where Solomon Müller got De Haan's type. I at once saw these differed considerably from the Waigen examples, especially in the ♀♀, and I therefore describe the Waigen form as a new subspecies.

#### 1. *Troides tithonus waigeuensis* subsp. nov.

♀. Differs from *T. tithonus tithonus* in having the white markings on the forewings much more extended, while on the hindwings it is somewhat restricted.

The female of *tithonus tithonus* has the white patch in the cell of the forewing deeply dentated on the outer margin, 10 mm. wide at the widest point and 3 mm. at the narrowest, while in *tithonus waigeuensis* it is almost quadrate, not so strongly dentated, and is 15 mm. wide at the widest and 10 mm. at the narrowest part. In the typical form just before apex of cell are a few white scales, while in the Waigen form there is a long white dash. The four white patches in *tithonus tithonus* between veins 9 and 5 are respectively 7, 11, 7, and 4 mm. long, while in my new one they measure 15, 20, 25, and 20 mm. in length. The submarginal white spots, five in number, between veins 5 and 1 are at least twice as large in the Waigen form as in the New Guinea one.

In both forms the discal spots vary much in size and number, but in *tithonus waigeuensis* the second spot between veins 3 and 4 varies from 19 (type-specimen) to 9 mm., while in *tithonus tithonus* it is either absent (type of ♀) or a mere dot. The spot between veins 2 and 3 in *tithonus tithonus* is rounded and measures 7 (type of ♀) to 9 mm. in diameter, while in *tithonus waigeuensis* it is elongate and measures 18 (type) to 14 mm.

In the hindwings the outer portion of the light area is much less washed with yellow in *tithonus waigeuensis* than in *tithonus tithonus*.

The white apex to the cell in *tithonus tithonus* measured along the centre line of the cell is 12 (type) and 10 mm. in length, while in *tithonus waigeuensis* it is 5, 7 (type), and 5 mm. long.

The round black post-discal spot between veins 6 and 7 in *tithonus waigeuensis* is joined to the black basal area, while in *tithonus tithonus* it is well separated and well within the light area; the white area partially surrounding the anal black spot is much more restricted in the new form.

On the underside the same differences hold good, and the yellow area on the hindwings of the New Guinea form is more orange.

♂. My male of *tithonus tithonus* and my two Waigen ♂♂ differ as follows: The yellow-green patch between veins 3 and 4 of forewings is smaller and more triangular in the new form, while it is square in the typical *tithonus tithonus*. On the hindwings the yellow patch within the cell is narrower and has a straight inner margin in the New Guinea specimen, while in *tithonus waigeuensis* it is broader and the inner margin is angulate. De Haan's figure of the type of *tithonus tithonus* is somewhat intermediate.

*Hab.* { *Troides tithonus tithonus*, S.W. New Guinea: Kapanr, W. Doherty,  
December 1896.  
*Troides tithonus waigeuensis*, Waigen Island.

Descriptions founded on 2 ♂♂ and 4 ♀♀ of *T. tithonus waigeuensis* and 1 ♂ and 2 ♀♀ of *T. tithonus tithonus*.

## 2. *Troides paradiseus flavescens* subsp. nov.

♀. Differs from *T. paradiseus paradiseus* chiefly in the much yellower colour of the light area of the hindwings both above and below. The praecostal cell on underside of hindwings is powdered with yellow, not white or yellowish white, scales. The yellow of the abdomen is deeper in tint, and beneath much more extended; the femora are streaked with yellow, not white. The third subcostal vein arises  $1\frac{1}{2}$  mm. before apex of cell, thus distantly approaching *T. supremus* Rüber, the female of which is unknown.

*Hab.* Etna Bay, Dutch New Guinea (H. C. Webster, August 8th, 1896); 1 ♀.

I at first suspected this specimen to be the female of *T. supremus* on account of the position of the third subcostal branch before the apex of the cell: but as among the five females of *paradiseus* from German New Guinea which are now in my collection there is one in which that vein stands just a little before the apex of the cell, and a second in which the distance amounts to  $1\frac{1}{2}$  mm., the position of the third subcostal branch does not speak against the present form being a race of *paradiseus*.

## 3. *Troides paradiseus meridionalis* subsp. nov.

♀. The markings on the disc of both wings purer white, being less dusted over with black scales than in *paradiseus paradiseus*. The patch in the cell of forewing is nearly straight at the basal side, its basal edge being very feebly dentate, while at the apical side it bears one deep triangular notch; it measures 12 mm. at its widest part. There are three discal patches: the uppermost stands between veins 3 and 4 and measures 15 mm. in length and 6 in breadth, while in *paradiseus paradiseus* this spot is small and ill-defined; the second patch has a length of 13 mm. and a breadth of  $5\frac{1}{2}$  mm.; the third mark is very small and linear, its dimensions being 6 and  $1\frac{1}{3}$  mm.

The light area of the hindwing is much extended, stopping at the median nervure 14 mm. short of the base, the apex of the cell bearing a large white patch which is obliquely cut off and has (in the centre of the cell) a length of 6 mm. The portion of the light area outside the discal black spots is brighter yellow than in *paradiseus paradiseus*, and so is the upperside of the abdomen.

Femora black, without white or yellow streaks.

*Hab.* Mailu district, British New Guinea, July 1895 (Anthony): 1 ♀.



4. *Papilio gambrisius buruanus* subsp. nov.\*

♀. *Upperside*: forewing differs from that of *gambrisius gambrisius* in the apex of the cell being more restricted white and in the posterior discal white patches being shorter; hindwing resembles that of *ageus ormenus*, in having a complete series of submarginal, clearly defined, large ochraceous markings, of which the anterior ones are the palest, the posterior one the brightest; the discal white band intermediate in shape between that of *gambrisius gambrisius* and *ageus*, being narrower anteriorly and broader in the middle than in *gambrisius* from Amboina, Saparna, or Ceram; the first spot behind costa has, in middle between the veins, a longitudinal diameter of 4 mm., the next spots of 5, 8, 9, 7, 10, 11 mm. respectively; the cellular spot is smaller than in the other form of *gambrisius*, measuring only 6 mm., the white colour being extended only to half-way between veins 3 and 2; on the disc there are two large patches of blue scales between veins 2 and 3, a smaller one behind vein 7, and some blue scales before vein 4 and also at the edge of the large anal rufous ochraceous lunule.

*Underside*: similar to the upperside, but all the markings (except the blue discal spots, which form a complete series) paler, the discal band of the hindwing narrower than above, especially the cellular spot smaller.

*Hab.* Tifu Bay, Buru; 1 ♀.

5. *Charaxes ansorgei* sp. nov.

♂. Allied to *Ch. pollux*, but differs as follows:—

*Upperside*: forewing from base to apex of cell and discal black spots rufous chestnut; at the outer edge of this area there are two small black spots between veins 1b and 2, two large black spots between veins 2 and 4, which are outwardly concave; the disc is traversed by a band that is darker ochraceous than in *pollux* and terminates at vein 4, being replaced between vein 4 and the costa by six spots, one before vein 4, three between veins 5 and 8, rounded and of  $1\frac{1}{2}$  mm. diameter, and two rectangular, between those three and the cell, between veins 5 and 7. Marginal dark ochreous spots rounded. Hindwing with a complete series of dark ochraceous submarginal spots; a milky white median band between costa and submedian fold, 4 mm. broad in front, 7 at the median nervure; anteriorly somewhat tinted at the edges with buff, posteriorly with a bluish sheen; wing outside the band black, inside the band brownish black; hairs of anal fold hair-brown.

*Underside*: outer region of forewing olive, with a slight tint of ochraceous at the margin between the veins and towards the disc; this area rather sharply defined; the submarginal triangular black spots very short, the anterior ones joined with their tips to whitish, the posterior ones to bluish, spots; the two discal black spots between veins 2 and 4 somewhat curved; the white band upon the discocellular veins and the white costal band outside it broader than in *pollux*. Hindwing with more sharply defined white discal band, which is especially posteriorly broader than in *pollux*; the outer region is olive, as on the forewing, with a tint of ochraceous; the submarginal black spots thinner than in *pollux* and more linear; there is a white space of 4 mm. width at the abdominal margin between the long black

\* I take this opportunity of correcting a penslip on p. 432 of Nov. Zool. III. (1896). I said there that Oberthür's figure resembled more Felder's *deiphontes* than Clerck's figure of *deiphobus*; I meant to write "*deipylus*," which is, like *deiphobus*, tailed, while *deiphontes* is tailless. *Papilio deiphobus*, *deipylus*, and *deiphontes* are probably geographical forms of one species.—K. JORDAN.

and white markings of the abdominal fold and the transverse black line which stands between the abdominal margin and vein 2 at the basal side of the eye-spot.

Forewing somewhat narrower in apical half than in *pollux*.

*Hab.* Patsho, Nandi Country, Uganda Protectorate, December 11th, 1896 (Dr. I. W. Ansorge).

Named in honour of the collector, who has lately discovered a good many of very interesting forms of butterflies and moths. The white band of the upperside of the hindwing distinguishes this species at a glance from *pollux*.

## 6. *Nudaurelia rendalli* sp. nov.

♀. *Upperside*: forewing saffron-yellow, dusted over with black scales; with two narrow tricolourous bands; one in the basal half, at the costa 10 mm. from the base, 3 mm. broad, straight from costa to submedian fold, where it turns at a right angle towards the hinder margin of the wing, which it reaches at a distance of 9 mm. from the base: the colours of the three lines composing the band are greyish black (inner line), white (middle line), vinaceous rufous (outer line): the second band is of the same width as the subbasal one, and consists also of three lines, but the order of the colours of the lines is inverted, the lines being vinaceous rufous, white, and greyish black respectively: the band starts at the costa 38 mm. from the base and reaches the hindmargin of the wing at a distance of 23 mm. from the base: it is almost parallel to the outer margin of the wing, but is between the veins rounded outward, and upon the veins angulate (the points of the angles directed towards the base). Upon the discocellular veinlets there is an eye-spot of  $7\frac{1}{2}$  mm. width; it has a small diaphanous centre which is surrounded by a broad ring of hazel, upon which follow three very thin rings of maroon, buff-pink, and vinaceous rufous.

The hindwing has the same bands as the forewing, but the subbasal one is very indistinct, the blackish line alone being obvious: the wing is saffron-yellow outside the exterior band; the rest of the wing is vinaceous rufous, becoming somewhat yellowish at the abdominal margin. The eye-spot has a diameter of 9 mm.; it is similar to that of the forewing, but the exterior rings are somewhat different, the colours being (from outside): white ring, somewhat broader vermilion-red ring, a thin black ring, a broad vinaceous cinnamon ring, and a diaphanous central spot. The (inner) vinaceous rufous line of the outer band is merged together with the vinaceous rufous colour of the disc.

*Underside*: forewing without the subbasal band; the outer band and the eye-spot as above, but less clearly marked: the whole wing from the base to the outer band washed over with vinaceous rufous. Hindwing from base to outer band very faintly washed with vinaceous rufous: the inner (vinaceous rufous) line of the outer band distinctly marked: the eye-spot without an outer white ring; subbasal band absent.

Body saffron-yellow. Antennae, tibiae in front, and tarsi black.

Expanse: forewing, length 64 mm., breadth 30 mm.

„ hindwing, „ 50 „ „ 33 „

*Hab.* Zomba, Upper Shiré R., Brit. C. Africa, 3000 feet, January 1896 (Dr. P. Rendall).

This species is distantly allied to *Antheraea anna* Maass. & Weym. from Mombasa, which insect I know only from the (most probably incorrect) figure.

7. *Mimeusemia fruhstorferi* sp. nov.

♂. *Upperside*: black. Forewing with the following cadmium-yellow markings: at the base a small spot before the costal vein and another at the posterior margin; a subtriangular patch in basal fourth stands between costal nervure and submedian fold, a little dilated along costal and median nervures; a transverse band, standing at right angles to the costal nervure, before middle of wing, extends from costa to near submedian vein, broadest beyond cell ( $3\frac{1}{2}$  mm.), a little dilated at median and costal nervures, the black interspace between this band and the subbasal patch being almost separated into two spots; a transverse, somewhat halfmoon-shaped band in apical third, rounded exteriorly, sub-trisinate at its discal edge, pointed at both ends, expands between veins 2 and 10, with a breadth of  $2\frac{1}{2}$  mm. at vein 4; at anal angle a small mark (diameters, 2 and  $1\frac{1}{2}$  mm.), shaded with some black scales. Fringe at apex of wing white. A curved line upon the discocellular veinlets, two spots beyond submedian band, standing on vein 2 and before vein 10 respectively, an oblique line in basal fourth crossing submedian nervure, and two small markings near base, composed of metallic blue scales.

Hindwing with the abdominal margin, the posterior portion of the exterior margin as far as the submedian fold, and two large patches on the disc cadmium-yellow. The marginal band has a width of  $1\frac{1}{4}$  mm. (including fringe). The exterior discal patch is oval, and expands between veins 2 and 8, having a length of 7 and a width of 5 mm.; at vein 7 it is indented, especially at the inner side; at vein 6 it stands 5 mm. from the outer margin. The basi-discal patch is band-like; it has at vein 8 a breadth of  $3\frac{1}{2}$  mm. and at its hinder end a breadth of 3 mm.; the anterior portion of the patch between costa and middle fold of cell is at right angles to the subcostal nervure; from there the patch runs almost parallel to the abdominal margin of the wing, and stops suddenly two mm. short of the yellow anal portion of the exterior wing-margin; at the median vein the patch is extended to the base. Fringe at apex whitish buff.

*Underside*: similar to the upperside, but the yellow markings paler and more extended, the black interspace between the subbasal patch and the submedian band divided at the median nervure; the basi-discal patch of the hindwing joined to the yellow abdominal wing-margin, thus forming a large yellow area which includes a black rounded spot at base of cell and an elongate black basal mark at vein 16.

Head black, with a buffish white line at each side in front. Palpi black; first joint white externally, second white internally, third with a few white scales on the inner side. Antennae dorsally between tip and middle scaled white. Thorax black, with three buffish white stripes; metathorax laterally with a tuft of cadmium-yellow hairs. Each abdominal segment ringed with cadmium-yellow at apex, with black at base; ventrally the abdomen is cadmium-yellow, except the seventh segment, which is black at base. Legs and underside of breast yellow; upperside of legs with black scales.

Length: forewing 25 mm., hindwing 19 mm.

*Hab.* Samanga, S. Celebes, November 1895 (H. Fruhstorfer); 1 ♂.

8. *Pristoceraea alba* sp. nov.

♂. Wings above and below silky white; upperside of forewing with a feeble tint of cream-colour. Costal and outer margin of forewing with black border of a nearly uniform width of  $\frac{3}{4}$  mm., except at anal angle, where the black colour is

almost confined to the fringe; border of outer margin dentate at the nervules. Hindwing with fringe between submedian fold and vein 5 black.

Head, underside of body, and tip of abdomen yellowish buff. Front of head produced into a high truncate cone, which is scaled black laterally. Base of abdomen and thorax above white. Palpi black, first and second joints with some yellow scales at base and apex. Anterior legs and all tarsi dark fuscous; hind tibiae cream-colour.

♀. Similar to ♂, but black border to outer margin of forewing wider, measuring  $1\frac{1}{3}$  mm. in breadth: hindwing with a narrow black outer border extending from veins 1b to 7,  $\frac{2}{3}$  mm. wide at vein 3, tapering off towards both ends. Abdomen beneath black.

Length: forewing 20 mm., hindwing 15 mm.

Breadth: " 10 " " 12 "

*Hab.* Fort Johnstone, Nyassaland, January and February 1896 (Dr. Percy Rendall); 2 ♂, 1 ♀.

The antennal joints are compressed, not cylindrical as in *Aegocera* and most other genera of *Agaristidae*. The first and second joints of the palpi are on the underside provided with long scales, while the third joint, which is about  $2\frac{1}{2}$  times as long as broad, is clothed with much shorter scales. The front of the head is produced into a high truncate cone, which is at the tip about a sixth the width of the front of the head.

#### 9. *Immetalia meeki huonis* subsp. nov.

♂. Differs from *meeki* from the D'Entrecasteaux Islands in the band of the forewing being brighter yellow and narrower, measuring on the upperside  $1\frac{3}{4}$ ,  $2\frac{1}{2}$ ,  $\frac{3}{4}$  mm. respectively at costa, vein 4, and submedian vein. Band of hindwing also slightly narrower: the black border of the wing obviously broader than in *meeki*, measuring  $6\frac{1}{2}$  mm. at vein 6.

♀. Similar to the *male*. The median band of the hindwing broader than in ♂ of *huonis*, but much narrower than in ♀ of *meeki*, especially its anterior portion: black border of hindwing as in ♂.

*Hab.* Simbang, near Finschhafen, Huon Golfe, German New Guinea (Captain H. C. Webster); 1 ♂, 1 ♀.

# NOVITATES ZOOLOGICAE.

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## ON THREE UNDESCRIBED COPROPHAGOUS LAMELLICORNS IN THE TRING MUSEUM.

By JOHN W. SHIPP.

### 1. *Heliocopris coryndoni* sp. nov.

♂ near *H. pimal* F.; differs in the coarser reticulations on the thorax, narrower head, three-pointed central thoracic armature, and parallel-sided elytra.

♂. Black, nitid: head with the clypeus rather rounded or slightly sinuated in front, terminating in a sharp angle in front of the transverse carina; the lateral margins are concave, with another angle or point just before the eyes. Front of clypeus covered with a fine network of carinae, with the interspaces very finely alutaceous. A raised bipointed transverse carina is on the disc of the head, very coarsely reticulate behind and at the sides.

Thorax very rough on disc and at sides, with the exception of a smooth cicatrix on each side close to the lateral margins.

Thoracic armature produced in the centre into a deflexed narrow three-pointed process, the two side teeth being very slightly reflexed and the centre one strongly deflexed; from each of the two outside teeth the carina runs semicircularly and forms another large point on each side. Truncation roughly and anterior angles obsoletely pointed; lateral margins produced into a large strong point, which projects anteriorly; the side margins of this point are slightly crenulated; lateral margins rather attenuated posteriorly. Posterior angles blunt, and the hindmargin slightly sinuate and rather produced near the scutellary space. Posterior margins very strongly marginate. Anterior and lateral margins fringed with long reddish brown bristles.

Elytra shining: interstices flat, very sparingly and finely punctured with minute punctures; striae plain, but shallow. Lateral margins almost parallel: margins very strongly marginate. The sutural interstices are much raised.

Pygidium as broad as long, emarginate, and sparingly punctured. Metathorax thickly punctured with setose punctures, with the exception of a longitudinal smooth line on disc, in the centre of which is a longitudinally impressed fine line. Disc of abdomen smooth; sides more or less thickly punctured. Episternum of the metathorax very thickly punctured, and covered with fine reddish brown hairs.

Undersides of femora smooth on disc, coarsely punctured with setose punctures towards the sides. Under and upper sides of the intermediate and posterior tibiae smooth on disc, with a row of large pores or punctures on the inner margin, from base to apex. The punctures are unisetose.

Anterior tibiae three-dentate on exterior margins, the apical tooth being furnished with a small tooth on the disc. Two rows of punctures with a raised edge,



giving the tibiae the appearance of being crenulated, are situated on the disc, the space between them being smooth.

Antennae pitchy, club greyish.

♀. Head produced in front; clypeus slightly reflexed; a tridentate carina on disc, with the centre tooth almost obsolete; lateral margins slightly crenulate.

Thorax not so coarsely punctured as in the ♂; the lateral margins crenulated; the posterior portion and scutellary area thickly granulate; on the disc of the thoracic armature and truncation the granules have run together. The thoracic armature is in the form of a sinuated slightly emarginate carina, somewhat similar to *japetus* ♀, from which, however, it differs in the anteriorly rounded form of the head and tridentate carina.

Elytra dark castaneous; striae punctured; interstices finely punctured with small punctures; sides somewhat roughened and aciculate. Lateral margins strongly emarginate and margined; between the humeral carina and the lateral margin are three punctate striae; interstices rugosely aciculate.

Pygidium shorter than in the ♂, and rather more thickly punctured.

Underside similar to the ♂. Intermediate and posterior tibiae thickly punctured on the upperside, and with the edges rather more thickly punctured on the underside than the ♂.

Anterior tibiae without a tooth on the upperside of the apical tooth.

Long. corp. ♂, ♀, 47 mm.; lat. 27—27½ mm.

*Hab.* Mpeta, Loangwa River (affluent of the Zambesi), November and December 1895, beginning of rainy season (Coryndon).

Type in Tring Museum.

## 2. *Heliocpris exclamationis* sp. nov.

Near *japetus* Klug. ♂ differs in having a short raised carina on the third interstice, which is also more strongly curved, in the shape of the thoracic armature, and in the shorter head and wider transverse carina.

♂. Black, shining, with the elytra obscure pitchy.

Head rounded in front, with the clypeus slightly reflexed; a central transverse tripointed carina extends across the head, the centre point being the largest. The lateral margins are strongly sinuate, the sinuation being strongest opposite the transverse carina.

Anterior portion finely rugosely reticulate; posterior portion much coarser. Lateral margins fringed with reddish bristles.

Thorax with the disc produced, and with eight distinct angles or points, of which four are situated on the discal carina, the front being rather produced to an obtuse angle which has at each side an obtuse point, and then terminated by a short sharp point. Another carina then extends from near the centre portion of the truncation towards each side, and is furnished near the lower extremity with a sharp point. The carina then extends in a semicircular form towards the lateral margins, but is broken in the centre by a sharp curved angle, which seems to divide the large curve into two smaller curves. The frontal truncature is very coarsely punctured in front, the punctures being rather shallow and running into each other, the sides are very deeply excavated and shining, very minutely punctured and finely alutaceous. Sparingly punctured at the margins.

Disc coarsely punctured with large punctures on the anterior portion, which

become granulated towards the centre, and with the posterior portion near the scutellary region thickly and finely granulate, finely and sparingly punctured on the lobes and finely granulate near the sides. A large, smooth, indented cicatrix is situated on each side near the lateral margins.

Anterior portion of the lateral margins smooth and emarginate: posterior portion rather crenulated and marginate.

Posterior margins widely marginate, with the margin smooth.

Elytra with a somewhat pitchy reflection.

Very fine punctured striae; interstices very sparingly punctured with fine punctures. A short sharp raised carina is situated on the basal third of the third and fourth striae.

Pygidium rather sparingly rugosely granulate.

Metasternum rather depressed towards the anterior extremity and sparingly punctured, the punctures being setose.

Femora smooth on disc, rather thickly punctured with setose punctures at the sides and margins.

Anterior tibiae three-dentate on the exterior margin, with the apical tooth furnished with a short tooth on the upperside at the apex. Hind tibiae rather thickly punctured on the upperside, almost glabrous underneath.

Long. corp. 48 mm.

*Hab.* Sierra Leone.

Type in Tring Museum.

### 3. *Aphengium cupreum* sp. nov.

Obscure cupreous; differs from *sordidum* Har. in the thorax being broader and the teeth on the clypens being shorter and almost obsolete and rather more thickly punctured on the elytra.

Head: clypens emarginate and rounded except in centre, where it is broken by two obsolete teeth, rather thickly and finely punctured, the punctures being larger and more coarsely scattered near the thorax.

Thorax twice as broad as long, wider near the anterior angles than at the base. Anterior angles rather produced.

Lateral margins slightly incurved near the anterior angles and then straight to the posterior angles, which are rounded. Posterior margin evenly rounded. Disc rather produced into an obtuse hump near the anterior margin, rather coarsely punctured with a few large hirsute pores: sides very thickly covered with close punctures and with a few reddish brown setae scattered round the margins. A cicatrix is situated at each side, remote from the lateral margins. Elytra plainly striated; interstices thickly punctured and covered with reddish setae.

Pygidium dull and pointed, strongly emarginate and almost smooth.

Metasternum and abdomen finely punctured in centre with fine setose punctures, very coarsely and thickly punctured at sides.

Long. corp. 9 mm.

*Hab.* Espirito Santo, S. Brazil.

Type in Tring Museum.

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## ON A COMPLETE SKELETON OF *MEGALAPTERYX* *TENUIPES* LYDEKKER IN THE TRING MUSEUM.

By CHARLES W. ANDREWS, B.Sc., F.G.S.

(Plate VI.)

THE confusion that has arisen in the nomenclature of the *Dinornithidae* in consequence of the founding of new species on isolated bones, or, what is worse, on sets of bones conjecturally referred to the same species, has often been commented upon, and some attempts have been made to remedy it. The difficulties are, however, so great that the confusion is probably to a large extent inextricable, and the whole question is rendered more difficult by the way in which many of the nominal species pass into one another by almost imperceptible gradations. Nevertheless, when more associated sets of limb-bones, or, better still, complete skeletons, have been described and measured, it will become possible to determine to a large extent how many good species there really are, although there will no doubt always be considerable difference of opinion as to the limits of some of them.

In the case of the almost perfect skeleton which, through the kind permission of the Hon. Walter Rothschild, I am able to describe in the present paper, the difficulty of determination is comparatively small, since it clearly belongs to the genus *Megalapteryx*, of which only two species have hitherto been named. The first of these, *Megalapteryx hectori*, which is the type of the genus, was described by Von Haast in the *Transactions of the Zoological Society*, Vol. XII. p. 161, on the evidence of the bones of the leg. The second species, *M. tenuipes*, was founded by Lydekker (*Cat. Foss. Birds Brit. Mus.* p. 251) on a much abraded right tibia (Brit. Mus. 49990); and since the tibia of the skeleton under description is identical with this bone in size and structure, it must be referred to the same species. At the same time I regard it as very unfortunate that so imperfect a specimen as the type tibia should have received a name at all.

The genus *Megalapteryx* is the least known of the numerous genera into which the *Dinornithidae* are subdivided. As already mentioned, it was founded by Haast for the reception of his new species *M. hectori*, and the chief character which he put forward as diagnostic of it was the slenderness of the bones of the leg, this being particularly marked in the case of the femur, in which the shaft is notably longer in proportion to the size of the extremities than in any other member of the group. He also drew attention to several other points which led him to believe that this bird was nearly related to the *Apterygidae*, and was, in fact, a gigantic apteryx. This opinion is rejected by later writers, and is not supported by the present specimen, which is in all respects *Dinornithine*; and, as Parker has pointed out, the skull in this genus is very similar in many respects to that occurring in Haast's genus '*Meionornis*' (= *Mesopteryx* Hutton, and *Anomalopteryx*, typical group, Lydekker). It should, however, be noted that some of the characters (*e.g.* the presence of a perforation at the lower end of the groove between the third and fourth metatarsals) to which Haast attached importance, occur in the skeleton under consideration, and appear, therefore, to be constant in the genus.



MEGALAPTERYX TENUIPES Lyd.

2 AUG 1897





*The Skull.*—The skull (fig. 1) is most similar to those of *Meionornis* and *Anomalopteryx*, but also seems to approach *Emeus* in a few points. Looking at the occipital surface the cranium will be seen to be somewhat depressed, and the general outline is like that of the skull figured by Parker as that of *Mesopteryx* sp.  $\beta$  (*Trans. Zool. Soc.* Vol. XIII. pl. 52, fig. 53). The paroccipital processes are very small and only slightly convex from above downwards; their rounded lower angles scarcely extend below the level of the occipital condyle. In *Meionornis casuarinus* these processes are large, very convex from above downwards, and their acute lower angles extend down to the level of the mammillary tuberosities; in *Anomalopteryx* and *Emeus* also they are larger than in the present species, but do not extend much farther ventrally. The occipital crest forms a prominent rounded ridge, and the anterior and posterior lambdoidal ridges are separated by a very narrow interval only, as in *Emeus*; in

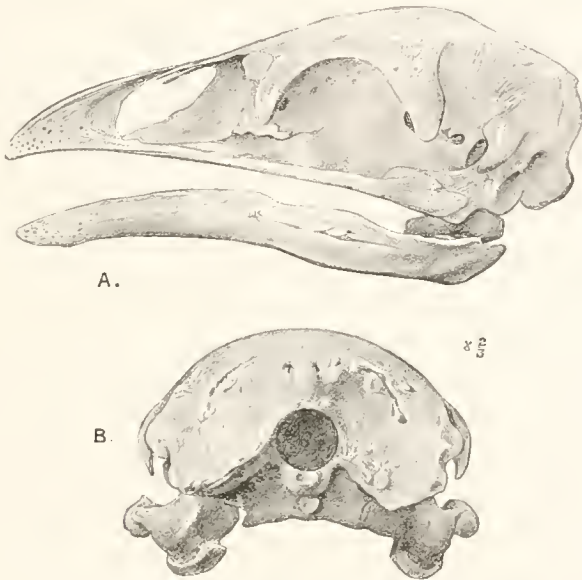


FIG. 1. SKULL OF MEGALAPTERYX TENUIPES LYD.  
A. from side. B. from behind. ( $\frac{2}{3}$  natural size.)

*Meionornis* and *Anomalopteryx* a considerable space is enclosed between the two ridges.

In consequence of the small size of the paroccipital processes the tympanic cavity is very small, much smaller than in *Meionornis* and *Emeus*; in *Anomalopteryx parva* they are also small, but their outline is sharply angulate instead of forming an even curve as in the present specimen.

The temporal fossae are very large and slope steeply backwards. Posteriorly the temporal and lambdoidal ridges become confluent; the inferior temporal ridge is well developed and terminates in a sharp pretympenic process. The posterior temporal ridge is confluent with the lower portion of the lambdoidal crest; after leaving this it runs downward and forward on to the zygomatic process in such a way that only a very small area of the squamosal prominence is outside the limits of the posttemporal fossa. In both *Meionornis casuarinus* and *Emeus* the temporal

fossa is small: in *Anomalopteryx parva*, on the other hand, it is as large as in the present specimen, and the temporal and lambdoidal ridges meet; there are, however, many differences in the arrangement of the inferior and posterior temporal ridges.

The outline of the orbit is evenly curved or very slightly sinuous, and, owing to the backward direction of the postorbital process, it seems to be larger than in the other genera, in which also the preorbital process is much smaller. The optic foramen is circular in outline, and it is situated as in *Meionornis*. There is a large and deep presphenoid fossa.

The mesethmoid is not perforated posteriorly by a fenestra, so that the olfactory chambers are completely separated by bone. The outer border of the antorbital plate, which is of very small vertical extent, is not fused with the lachrymal, the lower end of which is perforated by the lachrymal foramen as in *Anomalopteryx didiformis*. The alinasal appears on the surface of the skull, filling the angle between the nasal and lachrymal.

The beak is pointed as in *Meionornis*. The anterior portion of the nasal process of the premaxillae, where it joins the body of the bone, is thin, thus differing widely from the same region in *Mesopteryx*, *Anomalopteryx*, and, especially, *Emeus*.

Seen from above the roof of the skull presents a nearly evenly arched surface. The most notable characteristic is its great breadth between the orbits, much greater than in *Meionornis* and *Anomalopteryx*.

The only peculiarity noticeable on the ventral aspect is the length of the pedunculate basi-pterygoid processes.

The mandible is more slender than that of any other of the Moas, the depth at the level of the slightly indicated coronoid process being only 13 mm. The symphyseal region is short and pointed. The articular surface for the quadrate is broad; the posterior angular process is smaller than in *Anomalopteryx* and *Mesopteryx*, but on the other hand the internal angular process is much larger.

The general characters of the skull may be summarised as follows:—

Width of cranium at paroccipital processes less than half length of basis cranii.

Distance between optic foramina a little more than one-third length of basis cranii.

Orbit evenly curved.

Length of premaxilla less than two and a half times that of basis cranii.

Body of premaxilla pointed and slightly decurved; its length and breadth less than basis cranii.

The occipital plane slightly inclined backwards.

The occipital condyle projecting slightly beyond the paroccipital processes.

Anterior and posterior lambdoidal ridges separated by a very narrow interval in their middle region only.

Width at squamosals slightly more than double length of basis cranii.

Mammillary tuberosities not very prominent.

Margin of tympanic cavity evenly curved.

Temporal fossae very large; distance between temporal ridges about four-fifths width of cranium at fossae.

The posterior temporal ridge confluent with lambdoidal ridge; posttemporal fossae very large.

The inferior temporal ridge is strongly marked and there is a pretympenic process.

The zygomatic process well developed.

Rostrum dilated towards its anterior end, compressed and carinate beneath the large presphenoid fossae.

Mandible very slender ; posterior angular process small.

The dimensions of the skull are :—

Total length . . . . .	122 mm.
Length of cranio-facial axis . . . . .	97 "
"    "    basis cranii . . . . .	30 "
"    "    roof . . . . .	76 "
Width at paroccipital processes . . . . .	55 "
"    "    squamosal prominences . . . . .	65 "
"    "    temporal fossae . . . . .	45 "
"    "    postorbital processes . . . . .	73 "
"    "    preorbital processes . . . . .	47 "
Distance between temporal ridges . . . . .	36 "
Height of cranium . . . . .	42 "
Width of tympanic cavity . . . . .	20 "
"    "    temporal fossae . . . . .	26 "
"    "    orbit . . . . .	32 "
Distance between optic foramina . . . . .	10 "
Length of premaxilla . . . . .	66 "
"    "    body of premaxillae . . . . .	27 "
Width "    "    "    " . . . . .	25 "

The above measurements are taken according to the rules laid down by Prof. Jeffrey Parker in his paper on the Cranial Osteology of the *Dinornithidae* (*Trans. Zool. Soc.* Vol. XIII. 1895, p. 373).

*The Vertebral Column.*—There are twenty-one true cervicals, two cervico-dorsals, and four free dorsals. The two halves of the neural spine of the atlas are imperfectly united, their anterior two-thirds being separated by a narrow vertical cleft. The neural spine of the axis is not very prominent, and its posterior face bears a deep pit for the insertion of a ligament. The neural spines of the cervicals 3, 4, and 5 are bifid ; in the sixth the bifid spine is represented by two tuberosities, which in the succeeding vertebrae diverge from one another and become reduced in height, till on 17 we have two low tuberosities, separated by a considerable interval and arising from a common transverse ridge. In 18 and 19 these tuberosities become more prominent and again approach one another, while in 20 we have a high median spine which slopes forward and still shows traces of the bifid condition in the slight forking at its posterior upper angle. In 21—25 the neural spine continues to increase in breadth and height, but in the last two free dorsals, although the increase in height is maintained, the spine becomes very narrow from before backwards.

The centrum of the axis bears a median haemapophysis, as also does that of the third ; in the fourth this process is only slightly indicated. The fifth vertebra was missing and has been restored in plaster. In the sixth the ventral surface is deeply concave from side to side, and the paired catapophyses begin to appear ; these increase in height to the sixteenth, in the seventeenth they are reduced, and in the eighteenth replaced by a median haemapophysis. This increases in height and antero-posterior extent to the twenty-fourth ; on the twenty-fifth there is a median haemapophysis at the anterior border of the centrum, and a pair of blunt processes near the

hinder margin. These latter recur on the remaining free dorsals and also on the first two fused pelvic vertebrae.

The last three cervicals and the two cervico-dorsals bear hyperapophyses above the post-zygapophyses.

Large pneumatic foramina perforate the base of the neural arch from the second cervico-dorsal (23) to the last free dorsal (27) inclusive : and similar openings occur immediately behind the base of the transverse processes in vertebrae 22 to 26.

The total length of the vertebral column (exclusive of the pelvic vertebrae) measured along the ventral surface is about 187 cm.

The first of the pelvic vertebrae supports a free rib, the second a fused rib; these two vertebrae also bear paired haemapophyses near their hinder border. The post-acetabular vertebrae have a low keel on the ventral surface of their centrum.

The *pelvis* is narrow, and the preacetabular portions of the ilia meet at a very

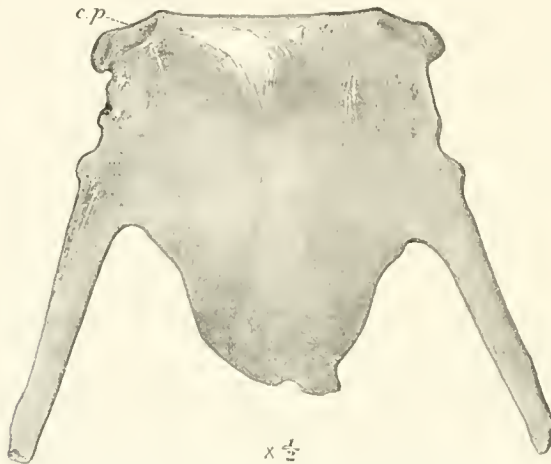


FIG. 2.—STERNUM OF MEGALAPTERYX TENUIPES LYD.  
From below. *c.p.*, coracoid pit. ( $\frac{1}{2}$  natural size.)

acute angle to form the iliac crest, which is convex from before backward. The ilia begin to diverge about opposite the middle of the acetabulum : the external surface of their postacetabular region is narrow from above downwards, and, except close to the posterior end, the thickened ventral margins do not descend below the level of the centra of the posterior pelvic vertebrae. The distal portion of the ischium is greatly expanded, but it remains separated by a considerable interval from the ilium. There is a blunt, not very prominent pectineal tubercle.

The dimensions of the pelvis are :—

Length of sacrum in a straight line	. . . . .	255 mm.
Greatest width of pelvic escutcheon	. . . . .	120 "
Greatest length of ilia	. . . . .	320 "
Width at pectineal processes	. . . . .	101 "
Width at antitrochanters	. . . . .	140 "
Least width of preacetabular region	. . . . .	68 "
Width between distal ends of pubis	. . . . .	95 "

*The Sternum.*—The sternum (fig 2) has a nearly straight anterior border between

the tuberosities for the coraco-scapular ligaments, which are fairly well marked. Laterad of these tuberosities the anterior edge rises to form the front border of the antero-lateral processes. These are large, and at their bases there are well marked coracoid pits (*c.p.*). The lateral borders of the sternum diverge from one another from the base of the antero-lateral processes to the tips of the postero-lateral processes, which are long, distally expanded, and extend considerably beyond the median process. This latter has an irregular extremity with an unsymmetrical notch. The whole sternum is short and broad, and is highly convex from before backward as well as from side to side.

There are three pairs of facets for the sternal ribs.

The anterior sternal rib is short and stout (45 mm. in length), the middle one more slender and longer (68 mm.), while the posterior is still longer and very slender (95 mm.).

The dimensions of the sternum are :—

Width at antero-lateral processes . . . . .	104 mm.
Length from tip of antero-lateral to tip of postero-lateral process . . . . .	141 „
Length in middle line . . . . .	129 „
Least width of body (in front of first rib-facet) . . . . .	100 „
Length of postero-lateral process . . . . .	87 „

#### BONES OF THE HINDLIMB.

The *femur* is of the same slender forwardly arched form as that of *M. hectori*, though of course considerably larger. There are, however, some structural differences; thus the neck is less clearly defined, the trochanter projects farther forward, and, at the lower end of the bone, the outer condyle is relatively larger and projects farther backward. In other respects, *e.g.* in the form of the popliteal fossa and of the articular surface for the fibula and in the arrangement of the intermuscular ridges, the femora of the two forms are similar, and on the evidence of this bone alone it would be possible to refer this species to the genus *Megalapteryx* without hesitation.

The *tibio-tarsus* is important because upon it depends the identification of the species. The tibia upon which Lydekker founded *M. tenuipes* is unfortunately much abraded, and the width of the distal extremity is thus reduced by about 13 mm. From this it follows that the measurements given in the diagnosis of the species are misleading, as also is the figure (*Catal. Foss. Birds Brit. Mus.* fig. 54 c, p. 219). The dimensions of the shaft agree almost exactly with those of the present specimen, and it is therefore a fair inference that those of the extremities in an unworn condition were also the same. If this was the case, the width of the distal end was more than one-eighth of the length of the bone instead of only one-ninth. In *M. hectori* the proportions were about the same, and the structure of the whole bone is closely similar.

The *metatarsus*, as in *M. hectori*, is much compressed antero-posteriorly in the middle of the shaft, and the arrangement of the hypotarsal ridges and the form of the distal trochleae are identical in the two birds. In the *M. tenuipes*, however, the intercondylar tubercle is much more prominent and the anterior depression is deeper. The foramen at the lower end of the groove between metatarsals 3 and 4 merely perforates a thin flange of the bone, as in *M. hectori*; there is no distal perforation between metatarsals 2 and 3.



One of the most notable characters about this skeleton is the remarkable length of the toes, the middle one being longer than the metatarsus. The ungual phalanges are peculiarly long, narrow, and curved, instead of being comparatively short and broad, as in most of the Moas.

One point of some interest may here be noticed, namely, that in the type of *Meionornis didina* Owen, the toes are very long and the ungual phalanges similar in form to those of the present specimen. This elongation of the toes seems to have been overlooked owing to the fact that the presence of dried tendons and integument on the foot masks the form and proportions of the bones. The likeness of the type of *M. didina* to the present specimen is not confined to the toes; but the metatarsus, tibia, and skull, as far as can be made out, are likewise similar, and if it were not that the tibia is somewhat stouter and the form of the cnemial crest different in *M. didina*, I should regard the two as specifically identical. As it is, I believe that both are species of the genus *Megalapteryx*. I do not know on what evidence the femora and pelvis referred by Professor Hutton have been determined, and my remarks relate only to the type-specimens which are in the British Museum.

The dimensions of the bones of the hindlimb in this specimen are given below, together with those of *Megalapteryx hectori* and *tenuipes* (type-tibia) and *Meionornis didina* for comparison.

	Specimen now described.	<i>Megalapteryx tenuipes</i> (type).	<i>Megalapteryx hectori</i> .	<i>Meionornis didina</i> (type).
FEMUR.				
Length . . . . .	264 mm.		173 mm.	
Width of upper end . . . . .	73 "		52 "	
" " lower end . . . . .	88 "		54 "	
Circumference of shaft at narrowest point . . . . .	100 "		71 "	
Diameter of ditto . . . . .	30 "		22 "	
TIBIA.				
Length (without cnemial crest) . . . . .	392 "	393 mm.		376 mm.
Width of proximal end . . . . .	68 "		65 "	
" " distal end . . . . .	57 "		43 "	54 "
Circumference of middle of shaft . . . . .	83 "	81 "	66 "	91 "
Width of ditto . . . . .	31 "		21 "	33 "
METATARSUS.				
Length . . . . .	190 "		143 "	187 "
Width at proximal end . . . . .	60 "		42 "	
" " distal end . . . . .	81 "		57 "	
Circumference of middle of shaft . . . . .	80 "		57 "	
Width of ditto . . . . .	31 "		22 "	

The length of the fibula is 265 mm.; the width of its upper end, 45 mm.

Length of middle toe, 197 mm. (1st phalanx, 63; 2nd, 43; 3rd, 39; 4th [claw], 76).

" " inner toe, 148 mm. (1st phalanx, 63; 2nd, 41; 3rd [claw], 65).

" " outer toe, 150 mm. (1st phalanx, 45; 2nd, 30; 3rd, 31; 4th, 27; 5th [claw], 48).

" " metatarsal of hindtoe, 50 mm.

The beautifully preserved specimen now described was discovered about 1865 by Mr. Salisbury in a cavern at Pockeroy Nelson, in the South Island of New Zealand.



# EXPLANATION OF PLATE V.

- Fig. 1. *Anisographe dissimilis* ♂, p. 254. n. 162.  
 „ 2. „ „ „ ♀, „ „ „  
 „ 3. *Lobocraspeda coeruleostriga* ♂, p. 242. n. 132.  
 „ 4. *Agathia obsoleta* ♂, p. 208. n. 35.  
 „ 5. *Phaselia* (?) *dentilinea* ♀, p. 245. n. 140.  
 „ 6. *Pterocymia nigrocellata* ♂, p. 236. n. 117.  
 „ 7. *Epiplema delicatula* ♀, p. 202. n. 19.  
 „ 8. *Goniopteroloba fuscata* ♂, p. 231. n. 104.  
 „ 9. „ *conjuncta* ♂, p. 230. n. 103.  
 „ 10. *Eois exquisita* ♀, p. 219. n. 70.  
 „ 11. *Hypostomodes nubilata* ♂, p. 252. n. 159.  
 „ 12. *Eulype* (?) *disparata* ♂, p. 234. n. 111.  
 „ 13. *Euphalacra nigradorsata* ♂, p. 196. n. 2.  
 „ 14. *Agraptochloa nigricornis* ♂, p. 208. n. 36.  
 „ 15. *Eucrostes impunctata* ♂, 211. n. 43.  
 „ 16. *Alcis contortilinea* ♂, p. 245. n. 141.  
 „ 17. *Darisa dissimilis* ♀, p. 247. n. 146.  
 „ 18. *Bursada* (?) *puncticornis* ♀, p. 240. n. 128.  
 „ 19. *Darisa dissimilis* ♂, p. 247. n. 146.  
 „ 20. *Chloromachia aureofulva* ♂, p. 209. n. 38.  
 „ 21. *Euchloris ochrea*, p. 210. n. 42.  
 „ 22. *Clepsimelea phryganeoides* ♀, p. 262. n. 182.  
 „ 23. *Chloroglyphica maculata* ♀, p. 208. n. 37.  
 „ 24. *Oniza tortuosa* ♀, p. 258. n. 173.  
 „ 25. *Terpna* (?) *ocellata* ♀, p. 207. n. 34.  
 „ 26. *Bursada rotundimacula* ♀, p. 241. n. 129.  
 „ 27. *Banisia albifimbriata* ♂, p. 196. n. 3.  
 „ 28. „ (?) *dohertyi* ♂, p. 196. n. 4.







NEW GENERA AND SPECIES OF *DREPANULIDAE*,  
*THYRIDIDAE*, *EPIPLEMIDAE*, *URANIIDAE*, AND  
*GEOMETRIDAE* IN THE TRING MUSEUM.

(Plate V.)

BY W. WARREN, M.A., F.E.S.

FAMILY *DREPANULIDAE*.

1. *Ausaris splendens* sp. nov.

*Forewings* : cream-colour, tinged with olive ; costa darker, studded throughout with silvery scales ; cell-spot large, ear-shaped, dark chestnut, edged with silvery scales ; a blotch of silvery scales at base of cell, with a line of the same along middle of cell, through the cell-spot, and broadening beyond it ; a silvery submarginal line, incurved at middle, then parallel to hindmargin ; marginal line silvery ; fringe and costal edge before apex fulvous ; the submarginal line is edged internally with olive fulvons.

*Hindwings* : with a short silvery line from inner margin at two-thirds ; marginal line silvery below middle ; fringe fulvons.

Underside uniform pale cream-colour. Face and palpi deep brown ; thorax and abdomen cream-colour ; antennae ferruginous.

Expanse of wings : 26 mm.

One ♂ from Tawaya, north of Palos Bay, Celebes, August or September 1896 (Doherty).

Closely allied to *A. argentilinea* Wlk.

*Euphalacra* gen. nov.

*Forewings* : elongate ; costa strongly arched at base and convex before apex, which is minutely falcate ; hindmargin bluntly toothed below veins 7 and 5, excised between the teeth and less strongly below apex ; the lower half strongly oblique.

*Hindwings* : with hindmargin toothed as in forewings, the excision between the teeth deeper ; costa strongly curved to the upper tooth ; hindmargin straight from lower tooth to anal angle.

Palpi porrect or inclined upwards, stout, and longer than in *Phalacra* ; tongue present ; frenulum absent ; antennae in both sexes flattened and serrate, the serrations clavate.

*Neuration* : forewings, cell half as long as wing ; discocellular inangulated ; first median beyond middle ; second at seven-eighths ; third from end of cell ; lower radial just above lower angle, upper from just below upper angle of cell ; 7, 8, 9, stalked ; 10, 11, stalked ; 10 anastomosing with 8, 9, and forming a very long areole, 11 being given off near its apex, 7 from the middle. Hindwings as in *Phalacra*.

Type : *Euphalacra nigradorsata* sp. nov.

*Phalacra edentata* Hampson, *Faun. Brit. Ind. Moths*, Vol. IV. p. 478, n. 747a, has similar neuration ; but no mention is made of the serration of the ♀ antennae.

2. *Euphalacra nigradorsata* sp. nov. (Pl. V. fig. 13, ♂).

*Forewings*: pale ochreous, with pale grey-brown suffusion and lines: a diffused grey-brown streak from base through cell, darker and extending to costa in the ♂: three fine very acutely dentate brown lines before middle, marked with dark points on the veins: a blackish dot at middle of discocellular, preceded by a pale ochreous elongated spot: a smaller blackish dot at lower end of cell: three strongly waved postmedian brown lines, approximated below middle and running obliquely to before middle of inner margin, marked with a brownish streak running through to the upper tooth and preceded by an oblique somewhat irregular streak of the pale ground-colour: a waved brown submarginal line and row of black marginal spots: fringe ochreous, darker at the teeth.

*Hindwings*: with two dark brown antemedian lines, forming a continuation of the oblique brown streak of forewings: two pale brown waved median lines, approximated towards inner margin and meeting along the veins, divergent above middle: two waved postmedian lines close together, the outer one darker: submarginal line and marginal spots and fringe as in forewings.

Underside pale ochreous, with dark brown sinuous outer and submarginal lines: the cell-spots distinct: costal area of forewings dark smoky brown. Face and palpi ochreous below, brown above: vertex, thorax, and abdomen ochreous: the last with a double blackish central blotch corresponding to the oblique dark line of wings, and two dark rings towards the anal segments.

Expanse of wings: ♂, 39 mm.: ♀, 45 mm.

A pair from the Khasias, August 1896.

FAMILY THYRIDIDAE.

3. *Banisia albifimbriata* sp. nov. (Pl. V. fig. 27, ♂).

*Forewings*: pale silky ochreous, crossed by very fine waved lines of an orange-red tint, four or five of which are more prominent than the rest, blackish with reddish edges—viz. two waved near base, one oblique from two-thirds of costa to inner margin beyond middle, crossing the cell-spot, a broken sinuous one beyond it, and a curved and sinuous submarginal one, oblique outwards towards middle of hindmargin, then incurved to anal angle: a fine dark marginal line, connected by short streaks with the submarginal: costa marked with black streaks: fringe reddish at base, white beyond.

*Hindwings*: with all the lines more distinct, the five darker ones all more or less parallel to hindmargin: fringe wholly white.

Underside the same. Head and thorax dark brown-red: abdomen whitish, with red segmental rings: the anal segment white.

Expanse of wings: 24 mm.

One ♂ from Monut Gedé, West Java, 4000 feet, 1896 (Fruhstorfer).

4. *Banisia* (?) *dohertyi* sp. nov. (Pl. V. fig. 28, ♂).

*Forewings*: somewhat shining, greyish fawn-colour, thickly dappled with darker: the fasciae darker grey, narrow, with irregular edges, starting from still darker brownish grey costal blotches, the first at one-fourth, the second just before middle, the third beyond middle from a large costal blotch reaching to the median and

strongly angled in the cell ; the fourth and fifth at even distances beyond, the fourth forming a narrow oblique and straight band, the fifth curved parallel to hindmargin, both marked with small round black dots between the veins ; apex freckled with white ; a small blackish cell-spot ; fringe glossy, pale, with a dark dividing line, and neatly chequered with dark grey beyond the veins in the ♂ ; wholly fawn-coloured in the ♀.

*Hindwings* : with traces of dark median, postmedian, and submarginal bands ; the first forming a large dark spot at end of cell, with some small hyaline spots before and behind it.

Underside darker, brownish grey, with the markings more distinct ; those of the hindwings black. Head, thorax, and abdomen fawn-colour ; underside of abdomen and legs whitish.

Expanse of wings : ♂, 32 mm. ; ♀, 28 mm.

A pair from Bali, March and April 1896 (W. Doherty).

A very distinct species. Forewings with apex slightly produced ; hindmargin bowed in middle, oblique below and incurved before anal angle, which is slightly lobed. Hindwings with apex produced ; inner margin very short ; hindmargin truncate and excised from anal angle to vein 1, and excised between 1 and 2, 2 and 3. The palpi long, obliquely porrect upwards ; third joint quite as long as second. Abdomen of ♂ very long, of ♀ short and stumpy.

##### 5. *Banisia mediostrigata* sp. nov.

*Forewings* : pale ochraceous, with darker ochraceous or pale brown strigulations and reticulations ; six pairs may be counted on the costa, with the ground-colour between them slightly deeper, oblique at first, then vertical : the limiting lines of the outer three pairs becoming much more irregular and distorted ; between each pair and also along the centre of each there are visible finer vermicular lines and streaks ; fringe concolorous, with a fine darker basal line. The median vein and second median nervule are thickened and slightly raised, edged towards the inner margin by a darker streak, the area above remaining of the paler ground-colour.

*Hindwings* : similar, the disc beyond the middle slightly paler.

Underside the same. Head, thorax, and abdomen dark ochraceous or pale brownish ; the metathorax and basal segments of abdomen somewhat paler.

Expanse of wings : ♂, 40 mm. ; ♀, 46 mm.

A pair from the Khasias, August 1896.

##### 6. *Banisia ordinaria* Warr., *Ann. Mag. N. H.* (7). II. p. 226 (1896).

I find that this species is subject to very considerable variation, both in size and markings. The type, a ♀, from Mackay, Queensland, is 34 mm., but of six examples from Geraldton, near Cairns, also in Queensland, four ♀♀ expand only 27 mm., while the other two ♂♂ are only 24 mm. The ♂ resembles *B. tetragonata* Wlk. in having small hyaline spaces beneath vein 2 on each side of the inner arm of the outer fascia, and is besides paler in coloration than the ♀.

In one form of aberration occurring in both sexes, for which I propose the name

ab. *nigristriata*,

the outer double line from costa before apex to middle of hindmargin in the

forewings is filled in with black between the veins; in a second, the inner arm of the outer fascia contains an oblong black blotch in both wings, which I call

ab. *hyphenata*.

#### 7. *Hypolamprus bipunctatus* sp. nov.

*Forewings*: reddish brown with a coppery tinge, crossed by very fine dark strigulae, which interlace towards the hindmargin and anal angle; eight pairs of dark lines from the costa hardly reaching beyond the subcostal, the space between the lines slightly darker, the seventh and eighth pairs divergent: the fifth produced to the median vein and embracing a dark cell-spot: some small round blackish spots beyond cell and along the submedian fold; fringe concolorous, with a distinct black dividing line, and dark streaks beyond the veins.

*Hindwings*: with rows of blackish spots between the veins; two submarginal consisting of small spots; the median row of larger ones, including the discal spot and one at anal angle.

Underside brighter, more coppery; forewings with a darker fascia from inner margin at one-third to median, with metallic scales on either side, and a darker median fascia reaching across wing and containing a large black and lustrous cell-spot; two lustrous white patches before apex. Head and thorax concolorous; abdomen paler, marked with red-brown at apex.

Expanse of wings: 22 mm.

One ♂ from Mount Gedé, West Java, 4000 feet, 1896 (Fruhstorfer).

#### 8. *Siculodes complicatalis* sp. nov.

*Forewings*: white, varied with irregular brown strigulae and reticulations, these becoming thicker and coarser towards inner margin; traces of submarginal dots below apex; fringe white, mottled with brown.

*Hindwings*: with all the brown lines thick, more definite than in forewings; a spot at base, then a bent band, followed by a straight one; median area with three or four interrupted and partly connected bands; a sinuous submarginal band, connected with hindmargin above and below middle.

Underside similar. Head, palpi, and front of thorax brown; the rest of thorax and abdomen white, the last with broad brown segmental rings.

Expanse of wings: 34 mm.

One ♂ from Gunong Ijan, Perak.

The forewings have the costa strongly shouldered near base and incurved at middle, the inner margin sinuate. Hindwings with hindmargin protuberant in middle, slightly incurved below apex and before anal angle.

### FAMILY URANIIDAE.

#### 9. *Acropteris illituratora* sp. nov.

*Forewings*: white, with a few scattered pale fuscous strigae, thickest on costal margin; fringe white, with no basal line.

*Hindwings*: the same; no trace of lines or bands on either wing.

Underside white. Face, palpi, and forelegs dark fuscous; head, thorax, and abdomen white.

Expanse of wings : 40 mm.

One ♂ from Mpwapwa, East Africa.

In this ♂ the venation is abnormal; veins 2 and 3 of forewings are short-stalked, and from their joint origin the median vein is strongly upcurved, vein 4 continuing the curve to hindmargin.

10. *Acropteris parvidentata* sp. nov.

*Forewings* : white, the costa strongly marked with double black strigae, which increase in size towards apex; the subcostal vein finely dotted with black; the streaks all pale brown, not grey; two double streaks from inner margin at one-third and beyond middle, meeting before apex; a diffuse streak from base through cell, and a narrower one in space between veins 7 and 8; two narrow bands of striae towards hindmargin; marginal line brown; fringe pale brown.

*Hindwings* : with four double bands; marginal line and fringe as in forewings.

Underside white, with the fringe pale brown. Palpi black and white; face brown; thorax and abdomen white.

Expanse of wings : 52 mm.

One ♂ from Lombok, June (Doherty); one ♂, two ♀ ♀, from Tawaya, north of Palos Bay, Celebes, August and September 1896 (Doherty); also several in the Felder Collection.

The hindmargin of hindwings is rounded, with only a very faint tooth at vein 4; hindmargin of forewings bent at one-third below costa, slightly incurved thence to anal angle.

11. *Acropteris vacuata* sp. nov.

*Forewings* : white, with no markings except some scattered pale brown strigae along costa and in the marginal area; fringe white, with no trace of any basal line.

*Hindwings* : the same.

Underside white; thorax and abdomen white.

Expanse of wings : 32 mm.

One ♀ from Morondava, Madagascar.

Like *A. illitirata* Warr. from Mpwapwa, but very much smaller.

12. *Pseudomicronia trimaculata* sp. nov.

*Forewings* : white, the costa with black points, emitting pale brown striae: pale brown oblique basal, forked antemedian, curved postmedian, and two finer, nearly straight, submarginal bands; hindmargin irregular, with fine dark marginal line, becoming obsolete before apex.

*Hindwings* : with the five streaks continued across them, all bent below middle, towards anal angle, the outermost streak split up into horizontal striae; an additional streak along inner margin; three large black spots between anal angle and tail, the marginal line swollen above.

Underside, head, thorax, and abdomen all white.

Expanse of wings : 45 mm.

One ♂; no locality.



13. *Stesichora bipunctata*.

*Stesichora apicipuncta* ab. *bipunctata* Warr., Nov. Zool. III. p. 344 (♀).

When I described the single ♀ from Biak as an aberration of *apicipuncta*, I had seen only that one; but I find that the differences between the two forms are quite constant, and that the ♂ is remarkably different from the ♀ in both forms.

Of six examples from Etua Bay, New Guinea (four ♀♀, two ♂♂), the ♀♀ agree with the type from Biak: the ♂♂, instead of being uniform white, have two broad fuscous bands, running obliquely from one-fourth and beyond half of inner margin towards apex, before which they become obsolete, not uniting, but slightly nearer each other than on inner margin. In the hindwings the first of these bands forms a line close to base, the second becomes antemedian, while, as a continuation of the spot at anal angle of the forewings, a third, more strongly marked, band runs from just before apex to above anal angle. On the underside the costa of forewings, as well as the apical blotch, is blackish, and the whole wing slightly tinged with grey. In two of the four ♀♀ the hindwings show fine traces of the third line. All six examples are dated August 1896 (Webster).

14. *Stesichora apicipuncta* Warr., Nov. Zool. III. p. 343 (♀). Humboldt Bay.

*Stesichora combinata* Warr., Nov. Zool. IV. p. 24 (♂). Constantinhafen.

As soon as I had discovered that the ♂ of *S. bipunctata* differed, by the additional markings, from the ♀, it occurred to me that the ♂ of *S. apicipuncta* would exhibit similar differences: and in fact I had already described it as a distinct species under the name of *combinata*, which name must therefore sink as a synonym.

## FAMILY EPIPLEMIDAE.

15. *Dirades exangulata* sp. nov.

*Forewings*: brownish grey; first line nearly in the middle, curved outwards in the cell, externally edged with darker brown, and preceded in cell by a dark spot; outer line from costa at two-thirds, oblique outwards to near hindmargin, then curved and running obliquely inwards, nearly parallel to hindmargin, to inner margin at four-fifths, pale itself, but edged internally with dark brown; fringe concolorous.

*Hindwings*: with antemedian and postmedian pale lines, edged conversely, as in forewings, with deep brown; space between them darker than the rest of the wings.

Underside of forewings dull greyish brown, of hindwings lighter. Face dark brown; thorax and abdomen like wings.

Expanse of wings: 16 mm.

One ♂ from Mount Muln, N. Borneo, 1000—4000 feet (Hose).

Apex of forewings produced, subacute; hindmargin oblique; hindwings with slight teeth at veins 4 and 7; antennae subserrate beneath, rough above.

16. *Dirades integra* sp. nov.

*Forewings*: grey; the costa darker, especially at base; the two lines very fine pale ochreous; first from beyond one-third of costa to beyond one-third of inner

margin, strongly angled outwards on the median vein ; second from costa at three-fourths to inner margin at four-fifths, strongly rounded above towards hindmargin, running in below vein 4, then vertical ; space between the lines dark grey, becoming dark fuscous along the lines themselves ; a submarginal row of small dark fuscous grey-edged spots ; fringe concolorous.

*Hindwings* : with costal area pale ; inner line obscure ; a wedge-shaped rust-coloured blotch edged with dark scales at the end of cell, emitting a dark and ochreous streak along vein 5 ; another patch towards base, and a third towards inner margin ; outer line bluntly angled beyond cell and sinuous to inner margin, edged outwardly with paler, and preceded by fuscous and ochreous patches ; a submarginal line of dark grey-edged lunules from upper tooth to below lower tooth ; area along submedian fold whitish, with the dark markings effaced.

Underside cinereous. Head, thorax, and abdomen pale grey ; dorsal area of the latter blackish grey ; face and palpi deep brown.

Expanse of wings : 17 mm.

One ♀ from Lombok, 2000 feet, May and June 1896 (Fruhstorfer).

Distinguished by the central fascia being entire, not interrupted across the middle and so forming a costal and inner-marginal blotch.

#### 17. *Dirades pygmeata* sp. nov.

*Forewings* : whitish, grizzled with grey ; a curved dark fuscous line at four-fifths, and a slight dark line from apex to middle of hindmargin ; a dark rather large cell-mark, and a dark spot on inner margin directly beneath it ; the curve of the outer line sometimes shaded internally with fuscous ; fringe grey.

*Hindwings* : with curved dark antemedian and postmedian lines, the former followed by a dark spot on the median vein ; a dark spot before each tooth, the lower one with a white spot adjacent.

Underside of forewings dark grey, of hindwings whitish. Face and palpi dark brown ; thorax and abdomen grey and white ; vertex and front of thorax pale grey.

Expanse of wings : 16 mm.

Four ♂♂ from Batchian, March 1892 (Doherty).

Hindmargin of forewings entire, of hindwings with short teeth at veins 4 and 7.

A single ♂ from the same locality has both wings above and below and the whole body dark smoky leaden-grey, the lines and cell-spot blacker. This I propose to call

ab. *plumbea*.

#### 18. *Epiplema amygdalipennis* sp. nov.

*Forewings* : white ; the costa on basal half marked with fuscous striae and three dark spots at one-sixth, one-third, and one-half ; a short horizontal dark mark beyond cell ; fringe white.

*Hindwings* : with a black dot near base on median at the origin of first median nervule and another on hindmargin below the lower tooth ; a few dark striae beyond middle.

Underside white, the forewings suffused with pale fuscous, the cell-spot showing white. Palpi externally dark fuscous ; face, head, thorax, and abdomen white.

Expanse of wings : 16 mm.

One ♂ from Apia, Upolu (Woodford).

The forewings are almond-shaped ; both costa and inner margin convex ; apex and hindmargin rounded ; hindwings with short teeth at ends of veins 4 and 7.

The example, though in good enough condition, bears indications of dark transverse markings, which have become obliterated.

19. *Epiplema delicatula* sp. nov. (Pl. V. fig. 7, ♀).

*Forewings* : white, tinged with rufous, and with fine transverse brown striae ; the lines dark brown ; first at one-third, sharply angled on subcostal vein, then vertical to inner margin ; second beyond two-thirds, straight to the anal angle ; cell-spot linear, oblique, dark brown ; marginal line fine, dark brown ; a black spot on margin above vein 6 ; fringe white, with a dark brown central line : all the veins brownish.

*Hindwings* : white, without the rufous tint ; the striae more distinct ; ante-median and postmedian brown lines, both angled above vein 2.

Underside similar, but paler, and without the first line. Palpi and face brown above, white below ; vertex white ; thorax and abdomen white, peppered with brown, especially the latter.

Expanse of wings : 26 mm.

One ♀ from the Khasias, October 1896.

Near to *E. reticulata* Moore, but the lines are quite different.

20. *Epiplema discata* sp. nov.

*Forewings* : greyish slate-colour, with a brownish tinge in places ; the dark scales arranged in close vertical lines throughout the wing ; the costa and hindmargin paler than ground-colour ; the lines dark brown ; a median line curved below costa, then vertical, swelling out into blotches on median vein and inner margin ; outer line at three-fourths, slightly curved outwards from costa to inner margin ; a brown crescentic mark before hindmargin opposite the cell, with two small black dots above it ; fringe slaty grey, varied with pale grey.

*Hindwings* : with a large round brown spot before middle of wing, with another between it and inner margin, followed by an indistinct brown median line, bent in midwing ; outer line from two-thirds of costa to inner margin close to anal angle, bent in middle and waved below ; a marginal row of irregular brown-edged lunules from apex to below lower tooth, with pale scales between them ; fringe with a pale line at base.

Underside uniform grey. Thorax, vertex, and abdomen slaty grey ; face and palpi dark brown.

Expanse of wings : 13 mm.

One ♂ from S. Celebes, August and September 1891 (W. Doherty).

21. *Epiplema lugens* sp. nov.

*Forewings* : purplish grey ; a central fascia and submarginal shade darker ; inner edge of central fascia obscurely indicated by a dark line angled outwards in middle ; outer edge dark, slightly sinuous, from two-thirds of costa to two-thirds of inner margin, followed by a paler fascia, grey with dark speckles ; submarginal fascia of uniform width, except at costa, where it is widened to apex, ending at anal

angle, edged externally with paler, and followed by a series of small dark triangles ; marginal area paler ; fringe dark purplish grey, with pale apices.

*Hindwings* : with the inner edge of central fascia twice angulated ; the outer edge sinuous, protuberant in middle, edged by a distinctly pale line ; marginal line black, internally pale-edged.

Underside cinereous, with darker reticulations. Palpi, face, thorax, and abdomen purplish grey ; vertex snow-white ; antennae white.

Expanse of wings : 20 mm.

One ♀ from Apia, Upolu (Woodford) ; one ♂ from Geraldton, Queensland (Meek).

In this ♂ the hindwings are much darker, brown-black, with a paler streak from base along middle of wing ; the abdomen is similarly darker, with a broad black basal band continuing the dark inner line of the hindwings ; the thorax and face being smooth, fawn-colour. In the forewings, instead of the submarginal triangles, is a row of black dashes connected by a rust-coloured shade.

## 22. *Epiplema nictitans* sp. nov.

*Forewings* : with the ground-colour whitish, tinged with ochreous, and covered with fine transverse dark grey striations ; basal area rather darker, edged by a dark shade, followed by a paler fasciaform space, with waved and curved outer edge ; from middle of costa an oblique dark line runs to vein 4, is there acutely angled, and then curved to inner margin at two-thirds ; before the angulation is a black dash preceded by a white spot ; space between this line and the inner fascia suffused with fuscous ; the line is followed by a diffused paler ochreous space, which on inner margin becomes white ; a dark blotch on costa before apex ; a submarginal sinuous row of black spots between the veins ; fringe wide, the basal half darker than the apical, from which it is divided by a dark line : dark dashes at apex, anal angle, and beyond veins 3 and 6.

*Hindwings* : with the line as on forewings ; a white blotch on costa near base, containing some black scales in the middle ; a row of dark paler-edged lunules along hindmargin.

Underside of forewings dark grey, paler along inner margin ; of hindwings whitish, much varied with grey and black speckles. Face dark brown ; palpi with tips dark ; thorax and abdomen dark and light grey.

Expanse of wings : 16 mm.

One ♂ from Padang Rengas, Malay Peninsula.

Hindmargin of wings slightly crenulate ; hindwings with blunt square teeth at veins 4 and 7.

## 23. *Epiplema rhombifera* sp. nov.

*Forewings* : pale leaden-grey, with fine darker striations, and tinged in parts with rufous ; the lines ferruginous, first from costa just before middle, the second from costa at two-thirds, both oblique outwards parallel to each other, the second bent rectangularly on vein 4 to join first line, forming an oblong which is darker than the wing on either side ; the point where the two lines meet touches a semi-circular spot on inner margin, which is pale grey within, and edged with velvety black ; a shade formed of dark striae from costa before apex to anal angle ; a row of black dots before hindmargin ; fringe dark grey.

*Hindwings* : with a broad median dark chocolate band, edged with pale ochreous, and marked with some black spots in middle ; marginal area chocolate-brown above the middle, leaden-grey below ; a line of leaden-grey, black, and ochreous scales before hindmargin from upper tooth to near anal angle.

Underside cinereous, mottled with dark. Face and palpi chocolate-brown ; thorax and abdomen leaden-grey.

Expanse of wings : 24 mm.

One ♀ from Oinainisa, Dutch Timor, November and December 1891 (Doherty).

The species mimics *Dirades conifera* Moore, but the venation is that of an *Epiplema*. The hindmargin of hindwings is angled at veins 7 and 4 ; the forewings are entire.

#### 24. *Epiplema ruptifascia* sp. nov.

*Forewings* : chalk-white, faintly discoloured with ochreous in places ; costa with a few purplish fuscous dots ; a central curved purplish grey fascia with brown edges, interrupted between veins 2 and 4, the outer edge only marked there by a dot on vein 3, followed in the middle by a fine brown line ; hindmargin with a narrow grey cloud at apex and middle, with a row of four black dots between ; fringe fuscous, white above anal angle.

*Hindwings* : with only the margins of the fascia expressed, the inner thick and blackish ; a series of grey lunules along hindmargin, that below lower tooth enlarged, and preceded by a grey cloud ; fringe grey.

Underside of forewings grey, of hindwings white. Head, thorax, and abdomen white ; palpi blackish ; antennae ferruginous.

Expanse of wings : 14 mm.

One ♂ from Bali, March and April 1896 (W. Doherty).

Antennae thickened and flattened, strongly serrate. The species resembles *E. nana* Warr. from Dili, Timor.

#### 25. *Gathynia albibasis* ab. *seminigra* ab. nov.

In Vol. III. of Nov. Zool., p. 278, I described *G. albibasis* from Fergusson Island, and stated that the ♀ differed from the ♂ in having the larger half of the hindwings black. I find that this peculiarity is not confined to the ♀, and the examples in which it occurs must be treated as an aberration from the more common type-form.

#### 26. *Gathynia lignata* sp. nov.

*Forewings* : reddish brown, with dark specklings ; the base and costa grey and fuscous ; a blackish fascia just beyond middle, the outer edge slightly sinuous, nearly parallel to hindmargin ; interrupted below the median by the red-brown ground-colour, the lower part forming a truncated semicircular blotch on inner margin ; a narrow dark marginal shade from apex ; fringe iron-grey.

*Hindwings* : with antemedian and postmedian dark brown curved lines, both slightly toothed in middle : fringe dark.

Face and palpi dark brown ; thorax dark fuscous ; abdomen paler grey.

Expanse of wings : 16 mm.

One ♂ from Bali, March and April 1896 (W. Doherty).



Hindwings with a slight tooth at vein 7 only. In the forewings the submedian and internal veins are both somewhat thickened and distorted at base, and the underside is clothed with rough scales along the inner margin near base.

**Mesoglypta** gen. nov.

*Forewings*: with costa curved at base and before apex, straight between: apex blunt; hindmargin outwardly oblique to vein 5, there obtusely dentate and oblique inwards: anal angle well marked; inner margin somewhat convex.

*Hindwings*: with apex bluntly rectangular; hindmargin curved; inner margin shortened; anal angle truncate to vein 16; costa shouldered near base.

Antennae of ♂ quite slender, filiform; palpi porrect, roughly scaled, terminal joint acute; tongue and frenulum present; hind tibiae with four spurs, the inner twice as long as the outer.

*Neuration*: forewings, cell barely one-third of wing; discocellular vertical; submedian strongly sinuous; first median at four-fifths of cell, curved downwards; second and third from lower angle; lower radial from just below upper angle, approximated at first to stalk of 6 and 7, then curved downwards; 8 and 9 stalked from close before upper angle, 10 from just before them, 11 from one-half; a strong puckered fold along lower part of cell produced to hindmargin above vein 4. Hindwings with costal curved away from subcostal from base; the two subcostal nervules on a long stalk; radial from below the upper angle; second and third medians, as in forewings, from lower angle of cell: first median from quite near base.

Type: *Mesoglypta fleximargo* sp. nov.

**27. Mesoglypta fleximargo** sp. nov.

*Forewings*: yellowish, covered with fine, slightly waved, rust-coloured striae; the costa marked with darker striae: traces of an oblique brown line from inner margin close to base to middle of wing parallel to costa; an outwardly oblique fuscous line from four-fifths of costa, with fuscous striae and blotches towards apex; a fuscous patch on hindmargin below vein 5, along which the fringe is also fuscous; yellow above and below.

*Hindwings*: yellow, with the rust-coloured striae, without any markings.

Underside paler, with sparse, more strongly marked, brown striae. Head, thorax, and abdomen all yellowish; palpi somewhat darker.

Expanse of wings: 27 mm.

One ♂ from Lombok, 2000 feet, May and June 1896 (Frühstorfer).

**28. Paradirades maculata** sp. nov.

*Forewings*: pale grey, suffused with pale fawn-colour; a black spot in middle of base: first line pale grey, indistinct, at two-fifths, slightly curved outwards and marked by three black spots, on costa, discocellular, and inner margin; second line at four-fifths, more strongly curved, marked by black spots on costa and inner margin only; the space included pale fawn; a dark spot on costa before apex, and one before hindmargin at middle; marginal line slender, black: fringe pale, with dark spots beyond veins, that at vein 4 large.

*Hindwings*: with fawn-coloured central fascia, the inner edge only marked by two black spots on and near inner margin: the outer simply a dark waved line; a black spot before middle of hindmargin.

Underside pale grey, with reddish reflections; fringes whitish. Face and palpi brown; head, thorax, and abdomen grey.

Expanse of wings: 16 mm.

One ♂ from Bali, March and April 1896 (W. Doherty).

#### FAMILY GEOMETRIDAE.

##### SUBFAMILY OENOCHROMINAE.

##### 29. *Oenochroma simplex* sp. nov.

*Forewings*: ochreous fawn-colour, sprinkled with blackish scales; fringe ferruginous.

*Hindwings*: ochreous white, with a few dark scales near anal angle.

Underside of forewings dull whitish towards base, greyer towards hindmargin, slightly dusted with rosy scales; a deep rosy ovoid blotch from vein 2 to 4 beyond cell. Hindwings dusted with rosy. Head, thorax, and abdomen fawn-grey; base of abdomen and pectus woolly, white.

Expanse of wings: 38 mm.

One ♂ from Roebourne, West Australia.

The hindwings agree in shape rather with *decolorata* Warr. than with *cinaria* Guen.

##### SUBFAMILY ORTHOSTIXINAE.

##### 30. *Derxena discata* sp. nov.

*Forewings*: nearly transparent, iridescent white, with a faint bluish tinge; a large round black spot on the discocellular.

*Hindwings*: the same.

Underside like upper; head, thorax, and abdomen concolorous; the anal segments of abdomen darker.

Expanse of wings: 28 mm.

One ♂ from Etna Bay, New Guinea, August 1896 (Webster).

##### 31. *Noreia albifimbria* sp. nov.

♀. *Forewings*: dark mouse-colour, the lines ferruginous; the first slender, indistinct, at one-fourth of costa, evenly curved to one-third of inner margin; cell-spot linear; second line from costa at three-fourths, oblique outwards and indistinct to vein 6, where it is bluntly angled and runs to inner margin at two-thirds, slightly waved between the veins and edged outwardly with pale yellowish, becoming more distinct as it approaches the inner margin; a fine black-brown marginal line; fringe pale yellowish white.

*Hindwings*: like forewings, without first line or cell-spot; the line post-medial.

Underside dark fuscous, with the cell-spot and outer line in each wing blackish, the latter curved below costa; fringe as above. Face and palpi brown-black; vertex, thorax, and abdomen concolorous with wings.

Another example, also a ♀, is pale dove-grey above and mouse-grey below.

Expanse of wings: 42—48 mm.

Two ♀♀ from Tawaya, north of Palos Bay, Celebes, August and September 1896 (W. Doherty).

32. *Ozola decolorata* sp. nov.

*Forewings*: dirty whitish, speckled and striated with fuscous: the striae thickest along costa; first line at one-third, enrvd and interrupted below, forming a blotch at costa; cell-spot small; a broad fuscous submarginal fascia, its inner edge slightly curved, its outer bluntly angled beyond cell, and nearly touching two small fuscous spots on hindmargin, then narrowed and diffused ontwards at anal angle, its centre there remaining whitish: fringe fuscous, whitish at apex and below middle.

*Hindwings*: with cell-spot and apex fuscous; traces of two submarginal lines, distinct only on costa.

Underside similar. Palpi fuscous; head, thorax, and abdomen whitish.

Expanse of wings: 24 mm.

One ♂ from Bali, March and April 1896 (W. Doherty).

Nearest *O. marginata* Warr., but much smaller and less strongly marked.

## SUBFAMILY PSEUDOTERPNINAE.

33. *Hypochroma ochrea*.

*Actenochroma ochrea* Warr., Nov. Zool. III. p. 360.

This species was described from three ♀♀ from Queensland; a ♂ which I have now seen, likewise from Queensland, has pectinated antennae, the abdomen crested, and four spurs to the hindtibiae. The species must therefore be transferred to *Hypochroma*.

34. *Terpna* (?) *ocellata* sp. nov. (Pl. V. fig. 25, ♀).

*Forewings*: whitish, with a pinkish tinge, covered with numerous green and purple transverse striae, the green striae becoming confluent in places and forming diffuse bands; one antemedian; a second postmedian, traversed by an acutely angulated green line; the third submarginal, slightly interrupted opposite the cell and on the submedian fold; the fourth marginal, interrupted at apex and below middle; a large oblique oval pale discal mark, thickly edged with purple; fringe pale, with darker chequering.

*Hindwings*: similar: the postmedian and submarginal green bands more symmetrical; the discal ocellus edged with deep green.

Underside white, with yellow suffusion at base; the large cell-spots, an angled postmedian band, and a broader submarginal band, diffused to margin beyond cell and above anal angle, deep purple: forewings with two additional purple spots beyond the yellow base, one small in the cell, the other larger below it. Face deep purple, with orange centre; palpi purple, with the tip yellow: vertex, thorax, and abdomen pinkish grey, dusted with green and purple scales; top of face with a similar coloured line; a fine purplish line between the antennae.

Expanse of wings: 52 mm.

One ♀ from the Khasias, September 1896.

Allied to *Terpna opalina* Warr. from Sikkim.

The antennae are minutely serrate; underside of body and legs tinged with yellow.

## SUBFAMILY GEOMETRINAE.

35. *Agathia obsoleta* sp. nov. (Pl. V. fig. 4, ♂).

*Forewings* : pale pea-green, with olive-fuscons speckles ; costa drab, dotted with black scales, and thinning out towards apex ; an olive-fuscons basal patch from median to inner margin : first line pale olive-drab, sinuous from median vein to inner margin, obsolete above median, except for a small black subcostal spot ; cell-spot olive-fuscons, round ; a diffuse dark olive-fuscons submarginal fascia, not reaching costa and attenuated towards anal angle, with both edges waved, the inner with a sinus in middle, the outer produced at middle to hindmargin : fringe bright green at base, the outer half olive-fuscons ; a black marginal dot at end of vein 4.

*Hindwings* : like forewings, but the submarginal band paler, split up into narrow crooked bands above and forming a large oblong blotch at anal angle ; the inner band, which is really the outer line, marked by black dashes on the veins, and containing a narrow rectangular green space between veins 3 and 4 ; fringe in lower half of wing wholly olive-fuscons ; anal angle marked by a black spot.

Underside of forewings pale fulvous green, with ferruginous mottlings ; the inner margin whitish : costa, as above, drab with black spots ; cell-spot black, edged with ferruginous ; submarginal band black, touching costa and expanded to hindmargin at apex, middle, and anal angle : space between whitish green ; fringe whitish, mottled with dark. *Hindwings* pale green, with the costa and markings ochreous : the two bands and margin blackish. Palpi and lower half of face whitish ochreous ; tips of palpi, upper part of face, and vertex brown-drab : collar, thorax, and abdomen bright green, the latter speckled with pale olive-fuscons.

Expanse of wings : 45 mm.

One ♂ from Mount Gedé, West Java, 4000 feet, 1896 (Fruhstorfer).

There is an example, without locality, in the British Museum Collection.

36. *Agraptochlora nigricornis* sp. nov. (Pl. V. fig. 14, ♂).

*Forewings* : deep grass-green, without markings : fringe green ; costa deep ochreous to middle, tinged with red-brown at base, beyond middle with fine black scales.

*Hindwings* : wholly green.

Underside whitish ; costa of forewings reddish at base. Face, palpi, and fore-legs deep red ; tillet reddish ; antennae with the shaft reddish from base, becoming whitish in outer half ; pectinations blackish ; vertex ochreous and red ; thorax and base of abdomen deep green ; centre of thorax paler green ; rest of abdomen ochreous, dusted with reddish grey, and with reddish grey dorsal blotches.

Expanse of wings : 24 mm.

Two ♂♂ from Mombasa Island, October 1896 (Dr. Ansonge).

37. *Chloroglyphica maculata* sp. nov. (Pl. V. fig. 23, ♀).

*Forewings* : dull green, dusted with sparse purplish grey atoms ; costa brownish ochreous, spotted with darker ; this tint extends as far as the median vein between base and first line, and as far as vein 7 beyond the second line, narrowing again to the apex ; basal area more thickly dusted with dark scales ; first line white, straight, outwardly oblique, from costa at one-fourth to inner margin at one-third, its outer

edge dark towards costa and marked on costa by an oblique purplish streak : cell-spot purple ; second line nearly straight, from three-fourths of costa to middle of inner margin, its inner edge darker : marginal area with denser aggregations of dark scales along its centre, forming a nebulous cloud towards anal angle ; fringe pale green, marked with fuscous below apex and in centre.

*Hindwings* : with a broad straight white line from middle of costa to middle of inner margin, its inner edge darker ; cell-spot indistinct ; the cloud at anal angle less marked.

Underside whitish green for two-thirds, then deeper ; the brown mottlings as above, but the lines only showing through faintly ; the deeper green margin in hindwings much narrower. Face and palpi fawn-brown ; vertex greenish, with some fawn-coloured scales ; shoulders green, with whitish streaks ; thorax green, with purplish scales in middle ; base of abdomen green : rest of abdomen ochreous, tinged with green and fuscous.

Expanse of wings : 58 mm.

One ♀ from the Khasia Hills, October 1896.

### 38. *Chloromachia aureofulva* sp. nov. (Pl. V. fig. 20, ♂).

*Forewings* : shining white, overspread with green ; basal area irrorated with green, bounded by a white line from one-fourth of costa to near middle of inner margin ; outer line shining white, vertical from costa at two-thirds to vein 6, then strongly and acutely dentate outwards, expanding towards inner margin into a white diffuse blotch before anal angle ; space between the two lines green, except on inner margin, which is white, and dusted with white in the cell ; apical half of wing suffused with golden fulvous ; a white submarginal line, swelling out into a white blotch between veins 3 and 5, which extends to the fringe ; some dark green marginal spots ; fringe greenish, with pale basal line.

*Hindwings* : white ; the outer half crossed by three or four undefined wavy green shades ; hindmargin and fringe as in forewings.

Underside white ; costal half of forewings olive-green, suffused with purplish fuscous at base and beyond middle : hindwings with a large blackish apical blotch. Palpi pale fuscous, white beneath : face green, with two white spots below : vertex white ; thorax green in front, mixed behind with white scales ; abdomen white, dusted with green.

Expanse of wings : 36 mm.

One ♂ from the Khasias, October 1896.

Unfortunately the antennae of this very distinct species are broken short off, but enough just remains to show that they were ciliated, not subserrate, as in *semialba* Wlk.

### 39. *Chloromachia divapala rufimargo* subsp. nov.

Like *divapala* Wlk. from Ceylon, but the marginal area of hindwings and the oblong blotch before anal angle of forewings not "white with ferruginous scales," but brick-red, with scattered fuscous scales ; the forewings also have a white blotch at middle of hindmargin, caused by the enlargement of the white spots in the submarginal and marginal lines, which is absent in the Indian species.

One ♀ from Penungah, N. Borneo, December 1893.



40. *Collesis mimica* Warr., Nov. Zool. IV. p. 37.

The genus and species were described from a ♀. The ♂ offers no features of difference: the pectinations of the antennae are, as usual, longer; the hindtibiae have four spurs. In markings the outer line reaches the inner margin at three-fourths, and there is a curved oblique inner line at one-third, less distinct than the outer. In the hindwings the outer line is slightly concave outwards and runs to inner margin above anal angle.

The ♂ expands 30 mm.

One example from Zomba, Upper Shiré River, 3000 feet (Dr. P. Rendall).

41. *Comostolodes consobrina* sp. nov.

*Forewings*: green; costa pale ochreous, streaked with reddish fuscous; the lines marked, as in *smaragdus* Hmps., by three white red-edged spots, on costa, median, and inner margin; a row of white dots along margin at end of veins, with a fuscous marginal line between them from apex as far as vein 6 only; fringe fuscous, with a faint rufous tinge, paler externally, and with darker fuscous patches opposite the veins.

*Hindwings*: similar, the white spot at end of vein 4 larger and ringed with red.

Underside pale green. Face green, edged with white; palpi pale green, the third joint fuscous; vertex, thorax, and abdomen at base green; rest of abdomen pale, with white red-edged spots on second and fourth segments.

Expanse of wings: ♂, 16; ♀, 18 mm.

Two ♂♂, one ♀, from Cedar Bay, Cooktown, Queensland (Meek).

Very near *smaragdus* Hmps. from India, with which it agrees in venation; but the hindmargin of the wings is differently marked and coloured.

*Cosmogonia* gen. nov.

*Forewings*: with costa strongly arched; apex acute, but not produced; hindmargin straight, oblique, slightly reflexed before anal angle, which is sharply rectangular.

*Hindwings*: with costa straight, apex rectangular; hindmargin produced into a stout tail at vein 4, the margin on each side straight; anal angle distinct, bluntly rounded.

Palpi correct, the third joint fine, projecting beyond face; tongue and frenulum present; antennae of ♂ subdentate, with short fascicles of cilia; hindtibiae somewhat thickened, with four spurs.

*Venation*: forewings, cell two-fifths of wing; discocellular straight for one-third, then obliquely concave; first median at three-fourths, second and third from lower end of cell; lower radial from the bend in the discocellular, upper from upper angle; 7, 8, 9, 10, stalked from upper angle, 11 free just before it. Hindwings with the two subcostals and last two medians long-stalked.

Type: *Cosmogonia decorata* Warr. (*Thalerura*?). In Nov. Zool. III. p. 369, I described the ♀ with a query as a *Thalerura*. The examination of a ♂ from the same locality, Cedar Bay, Queensland, enables me to correct this.

42. *Euchloris ochrea* sp. nov. (Pl. V. fig. 21).

*Forewings*: bone-colour, with fine ochreous striations, and sparsely dusted with blackish scales; the lines ferruginous; first from one-third of costa to one-third

of inner margin, strongly outcurved in cell to touch the large black cell-spot ; second at two-thirds, outcurved and slightly waved from veins 6 to 3 ; fringe concolorous, with fine basal line.

*Hindwings* : the same, without basal line ; the inner margin with black scales.

Underside paler ; the forewings with much coarse dusting. Head, thorax, and abdomen all concolorous.

Expanse of wings : 28 mm.

Both sexes from Dar-es-Salaam, German East Africa.

Akin to *E. uridula* Swinhoe.

#### 43. *Eucrostes impunctata* sp. nov. (Pl. V. fig. 15).

*Forewings* : apple-green ; the costa white from near base to before apex ; two faint whitish lines, antemedian and postmedian, approximating on inner margin ; marginal line crimson, retracted along costa at apex ; fringe snow-white, with red lunules from vein to vein ; outer half of fringe beyond lunules pinkish ; no cell-spot.

*Hindwings* : the same.

Underside greenish white ; costa white : fringe as above, but duller. Face and palpi red ; vertex snow-white ; thorax green ; abdomen ochreous, becoming white towards apex, dusted with reddish at base, and with snow-white red-edged dorsal spots.

Expanse of wings : 15 mm.

Several from Mombasa Island, October 1896 (Dr. Ansoerge).

Distinguished by the entire absence of the dark cell-spot.

#### 44. *Eucrostes nanula* sp. nov.

*Forewings* and *hindwings* green, with no traces of markings.

Underside paler green. Face reddish ; vertex, thorax, and abdomen green.

Expanse of wings : 12 mm.

One ♂ from Cedar Bay, Cooktown, Queensland.

The only specimen is unfortunately worn, and the fringes cannot be well made out, but their base and the extreme hindmargin appear to have been fuscous-tinged.

#### 45. *Hemistola* (?) *flavitincta* sp. nov.

*Forewings* : bright green, the veins marked with yellow ; costa ochraceous, with purplish speckles ; a faintly darker cell-spot ; the exterior line only present, and that indicated only by a curved row of whitish vein-spots parallel to hindmargin ; marginal line finely purple, interrupted by pale yellow dots at end of veins ; fringe pale yellow, with slight purplish flecks beyond the yellow dots at the ends of veins.

*Hindwings* : exactly similar.

Underside glossy whitish green ; costa of forewings broadly yellowish ; cell-spot of forewings distinct ; fringe and marginal line as above. Palpi dark fuscous ; face red ; vertex white, finely edged behind with purple ; thorax green ; abdomen ochreous.

Expanse of wings : 45 mm.

One ♀ from the Khasias, July 1896.

The antennae are fully pectinated, as in the ♀ of *H. liliana* Swinh., but the scaling is much denser than in any other of the species of the genus, and the colour bright green, not bluish green.

46. *Iodis dentifascia* sp. nov.

*Forewings*: dull green, the costa ochraceous; the two lines dentate, very indistinct, the first at one-third of costa, the second at three-fourths; the first oblique outwards and reaching inner margin near middle and approaching second line; the included space faintly darker green near the lines; the first edged inwardly and the second outwardly with faint whitish, most distinct above inner margin; fringe green.

*Hindwings*: the same, but first line not visible.

Underside of both wings uniform green. Head, thorax, and abdomen green; fillet and shaft of antennae at base white; rest of shaft green.

Expanse of wings: 28 mm.

One ♂ from Japan.

Distinguished from both *obliterata* Wlk. from China and *unifascia* Hmps. from India by the green face and dentate outer line.

47. *Iodis micra* sp. nov.

*Forewings*: pale sea-green: the costa narrowly pale; first line from one-fifth of costa to one-third of inner margin, dentate and curved, whitish followed by a deeper green shade; second line at three-fourths, waved and dentate, finely white, edged inwardly by deeper green; cell-spot large, deep green; fringe concolorous.

*Hindwings*: the same.

Underside whitish green; costa of forewings yellowish. Face, palpi, and forelegs brown; thorax, vertex, and abdomen pale green.

Expanse of wings: 17 mm.

One ♂ from Bali, March and April 1896 (W. Doherty).

48. *Microloxia ruficornis* Warr., Nov. Zoon. IV. p. 42.

The example from which the description was made turns out to be, after all, faded. I have now met with a specimen in which the green has been well preserved, and amend the previous description accordingly.

Wings dull green; forewings with a curved whitish line at one-third, and straight outer line at four-fifths, the latter becoming slightly curved on hindwings; costa of forewings yellow, red at base; shoulders, vertex, and forehead yellow, the last edged with red; palpi, forelegs, and antennae red. Underside as deep green as upper. This ♂ expands 17 mm.

49. *Oenospila flavilinea* sp. nov.

*Forewings*: deep green; costa white, edged beneath by a yellow line, which starts from the base, and before apex by a red line; cell-spot minute, red-brown; marginal line red, slender, consisting of shallow lunules, interrupted by rather large whitish dots at the ends of the veins; fringe vinous red.

*Hindwings*: the same; outer line in both wings marked by a small red spot on inner margin.

Underside whitish. Face, palpi, vertex, thorax, and abdomen green; fillet and antennae white.

Expanse of wings: 26 mm.

One ♂ from Cedar Bay, south of Cooktown, Queensland; one ♀ from Geraldton.

Allied to *O. stellata* Warr. from Fergnsson Island. The hindwings are obscurely angled at vein 4; hindtibiae with the median pair of spurs only—the outer very short, the inner very long and slender—and with a process as in *Probolosceles*.

**Pamphlebia** gen. nov.

*Forewings*: with costa straight, apex acute; hindmargin nearly straight, oblique; anal angle well expressed.

*Hindwings*: with apical and anal angle well marked; hindmargin with a distinct angle in middle, the margin straight on either side: antennae of ♂ pectinated; palpi short, porrect; hindtibiae of ♂ with one pair of spurs.

*Neuration*: forewings, cell less than half the length of wing; discocellular inaugurated; first median at three-fourths, second and third stalked: veins 6, 7, 8, 9, 10, 11, stalked, 11 anastomosing with 12. Hindwings with 3, 4, and 6, 7, stalked.

Type: *Pamphlebia rubrolimbaria* Guen.

**50. Probolosceles pallidicincta** sp. nov.

*Forewings*: pale green; the costa whitish yellow, the extreme edge white; cell-spot minute, red-brown; the two lines very slender; first at one-fourth, indistinct, bent above inner margin; second at five-sixths, waved above median, and retracted to costa; a small roundish brown blotch at anal angle, the green round it tinged with yellow; marginal line very slender, interrupted, and marked only by brown dots between the veins and whitish dots beyond them; fringe pale ochreous, with slight fuscous mottlings beyond the veins.

*Hindwings*: with the blotch at apex larger than that at anal angle of forewings.

Underside whitish, greener towards costa of forewings: the cell-spots of raised scales; a dark green postmedian line on both wings. Palpi white, with brown scales externally on second joint, the third joint ferruginous; face, vertex, and thorax green; abdomen ochreous, sprinkled with reddish scales; underside white; legs white, with dark brown patches.

Expanse of wings: 32 mm.

One ♀ from Mount Gedé, West Java, 4000 feet, 1896 (Fruhstorfer); one ♂ from Talant, February and March 1892 (Doherty).

Closely related to *P. detenta* and *dissessa* Wlk., but with different coloured fringes and without any red markings.

**51. Syndromodes rubridentata** sp. nov.

*Forewings*: pale green, whiter towards the costa; an exterior white line at two-thirds, parallel to hindmargin; fringe white; marginal line bright red, running out into teeth opposite the veins, and curving round at apex below the white costal streak; tips of the fringe between the teeth pink.

*Hindwings*: the same; a faint white cell-spot on each wing.

Underside pale green. Face and forelegs rosy; vertex and antennae white; thorax green; abdomen ochreous, sprinkled with red scales, and with four white spots on basal segments.

Expanse of wings: 17 mm.

One ♀ from Dar-es-Salaam, German East Africa.

52. *Thalassodes albifimbria* sp. nov.

*Forewings* : blue-green, with sparse pale faintly lustrous strigulations, most numerous towards the marginal area; costa ochreous white; a nearly straight faintly lustrous line at three-fourths, parallel to hindmargin, not touching costa and wider at inner margin: fringe white.

*Hindwings* : with the line finer, bent parallel to hindmargin.

Underside duller, without markings. Head, thorax, and abdomen all bluish green: the fillet finely white: antennae ochreous white like costal edge.

Expanse of wings : 28 mm.

One ♀ from Blantyre, British Central Africa.

53. *Thalassodes flavicosta* sp. nov.

*Forewings* : green, with numerous faint whitish strigulae, but without any trace of whitish lines; fringe green: costa finely white throughout, from near base to near apex, with a broad pale yellowish streak beneath it.

*Hindwings* : like forewings; both wings with deeper green cell-spot.

Underside whitish green. Face and palpi pale ochreous; tips of palpi and pectinations of antennae pale ferruginous: vertex and shaft of antennae white: thorax and abdomen green, the latter becoming ochreous beyond middle.

Expanse of wings : 32 mm.

One ♂ from Port Darwin, N. Queensland (coll. Buckland).

Distinguished by the broad pale costa, absence of lines, and smaller size.

## SUBFAMILY STERRRHINAE.

*Apostates* gen. nov.

*Forewings* : triangular, the costa nearly straight; apex rounded; hindmargin oblique, slightly curved, almost as long as inner margin.

*Hindwings* : bluntly produced at end of vein 6, curved above it, and nearly straight below to anal angle.

Antennae (♀) very fine, filiform; palpi porrect, short, the second joint thickly sealed, the terminal joint very short. Tongue and frenulum present.

*Neuration* : forewings, cell half as long as wing; discocellular vertical; first median at three-fourths, second at seven-eighths, third from end of cell; lower radial from centre of discocellular, upper from upper angle of cell: vein 7 free, from just before end of cell, slightly curved from origin; 8, 9, 10, stalked, 11 anastomosing with them to form a single areole. Hindwings with costal shortly touching subcostal; the two subcostals short-stalked; radial from slightly above centre of discocellular; medians as in forewings.

Type: *Apostates albiclathrata* sp. nov.

The ♂ will perhaps indicate better the proper place of this genus; for the present it may be placed near *Rhodostrophia*.

54. *Apostates albiclathrata* sp. nov.

*Forewings* : dull brown: the costa, veins, and three transverse lines pale ochreous; the costa broadly ochreous to middle; first line from about one-fourth of costa to one-third of inner margin, slightly oblique above the median and below the



submedian; median line very broad above, where it contains a deep brown elongated cell-spot, and constricted at the submedian fold; outer line submarginal, sinuous, from before apex to anal angle, bent outwards between vein 5 and submedian fold; hindmargin narrowly ochreous; fringe ochreous, with brown basal line.

*Hindwings*: ochreous, dusted with brownish below the median; cell-spot dark brown as in forewings; a faint curved median line; submarginal line as in forewings; the marginal space beyond it brown; hindmargin and fringe as in forewings.

Underside ochreous, dusted with grey; cell-spots and a large subapical patch on both wings brown. Palpi and face brownish; thorax and abdomen ochreous, dusted with grey.

Expanse of wings: 32 mm.

One ♀ from Merv. An insect standing quite by itself.

#### 55. *Brachycola decolorata* sp. nov.

*Forewings*: ochreous, finely dusted and striated with grey; the lines diffuse, grey; the first at one-fourth, curved; the second median, excurved round cell; the third dentate and oblique; the first and third marked with black dashes on veins; submarginal line pale, with a grey shade on each side, the inner one interrupted; marginal spots minute; fringe concolorous; cell-spot round, blackish.

*Hindwings*: the same, but the cell-spot larger, formed of slightly raised reddish white scales, with a dark ring.

Underside ochreous, with outer line, cell-spot, and marginal dots marked. Face and palpi pale ochreous below, rosy above; vertex, antennae, thorax, and abdomen all ochreous.

Expanse of wings: 32 mm.

One ♂ from Lifu, Loyalty Islands.

Differs from *B. obriitaria* Gnen. in the entire absence of rosy speckling or suffusion above or below.

#### 56. *Brachycola flavareata* sp. nov.

*Forewings*: deep yellow, almost entirely suffused with brick-red, and along the costal region thickly striated with the same colour, the unsuffused patches of ground-colour being a small quadrate one near base of cell, a large quadrate one beyond cell, two smaller patches on the course of the submarginal line, the one below apex, the other at the middle, and two on the submedian fold; the outer line is marked by a series of black vein-dots at four-fifths; a row of dark marginal dots between the veins; fringe brick-red; cell-spot small, white.

*Hindwings*: with the yellow patches much more restricted and obscure; the cell-spot white.

Underside yellowish white; the forewings with a dull reddish suffusion in centre of wing, the outer line and marginal dots reddish; costa striated with red; inner margin paler; hindwings altogether paler. Legs and palpi externally red; face ochreous, reddish above; vertex, antennae, thorax, and abdomen red.

Expanse of wings: 32 mm.

One ♂ from Penang, 1896 (Curtis).

In appearance like the ♂ of *Perixera* (?) *flavirubra* Warr. from Queensland. The hindmargin of hindwings slightly angled at middle.

57. *Brachycola* (?) *inornata* sp. nov.

*Forewings* : pale brownish ochreous, finely dusted with darker ; the lines very obscure, appearing merely as greyish shades ; first nearly vertical, at one-fourth ; median slightly curved and outwardly dentate ; the third waved, and marked by dark vein-dashes ; submarginal paler, hardly visible ; marginal dots small ; fringe concolorous ; cell-spot linear, dark grey.

*Hindwings* : the same : the cell-spot plainer.

Underside uniform pinkish ochreous. Face deep red ; palpi ochreous below, red above ; vertex white ; thorax and abdomen like wings.

Expanse of wings : 33 mm.

One ♀ from Banda Islands.

Resembles *absconditaria* Wlk., but the median and outer lines are retracted to costa, and do not run parallel to hindmargin throughout.

58. *Brachycola* (?) *samoana* sp. nov.

*Forewings* : greyish ochreous, dusted with fuscous and rosy atoms : first line indicated by fine black dots on veins ; cell-spot minute, black ; a diffuse oblique central shade ; outer line at five-sixths, preceded by a grey shade, the teeth marked by fine dashes on veins, and followed by a curved line of the pale ground-colour undusted ; marginal area grey, with the submarginal line paler and obscurely indicated ; a double row of black marginal dots ; fringe concolorous.

*Hindwings* : the same ; the cell-spot larger.

Underside pinkish ochreous, the outer line of dots marked. Face and palpi ochreous below, rosy above ; vertex and antennae whitish ; thorax and abdomen concolorous with wings.

Expanse of wings : 26 mm.

One ♀ from Apia, Upolu (Woodford).

59. *Chrysocraspeda aurimargo* sp. nov.

*Forewings* : deep vinous red, covered with very fine dark strigae ; traces of a curved diffused dark first line at one-third and a similar nearly straight outer line at three-fourths ; hindmargin narrowly yellow from apex to middle, and from anal angle to middle, the yellow swelling out at the anal angle into a blotch ; fringe yellow, tinged with red at apex and in the middle of hindmargin.

*Hindwings* : with the yellow margin narrow throughout ; cell-spot white. In both wings the yellow along hindmargin is irregularly edged internally with blood-red.

Underside rosy, with the yellow as above ; in the forewings the discal spot is pale yellow beneath and not marked above. Palpi red above, yellow below ; face yellow ; vertex, thorax, and abdomen concolorous with wings ; shaft of antennae red, the pectinations yellow.

Expanse of wings : 19 mm.

One ♂, one ♀, from Cedar Bay, south of Cooktown, Queensland (A. S. Meek).

60. *Conchocometa javensis* sp. nov.

Like *Conchocometa sabulosa* Warr. from Palabuan, but much smaller ; the wings dusted with rosy atoms ; the first line marked, as well as the outer line,

by red dots on veins ; cell-spot of hindwings elongated, white, with a dark red edge.

Expanse of wings : 24 mm.

One ♂ from Bandong, Java.

61. *Cosymbia unocula* sp. nov.

*Forewings* : pink, speckled with rosy ; lines shown by red dots on veins ; first near base, very indistinct ; outer near hindmargin and parallel to it ; marginal line deep red ; fringe pink.

*Hindwings* : the same, but with a large white dark- or red-edged ocellus.

Underside dull rosy. Head, thorax, and abdomen concolorous : face and palpi darker red.

Expanse of wings : 26 mm.

One ♂, three ♀ ♀, from Dar-es-Salaam, German East Africa.

Possibly a form of *pupillaria* ; in all four instances the discal spot of forewings is absent, that of the hindwings large ; one ♀ has a red median shade across both wings.

62. *Craspedia acentra* sp. nov.

*Forewings* : sandy ochreous, dusted with coarse black atoms : the lines ill-defined, subdentate, smoky grey ; first at one-fourth, wavy ; second at three-fifths, incurved below cell ; third at three-fourths, more distinct, marked with blackish on the veins, sinuate slightly inwards beyond cell and on submedian fold ; submarginal line pale, wavy, with greyish fasciae on each side ; a marginal row of triangular black spots between the veins ; fringe ochreous, with patches of dark scales beyond the veins ; cell-spot blackish ; costa ochraceous.

*Hindwings* : the same, without first line.

Underside dull greyish ochreous, with only cell-spots and outer line marked. Face, palpi, and collar brown-black ; vertex ochreous ; thorax and abdomen ochreous, mixed with black scales.

Expanse of wings : 32 mm.

One ♂ from South Africa.

Antennae with pairs of cilia from each joint ; hindtibiae fully developed, but without a trace of spurs ; midtibiae with long terminal spurs.

63. *Craspedia atridiscata* sp. nov.

*Forewings* : pale yellowish ochreous, finely dusted with darker ; the costa finely pale brown ; the lines diffuse, pale brownish ; inner line obsolete ; median shade obscure, curved round cell ; outer line irregularly waved, and forming a slightly deeper sinus beyond cell ; marginal dots minute ; fringe concolorous.

*Hindwings* : with waved antemedian and postmedian diffuse lines and with faint traces of a submarginal ; both wings with large round black cell-spot.

Underside paler, with the cell-spots and outer line distinct ; forewings with the basal two-thirds brownish. Face and palpi black ; vertex, thorax, and abdomen ochreous : the collar brownish.

Expanse of wings : 28 mm.

One ♂ from the Khasias.

The cell-spot is exactly half-way between base and apex, not, as usual, nearer the base ; the forewings are elongate, narrow, with produced apex, and hindmargin oblique, scarcely curved.

64. *Craspedia discata* sp. nov.

*Forewings* : bone-colour, without any dark dusting, except sometimes a few sparsely scattered scales near base : the lines fine and delicate : first at one-third, curved ; median shade thicker, excurved round cell, both very pale ochreous ; outer line grey or ochreous grey, blackish at the costa, finely subdenticulate ; submarginal line very faint, between two pale ochreous shades ; marginal dots black ; fringe bone-colour ; cell-spot black, distinct.

*Hindwings* : similar, without first line, and the cell-spot large and black.

Underside with cell-spots and outer line alone marked. Palpi bone-colour below, black above ; face black ; vertex whitish ; collar ferruginous ; thorax and abdomen like wings, the latter without black dorsal spots.

Expanse of wings : 24 mm.

Several from Kiriwini, Trobriand Islands, March to May 1895 (A. S. Meek) ; also from the Solomon Islands.

Distinguished by the large black cell-spots and pale ground-colour ; in many cases only the outer line is visible.

65. *Craspedia furfurata* sp. nov.

*Forewings* : yellowish ochreous, thickly dusted with very fine ochraceous scales ; the lines ochraceous, rather thick ; first line obscure, at one-fourth ; central line oblique, slightly outcurved round the reddish brown cell-spot ; exterior line subdentate, double ; submarginal wavy, pale, and rather broad ; margin itself with an ochraceous shade ; fringe silky, concolorous, with a row of minute dark dots at base between the veins ; costa ochraceous.

*Hindwings* : similar, but without first line, and the cell-spot minute.

Underside glossy, pale ochreous, with the central and outer lines faint. Face and palpi brown ; collar ferruginous ; vertex, thorax, and abdomen ochreous.

Expanse of wings : 26 mm.

One ♀ from Simla.

66. *Craspedia ossicolor* sp. nov.

*Forewings* : pale bone-colour, with a few scattered black scales ; the lines ochraceous ; first at one-third, faint, marked by three black dots in a vertical line ; cell-spot black ; median shade ochraceous, dentate, obliquely curved ; outer line fine, subdentate, marked by black dots ; an interrupted ochraceous band on each side of the pale submarginal line, the outer one with a few darker scales on hindmargin beyond cell and above anal angle ; marginal dots black, of irregular size ; fringe ochraceous.

*Hindwings* : the same.

Underside whitish ; the forewings fuscous-tinged. Face, palpi, and vertex black ; thorax and abdomen white.

Expanse of wings : 20 mm.

One ♂ from Sierra Leone.

67. *Craspedia pallidilinea* sp. nov.

*Forewings* : pale straw-colour, with the lines pale ochraceous, oblique, and

slightly waved—basal, inner, median, exterior, submarginal, and marginal ; a row of distinct black marginal dots ; fringe ochreous.

*Hindwings* : with four lines—antemedian, postmedian, submarginal, and marginal.

Underside paler ; the costal region of forewings ochraceous. Face, palpi, and forelegs dark fuscous ; vertex, thorax, and abdomen ochreous.

Expanse of wings : 22—24 mm.

Two ♀ ♀ from Bandong, Java.

#### 68. *Craspedia sagittilinea* sp. nov.

*Forewings* : ochreous with an olive tinge, thickly dusted and in places suffused with rufous fuscous ; first line from one-third of costa to one-fourth of inner margin, bent below costa, sometimes fine and obscure, sometimes thick and strongly marked ; cell-spot black, followed by an obscure dentate median shade ; outer line at two-thirds, parallel to hindmargin, acutely dentate, velvety black, the teeth externally finely edged with pale ochreous ; submarginal line waved, lunulate, followed and preceded by rufous fuscous shades, the inner interrupted beyond cell ; a row of distinct black marginal spots ; fringe greyish ochreous.

*Hindwings* : the same, but the dark cell-spot is surmounted by a round spot of snow-white raised scales.

Underside pale ochreous : both wings with black cell-spot, outer line, and marginal dots ; forewings with costa dark at base, and the submarginal shades dark. Palpi dark brown ; face dark brown, paler below ; vertex, thorax, and abdomen ochreous ; abdomen with dark segmental marks, and a black ring at base.

Expanse of wings : 26 mm.

Two ♂ ♂, one ♀, from Mombasa Island, October 1896 (Dr. Ansorge).

Remarkable for the dense and rough scaling.

#### 69. *Craspedia uninotata* sp. nov.

*Forewings* : pale yellowish white, with very fine dark irroration ; a single waved pale fulvous line beyond the middle ; cell-spot fulvous ; fringe concolorous.

*Hindwings* : similar.

Underside without irroration ; the costa of forewings yellowish. Thorax and abdomen concolorous ; face and palpi dark brown.

Expanse of wings : ♂, 26 ; ♀, 28 mm.

One ♂, one ♀, from Sierra Leone, 1892 (Dr. Clements).

The hindmargin of both wings curved ; antennae of ♂ well ciliated.

#### 70. *Eois exquisita* sp. nov. (Pl. V. fig. 10, ♀).

*Forewings* : pale greyish olive : the costa, the basal third, and a broad submarginal fascia bright rosy ; fringe olive.

*Hindwings* : with a rosy submarginal fascia.

Underside the same. Head, thorax, and abdomen rosy ; centre of thorax olive ; vertex white.

Expanse of wings : 16 mm.

One ♀ from Upper Shiré River, British Central Africa, 3000 feet (Dr. P. Rendall), January 1896.



71. *Eois* (?) *perspersata* sp. nov.

*Forewings* : ochreous, densely powdered with somewhat shining rufous scales : the costa yellowish ochreous : cell-spot rufous ; very faint traces of a darker ante-median and waved postmedian line ; the extreme hindmargin slightly darker between the veins : fringe concolorous, with a fine pale basal line.

*Hindwings* : similar, the cell-spot plainer.

Underside uniform pale ochreous. Face brown ; palpi, vertex, thorax, and abdomen ochreous fawn-colour, the abdomen deeper.

Expanse of wings : 20 mm.

One ♀ from Oinainisa, Timor, November and December 1891 (W. Doherty).

The hindtibiae of this ♀ have only the terminal pair of spurs ; it is referred therefore to *Eois* provisionally ; judging from the shape of the wings and the markings, it is probably akin to *insuavis* Butler and *purpurea* Hampson.

72. *Lipomelia striata* sp. nov.

*Forewings* : dull olive-green, with dense transverse darker striations ; first line at one-third, bent below costa, then vertical : exterior and submarginal lines oblique, parallel to hindmargin ; the lines formed by darker green spots on the veins, externally edged with paler ; fringe green, the marginal line slightly darker ; cell-spot obscurely darker.

*Hindwings* : the same, with a small white cell-spot.

Underside paler green, tinged with rosy in forewings, less so in hindwings ; the submarginal line only shown. Face, palpi, and legs dull reddish ; head, thorax, and abdomen green.

Expanse of wings : 26 mm.

One ♀ from Warri, River Niger, June 1896 (Dr. Roth) ; also from Sierra Leone.

Distinguished by the olive-green ground-colour, the *single* white cell-spot of hindwings, and the green costa.

73. *Nobilia oblitterata* sp. nov.

*Forewings* : rufous fawn-colour, covered with pale transverse slightly lustrous striae ; costal streak without striae, but dusted with fine black scales ; the costal edge blackish ; no inner line ; cell-spot very minute, black ; outer line marked only by minute black vein-dots, and by the deeper ground-colour of the marginal space beyond, forming a sinus outwards above and below cell, and one inwards beyond cell ; fringe slightly paler.

*Hindwings* : the same ; the cell-spot larger and more distinct.

Underside uniform pale flesh-colour. Face and palpi pale flesh-colour beneath, deeper above ; thorax and abdomen like wings, but front of thorax paler.

Expanse of wings : 40 mm.

One ♂ from Kuching, Borneo.

*Pachythalia* gen. nov.

*Forewings* : short and broad ; costa hardly curved ; apex rounded ; hindmargin rounded, scarcely oblique ; costal edge slightly folded over beyond one-third, and clothed with a line of outwardly directed hairlike scales.

*Hindwings* : large ; anal angle square ; hindmargin well rounded.

Thorax and body thick ; antennae of ♂ pectinated, the shaft above clothed with thick hairlike scales, long at base, and becoming shorter and pubescent beyond ; palpi porrect, squamons, the third joint bent, as in *Perixera* ; fore femora very hairy ; hind tibiae with three spurs, as in *Pisoraca*.

*Nervation* : as in *Perixera*.

*Type* : *Pachythalia rotundata* sp. nov.

#### 74. *Pachythalia rotundata* sp. nov.

*Forewings* : greyish ochreous, densely dusted with dull rosy atoms ; cell-spot rosy ; the usual lines marked by rows of dots on veins ; traces of a submarginal line ; a row of marginal dots, all rosy ; the veins towards margin reddish.

*Hindwings* : the same ; the cell-spot larger, linear.

Underside dull pinkish ochreous. Head, thorax, and abdomen concolorous.

Expanse of wings : 26 mm.

One ♂ from Penang, 1896 (Urtis).

Distinguished at once by the broad wings ; the description of *Anisodes illepidaria* Guen., made from a ♀, agrees very well, but Guenée calls the forewings oblong.

#### 75. *Perixera* (?) *radiata* sp. nov.

*Forewings* : greyish fawn-colour, with darker dusting ; the lines cloudy, dark grey ; first curved, at one-fourth ; second from costa at two-thirds, outer curved round cell and incurved below middle ; outer line at five-sixths, parallel to hindmargin, and marked by blackish vein-dots ; dull rufous streaks from base through cell and along submedian fold, and a series of finer rufous streaks between the veins from second line to hindmargin, ending in black marginal spots ; fringe rufous grey ; cell-spot annular, with dark brown edge.

*Hindwings* : the same ; the edge of the cell-spot darker.

Underside diffused rosy, the forewings deeper than the hindwings ; marginal line black. Forelegs and palpi rosy ; face deep brown ; vertex, thorax, and abdomen like wings.

Expanse of wings : 32 mm.

One ♀ from Indralaman, Benthain, 2300 feet, October 1895 (A. Everett).

The forewings are more elongate than usual ; hindmargin of both wings slightly crenulate.

#### 76. *Perixera rufannularia* sp. nov.

*Forewings* : ochreous, dusted with pale rosy and fuscous scales ; first and outer lines represented by blackish dots on veins, the dot on vein 5 breaking the series, being much nearer the cell ; an oblique grey denticulated median shade ; a faint submarginal pale line ; a row of reddish marginal dots between the veins ; fringe pale ; cell-spot obsolete.

*Hindwings* : the same, without first line ; cell-spot pale, oval, with a rosy ring.

Underside whitish, with the lines and a slight suffusion pinkish. Face white, with a rosy bar at top ; palpi rosy outwardly ; vertex ochreous ; thorax and abdomen ochreous, the latter much dusted with reddish.

Expanse of wings : 32 mm.

One ♂, one ♀, from Apia, Upolu (Woodford). The ♂ is decidedly paler than the ♀.

77. *Phrissosceles argyromma* ab. *heterospila* ab. nov.

The type of *P. argyromma* described by me in Nov. Zool. III. p. 114, was a ♂ from the Khasias. A pair from Penang now before me must be referred here. Of these the ♀ agrees precisely with the Khasia insect; the ♂, instead of having the silvery white black-edged cell-spot of hindwings, has a round black one with small pale centre. For this aberration I propose the above name. The Penang insects expand only 35 mm., as against 46 mm. in the Khasia example.

*Phyletis silonaria* Guen., *Phal.* II. p. 169.

Under *Phyletis* Guenée described three species—*pelloniaria*, *silonaria*, and *meonaria*. Of these the first and last are from India, the second from Africa. The Indian species, along with those of *Pellonia* Dup., have been referred together to *Rhodostrophia* Hüb., the forewings of which have a double areole, and the hind tibiae one of the middle spurs missing. Now of *Phyletis* Guenée says “areole simple.” It is possible that the minuteness of the second areole in *pelloniaria* and *meonaria* escaped him; but in *silonaria* the areole is simple. The ciliations of the ♂ antennae are much shorter, and the hind tibiae entirely spurless. It seems therefore only reasonable to retain his genus *Phyletis* for this species.

78. *Pisoraca punctata* sp. nov.

*Forewings*: pale ochreous, slightly dusted with fuscous: the lines fuscous, all marked more strongly on the veins; a blackish subcostal dot near base; first line curved, at one-third, approaching base on inner margin; outer line at five-sixths, curved outwards to vein 6, and running obliquely inwards from vein 4 to inner margin, between 4 and 6 forming a deep angle basewards, the dot at the angle on vein 5 larger than the rest; an obscure shade beyond the middle; cell-dot small, black; a row of distinct black marginal dots; fringe concolorous.

*Hindwings*: similar, but the discal mark is a long oval, with dark edges, lying on the central shade; inner and outer lines thickened towards and forming dark spots on the inner margin.

Underside pale ochreous. Palpi and upper part of face dull rosy: face, fillet, and antennae white; vertex, thorax, and abdomen ochreous.

Expanse of wings: 20 mm.

One ♂ from Cedar Bay, near Cooktown, Queensland.

79. *Problepsis craspediata* sp. nov.

*Forewings*: bone-colour, sparsely dusted with black atoms; costa becoming grey towards apex: the lines greyish ochreous, indistinct; first line and median line only plain on inner margin, the latter curved round cell; outer line at five-sixths, distinct, dentate on the veins; submarginal line interrupted; a fine black marginal line, with small round black dots on it between the veins; fringe white; no cell-spot, but an aggregation of black scales on the median line beyond cell.

*Hindwings*: similar, with no basal line; a linear black cell-mark; two grey submarginal lines.

Underside wholly white: the costa of forewings grey. Palpi externally dark fuscous; head, thorax, and abdomen white; antennal pectinations ferruginous.

Expanse of wings : 39 mm.

One ♂ from Simbang, German New Guinea, June 1893.

Allied to *P. margaritata* Warr. from Australia.

#### 80. *Pseudasthena sordida* sp. nov.

*Forewings* : pale ochreous, with a slight olive tint, finely dusted with grey, crossed by a succession of waved dark grey lines ; the central area more suffused with grey than the outer ; a lunulate line at four-fifths is more conspicuous, being preceded by a paler band ; a fine dark line with dots on the veins before the hindmargin ; the space beyond it pure ochreous, without grey dusting ; fringe concolorous ; cell-spot grey.

*Hindwings* : the same ; the lines darker on abdominal margin.

Underside whitish ochreous, the grey lines only showing through. Head, thorax, and abdomen olive-ochreous ; antennae white ; fillet very narrowly white.

Expanse of wings : 22 mm.

One ♂ from Oinainisa, Timor, November and December 1891 (Doherty).

#### 81. *Ptychopoda angustipennis* sp. nov.

*Forewings* : straw-colour, glossy, tinged with olive-ochreous ; basal area suffused with grey ; first line curved, obscure, at one-fourth ; median shade marked only by a brownish costal spot ; outer line dark purple-grey, at three-fourths, parallel to hindmargin, bent inwards opposite the cell and so forming a sinus outwards above and below, followed by a violet-grey fascia, beyond which the marginal area is again ochreous with the fringe ; some minute dark specks at ends of veins.

*Hindwings* : with the whole apical one-third purplish grey, with a deeper purplish blotch at anal angle.

Underside similar. Face and palpi dark brown ; vertex fuscous ochreous ; thorax and abdomen ochreous.

Expanse of wings : 15 mm.

One ♀ from Cedar Bay, south of Cooktown, Queensland.

In the hindwings the anal angle is peculiarly prominent, as the hindmargin is strongly excised from it as far as vein 3, as in *atopocodes* Meyr., to which the present species is evidently allied.

#### 82. *Ptychopoda carneola* sp. nov.

*Forewings* : ochreous flesh-colour ; the lines and cell-spot deeper ; antemedian at one-third, postmedian at two-thirds, both nearly straight ; submarginal slightly waved and curved ; fringe concolorous.

*Hindwings* : more dusted with darker flesh-colour ; the lines hardly visible.

Underside paler, with no markings. Head, thorax, and abdomen concolorous ; face and palpi reddish.

Expanse of wings : 26 mm.

Three ♂♂, one ♀, from Penang, 1896 (Curtis) ; one ♂ (*type*), one ♀, from Labuan, N. Borneo, April 1895 (A. Everett).

83. *Ptychopoda crinipes* sp. nov.

*Forewings* : reddish testaceous, thickly dusted with grey atoms ; the lines all obscure : cell-spot dark : a median shade bent ont round cell ; outer line marked by black points on veins ; two waved submarginal lines ; marginal line dark between the veins : fringe concolorous, with dark spots at base beyond veins.

*Hindwings* : similar.

Underside paler, without markings. Head, thorax, and abdomen concolorous ; face dark red-brown.

Expanse of wings : 16 mm.

Nine ♂♂ from Cedar Bay, N. Queensland.

The fore and middle tibiae of the ♂ are densely clothed with reddish hairs, the hindlegs, as usual, being aborted ; antennae densely ciliated.

84. *Ptychopoda exilinota* sp. nov.

*Forewings* : glossy, deep straw-colour ; first line from a purplish grey costal spot at one-third, to inner margin at one-fourth ; outer line from a similar spot at three-fourths, slightly sinuous and waved, to inner margin at three-fourths, followed by a neatly marked purplish grey waved fascia which does not attain the costa and is succeeded by a narrow grey shade ; fringe concolorous, with a row of neat dark spots at base ; cell-spot distinct, purplish grey.

*Hindwings* : the same ; the inner line visible only on inner margin.

Underside similar ; the forewings nearly entirely suffused with purplish grey, the veins remaining yellowish. Head and palpi dark brown ; thorax and abdomen like wings ; the vertex somewhat paler.

Expanse of wings : 13 mm.

One ♂ from Weenen, Natal, January 1895.

85. *Rhodostrophia subrufa* sp. nov.

*Forewings* : pale brick-colour, darker, somewhat greyish, towards base and hindmargin : traces of slightly darker oblique antemedian and postmedian lines, and of a sinuous submarginal line ; fringe pale, with very fine dark basal line ; cell-spot brown, large and conspicuous.

*Hindwings* : similar, the cell-spot smaller ; the marginal darker fascia more distinct.

Underside pale ochreous, thickly dusted with brick-colour, the lines more distinct. Head, thorax, and abdomen concolorous.

Expanse of wings : 26 mm.

One ♂ from Simla.

A small and inconspicuous species ; akin to *R. muricolor* Warr.

86. *Sterrhia* (?) *baptata* sp. nov.

*Forewings* : glossy greyish white ; the lines darker grey, indistinct, parallel to hindmargin ; first at one-third, second beyond middle, third at three-fourths, waved, followed closely by the submarginal, which is also waved ; a darker grey shade along hindmargin ; fringe white ; an obscure grey cell-spot.

*Hindwings* : similar, the three outer lines curved and waved.



Underside shining white; the forewings tinged with yellowish towards costa. Face, palpi, vertex, antennae, forelegs, and extreme edge of costa orange-fulvous; thorax and abdomen white.

Expanse of wings: 23 mm.

One ♀ from Apia, Upolu (Woodford).

Superficially like a small *Bapta*. It is referred to *Strophoptila* provisionally, the hindtibiae of the ♀ having a single pair of spurs.

### **Strophoptila** gen. nov

♂. *Forewings*: elongate; costa straight, rounded towards apex, which is likewise bluntly rounded; hindmargin curved, bent at vein 3 and more oblique below it; the anal angle rounded off.

*Hindwings*: triangular: the costal margin short; hindmargin little curved, and bent at vein 3; inner margin very long, folded over beneath, and containing a furrow with rough hairs.

Antennae almost filiform: palpi slender, porrect: hindtibiae and tarsi thickened and clothed with coarse scales, without spurs.

*Neuration*: forewings, cell about half the length of wing: first median from just beyond middle, second well before angle of cell: 11 anastomosing with stalk of 7, 8, 9, 10 to form a single areole. Hindwings with 6 and 7 stalked: medians as in forewings. Forewings beneath with a bed of coarse scales at base.

Type: *Strophoptila informis* sp. nov.

### 87. **Strophoptila informis** sp. nov.

*Forewings*: ochreous grey, with an olive tinge; the costa and lines pale ochreous; the first, near base, curved; second, in middle, nearly straight: third submarginal, forming a slight sinns outwards from vein 2 to 4; fringe ochreous, with a darker basal line, which is here and there preceded by faint ochreous spots.

*Hindwings*: the same, the inner line very faint.

Underside paler and duller: the hindwings whitish. Head, thorax, and abdomen ochreous grey: face dark brown; eyes large, reddish.

Expanse of wings: 20 mm.

One ♂ from the Khasias.

This species is evidently related to *Acidalia phoenicoptera* Hmps. from Ceylon, but in that the *outer* margin is folded over beneath, and the present species has no vestige of red scales.

### 88. **Traminda nigripuncta** sp. nov.

*Forewings*: dull green, the fringe concolorous: cell-spot black, distinct; an obscure oblique line from costa before apex to inner margin at two-thirds, indicated only by the difference in the shades of green.

*Hindwings*: with the cell-spot white, the line central and slightly curved: very faint traces of a waved darker submarginal line.

Underside yellowish green, unmarked: the fringe and marginal line reddish. Face, palpi, forelegs, and collar red: vertex white: thorax and abdomen green.

Expanse of wings: 27 mm.

Two ♀♀ from Liberia.

The apex of forewings is slightly produced, the hindmargin sinuate: hindwings with distinct tooth in middle of hindmargin.

89. *Triorisma* (?) *violacea* sp. nov.

*Forewings* : dull purplish grey, the lines with a reddish tinge, rather thick ; first at one-fourth, bent on the median : outer line at two-thirds, bent in cell, then oblique, parallel to hindmargin ; submarginal line at three-fourths, sinuous ; a fine dark marginal line, and dark linear cell-spot.

*Hindwings* : with thick curved antemedian line ; the postmedian bent on vein 2 : cell-spot distinct, linear : marginal line slightly waved ; fringes of both wings concolorous.

Underside pale grey, rufous-tinged ; the lines darker and finer. Thorax concolorous ; head and abdomen wanting.

Expanse of wings : 34 mm.

One ♀ from Sikkim, May 1889 (Col.-Surgeon Pilcher).

*Xenoprora* gen. nov.

Like *Perixera* Meyr., but with entirely different palpi : these, instead of being slender, porrect, and decumbent, are thick, short, and upcurved in front of face, smoothly scaled below, rough-haired above, the third joint as large as the second, the hairs expanding above. Antennae of ♂ bipectinate, the inner row of pectinations about half as long as the outer.

Type : *Xenoprora parallela* sp. nov.

90. *Xenoprora parallela* sp. nov.

*Forewings* : dull greyish ochreous, dusted with darker ; the lines likewise slightly darker, but obscure, all parallel to hindmargin—inner, median, outer, and two submarginal : the latter, like the median, are more shades than lines ; the inner and outer are both marked by dark dots on veins ; cell-spot hardly denoted : hindmargin subrennulate, with dark dots between the veins and minute ones at the vein-ends ; fringe concolorous.

*Hindwings* : similar, but the cell-spot an elongated annulus with dark edge.

Underside without markings. Palpi ochreous, externally marked with brown : face brownish ochreous ; vertex, thorax, and abdomen like wings.

Expanse of wings : 28 mm.

One ♂ from Lifu, Loyalty Islands.

The base of costa of forewings is slightly rough-haired. In appearance the insect much resembles *Stibarostoma griseata* Warr. from North Queensland, which itself differs from *Perixera* by the abnormally shaped palpi.

## SUBFAMILY ASTHENINAE.

91. *Hydrelia subrosea* sp. nov.

*Forewings* : very pale dull yellow, crossed throughout by a succession of wavy dentate rufous grey lines, slightly darker on costa : a distinct cell-spot and row of marginal dots purple : fringe yellow.

*Hindwings* : the same.

Underside pale yellowish : the forewings suffused with bright rosy, especially towards costa ; basal line of fringes in both wings bright rosy. Face and palpi pale yellowish, face brown above ; fillet white ; vertex, thorax, and abdomen pale yellow.

Expanse of wings : 24 mm.

One ♂ from Bali, March and April 1896 (W. Doherty).

Allied to *H. flavilinea* Warr. from Sikkim.

92. *Psilocambogia undulosaria* sp. nov.

*Forewings* : dull yellow, with numerous wavy dull orange lines crossing them from base to apex ; indistinct orange or ferruginous submarginal dots between veins ; fringe concolorous.

*Hindwings* : the same ; no cell-spots on either wing.

Underside paler, somewhat reddish-tinged, without markings. Face and vertex dark brown ; fillet snow-white ; thorax and abdomen yellow.

Expanse of wings : 22 mm.

One ♂ from Amboina, August 1892 (Doherty).

The forewings in this species have a very distinct fovea.

SUBFAMILY TEPHROCLYSTINAE.

93. *Chloroclystis grisea* sp. nov.

*Forewings* : ochreous, suffused with grey and tinged with rufous : central fascia darker, and marked with dark dashes on veins, its inner edge angled in cell, its outer on veins 6 and 4, preceded and followed by a pale band of ground-colour traversed by a grey line ; basal patch and central fascia with traces of wavy grey lines through them ; marginal area grey, traversed by the pale uniformly wavy submarginal line ; fringe chequered light and dark grey, beyond a fine blackish basal line.

*Hindwings* : similar ; the central fascia and basal area sprinkled with black scales towards inner margin.

Underside pale grey, with the outer line in both wings marked as a diffuse black shade. Head, thorax, and abdomen greyish fuscous.

Expanse of wings : 16 mm.

Two ♂♂ from Mombasa Island, October 1896 (Dr. Ansorge).

The hindwings are emarginate on either side of the middle.

94. *Chloroclystis minima* sp. nov.

*Forewings* : whitish grey, with a curved dark grey antemedian line and a thicker darker postmedian, interrupted in the middle ; marginal area darker grey, with the paler submarginal line indistinctly visible.

*Hindwings* : with a sinuous postmedian line ; the margin strongly excised opposite cell.

Underside dull cinereous, with the markings darker. Head, thorax, and abdomen grey.

Expanse of wings : 12 mm.

One ♀ from Geraldton, near Cairns, N. Queensland (A. S. Meek).

95. *Chrysoclystis perornata* Warr., Nov. Zool. III. p. 390.

The three examples from which the original description was made were all ♀♀ from Humboldt Bay, New Guinea. I thought it probable that the ♂ might differ, but an example lately examined from Padang Rengas, Malay Peninsula, presents no differences whatever, except in the coloration of the face and palpi, which are brownish instead of yellow. The antennae are slender, lamellate, scarcely pubescent: the hindtibiae with four spurs.

96. *Gymnoscelis albicaudata* sp. nov.

*Forewings*: greyish green, dusted with dark atoms; first line at one-fourth, blackish, angulated, bent below costa, and then parallel to hindmargin; outer line at three-fourths, angled on veins 4 and 6, below 4 parallel to hindmargin; the inner half of central fascia darker from costa to below middle, the inner-marginal area pale green; submarginal line pale, minutely dentate, preceded by a dark cloud; the whole wing crossed by obscure wavy lines; marginal line distinct, blackish, suberruminate; fringe grey, with paler base.

*Hindwings*: greyish ochreous, tinged with pale green towards hindmargin, with several curved wavy darker lines and shades; a wavy postmedian black line, recurved at costa; a darker submarginal fascia, with dentate edges; a pale spot beyond it in middle; fringe and marginal line as in forewings; cell-spots in both wings indistinct.

Underside whitish, towards the costa tinged with rufous cinereous, with the two outer lines dark grey, and the cell-spot of hindwings plain. Head, thorax, and abdomen greyish green, dusted with darker; anal tuft very long, white.

Expanse of wings: 20 mm.

One ♂ from the Khasias.

The costa of forewings is rough-haired to the middle, faintly convex near base, and insinuate in middle; the hindtibiae of ♂ have the two terminal spurs as in *Calluga costalis*, one much longer than the other; but the venation is that of *Gymnoscelis*, 11 anastomosing with but not becoming coincident with 12; the subcostal is not bent down, and the areole is narrow. The hindmargin of forewings is bent at vein 4, oblique below, and slightly inbent before the distinct anal angle; hindwings with hindmargin strongly rounded, somewhat bulged in centre.

97. *Gymnoscelis coquina* ab. *semiviridis* ab. nov. (? sp. dist.).

*Forewings*: precisely like typical *coquina*, with all the veins marked with black scales.

*Hindwings*: pale ochreous or greyish, suffused only with green, which forms a basal patch, central fascia, and marginal shade, with the veins as in forewings, marked with black scales; cell-spot black, distinct.

Underside of both wings white, with the fasciae blackish and concise. Head, thorax, and basal segment of abdomen dark fuscous; rest of abdomen pinkish ochreous.

Expanse of wings: 18—20 mm.

Two ♀♀ from Geraldton, near Cairns, Queensland.

The specimens of *coquina* were all from Cedar Bay, south of Cooktown. I am by no means sure that these with the green hindwings are not a distinct species.

98. *Gymnoscelis cristata* sp. nov.

*Forewings*: dark fuscous, mixed with vinous; the veins all marked with white and black scales; a tuft of spatulate black scales on the median vein at origin of first median nervule; the lower radial with raised scales throughout the central fascia, the first half white, the second black; edge of basal area indistinct; central fascia limited by fine white lines, the first followed by two darker lines, the second crenulate and angled below vein 4; outer half of central fascia vinous, except between veins 3 and 4, which space is pale green, and extends through the vinous and fuscous marginal area to the margin itself; marginal line black, interrupted by pale spots at ends of veins, which emit pale streaks through the fuscous fringe.

*Hindwings*: fuscous and vinous, except the anal half of the marginal area, which is pale green; two thick fuscous postmedian lines with vinous between them, and three fine blackish lines beyond; the veins black; marginal line and fringe as in forewings, but the fringe green beyond the green area.

Underside of forewings dark smoky grey, with four diffuse black lines; the inner margin, outer edge of exterior line, and a horizontal streak from it to hindmargin below vein 4, whitish. Hindwings white, with three diffuse blackish bands. Palpi and face fuscous; vertex and thorax mottled with rufous grey and whitish scales; abdomen with basal half reddish grey, with black segmental rings; the anal half greenish.

Expanse of wings: 24 mm.

One ♀ from Sandye, Jaintia Hills.

99. *Gymnoscelis grisea* sp. nov.

*Forewings*: greyish fuscous, with numerous darker waved lines, all bluntly angled below the costa, then oblique and parallel to hindmargin; just beyond one-third two of these are darker and the space between them filled up with darker, so forming a narrow fascia; a similar one, but not so prominent, beyond the middle.

*Hindwings*: narrow, greyish fuscous, with the two dark fasciae of the forewings appearing as dark lines; fringes of both wings fuscous grey.

Underside dull cinereous, without markings. Head, thorax, and abdomen all concolorous; abdomen of the ♂ very long, with whitish ochreous anal tuft; vertex of head also paler.

Expanse of wings: 18 mm.

One ♂, one ♀, from Fergusson Island, September 1894 (A. S. Meek).

100. *Gymnoscelis perangusta* sp. nov.

*Forewings*: pale grey, with a slight ochreous and greenish tinge in places; the lines dark grey, waved or subdentate, and angled below costa; first near base; second, forming a band, a little before middle; third at three-fourths; submarginal line cloudy, interrupted opposite cell and below middle; a fine dark marginal line; fringe grey.

*Hindwings*: with obscure central line, and distinct curved postmedian and submarginal lines. In both wings the dark lines are finely edged with paler.

Underside dull cinereous. Head, thorax, and abdomen grey.

Expanse of wings: 18 mm.

One ♂ from Kuching, Borneo.



**Megatheca** gen. nov.

A development of *Chloroclystis*, from which it differs in having the hindwings of the ♂ very narrow, the whole of the inner-marginal area being folded over beneath from base to anal angle; the hindtibiae of ♂ have one very long median spur before the terminal pair.

Type: *Megatheca purpurea* sp. nov.

**101. Megatheca purpurea** sp. nov.

*Forewings*: pale yellowish green, dusted with purple scales and with dull purple fasciae, the edges waved and lined with paler; an antemedian passing round the dark cell-spot; a postmedian diffuse and broad, and a narrower submarginal.

*Hindwings*: with postmedian and submarginal fasciae only.

Underside gilded yellowish, with the disc broadly and a narrow submarginal fascia deep purple; hindwings with only the marginal area purple. Head, thorax, and abdomen dull green.

Expanse of wings: 16 mm.

One ♂ from Penang, 1896 (Curtis).

**102. Tephroclystia ruficorpus** sp. nov.

*Forewings*: pale grey, suffused with pale vinous red; the costa darker, with large brown blotches representing the origin of the lines; disc crossed by numerous waved and oblique obscurely darker lines, marked often with dots on the veins, and all angled below the subcostal vein; median vein red-brown from base to end of cell; submarginal line finely denticulate, pale grey, preceded by a rufous brown fascia, containing three darker blotches, at costa, beyond cell, and above anal angle, separated from central fascia by a pale space through the centre of which a dark line is distinct; marginal area dark grey, with the veins rufous; marginal line finely black, interrupted by the paler veins; fringe dark grey, with deeper middle shade; cell-spot obsolete.

*Hindwings*: pale grey, with darker curved lines and shades; inner margin faintly tinged with vinous.

Underside pale grey, with the markings darker, especially the broadish grey submarginal fascia; cell-spots marked, but small. Face and palpi brown; vertex, thorax, and basal segment of abdomen grey, with faint reddish tint; abdomen bright vinous red.

Expanse of wings: 20 mm.

One ♀ from the Khasias, October 1896.

Very near to *T. rubripicta* Hmps.; distinguished by the absence of large cell-spots on upper surface, and by the wholly grey hindwings and bright red abdomen.

## SUBFAMILY TRICHOPTERYGINAE.

**103. Goniopteroloba conjuncta** sp. nov. (Pl. V. fig. 9, ♂).

*Forewings*: ochreous yellow, with an olive tinge in places, and especially along costa, and with some scattered black scales; a black dot at base of costa and submedian vein; the lines black; first from one-third of costa to one-third of inner

margin, interrupted in the cell; second from two-thirds of costa to before two-thirds of inner margin, angled on vein 3, swollen below and connected with first line along submedian fold; submarginal line very faint, denoted by a line of dark scales, followed by a pale band; marginal line black, lunular, interrupted in middle, and preceded opposite the cell by a black blotch from the submarginal line; fringe yellow, chequered with black; costa dotted with black.

*Hindwings*: with a black curved central line; marginal area as in forewings.

Underside deeper yellow, with fine black strigae; the markings obscure. Head, thorax, and abdomen yellow.

Expanse of wings: 18—20 mm.

Both sexes from Mount Dulangan, Mindoro, 4500—5500 feet, November 1895 to January 1896 (J. Whitehead).

In the hindwings the lower angle of cell is produced to an acute point, not rounded as in the type-species, and vein 5, the radial, rises along with the third median from the point.

#### 104. *Goniopteroloba fuscata* sp. nov. (Pl. V. fig. 8, ♂).

*Forewings*: yellowish olive, fuscous-tinged, with a few black scales, which are most conspicuous along costa, which is paler; the lines indistinct, starting from oblique dark brown costal spots at one-third and two-thirds; the outer line marked by a dark spot on vein 5 and the submedian; submarginal line very obscure, marked by a small blackish spot beyond cell; fringe concolorous.

*Hindwings*: more fuscous, but paler along costa, with traces of a darker central line from centre of inner margin.

Underside deep yellow, mottled with fuscous, with the two costal spots and submarginal spot marked darker. Head, thorax, and abdomen concolorous with wings.

Expanse of wings: 26 mm.

One ♂ from Mount Dulangan, Mindoro, 4500—5500 feet, November 1895 to January 1896 (J. Whitehead).

#### 105. *Remodes curticornis* sp. nov.

A ♂ from Tawaya, north of Palos Bay, Celebes, in good condition, answers entirely to Guenée's description of *R. aborticata* from Borneo. Of two ♀ ♀, likewise in perfect condition, from Kuching, Borneo, one is almost the exact counterpart of the ♂ from Tawaya; in fact, the markings, being clearer, correspond more precisely than do those of the ♂ with Guenée's details. In both of these specimens the three green bands which form the outer arm of the central fascia become purple only between the lower radial and the submedian vein, while the single band which forms the inner arm is purple only between the median and submedian; the marginal band and row of spots likewise become purplish almost to the apex, while in the ♀ the second of the four basal bands is slightly purple between the median and submedian. In both sexes the cell-spot is green; the hindtibiae of the ♂ are tufted with pale scales, and the abdomen has two pairs of lateral tufts on the penultimate segment.

In the second ♀ from Kuching nearly all the transverse lines are tinged with purple throughout, while the lustrous scales between the lines become paler and more silvery; but I should have referred it likewise to Guenée's *aborticata*, as in size and position of markings it agrees entirely with that species, had I not noticed

a decided difference in the antennae: in *abortivata* ♀ these are slender and two-thirds of the length of the forewings: in *curticornis* they are much stouter, rougher, and only half as long as the wings. The comparison of three other similarly marked ♀♀, one from Penang and two from Timor, brings out the difference clearly. These all agree in the shortness and stoutness of the antennae, and in having the transverse lines more or less dark-tinged and the cell-spot dark; the apex of both fore- and hindwings is rounder, and the row of marginal spots on forewings much more concise. The darker tints have a tendency to develop themselves horizontally beyond the cell and along the submedian fold.

106. *Remodes contorta* sp. nov.

*Forewings*: mealy green, without any fine darker green transverse lines, these where expressed, being all blackish: base marked with blackish; basal area limited by a bent narrow band with darker edges: central fascia with its inner edge formed by a contorted darker green band with blackish edges: the outer edge by a similar band edged by a double dentate black line, excurved below costa and becoming obsolescent in a whitish hyaline and transparent blotch, the inner arm of the inner line alone reaching the inner margin: cell-spot distinct, blackish, touching both bands: the green space between basal patch and central fascia marked above inner margin with horizontal black dashes; area between central fascia and submarginal line pale green on costa, traversed below vein 6 by a double blackish line; submarginal line parallel to hindmargin, blackish; subdentate marginal dark spots at end of veins: fringe green.

*Hindwings*: whitish.

Underside whitish grey: costal half of forewings tinged with dull rufous. Face and palpi pale green; thorax and abdomen green, mixed with blackish scales; antennae broken.

Expanse of wings: 28 mm.

One ♂ from Penang.

Resembles *R. pallidiplaga* in the white blotch at anal angle, but the palpi are green, not black, and the markings are different. The inner margin of forewings is decidedly bulged from near base to end of submedian vein, where it is slightly indented; the incision above anal angle is strongly marked, and the area below the submedian fold occupied by the pale blotch is slightly puckered and contorted beneath; the hindwings have no dark scales whatever.

107. *Remodes pallidiplaga* sp. nov.

*Forewings*: pale dull green; the lines darker green, irregularly waved on basal half, beyond the middle angulated; three close to base, the first marked with some blackish scales, the next two confluent; inner edge of central fascia marked by a single dark green line, angulated sharply on subcostal, where it touches the dark green cell-spot, and bent below; space between basal patch and this line pale green, with a deeper wavy green line down its centre; outer part of central fascia consisting of three dark green angulated lines, curved outwards above and incurved below, approximating towards inner margin: central fascia followed by a similar pale green band to that which precedes it, but ending at anal angle in a pale whitish blotch: two dark green lines, becoming confluent below middle and containing a subquadrate dark greenish black blotch beyond cell; submarginal line sinuous, blackish green,

edged internally with pale green ; the marginal area beyond it from apex to incision slightly purplish-tinged ; five large triangular black marginal spots at ends of veins 2, 3, 4, 5, 6 ; fringe at base dark grey, paler externally ; the darker basal half with white spots beyond each of the five black marginal spots.

*Hindwings* : pale ochreous, dusted with grey scales ; the tip of the middle lobe darker grey ; the basal lobe very small.

Underside of forewings greenish grey, becoming fuscous towards hindmargin ; fringe fuscous, with the five white dots well marked ; hindwings as above. Palpi and antennae black, the tips of both pale ; head and thorax green ; abdomen ochreous.

Expanse of wings : 32 mm.

One ♂ from Mount Gedé, West Java, 4000 feet, 1896 (Fruhstorfer).

Allied to *R. abortivata* Guen. ; distinguished at once by the pale patch at anal angle.

#### 108. *Trimetopia aetheraria* Guen., *Phal.* I. p. 352.

The examination of a ♀ of this rare species, from Dar-es-Salaam, East Africa, affords me the opportunity of making some slight corrections in Guenée's descriptions of the genus and species, and referring it, according to the neurulation, to its proper subfamily.

The specimen before me, which is in very fair condition, does not show any *white* veins ; perhaps Guenée's examples were worn or rubbed. The tongue is present, but very slightly developed. The antennae of this ♀ are strongly pectinated, and I am inclined to believe that this pectination misled Guenée into describing his type as a ♂. It will be noticed that in his description he refers only to the ♂ ; but he afterwards records from Abyssinia a *male* and a *female*, querying this latter, possibly as not having any antennae left, for in his remarks on the genus he says, "The abdomen of the ♂ is so thick that, were it not for the presence of antennae, it might lead to a mistake."

The venation is almost identical with that of *Pseudeuchlora* Hmps. : the discocellular in forewings oblique ; in hindwings twice bent, inwards at the upper, outwards at the lower third, from which latter the radial arises. The genus must therefore be referred to the *Trichopteryginae*, next to *Leptostegna* Chr. and *Pseudeuchlora* Hmps., from both of which it differs in the pectinated antennae. The frenulum (in the ♀) is represented by a few hairs only.

#### SUBFAMILY HYDRIOMENINAE.

#### 109. *Camptogramma constellata* sp. nov.

*Forewings* : black-brown, very much like *stellata* Guen. from America and the West Indies ; the margins of the central fascia darker, and marked by pale dots on the veins ; submarginal line irregularly dentate, pale ochreous, with a small but distinct pale spot beyond it between veins 3 and 4 ; marginal line black, with faint pale dots before it ; fringe dark, with pale apices.

*Hindwings* : similar.

Underside cinereous ; the lines and cell-spots dark brown. Head, thorax, and abdomen concolorous with wings.

Expanse of wings : 34 mm.

One ♀ from Mauritius.

110. *Epirrhoë crepuscularia* sp. nov.

*Forewings*: with the ground-colour dull rufous olive; basal area with inner half blackish fuscous, the outer olive-brown, with a paler shade between; first line, limiting the basal area, at one-fifth, curved; central fascia broad, blackish fuscous; its inner edge curved and slightly indented in cell and on submedian fold, its outer protuberant below costa, forming a sinus in cell, with two small blunt teeth below middle and waved above inner margin; traversed by three darker lines, and containing a dark cell-spot; the fascia is margined on both sides by a fine pale slightly lustrous line within a fine dark one; the narrow curved band preceding it and the somewhat broader one following it are of the ground-colour; marginal area formed first of a brown fascia, which deepens into a dark fuscous cloud along hindmargin; submarginal line obscure, wavy; dark marginal area obliquely edged from apex, the apex itself remaining paler; fringe dark fuscous.

*Hindwings*: dark smoky fuscous, with traces of a narrow antemedian and broad median and submarginal darker bands.

Underside dull cinereous, with darker markings. Head, thorax, and abdomen dark fuscous olive.

Expanse of wings: 32 mm.

One ♀ from Mount Dulangan, Mindoro, 4500 to 5500 feet, November 1895 to January 1896 (J. Whitehead).

111. *Eulype(?) disparata* sp. nov. (Pl. V. fig. 12, ♂).

♂. *Forewings*: glossy, leaden-grey; costal edge tinged with ochreous, more broadly beyond the middle; three transverse broadish lines white; first curved, close to base; second at one-third, curved slightly below costa, and bent at median, nearly vertical; third at two-thirds, vertical below costa and above inner margin, forming a strong outward sinus between veins 4 and 2; fringe greyish ochreous; cell-spot minute, dark, with paler scales round it.

*Hindwings*: white, with fine angled median and dotted postmedian lines; the margin beyond submarginal line leaden-grey; fringe ochreous grey, with dark grey dashes beyond the veins.

Underside similar, but the forewings with only the outer pale line. Head, thorax, and abdomen leaden-grey; antennae pale ochreous.

♀ very different; dull whitish, with very pale olive-grey inner, outer, and submarginal lines; margin of both wings grey; underside white; head, thorax, and abdomen all whitish.

Expanse of wings: ♂, 28 mm.; ♀, 25 mm.

One ♂, one ♀, from Nandi, Uganda Protectorate, December 1896 (Dr. Ansorge).

The ♂ antennae are lamellate, subserrate; areole of forewings simple.

112. *Euphia propinqua* sp. nov.

*Forewings*: deep fulvous yellow, with rufous brown fasciae; basal area with the outer edge evenly curved; central fascia with its inner edge bluntly bent on the median vein, its outer bluntly angled on the subcostal and strongly on the third median nervule, with a sinus above and below, so that the fascia itself is constricted below the middle; marginal area broadly rufous brown, containing a triangular pale apical blotch, edged with pale yellow; fringe rufous brown; the edges of the central fascia and basal patch with a paler yellow line.



*Hindwings*: uniform fulvous yellow; the fringe concolorous.

Underside fulvous yellow, with the edge of basal patch, outer edge of central fascia, and area beneath the apical spot brownish. Head, thorax, and abdomen concolorous.

Expanse of wings: 27 mm.

One ♂ from Pu-tsu-fu, West China, 8000—10,000 feet, July 1890.

Allied to *E. fulcata* Forst. and *ungata* Feld.

### 113. *Gandaritis reduplicata* sp. nov.

Like *G. flavata* Moore in the forewings.

*Hindwings*: with basal two-thirds white, marginal third yellow; the veins blackish; a diffuse curved blackish central band, and distinct lunulate blackish postmedian and submarginal band; the cell-spot black.

Expanse of wings: 70 mm.

One ♀ from Omei-Shan, West China.

### 114. *Glaucopteryx subalbata* sp. nov.

*Forewings*: fuscous black, sprinkled with bluish white scales; the usual transverse wavy lines darker, but obscure; the waved fascia between basal patch and central fascia marked by bluish white scales, most conspicuous at costa and on inner margin; the space between the two limiting bands of the central fascia white from costa to middle, then whitish smeared with fuscous and diffusely broadened to inner margin, leaving the dark basal half of wing projecting along the median vein as an acute point; outer line, bounding central fascia, and submarginal line, both waved and marked with bluish white scales, and whitish towards costa: a row of dark marginal dashes between the veins; fringe with basal half wholly dark, apical half whitish, with dark patches opposite veins; cell-spot dark, obscure.

*Hindwings*: white, smoky grey at base and along inner margin, with a broad smoky fuscous marginal band; fringe altogether white round apex.

Underside of forewings white, with the cell cinereous, and a broad blackish marginal fascia, containing a large white apical and smaller white subapical spot. Hindwings white, with broad blackish marginal fascia, containing a white spot at apex. Head, thorax, and abdomen blackish, speckled with pale grey.

Expanse of wings: 39 mm.

One ♂ from Sikkim, 11,000 feet.

This is evidently akin to *albaper* Hmps., also from Sikkim, in which species, however, the hindwings are black throughout, except for the apical spot. Superficially it reminds one much of *Xanthorhō turbata* Hüb., like it a mountain species.

### 115. *Photoscotosia funebris* Warr., Nov. Zool. II. p. 117.

The ♀ of this species, like the ♀ of *P. miniosata*, is different from the ♂. The outer three-fifths is a mixture of rufous and grey on a paler ground; the basal two-fifths suffused with blackish brown as far as second line; underside of forewings with the pale discal space much wider and reaching to costa, containing there at its middle a large blackish blotch, at the commencement of the outer line.

It is evidently the Chinese form of the Indian *miniosata*.

116. *Plerocymia albiclausa* sp. nov.

*Forewings*: with ground-colour whitish ochreous, more or less suffused, except in the marginal area, with pale red-brown; basal patch edged by a pale line angled below costa, then oblique and waved; a similar line through the patch nearer base, with a dark dot below the median; inner edge of central fascia limited by a similar line at one-third; outer edge dark brown, oblique and straight, parallel to hindmargin, at five-sixths: the fascia itself dull red-brown, containing three or four darker oblique lines and a small black cell-spot; the fascia is followed by an oblique white band, with a grey line along its middle; marginal area beyond rufous fuscous, the inner half forming a dark band edged by the obscure pale submarginal line; an oblique pale streak from the apex; marginal line formed of pairs of black dots; fringe fuscous.

*Hindwings*: whitish, with a grey curved postmedian shade.

Underside ochreous, dusted and suffused with fuscous; the marginal area paler; cell-spots and outer line dark and distinct. Head, thorax, and abdomen rufous ochreous.

Expanse of wings: 26 mm.

One ♂ from Natal (A. J. Spiller).

117. *Plerocymia nigrocellata* sp. nov. (Pl. V. fig. 6, ♂).

*Forewings*: uniform glossy grey; marginal area darker, beyond a pale submarginal line curved parallel to hindmargin; costal area slightly darker, brownish; cell-spot oblique, velvety black; fringe glossy grey.

*Hindwings*: hardly paler, without markings of any kind.

Underside slightly reddish-tinged; forewings as above; hindwings slightly speckled with blackish, with a minute black cell-dot and submarginal line denoted by black dashes on veins. Head, thorax, and abdomen concolorous.

Expanse of wings: ♂, 32 mm.; ♀, 26 mm.

One ♀, four ♂♂, from Nandi, Uganda Protectorate, December 1896 (Dr. Anson).

*Polystroma* gen. nov.

*Forewings*: with costa straight, curved at base and before apex; hindmargin obliquely curved: the submedian vein beneath with a tuft of black hairs from base.

*Hindwings*: with hindmargin rounded and suberuncate, slightly truncate before the anal angle: fold in cell clothed in last half with a bed of grey scales.

Antennae of ♂ subserrate, ciliated, as in *Ochyrus*; forehead with a cone of scales; palpi triangular, squamous, third joint obscured; tongue and frenulum present; hindtibiae with four spurs.

*Neuration*: forewings, cell half the length of wing; discocellular nearly vertical; first median at seven-eighths, second only just before lower angle of cell; radials normal; 7, 8, 9 stalked; 10 anastomosing with 11, and again with 7, 8, 9, forming a double areole; 11 from near apex of areole, 7 from apex; 10 short-stalked. Hindwings with the subcostals stalked; discocellular oblique; radial from its centre.

Type: *Polystroma subspissata* sp. nov.

*Cidaria fuscigrisca* Hmps. from India, and *Lygris mardinata* Standl. from Mesopotamia, are probably congeneric. The genus is akin to *Melitulias* Meyr. from Australia.

118. *Polystroma subpissata* sp. nov.

*Forewings*: cinereous, with a slight reddish tinge; basal patch and central fascia blackish, with some rufous scales intermixed; the former bounded by two curved black lines; the latter with inner edge curved and slightly toothed on submedian fold, the outer toothed below costa and angled on vein 4, below which it is incurved; several waved blackish lines are visible within the fascia; cell-spot dark, with rufous scales round it; space between basal patch and central fascia with three fine curved lines, and some rufous scales before the fascia; beyond the fascia is a rufous band with two waved dark lines; marginal area grey and rufous, with the waved submarginal line paler; a black interrupted marginal line; fringe pale.

*Hindwings*: pale grey; the inner margin blackish; a blackish postmedian curved line, followed by a pale fascia and some dark waved lines, all more distinct towards inner margin.

Underside dull cinereous, with central fascia and cell-spots of both wings darker. Head, thorax, and abdomen grey and black: basal segment of abdomen paler; metathorax blackish; tuft of forewings black; thickened scales in cell of hindwings grey.

Expanse of wings: 28 mm.

One ♂ from Weenen, Natal, March 1894; one ♀ marked Natal, without date.

An obscure-looking species, recalling *unidentaria* of Haworth.

The ♀ has the pale band on each side of the central fascia narrower, with a single rufous line through it; the dark band preceding the submarginal line is more distinct, and marked with black beneath costa and opposite cell; the hindwings are smoky fuscous, with the lines darker.

## SUBFAMILY DEILINIINAE.

*Allaxithea* gen. nov.

*Forewings*: triangular, broad; costa curved throughout; apex prominent, acute; hindmargin scarcely curved; anal angle rectangular.

*Hindwings*: triangular; apex rounded; anal angle rectangular; hindmargin slightly curved.

Palpi porrect, upcurved, third joint short, pointed; antennae of ♂ serrate, of ♀ simple.

*Neuration*: forewings, cell not half as long as wing; discocellular straight; first median at two-thirds; second a little before angle of cell; radials normal; 7, 8, 9 stalked from some distance before angle of cell; 10 and 11 coincident, anastomosing with costal. Hindwings with first subcostal and second median both shortly before angle of cell. Forewing of ♂ without fovea; hindwing with fovea at base of vein 8.

Type: *Allaxithea purpurascens* Moore.

Allied to *Orthobrachia* Warr.; certainly belonging to the *Stegania* group, not to *Tephрина*.

119. *Bapta longipennis* sp. nov.

*Forewings*: elongate, white, very finely dusted with dark atoms; the lines diffuse, grey; first from costa before one-third to near middle of inner margin; the

outer at three-fourths, slightly waved, and parallel to hindmargin : marginal and apical areas smeared with pale fulvous; marginal line and fringe pale fulvous.

*Hindwings* : with second line only marked.

Underside dull white. Vertex, thorax, and abdomen white; face and palpi dark brown; antennae fulvous.

Expanse of wings : 30 mm.

One ♂ from the Khasias, July 1896.

120. *Micronidia simpliciat*a ab. *mediofusca* ab. nov.

Differs from typical *simpliciat*a Moore in having the first three lines obliterated, the space between the basal and outer line being suffused with pale brownish grey; submarginal line only visible above inner margin. On the hindwings, which have no inner line in the type-form, the grey band is restricted to the space between the median and postmedian, the submarginal line remaining distinct throughout.

A single ♂ from the Khasias, August 1896, taken with others of the ordinary form.

*Microxena* gen. nov.

*Forewings* : with costa curved at base and before apex, straight between; apex rectangular; hindmargin elbowed at vein 3, vertical above, oblique below, and slightly incurved before anal angle, which is well marked.

*Hindwings* : ample; with the margin bent at veins 8 and 7, and bluntly subdentate at vein 4, faintly excised between 4 and 6; anal angle rectangular.

Antennae of ♂ minutely serrate, with short ciliations; palpi porrect, short; tongue and frenulum present; no fovea; hindtibiae with four spurs.

*Neuration* : forewings, cell not quite half the length of wing; discocellular oblique, very faint; first median at three-fourths, second from close to lower angle; radials normal; all five subcostals stalked; 10 and 11 coincident, anastomosing with costal, 10 again anastomosing with 8 and 9. Hindwings with costa shortly approximated to subcostal; first subcostal nervule and second median from before angles of cell; no radial.

Type : *Microxena invalida* sp. nov.

The genus will come near *Peratophyga* and *Ninodes*, from both of which it differs by the absence of a fovea and by the elbowed hindmargin in the forewings.

121. *Microxena invalida* sp. nov.

*Forewings* : dull purplish grey, with no distinct markings; the costa yellowish, with groups of striae of the dark ground-colour; hindmargin narrowly yellowish, the darker ground-colour running out to the elbow as in the genus *Chrysocraspeda*; fringe yellowish.

*Hindwings* : with the hindmargin very narrowly and obscurely yellowish; fringe yellow.

Underside paler, with faint traces of a curved darker postmedian band on forewings. Face and palpi yellowish; thorax and abdomen like wings.

Expanse of wings : 17 mm.

One ♂ from Bali, March to April 1896 (W. Doherty).

Superficially wonderfully resembling a *Chrysocraspeda*.

122. *Nothomiza binotata* sp. nov.

♂. *Forewings*: silky grey, sparsely mottled with rather coarse blackish speckles, tinged with fawn-colour towards base, and becoming quite reddish fawn along costa; two cream-coloured costal blotches of an irregular triangular shape, the first in the middle, the second at three-fourths.

*Hindwings*: paler, silky grey, mottled only towards inner margin and anal angle, and there also slightly suffused with fawn.

Head, face, thorax, and abdomen all fawn-colour, the hind segments of the abdomen greyer. Underside quite pale: the hindwings much mottled, and showing traces of a dark curved submarginal line.

Expanse of wings: 26 mm.

Many from the Khasias.

Closely related to *Nothomiza costinotata* Warr. (*Argyge*).

123. *Nothomiza nana* sp. nov.

*Forewings*: dull grey-brown, with numerous indistinct dark strigulae; the costal streak throughout pale sulphur-yellow, its lower edge irregularly striated with the brown ground-colour; very indistinct dark antemedian and postmedian lines and dark cell-spot; fringe lemon-yellow, with a dark brown basal line.

*Hindwings*: paler, with a strong rufous tinge; cell-spot and outer curved line visible; fringe and marginal line as in forewings; the inner margin narrowly yellow.

Underside of both wings uniform deep yellow, the hindwings deeper than the forewings; forewings towards hindmargin with a few fine dark freckles. Face, palpi, and collar ferruginous; vertex and antennae sulphur-yellow; thorax, patagia, and back of abdomen grey; rest of abdomen and legs yellow.

Expanse of wings: 22 mm.

One ♂ from the Khasias, October 1896.

124. *Parasynergia nigrifrons* sp. nov.

*Forewings*: sandy ochreous, speckled with fine black atoms; a black dot at base in middle: first line represented by four black dots in a curve, one above subcostal vein, one on median and submedian veins, and the fourth on inner margin nearer base; a black cell-spot on a very faint median shade; outer line obliquely curved parallel to hindmargin, marked by black dashes on veins to vein 2, then by two curves to inner margin: the line is closely followed by a blackish shade, forming two black blotches above inner margin; submarginal line formed by black somewhat wedge-shaped marks between the veins, followed, after a fine waved pale line, by an interrupted blackish shade, the dark markings being more prominent beyond cell and above inner margin; a row of distinct black marginal spots; fringe concolorous.

*Hindwings*: similar, the black markings less pronounced; the dots forming the second line connected by a ferruginous thread.

Underside duller; the black markings coarser, more blotched. Face and palpi black; vertex, thorax, and abdomen ochreous; abdomen with pairs of dorsal black dots; antennae ochreous, with very long pectinations.



Expanse of wings : 38 mm.

One ♂ from Indralaman, Bonthain, 2300 feet, October 1895 (A. Everett).

Distinguished at once by the black face and palpi.

125. *Scardamia maculata* sp. nov.

*Forewings* : deep fulvous orange, with numerous fine black transverse striae ; lines as in *auricincta* Wlk. (= *sotalaria* Feld.) from S. Africa: central area between inner and outer line occupied by a large blackish blotch, thinning out towards costa.

*Hindwings* : with an aggregation of black striae in place of a blotch.

Underside pale yellowish ochreous, with the margins of both wings diffusely reddish brown.

Expanse of wings : 32 mm.

One ♀ from Dar-es-Salaam, German East Africa.

SUBFAMILY ABRAVINAE.

126. *Pogonopygia nigralbata attenuata* subsp. nov.

Differs from the type-form of *nigralbata* Warr., from Japan, W. China, and the Khasias, chiefly in having the central markings of forewings attenuated. In the place of three rounded costal blotches are three oblique streaks, consisting of contiguous flattened oval marks on the veins : the first, of four such marks, on costa, costal and subcostal veins, and on the fold in the cell ; the second, of two above and two below the large cell-spot, which is blackish with white central line ; the third, of a double costal blotch and a smaller one on vein 5 ; on the first median nervule and on the submedian fold below it are two elongate blotches, not contiguous ; and in the place of the blotch on inner margin, two oblique streaks to the submedian vein ; the veins and submarginal line intersecting the dark marginal area are white only below the middle, being dark grey above.

One ♀ from Rukit Putus, Selangore, 3000 feet, May 1896 (Curtis).

SUBFAMILY BRACCHINAE.

127. *Bursada adaucta* sp. nov.

Like *B. maculifera* Feld., but with all the orange markings enlarged and with more irregular edges, so that instead of describing it as black with orange spots it would be more correct to call it orange with black markings and two narrow black transverse bands: the orange apical mark is considerably larger. In the hindwings an additional orange streak is developed beyond the blotch at anal angle, and the basal and anal segments of the abdomen are broadly orange.

Two ♂♂ from Siao Islands, north of Celebes, September 1896 (W. Doherty).

Expanse of wings : 34 mm.

128. *Bursada* (?) *puncticorpus* sp. nov. (Pl. V. fig. 18, ♀).

*Forewings* : deep orange-red ; the base narrowly black, with a snow-white spot ; a broad black band from middle of costa to anal angle, its inner edge very irregularly crenulate ; apex black from three-fourths of costa to middle of hindmargin, which there is narrowly black.

*Hindwings* : with hindmargin black, narrow in middle, its inner edge sinuous from three-fourths of costa, and forming a large quadrate blotch at anal angle.

Underside the same. Palpi and antennae black; face black, with the lower third white; thorax black, with a white spot between the shoulders in front; abdomen black, with a row of white spots down the back.

Expanse of wings : 40 mm.

One ♀ from Fort Abercorn, British Central Africa, 1895.

129. **Bursada rotundimacula** sp. nov. (Pl. V. fig. 26, ♀).

*Forewings* : black, with two white streaks from base, one, reaching to two-thirds of cell, above the subcostal vein, the other short, above the submedian; a pale yellowish spot at base; a very irregular white fascia from near end of cell, not touching the subcostal vein, running obliquely outwards and broadening to the submedian fold, then much constricted on the submedian vein, and again expanding and occupying the middle third of inner margin; a large irregularly edged oval blotch towards apex from near costa to below vein 4; a series of submarginal oval white spots between the veins, those opposite the cell obsolescent; fringe black(?).

*Hindwings* : white, with the base narrowly black; a large round discal spot; a broad marginal black border, running in along vein 4, containing large white semi-elliptical submarginal blotches between the veins; the inner edge of the marginal border slate-colour, which tint is extended along costa to basal blotch, which is also edged with slate-colour.

Underside the same, but blacker. Face, pectus, forefemora, and collar pale yellowish; palpi and antennae black; thorax black, mixed with pale yellowish; abdomen ringed alternately with black and pale yellow.

Expanse of wings : 58 mm.

One ♀ from N. Luzon (Whitehead).

In appearance resembling rather a *Craspedosis*, but the antennae, even in the ♀, are pectinated, as in *Bursada*.

130. **Craspedosis albigutta** sp. nov.

*Forewings* : slaty black, with an oblique white blotch from below middle of costa to near inner margin before anal angle; this blotch is broader below than above, the inner edge sinuous, with a slight indentation basewards below first median nervule, and with a short point below costa directed towards the apex; fringe black.

*Hindwings* : wholly black.

Underside like upper. Head, thorax, and abdomen black; anal orifice beneath orange.

Expanse of wings : 48 mm.

One ♀ from Etna Bay, New Guinea, August 1896 (Webster).

Intermediate between *C. semiplaga* Warr. from Fergusson Island and *C. oralis* from Humboldt Bay, New Guinea; distinguished from the former by the *broad* white blotch, and from the latter by the wholly black hindwings and abdomen.

131. **Hylemera flavibasis** sp. nov.

*Forewings* : white; costa narrowly black at base, limiting a small basal orange blotch, then widening to apex; hindmargin diffusely black, containing dull smoky-tinged pale spaces, beyond cell and between the medians, the whitish ground-colour running in nearly to margin along the submedian fold; the black edging extends

from anal angle along inner margin nearly to middle ; the median vein is marked with black in the outer half of cell.

*Hindwings* : white, with a sinuous-edged blackish border from just beyond middle of costa to anal angle, interrupted opposite the cell, except for a few marginal black scales, by the white ground-colour ; fringe black, except opposite the cell.

Underside similar ; face yellowish ; antennae and thorax black ; abdomen with whitish basal segment.

Expanse of wings : 34 mm.

One ♂ from the Cameroons.

### **Lobocraspeda** gen. nov.

*Forewings* : elongate ; costa straight, curved slightly at base, and convex before apex ; apex rounded ; hindmargin obliquely rounded, very faintly indented at end of vein 2.

*Hindwings* : narrow, elongate ; hindmargin very strongly rounded, forming a semicircle from apex to end of vein 2, where there is a deep angular indentation, the anal region forming an angulated lobe ; in the ♀ this indentation is very faint.

Antennae (♂) pubescent ; palpi porrect, hairy ; tongue and frenulum strongly developed ; pectus and femora hairy ; forewings of ♂ with fovea ; hindwings of ♂ with inner-marginal area sulcate on either side of vein 1.

*Neuration* : forewings, cell about half as long as wing ; discocellular slightly oblique ; first median at one-half, second close before angle of cell ; radials normal ; 7, 8, 9, stalked ; 10 and 11 coincident. Hindwings with costal approximated to subcostal for three-fourths of cell ; cell more than half the length of wing, the discocellular inangulated ; first and second median nervules near together from before lower angle of cell, both curved and shortened.

Type : *Lobocraspeda coeruleostriga* sp. nov.

#### 132. *Lobocraspeda coeruleostriga* sp. nov. (Pl. V. fig. 3, ♂).

*Forewings* : black, with a blue spot near base on the submedian fold, and a vertical slightly sinuous blue fascia at two-thirds, not touching either costa or inner margin ; fringe black, glossy.

*Hindwings* : with the base, costa, and three-fifths of outer margin, including the lobe at anal angle, black, leaving an irregularly semicircular area on inner margin yellow.

Underside dull slaty brown ; the yellow area of hindwings duller. Head, palpi, and thorax black ; abdomen yellow. In the ♀ the yellow becomes dull blurred orange.

Expanse of wings : ♂, 54 mm ; ♀, 58 mm.

Four ♂♂, one ♀, from New Guinea. Mount Alexander to Mount Nisbet, January 1896 (Anthony).

#### 133. *Pitthea fractimacula* sp. nov.

*Forewings* : black, with two oblique red blotches with broken edges, one from below one-third of costa to above inner margin beyond middle, the other from below two-thirds of costa to near middle of hindmargin, the latter bent and narrowed at the lower end.

*Hindwings*: with an irregular red discal blotch from near base to near middle of hindmargin, touching costa beyond middle; fringes of both wings black.

Underside duller. Head, thorax, and abdomen black.

Expanse of wings: 46 mm.

One ♂ on the road between Stanley Pool and Lukolele, 1894 (Harrison).

#### 134. *Turekheimeria argentiplaga* sp. nov.

*Forewings*: velvety black, with an oval oblique white blotch towards apex extending from vein 7 to vein 3, crossed by veins 4 and 6 as black lines, vein 5 remaining white; fringe black.

*Hindwings*: purple-black, the purple tinge in certain lights very brilliant, much more so than in the forewings.

Underside of forewings more brownish, towards base and inner margin smoky white; hindwings occupied by a large oval bluish white patch, the inner and hindmargins and apex broadly black, the costa narrowly black; extreme base orange, edged by a black line. Palpi, upper half of face, vertex, antennae, thorax, and abdomen black; lower half of face white; collar scarlet; pectus orange.

Expanse of wings: 48 mm.

Two ♂♂ taken on the road from Stanley Pool to Lukolele, 1894 (Harrison).

#### 135. *Turekheimeria rubriplaga* sp. nov.

*Forewings*: velvety black, with an irregularly shaped white blotch beyond cell, extending from subcostal vein to near hindmargin, constricted in the middle opposite the cell, and prolonged hindward.

*Hindwings*: black; fringes of both wings black.

Underside of forewings as above, but paler and tinged with reddish along the veins towards base; hindwings deep red, with a narrow crenulated black border from costa before apex, thinning off along hindmargin to a point at anal angle. Pectus, underside of abdomen, and collar red; lower half of face white; all else black.

Expanse of wings: 45 mm.

One ♂ from Sierra Leone.

#### 136. *Xanthomima cyanoxantha pallida* subsp. nov.

Meyrick's type of *cyanoxantha*, a ♀, was from Port Moresby, New Guinea. A pair from Stephansort, German New Guinea, differ from the type in that the slate-coloured central area of the dark marginal fascia has become much paler. In the ♀ the difference is less conspicuous, as only the area opposite the cell of forewings is whitish, with dark striae. On the other hand, in the ♂ there is a whitish fascia from anal angle upwards, widening out beyond the cell into a whitish blotch, with an acute projection inwards along vein 6, while in the hindwings the centre of the black fascia is occupied by a series of yellow lunular blotches, which towards the apex are coalescent. The fringe of both wings is wholly black, without any trace of white dots at the ends of the veins, as described by Mr. Meyrick.

## SUBFAMILY BISTONINAE.

137. *Buzura analiplaga* sp. nov.

*Forewings*: dull white, covered with coarse grey and fuscous speckles; the lines all indistinct; four dark spots on costa, at one-fourth, one-half, three-fourths, and before apex; from the first a curved brown shade arises, representing the basal line; before hindmargin, on vein 5, are two small brown blotches, separated by the pale submarginal line, which rises from the apical spot; above the anal angle is a large patch of brown scales, containing a double strongly angulated brown line, ending in anal angle; dark marginal spots between the veins; fringe whitish; cell-spot obscure, greyish.

*Hindwings*: with no first line; all the marginal markings as in forewings, but the blotch above anal angle narrower.

Underside dull white, with the dark markings showing through. Lower half of face and palpi fuscous; upper part of face, vertex, thorax, and abdomen whitish; basal segment of abdomen with a broad fuscous ring.

Expanse of wings: 45 mm.

One ♂ from Warri, Niger Coast Protectorate, April 1896 (Dr. Roth).

138. *Buzura annulata* sp. nov.

*Forewings*: pale ochreous, dusted in places with fuscous scales; the lines fuscous, accompanied by a yellower shade; first at one-fourth, nearly straight to the submedian, then sharply oblique basewards, preceded by a yellow spot between the median and submedian veins; central shade yellow only, except at costa, where there is a fuscous spot, and on inner margin, where it shows a fuscous lunule; cell-spot not marked; outer line at three-fourths, obliquely curved outwards, bidentate beyond cell, then dentate inwards on veins and forming curves outwards between them to inner margin at four-fifths; submarginal line pale, waved, preceded by lunulate fuscous spots, and opposite the cell by a similar bidentate mark to that of the outer line, where the marginal dusting is also stronger; an obscure row of dark marginal spots, those immediately below apex only distinct; fringe ochreous, chequered with brown.

*Hindwings*: less dusted with dark scales; the central shade fuscous, bent in along the median vein; outer line bent outwards, scarcely bidentate, beyond cell, thick and nearly straight to inner margin; the rest as in forewings.

Underside pale ochreous, undusted; cell-spots fuscous, those in forewings large; the outer lines indicated. Face brown above, yellowish below; pectus and forelegs brown; vertex, thorax, and abdomen ochreous; abdomen with a brown band at base and brown segmental rings.

Expanse of wings: 58 mm.

One ♂ from Bali, March and April 1896 (W. Doherty).

Distinguished from *B. pustulata* Warr. by the absence of the sinus in the outer line below the cell.

139. *Buzura atomaria* sp. nov.

*Forewings*: yellowish ochreous, with an oblique central and marginal yellower fascia; the whole surface dusted with black atoms, most densely in the basal half of wing, the space between the two fasciae alone remaining comparatively free from dark scales and bounded externally by the sinuous edge of the outer fascia;



submarginal line visible only beyond cell, where it is preceded by two blackish lunules and followed by blackish scales.

*Hindwings* : similar, but the dense dusting confined to a diffuse central fascia; fringe of both wings pale ochreous.

Underside rather paler, less densely dusted. Palpi blackish; face yellow, or dark fuscous with lower third yellow; vertex and shoulders yellow; thorax and abdomen ochreous, with darker scales; legs dark grey.

Expanse of wings : 60—68 mm.

Two ♂♂ from Tawaya, north of Palos Bay, Celebes, August and September 1896 (W. Doherty).

These may be the ♂♂ of *Buzura pura* Warr. from S. Celebes, of which only ♀♀ are known.

140. *Phaselia* (?) *dentilinea* sp. nov. (Pl. V. fig. 5, ♀).

*Forewings* : dull whitish, overlaid with pale olive-grey and sparse black scales; the lines black; first from costa at one-sixth, running out along subcostal vein to beyond middle of cell, there strongly angled, and oblique and wavy to inner margin at one-sixth; second from costa before middle, running obliquely outwards to beyond cell-spot, there bluntly angled, oblique inwards to origin of first median nervule, acutely angled basewards, curved outward and oblique to inner margin before middle; outer line at two-thirds, at first shortly incurved, then running outwards, but less obliquely, bluntly angled on vein 5, and oblique to inner margin in middle, just beyond median line, bluntly angled outwards above the submedian vein; submarginal line strongly zigzag, somewhat interrupted; an olive-grey marginal fascia; traversed between the veins by horizontal black streaks, each running to the apex of a black marginal lunule; fringe whitish, chequered with dark at the ends of the veins; cell-spot small, black.

*Hindwings* : with a central biareolate line from inner margin to cell; a curved postmedian line; cell-spot large, black; hindmargin as in forewings, but the submarginal line still more indistinct; the marginal line strongly crenulate, the horizontal black streaks obscure.

Underside dingy grey; both cell-spots large and black; black spots on costa at origin of lines in both wings; the outer line marked across the wing. Face and palpi white below, black above; vertex white; collar black; basal third of antennae white, the rest black. Thorax white, the tips of the shoulders black; abdomen whitish, tinged with grey, each segment behind with a black white-edged ring, the black developed into a double row of small spots along the dorsal area.

Expanse of wings : 35 mm.

One ♀ from S. Africa.

The margin of hindwings is strongly indented beyond the submedian fold, so that the anal angle appears lobed. In the forewings veins 10 and 11 are coincident; in the hindwings the costal is approximated to the subcostal for fully three-fourths of cell.

SUBFAMILY ASCOTINAE.

141. *Alcis contortilinea* sp. nov. (Pl. V. fig. 16, ♂).

*Forewings* : pale pinkish grey, dusted with black; the lines velvety black; first line from costa at one-third, outwardly curved to the median vein, thence oblique to

inner margin close to base; second line from costa at two-thirds, oblique outward to vein 5, where it is strongly angled, then curved inward to middle of inner margin and forming a blunt tooth outward on vein 2; this line forms a small outward tooth on each vein; submarginal line pale, strongly dentate, edged internally with black at costa, in middle, and above anal angle, also edged outwardly with black in middle and above anal angle; discal mark oval, black-edged; a fine black median line starts from a black costal spot touching the discal mark, forms two teeth outwards beyond the mark, then runs basewards and touches the first line on median vein, forms a horizontal loop and three teeth below it, reaching inner margin close to outer line; a row of large black marginal spots between the veins; from the base of the discal mark a black line runs outward to the inner edge of the submarginal line at the middle; fringe pale grey.

*Hindwings*: with black basal line, and straight black line shortly beyond, not reaching costa; a black-edged large discal annulus; curved and dentate black central line; submarginal line pale, edged inwardly with black, the black from inner margin to the angle on the radial being thick and straight.

Underside pale yellowish ochreous, with the cell-spots and lines black. Head, thorax, and abdomen concolorous with wings.

Expanse of wings: 46 mm.

One ♂ from Upoto, R. Congo (Oram).

#### 142. *Aleis faustinata* sp. nov.

*Forewings*: greyish white, dusted with dark grey and ochreous; the lines dark grey, starting from dark costal spots; first at one-fourth of costa, curved, to inner margin near base; second in the middle, bent outwards beyond cell round the blackish cell-spot, then oblique to middle of inner margin; third at two-thirds, sinuous, and marked chiefly by dark dashes on veins, and followed by a fuscous shade; submarginal pale, indistinct, with irregular dark clouds on either side; marginal spots dark grey; fringe pale grey, mottled with dark basal patches.

*Hindwings*: the same, without first line; the cell-spot *beyond* the median line.

Underside greyish ochreous, dusted and suffused with fuscous; cell-spots and middle and outer lines blackish. Face and palpi black and whitish; thorax and abdomen concolorous with wings.

Expanse of wings: 40 mm.

One ♂ from West China.

#### 143. *Calichodes foveata* sp. nov.

*Forewings*: white, speckled with olive-grey; the lines dark olive-grey; first obscure, at one-fourth; second in middle, diffuse and darker, strongly curved round the cell-spot; third at three-fourths, twice sinuated; submarginal waved, formed of olive-grey lunules; connected with outer line below middle, and with hindmargin above the middle by a dark shade; a row of dark marginal dashes; fringe whitish, chequered with grey.

*Hindwings*: with the lines darker and thicker.

Underside dull grey. Head, thorax, and abdomen whitish; face with two black dots, forming a bar, in the middle.

Expanse of wings: 20 mm.

One ♂, one ♀, from Penang, 1896 (Curtis).

The fovea of forewings in the ♂ is conspicuous ; in forewings veins 7, 8, 9, 10 are stalked, 11 being coincident with 10. The insect is superficially very much like *Craspedia fibulata* Guen.

#### 144. *Chogada lacteata* sp. nov.

*Forewings* : white, dusted with fuscous ; the three lines blackish, curved, wavy and denticulate, the outer approaching the median on inner margin ; the first preceded and the third followed by an ochreous fascia ; cell-spot of raised white scales within a sinus of the median line ; submarginal line also denticulate, but thicker than the other lines, followed also by an ochreous shade ; a row of marginal black spots ; fringe whitish.

*Hindwings* : similar, without first line.

Underside white, with large cell-spots, thick postmedian and broad marginal shade blackish.

Head, thorax, and abdomen whitish, dusted with fuscous.

Expanse of wings : 36 mm.

One ♀ from Kinnignuang, New Britain (Ribbe).

#### 145. *Chogada marmorata* sp. nov.

*Forewings* : whitish, tinged in parts with rufous and dusted with fuscous ; first line broad, double, strongly waved and dentate, vertical, at one-third ; median line single, distinct, vertical, and faintly waved, edged with ferruginous scales ; outer line at two-thirds, strongly dentate and double, incurved from vein 4 and closely approximated to median line on inner margin ; marginal area beyond it blackish as far as vein 4, then whitish ochreous, containing a serpentine streak and some dark clouds towards anal angle ; the submarginal line pale and waved, only distinct in the dark apical shade ; a row of black marginal spots ; fringe grey or ochreous.

*Hindwings* : the same, without first line ; the apical patch paler ; both wings with cell-spot formed of glossy ochreous scales, semi-erect, and concealing some black scales beneath their apex.

Underside mealy grey, with the dark markings indistinctly showing through. Head, thorax, and abdomen whitish ; shoulders with a brown line across them in front.

Expanse of wings : 48 mm.

One ♂ from Mauritius.

In this species the palpi are longer than usual ; the hindtibiae greatly swollen ; the middle segments of the abdomen with conspicuous lateral tufts.

#### 146. *Darisa* (?) *dissimilis* sp. nov. (Pl. V. fig. 17, ♀ ; 19, ♂).

♂. *Forewings* : brown or red-brown, speckled with blackish ; the lines blackish, often much obscured by darker shading ; first line at one-fourth, double, bent below costa, sometimes marked by black costal spots, and with dark dots on veins, embracing a black blotch on inner margin ; middle line single, otherwise similar to first line, curved round the black cell-spot ; outer line at two-thirds, double, marked by double black points on veins, and with a blackish blotch beyond the origin of

veins 3 and 4 ; submarginal pale, wavy, lunulate, preceded on costa by a blackish blotch, preceded and followed by similar blotches opposite the cell : a row of black marginal spots between the veins ; fringe concolorous ; the black blotches on the various lines sometimes expanded so as to form a diffuse oblique black shade from base of first line to hindmargin above middle ; at the origin of veins 3 and 4 is a wedge-shaped pale spot, white, ochreous, or pale brown.

*Hindwings* : with double waved antemedian and postmedian blackish lines, with a distinct round black cell-spot in the paler fascia between them ; submarginal line pale, with a dark shade before and beyond it, and preceded opposite the cell by a dark blotch.

Underside ochreous, mottled with fuscous ; the cell-spots distinct ; a broad fuscous or brownish marginal fascia, more complete on the forewings. Head, thorax, and abdomen brown ; underside of abdomen and legs much paler.

♀. Pale ochreous wood-colour, dusted with grey ; the lines marked only by dark dots on veins ; the markings varying much in intensity ; the dark oblique shade from base of first line always more or less indicated ; the pale spot on the median often hardly marked.

Expanse of wings : ♂, 32—39 mm. : ♀, 32—46 mm.

Three ♀ ♀, five ♂ ♂, from Mauritius.

A variable species, but always distinguishable by the oblique dark shade and pale central spot.

#### 147. *Ectropis macariata* sp. nov.

*Forewings* : silky grey, with a slight lilac tinge ; the costa dark grey : the veins in places with black scales ; first line at one-third, vertical, twice curved, dotted on the veins ; median line fine, sinuous, just curved round the dark linear cell-streak ; outer line at two-thirds, very sinuous, its upper half darker and thicker, marked with darker dots on veins, shortly sinuous outwards from vein 3 to 4, widely inwards from vein 3 to 1 : upper half of marginal area more or less brown-grey ; submarginal line pale grey, irregularly waved, preceded by a darker shade, marked with dots on veins : a marginal row of blackish triangular spots ; fringe pale grey.

*Hindwings* : similar, without first line ; median line obsolete before costa ; basal area to outer line paler than marginal area.

Underside dull grey, with dark smoky marginal fascia. Face, palpi, and thorax brownish grey ; abdomen paler grey.

Expanse of wings : 28 mm.

Two ♂ ♂ from Cedar Bay, south of Cooktown, Queensland (A. S. Meek).

The fovea is greatly developed.

#### 148. *Ectropis sabulosa* Warr., Nov. Zool. IV. p. 94.

The type, a ♂, was from Amboina. A ♀ lately received from Doherty, taken in August or September 1896 at Tawaya, north of Palos Bay, Celebes, expands 52 mm. The lines in it are marked by small dark spots on costa, and by very pale olive-ochreous shades, only the exterior and submarginal lines being marked with darker, the submarginal forming a grey blotch before apex. On the underside the wings are thickly dusted with greyish fuscous speckles, and the submarginal line is marked by a dark grey shade, forming a blotch on costa.

149. *Ectropis* (?) *tenuis* sp. nov.

*Forewings*: pale greyish, dusted with darker atoms; a short dark line close to base; first line at one-fourth, curved, marked by dark dashes on veins, most distinct at costa; second line oblique, from costa at three-fourths to two-thirds of inner margin, with long and somewhat irregular dashes on veins; a dark cell-spot; submarginal line formed of angulated dashes, darkest beyond cell; a row of dark marginal spots; fringe concolorous.

*Hindwings*: thickly dusted with darker, but without markings.

Underside dull grey, the markings showing through. Head, thorax, and abdomen concolorous.

Expanse of wings: 32 mm.

One ♀ from Oolassi, N.W. India, August 1893.

In the British Museum is another example, also a ♀, from Dalhousie.

The wings are elongate and semitransparent.

150. *Ophthalmodon ruficornis* sp. nov.

*Forewings*: dull greyish green; costa striated with darker green and fuscous; the lines dark fuscous, tinged with rufous, and marked generally by dark linear dashes on the veins; the exterior line double, incurved below middle, and approaching median line on inner margin: submarginal pale, dentate, preceded by an interrupted series of black wedge-shaped marks, and followed by an obscure row of rounder marks; marginal spots large, distinct; fringe green; cell-spot green, edged with fuscous.

*Hindwings*: similar; the central space dusted with rufous and fuscous scales.

Underside blurred olive-grey; the cell-spots smoky brown; an angulated outer line, and apex of forewings paler; costa ochreous, with black strigae. Head, thorax, and abdomen grey-green; basal segments of the latter with pairs of dark dorsal spots. Antennae with pectinations red.

Expanse of wings: 58 mm.

One ♂ from Tawaya, north of Palos Bay, Celebes, August and September 1896 (Doherty).

151. *Pseudalcis cinerascens* Warr., Nov. Zool. IV. p. 97.

In the series of this insect from Pulo Lant, south of Borneo, there was no ♀. Along with two ♂♂ taken by Doherty at Tawaya, north of Palos Bay, Celebes, comes a single ♀ which, though decidedly different in appearance, evidently belongs here. The ground-colour is whitish—not fuscous grey—irrorated with pale olive-grey, and with all the lines and edges of the discal spots olive-grey. The underside as in the ♂, but paler.

Expanse of wings: 45 mm. only, the smaller of the two ♂♂ being 52 mm., the larger 62 mm., the same as the Pulo Lant examples.

152. *Pseudalcis* (?) *pectinata* Warr., Nov. Zool. IV. p. 97.

The ♂ of this species agrees with the ♀, except on the underside, which, instead of being smoky brown, is whitish throughout, with a dark grey submarginal shade, most distinct below costa of forewing. The ♀ originally described was from Warri, R. Niger: the ♂ is from Nandi, Uganda Protectorate, dated December 1896 (Dr. Anson).



## SUBFAMILY SCOTOPTERYGINAE.

153. *Catascia* (?) *pulverulenta* sp. nov.

*Forewings*: whitish, entirely covered with fuscous atoms: the lines darker; first at one-fourth, waved; median shade just beyond the slightly darker cell-spot: outer line oblique, parallel to hindmargin, closely followed by a fuscous band; submarginal marked by white sagittate marks, preceded and followed by dark fuscous; fringe fuscous, preceded by dark marginal lunules.

*Hindwings*: with basal two-thirds somewhat paler; without first line: the submarginal fascia beyond outer line broader and stronger.

Underside with basal two-thirds of both wings whitish, dusted with fuscous; outer third obscurely fuscous. Head, thorax, and abdomen fuscous.

Expanse of wings: 45 mm.

One ♀ from Taganak Island, N.E. Borneo, June 1893.

## SUBFAMILY SELIDOSEMINAE.

*Parametrodes* gen. nov.

*Forewings*: with costa straight, curved only at base and before apex; apex blunt; hindmargin rounded.

*Hindwings*: ample, disproportionately large compared with forewings; both angles and hindmargin well rounded, the latter slightly elbowed in middle.

Antennae of ♂ pectinated throughout, with the basal joint swollen; forehead with a cone of scales; palpi porrect, somewhat rostriform; tongue and frenulum present; hindtibiae with four spurs.

*Neuration*: forewings, cell half as long as wing: first median at four-fifths second before end, third from end of cell; radials normal: 7, 8, 9, stalked from end of cell; 10 and 11 coincident, anastomosing with the costal. 10 subsequently anastomosing with 8, 9. Hindwings with costal approximated to subcostal for half the length of cell; first subcostal shortly before end of cell; medians as in forewings; no radials.

Type: *Parametrodes dispar* sp. nov.

Allied to *Petelia* H.S.

154. *Parametrodes dispar* sp. nov.

*Forewings*: dull coppery red-brown, with numerous dark fuscous transverse striae: the costal area grey, with dense fuscous striae: first line at one-third, marked by pale yellow spots between the veins: second line at two-thirds, marked by a large pale yellow roundish subcostal blotch, sending a spur outwards along the lower radial, and by a small yellow blotch on submedian fold; a sinuous oblique yellowish mark from apex; cell-spot black, distinct; fringe concolorous.

*Hindwings*: with black cell-spot, and an indistinct curved postmedian line of small yellowish spots, visible only from inner margin to middle.

Underside paler and duller. Head, thorax, and abdomen concolorous with wings; antennae with shaft and basal joint pale golden.

Expanse of wings: 24 mm.

One ♂ from Cedar Bay, south of Cooktown, Queensland (A. S. Meek).

## SUBFAMILY SEMIOTHISINAE.

155. *Azata flexilinea* sp. nov.

*Forewings*: grey-brown, dusted and suffused with darker; the lines dark brown; first from one-fourth of costa to one-fourth of inner margin, rectangularly bent in cell; outer line at three-fourths, strongly angled on vein 6, then obliquely curved to inner margin at three-fourths; cell-spot blackish, followed by a median line shaped like the first line, but much fainter; a dark brown marginal line, swollen between the veins; fringe concolorous, with a whitish line along base.

*Hindwings*: without first line.

Underside whitish, tinged with yellowish, strigulated and spotted with brown; cell-spots and two outer lines slightly marked; a submarginal row of dark and light blotches. Head, thorax, and abdomen fuscous brown.

Expanse of wings: 26 mm.

One ♀ from West China.

156. *Azata luteiceps* sp. nov.

*Forewings*: luteous, much speckled with black, towards hindmargin tinged with flesh-colour; costa speckled with black; a short brown-black subcostal shade from base; the lines ferruginous, starting from blackish costal spots; first close to base, angled below costa, then oblique; second median, slightly oblique; third at three-fourths, faintly curved and bent slightly inwards at submedian fold, followed by a shade which is fulvous near costa, and contains a black spot between veins 3 and 4 and another on inner margin; marginal line blackish, interrupted; fringe with a luteous basal line, dark grey in upper half, luteous chequered with dark below the middle.

*Hindwings*: with only the two outer lines, and the black spot between veins 3 and 4 distinct.

Underside yellowish straw-colour, speckled slightly with brown-black; the lines the same colour; cell-spots distinct; outer line followed by a brown-black shade, which narrows off towards costa of forewings and inner margin of hindwings; fringe yellowish, chequered with brown. Abdomen beneath, legs, palpi, face, vertex, and collar yellowish straw-colour, the face and vertex rather deeper; abdomen above like wings; thorax brown-black.

Expanse of wings: 26 mm.

One ♂ from Tawaya, north of Palos Bay, Celebes, August and September 1896 (Doherty).

The hindmargin of forewings is not excised, of the hindwings subcrenulate and scarcely dentate in the middle. It may be distinguished from *A. mutabilis* from Penmgah, as indeed from all the other species, by the pale head and face.

157. *Gonodela abbreviata* sp. nov.

*Forewings*: whitish, speckled with ochreous and fuscous, the veins ochreous; the costa ochreous, with short dark striae; the lines ochreous; first near base, angled on the subcostal vein, running in along the median, and obliquely curved to inner margin near base; second median, angled below costa, then oblique and bent in on vein 2; outer line at two-thirds, angled on vein 6 and bent outwards below vein 2, marked with blackish between the veins, followed on costa by a sinuous

brown-black blotch, sharply defined by vein 6; marginal area greyish ochreous, separated from outer line by a pale line, interrupted by the ochreous veins; a small dark costal spot before apex; marginal line dark, waved; fringe grey, with a white base: cell-spot dark, distinct.

*Hindwings*: with a black dash at base; an ochreous antemedian line, forming a sinus between median and subcostal veins, containing a large round blackish cell-spot; outer line straight, slender, and double: the rest as in forewings.

Underside white, thickly peppered with brown; the lines brown; a broad submarginal brown fascia, extending to hindmargin above the middle, followed by a white blotch below the middle of both wings and at apex of forewings, these white blotches forming faintly paler spaces in the dark marginal area of the upperside. Head, thorax, and abdomen ochreous, mixed with grey.

Expanse of wings: 36 mm.

One ♀ from Bali, March and April 1896 (W. Doherty).

Like *G. ruptifasciata* Warr. from the Khasias, but smaller; the outer dark fascia reduced to a single blotch on costa of forewings.

#### 158. *Gonodela perconfusa* Warr., Nov. Zool. III. p. 409.

The type originally described was a ♂ from Dili, Timor: the ♀, of which I have now seen an example from Pringabaja, Lombok, captured April 1896, by Fruhstorfer, differs mainly in the fuscous speckling being more mixed with ochreous scales: the inner dark line is nearer the base; an ochreous curved median line touches the black cell-spot, and the postmedian fascia is edged internally by an interrupted black line; the face and palpi are ochreous fuscous, rather than ferruginous. The slight differences here noted may be really sexual, or, as is equally probable, may represent slightly variant local forms.

#### *Hyostomodes* gen. nov.

*Forewings*: with costa straight for two-thirds, then decidedly convex: apex somewhat produced, bluntly rounded; hindmargin oblique, very faintly indented opposite the cell: fovea absent.

*Hindwings*: with hindmargin rounded, slightly toothed at middle and subcrenulate above.

Antennae of ♂ pubescent, of ♀ simple; palpi porrect, laxly scaled; tongue and frenulum present; forehead with a bilobed chitinous projection, enclosing a longer prominence, distinct in ♂, but obscure in ♀.

Type: *Hyostomodes nubilata* sp. nov.

A development of *Tephрина* Dup., with which it agrees in neurulation.

#### 159. *Hyostomodes nubilata* sp. nov. (Pl. V. fig. 11, ♂).

♂. *Forewings*: whitish, thickly dusted and striated with dark grey; costa darker; lines starting from dark costal spots: first and median obscure, at one-fourth and one-half; outer line at three-fourths, starting obliquely from a dark costal triangle, angled acutely on vein 6, then irregularly curved to inner margin at two-thirds: edged on costa with pale, and followed by another dark blotch; marginal area suffused with smoky grey, darker beyond cell and at anal angle, and in places along the outer line; an obscure pale oblique blotch from apex; marginal line diffusely dark grey; fringe grey, with a pale basal line.

*Hindwings* : with diffuse straight antemedian and curved postmedian and submarginal shades, towards the margin tinged with rufous ; cell-spot black.

Underside with the markings less distinct. Head, thorax, and abdomen grey; the frontal prominence brown, without scales.

♀ smaller and paler, more rufous-tinged, with the lines of forewings plainer.

Expanse of wings : ♂, 26 mm. ; ♀, 24 mm.

One ♂, one ♀, from Innani, British East Africa, December 1896 (Dr. Ansorge).

#### 160. *Nadagarodes turpis* sp. nov.

♀. *Forewings* : ochreous drab, thickly dusted with brown atoms ; the lines obscure and accompanied by pale brown shades ; costa marked with shallow blackish spots, at one-fourth, one-half, three-fourths, and again before apex, indicating origin of the lines ; these are all oblique outwards from costa, angled opposite cell, and then oblique inwards ; first line hardly traceable ; second denoted by a brown shade only ; third marked by black points on veins and followed by a broad pale brown shade ; submarginal line formed by brownish lunules, and not angled below costa ; a row of small dark marginal dots ; fringe dull yellowish.

*Hindwings* : with first line basal ; the rest as in forewings.

Underside clear fulvous, striated concisely with black ; a blackish bent cell-mark in forewings and small dot in hindwings ; exterior and submarginal lines marked by rows of distinct black spots on veins, the former followed by a black shade ; marginal line continuous. Face and palpi ferruginous ; vertex, thorax, and abdomen drab.

Expanse of wings : ♀, 40 mm. ; ♂, 36 mm.

One ♂, three ♀ ♀, from Bali, March and April 1896 (W. Doherty).

The only ♂ is paler and less distinctly marked than the ♀ ♀ ; the shade beyond the outer line developed into a conspicuous dark brown-black blotch on and above vein 2 in both wings.

#### 161. *Petrodava olivata* sp. nov.

♂. *Forewings* : olive-green, with minute transverse dark striae ; the lines dull brown ; first at one-fourth, angled on the subcostal, and oblique to inner margin at one-fourth ; second in middle, nearly vertical, starting from a dark costal blotch, and passing over the cell-spot ; outer line slightly wavy, from costa at three-fourths to inner margin before anal angle ; marginal area much suffused with olive-brown ; fringe brown.

*Hindwings* : the same, without first line ; the marginal brown suffusion restricted to an apical patch and a dentate-edged band along outer line ; the top tooth, in the apical patch, is black.

Underside yellow, with red-brown strigae and markings ; marginal area filled up with chestnut-brown, leaving pale patches in middle of hindmargin of both wings and at apex of forewings. Pectus and palpi beneath yellow ; palpi above and face pale lilac-grey ; vertex, thorax, and abdomen olive ; femora yellowish ; tibiae and tarsi reddish grey.

♀ wholly yellow, above and below, with the lines and shades ferruginous red ; marginal area yellow.

Expanse of wings : 40 mm.

One ♂, one ♀, from Dar-es-Salaam, German East Africa.

## SUBFAMILY ENNOMINAE.

**Anisographe** gen. nov.

*Forewings* : with costa nearly straight ; apex produced, acute, falcate ; hind-margin bluntly angled at vein 4, incised below apex, very oblique below middle.

*Hindwings* : kite-shaped, the hindmargin suberemulate and toothed at vein 4.

Antennae of ♂ with short thick ciliated pectinations for five-sixths. Palpi stout, upcurved, the terminal joint short; tongue and frenulum present; hindtibiae hardly thickened, with four spurs.

*Neuration* : forewings, cell half as long as wing ; first median at five-sixths, second close before end of cell ; radials normal ; 7, 8, 9, stalked from just before end of cell ; 10 and 11 coincident, anastomosing with the costal, 10 again anastomosing at a point with 8 and 9; the areole very long and narrow. Hindwings with costal approximated to subcostal for half cell.

Type : *Anisographe dissimilis* sp. nov.

162. **Anisographe dissimilis** sp. nov. (Pl. V. fig. 1. ♂ : 2, ♀).

♀. *Forewings* : yellowish ochreous, with scattered transverse fuscous atoms and striae ; the lines greyish fuscous ; the first at one-third, vertical, shortly angled on the subcostal ; no other lines distinct ; at middle of costa a curved grey line, and shortly beyond it an outwardly oblique grey line ; outer half of wing occupied by a broad greyish fuscous fascia, with diffusely sinuous edges, leaving the hindmargin of the pale ground-colour, and containing a sinuous submarginal line marked only by black vein-dots, the marginal space before apex and below middle angle paler than the space between ; two black submarginal dots between veins 2 and 4 ; fringe concolorous ; a black cell-spot and irregular fuscous blotch below it to the inner margin.

*Hindwings* : with sinuous antemedian and postmedian fuscous grey lines ; a black cell-spot just beyond the former ; marginal third fuscous grey, except a patch below the middle.

Underside the same, but the ground-colour pale straw-colour. Head, thorax, and abdomen concolorous with wings; the palpi darker.

♂ dull reddish brown, dusted with blackish scales; the transverse lines as in the ♀, but obscure ; a broad oblique olive-brown line from apex to inner margin at one-third, edged externally with a pale lilac line ; no trace of the broad greyish fuscous fascia of the ♀. Hindwings with a straight black basal line, being the continuation of the oblique line of forewings; the other lines as in ♀ ; a submarginal denticulated line ; fringe of both wings red-brown. Underside pale pinkish ochreous, coarsely speckled with black, and the lines irregularly marked with blackish: apex of forewings pale; head, thorax, and abdomen pale pinkish ochreous; antennae in both sexes concolorous with ground-colour and speckled with black.

Expanse of wings : 45 mm.

One ♂, one ♀, from Mackay, Queensland ; one ♂ from Cedar Bay, south of Cooktown.

In this last example the ground-colour is nearly that of the ♀, but suffused with pale tawny ; the oblique line is double, and preceded below the median by pale blotches ; the submarginal spots are continued to the apex, and the base of abdomen is marked with a brown-black line.



163. *Anthyperythra* (?) *illitirata* sp. nov.

*Forewings* : pale yellowish, slightly tinged with grey and with a few dark transverse mottlings ; the costa dotted with brown : lines scarcely marked ; the outer line double, at four-fifths, but only marked by short brown streaks on costa and at inner margin ; fringe yellowish : cell-spot hardly visible.

*Hindwings* : with faint cell-spot, and traces of a curved central line from inner margin.

Underside yellow, freckled with pale ferruginous. Head, thorax, and abdomen all pale yellowish.

Expanse of wings : 30 mm.

One ♂ from South-East Africa (Dykes).

In the forewings veins 7, 8, 9, 10 are stalked as in *A. patulata* Feld.; in the type-species *hermearia* Swinh. vein 10, as well as 11, is free.

164. *Auzeodes nigroseriata* Warr., *Pr. Z. S.* 1893, p. 405.

The type from which this species was described is a ♂ in Mr. Elwes' collection, and came from East Pegn. I am now able to describe the other sex. In the ♀ the dark scales of the forewings tend to form four vertical lines or shades, an inner, faint, and a median, outer, and submarginal, more distinct : on all these lines, where they cross the veins, a few whitish scales occur, generally inconspicuous, but on the median line, below costa and above inner margin, distinct ; the four black spots on the outer line that are so prominent in the ♂ are here wanting, or at least very minute and overspread by the whitish ones ; the submarginal line is marked, however, by three black spots edged with whitish scales below the costa ; these in the ♂ are confluent and form a black blotch. The hindwings are much darker, but the three outer lines are present, with the white scales at all the veins.

This ♀, which expands 45 mm., is from Rakit Putus, Selangore, taken in May 1896, at 3000 feet (Curtis).

The cell in both wings is short, hardly more than one-third of the wing.

165. *Auzeodes rufa* sp. nov.

*Forewings* : deep flesh-colour ; the lines slightly darker, curved and faintly waved, at one-third and two-thirds ; cell-spot also darker ; fringe concolorous.

*Hindwings* : similar.

Underside paler ; head, thorax, and abdomen concolorous.

Expanse of wings : 30 mm.

Four ♀♀ from Penang, 1896 (Curtis).

Agrees with *Auzeodes* in neururation, but in shape of wing and character of markings and scaling most like Moore's *Bapta deletaria*.

166. *Eurytaphria minorata* sp. nov.

*Forewings* : grey-green ; costa striated with purplish ; the lines purplish ; first at one-third, curved, and distinct towards inner margin ; outer line at five-sixths, subdentate, the teeth marked darker on the veins, preceded in its lower half by a purplish shade ; cell-spot purplish ; fringe pale yellowish green, without a trace of basal line.

*Hindwings* : similar, with some purplish dots near base.

Underside greyer and duller, with the outer line dark. Face and palpi ferruginous; thorax grey-green; abdomen ochreous grey.

Expanse of wings: ♀, 24 mm.; ♂, 20 mm.

One ♂, one ♀, from Bali, March and April 1896 (W. Doherty).

Very much like *Psilotaphria viridulata* Warr. from the Khasias, but smaller and without the additional outer shade.

The ♂ antennae are fully pectinated, those of the ♀ minutely subserrate.

#### 167. *Fascellina deflayata* sp. nov.

*Forewings*: dull fulvous above the median vein, dull olive-brown below it, the two shades clearly divided by the median; a brown subcostal streak from base, the extreme costal edge being pale with dark dots; towards the apex the fulvous fades into dull olive, and that again into lilac-grey along upper half of hindmargin; first line at one-third, curved, and marked by a fine oblique white costal streak, a brown-black spot in cell with pale scales on it, and another larger below the median nearer the base; outer line from inner margin at two-thirds, oblique to submedian fold, then crenulate and waved, becoming obsolete at vein 6, deep brown, edged with a pearly silvery line; the margin beyond it having a mixture of yellow, fulvous, and grey scales, succeeded by a dark patch along the excision containing three lustrous lunules, preceded and followed by black scales, with two smaller and paler ones above them; fringe pearl-grey along upper half, chocolate-brown below; before the greyish olive apical patch an obscure fulvous streak can be seen, decreasing in width, till the point nearly touches the base of the outer line; its inner edge is marked by a pale yellowish vertical streak from costa.

*Hindwings*: with basal half deep fulvous, outer half reddish brown; the two shades separated by a straight pearly median line, dark-edged on both sides; the inner half of the outer area is tinged with lustrous and edged by a strongly zigzag lustrous line; fringe deep red-brown; fringe of inner margin white.

Underside pale ochreous, with fulvous striae; costa of forewings cream-colour, without striae, as far as the yellow line; beyond this there is a deep chocolate-brown blotch, edged by a fine white line which starts from costa before apex, curves round close to hindmargin, running inward along vein 6, and reaches inner margin along with the inner edge of the patch; the sinus at vein 6 is edged with yellow, contains two or three black spots, and is followed by a triangular white blotch on the hindmargin; hindwings with marginal area bright fulvous, with two deeper curved lines, of which the inner is abbreviated. Head, thorax, and abdomen fulvous, the vertex and shoulders greyer.

Expanse of wings: 45 mm.

Two ♂♂ from Rukit Putus, Selangore, 3000 feet, May 1896 (Curtis).

The hindmargin of forewings only slightly excised above anal angle.

#### 168. *Heteromiza unilinea* Warr., Nov. Zool. IV. p. 118.

The ♀ from which the original description was made came from South Celebes. The ♂, of which I have now seen two examples, from Lepanto, North Luzon, differs from the type ♀ in having, in the forewings, an oblique and somewhat waved dark inner line at one-third, the cell-spot small but distinct, and an obscure submarginal line, emphasised below apex and above anal angle by an aggregation of black scales on each side; fovea small, but distinct.

The antennae of the ♂ are lamellate, and quite simple, without a trace of pubescence ; in Guenée's Australian genus *Idiodes*, which is otherwise very nearly related, they are ciliated ; and the fovea is wanting.

Expanse of wings : 39 mm., the same as the ♀.

#### 169. *Hyposidra caesia* sp. nov.

*Forewings* : slaty black, with an obscure darker curved inner line and oblique postmedian one ; a large deep black spot on discocellular ; a small white spot on costa at two-thirds, a square white blotch between veins 3 and 4, and a similar one on inner margin at two-thirds ; fringe concolorous, with a fine pale basal line.

*Hindwings* : with a white bar from vein 6 to inner margin, the same width as the white spots of forewings.

Underside with the costal spot of forewings absent, and that on the inner margin dull. Head, thorax, and abdomen like wings.

Expanse of wings : 48 mm.

One ♂ from Penang, 1896 (Curtis).

#### 170. *Hyposidra linearis* sp. nov.

*Forewings* : ochreous yellow, dusted with brownish ; the costa brown at base : the lines brown : first at one-third, angled below costa, then oblique to inner margin at one-fourth ; second at two-thirds, oblique and slightly bent on the median to inner margin before middle, joined along inner margin to first line by a brown shade ; submarginal line indistinct, except towards apex, where it is marked by brown blotches between the veins ; apical region tinged with brown ; fringe brownish ochreous, deep brown towards apex.

*Hindwings* : yellower, with an indistinct central brown line, and traces of ante-median and submarginal lines.

Underside brighter, with the markings plainer, deep brown. Head, thorax, and abdomen ochreous ; front of thorax tinged with fawn-colour.

Expanse of wings : 28—32 mm.

Two ♂♂ from Natal (A. J. Spiller).

#### 171. *Hyposidra nivitacta* sp. nov.

*Forewings* : whitish, so thickly clouded and dusted with olive-fuscous scales as to appear of that shade dusted with white ; a clear white elongated blotch towards the end of cell beneath the subcostal vein ; a large milk-white costal blotch at three-fourths, not quite reaching apex ; from its inner corner an interrupted whitish line, formed by blotches between the veins, runs to hindmargin above anal angle ; fringe fuscous, tipped with white between the veins ; cell-spot and veins darker.

*Hindwings* : without white blotches : a dark median shade, and dentate paler postmedian curved line ; the space between the two lines somewhat deeper coloured.

Underside similar. Head, thorax, and abdomen all fuscous.

Expanse of wings : 42 mm.

One ♂ from Iudrulaman, Bonthain, 2300 feet, October 1895 (A. Everett).

172. *Hyposidra unimacula* sp. nov.

*Forewings* : brown-black, with a darker spot on discocellular ; apex with a single triangular white blotch.

*Hindwings* : wholly black.

Underside like upper. Head, thorax, and abdomen all concolorous.

Expanse of wings : 46 mm.

One ♂ from Palawan, September 1894.

173. *Omiza tortuosa* sp. nov. (Pl. V. fig. 24, ♀).

*Forewings* : pale dull olive-green, with darker green spots and blotches ; two irregular contorted fasciae near base, formed of dark-edged green blotches ; an S-shaped mark from costa before middle to median vein, swelling out below the median into a large subquadrate blotch, connected on the submedian fold with the outer of the basal fasciae and also with an oblique fascia running from before anal angle towards apex ; outer half of wing filled up with irregular green spots ; cell-spot oval, pale with dark green edge, lying parallel to hindmargin, followed by a dark horizontal blotch.

*Hindwings* : paler, towards the costa yellowish, with numerous dark green spots and blotches, which tend to form a submarginal and marginal fascia. Fringes of both wings pale green.

Underside of forewings yellow, with red blotches on costa, in cell, and below the median ; the inner margin whitish : apical area from cell above the median vein suffused with olive-green. Hindwings yellow, with blood-red spots and submarginal and marginal fasciae. Palpi reddish ; face yellow ; vertex, thorax, and abdomen green, the last darker along back and yellow on sides and beneath. Antennae with the shaft pale and pectinations black.

Expanse of wings : 49 mm.

One ♀ from the Congo.

*Paracrocoṭa* gen. nov.

*Forewings* : with costa gradually curved from base to apex ; apex blunt, rectangular ; hindmargin slightly convex.

*Hindwings* : with rounded hindmargin, faintly projecting in middle.

Antennae of ♂ strongly pectinated to the tip ; palpi slender, subascending ; tongue and frenulum present ; forewings without fovea.

*Neuration* : forewings, cell half as long as wing ; discocellular vertical in upper half, very oblique below ; first median at two-thirds, second shortly before end of cell ; radials normal ; 7 and 8 stalked from before end of cell ; 9, 10, 11, coincident, anastomosing with the costal, 9 subsequently anastomosing with 8. Hindwings, costal shortly approximated to subcostal ; first subcostal nervule and second median from a little before the end of cell.

Type : *Paracrocoṭa perriata* sp. nov.

174. *Paracrocoṭa epionata* sp. nov.

*Forewings* : yellow, freckled with orange-tawny ; the lines dark brown : first from one-fourth of costa, bent at right angles on the subcostal vein, thence straight

to inner margin at one-third, with a slight outward tooth on the median vein ; enter line from just before apex, retracted to costa, very faintly curved to inner margin at two-thirds, the orange freckles denser beyond it at middle, and a small brown spot between veins 3 and 4 ; fringe yellow ; cell-spot black.

*Hindwings* : with the line curved ; no first line ; the marginal area redder.

Underside paler, the enter line only marked. Head, thorax, and abdomen concolorous with wings.

Expanse of wings : 35 mm.

One ♀ from Assala, Lower Niger (Dr. Crosse).

Differs from the type-species in having the hindmargin of the forewings protuberant at vein 4 and vertical above, the hindmargin of hindwings more prominent at middle. In forewings vein 9 is stalked with 7, 8; 10 and 11 alone being coincident and anastomosing with 12.

#### 175. *Paracrocota perviata* sp. nov.

*Forewings* : pale orange, with rather coarse darker speckles and suffusion ; a slightly sinuous reddish orange line from apex of forewings to beyond middle of inner margin of hindwings, marked externally by white dots on the veins, forked just before apex and enclosing a pale spot on costa ; cell-spot minute, black.

*Hindwings* : without cell-spot ; fringes dark orange.

Underside paler, with the line obscure. Head, thorax, and abdomen all concolorous.

Expanse of wings : 39 mm.

One ♂ from Sirabe, N. Betsileo.

#### 176. *Psilocerea apiciata* sp. nov.

*Forewings* : ochreous, suffused with pale fawn-colour, and dusted with black scales ; the lines ferruginous ; first line very fine, at one-third, oblique from subcostal vein to median at origin of first median nervule, then vertical and concave to the submedian, and straight to inner margin ; enter line nearly straight from apex to inner margin just beyond middle, dark ferruginous, finely edged outwardly with paler ; traces of a dark spot or cloud between veins 3 and 4 ; fringe brownish ; cell-spot black, with some raised pale scales.

*Hindwings* : paler, with the line central, and a small dark cell-spot.

Underside pale greyish ochreous, thickly sprinkled with coarse black scales ; the oblique line obscurely denoted ; the fringes chequered with dark at end of veins. Head, thorax, and abdomen concolorous ; the abdomen reddish-tinged.

Expanse of wings : 39 mm.

One ♀ from Knysna, S. Africa.

#### 177. *Psilotaphria viridulata* sp. nov.

*Forewings* : dull olive, sparsely speckled with brown ; costa thickly marked with brown striae ; the lines brown ; first obscure, at one-third of costa, slightly curved to inner margin at one-fourth ; second line at three-fourths, sinuous, excurved above middle, incurved below, followed in lower half by a second brown line or shade, which swells out into two brown spots between veins 2 and 4 ; fringe concolorous, with a few brown scales along base ; cell-spot distinct, dark brown,



*Hindwings*: with a faint sinuous grey-brown nearly central line; cell-spot brown.

Underside greyer, with a dark outer line, slightly waved at three-fourths of both wings, not coincident with the course of the outer lines above.

Face and palpi dark brown; thorax and abdomen like wings; vertex deeper olive.

Expanse of wings: 26 mm.

One ♀ from the Khasias, August 1896.

#### 178. *Sicyodes ocellata* sp. nov.

*Forewings*: pale olivaceous fawn-colour; the lines slender, slightly paler: first from before middle of costa to inner margin beyond one-third, very slightly curved; second from costa a little before apex to two-thirds of inner margin; both marked with small brown dashes on veins, the first externally, the second internally; cell-spot pale, with a reddish margin; fringe slightly darker.

*Hindwings*: whitish ochreous, tinged with fulvous towards inner and hind-margins.

Underside paler. Head and thorax concolorous with forewings, abdomen with hindwings.

Expanse of wings: 32 mm.

One ♂ from Natal (A. J. Spiller).

#### *Trisyndeta* gen. nov.

*Forewings*: with costa arched from base to apex; apex slightly produced; hindmargin toothed at vein 4, concave above, sinuous below; the anal angle rounded off; fovea absent.

*Hindwings*: kite-shaped; the apex rounded, the anal angle less so; hindmargin with a tooth at vein 4.

Palpi porrect, laxly scaled; third joint small; tongue and frenulum present; antennae of ♂ strongly pectinated; hindtibiae with four spurs.

*Neuration*: forewings, cell fully half as long as wing; discocellular angulated, the lower arm oblique; first median at two-thirds, second shortly before end of cell; lower radial from somewhat above middle of discocellular, upper from upper angle, the subcostal vein shortly depressed at extremity; veins 7 and 8 stalked from just before end; 9, 10, 11, stalked and anastomosing with costal; 9 subsequently anastomosing with 8 just beyond the origin of 7. Hindwings with costal shortly approximated to subcostal; the two subcostal nervules from end of cell; medians as in forewings.

Type: *Trisyndeta subspersa* sp. nov.

#### 179. *Trisyndeta subspersa* sp. nov.

*Forewings*: pale straw-colour; the markings pale brown; the lines interrupted, marked by blotches on the veins; first at one-third, curved below costa; second at four-fifths, starting from a triangular subapical blotch, slightly incurved below middle, to inner margin beyond two-thirds; some indistinct submarginal blotches; marginal dots brown, at the ends of the veins; fringe concolorous; cell-spot dark brown.

*Hindwings* : similar, without first line.

Underside with fainter markings. Head, thorax, and abdomen concolorous.

Expanse of wings : 32 mm.

One ♂ from Nandi, Uganda Protectorate, December 1896 (Dr. Ansorge).

#### 180. *Zamarada ansorgei* sp. nov.

*Forewings* : pale yellowish ochreous, beyond the outer line and along the costa dusted with darker ochreous and grey; the basal two-thirds paler and hyaline; cell-spot brown, distinct; in one example traversed by an ochraceous obscure median shade; outer line brown, twice sinuate, above and below the cell; a faint trace of a submarginal shade in the darker marginal area; a row of dark marginal dashes; fringe concolorous.

*Hindwings* : similar.

Underside rather darker, less ochreous, especially the outer area.

Head, thorax, and abdomen ochreous.

Expanse of wings : 20 mm.

Ten ♂♂ from Kiboko River, British East Africa, November 1896 (Dr. Ansorge).

This species is certainly related to Guenée's *secutaria* (*Stegania*) from Abyssinia, but does not in all points agree with his description; that, however, was made from a single ♀.

#### 181. *Zamarada latimargo* sp. nov.

*Forewings* : opalescent hyaline, striated with pale olive; costa varied with dark fuscous and dull orange striae; marginal area dark olive-fuscous, its inner edge formed by a deep brown line from the subcostal vein, which forms a shallow sinus above the cell, and a deeper one below median, the line itself edged outwardly with silvery scales; a submarginal row of darker lunules between the veins, edged with silvery scales; fringe dark fuscous; the dark marginal fascia occupies one-third of the wing at costa and inner margin, and the lower sinus only extends one-third towards the margin; cell-spot large, dark fuscous, connected with the costal streak; the striae on inner margin appear to form the beginning of a basal patch and central fascia, the latter widening upwards round the cell-spot.

*Hindwings* : similar, the cell-spot smaller; the veins in both wings are marked with fuscous.

Underside the same; the hindwing without cell-spot. Face and palpi brown; vertex and collar ochreous; thorax pale silvery grey; abdomen cinereous.

Expanse of wings : 34 mm.

One ♂ from Upoto, Congo River (Oram).

### SUBFAMILY PROSOPLOPHINAE.

#### *Clepsimelea* gen. nov.

*Forewings* : very narrow and elongate; the costa straight, convex only at apex; apex produced, bluntly rounded; hindmargin very oblique.

*Hindwings* : with the inner margin very short; hindmargin curved; apex slightly produced.

Antennae in both sexes as in the *Erycinidae*, slender at base, gradually thickened into a club, and ending in a point; palpi smoothly scaled, long, angulated, the third joint as long as second, and blunt; tongue and frenulum present; eyes large; hindtibiae long and fairly stout, with four short spurs; the tarsi short.

*Neuration*: forewings, cell half of wing; discocellular angulated, vertical above, oblique below; first median nervule at four-fifths; the median vein itself at the end of cell, shortly bent upwards nearly at right angles; the second median nervule from the bend, the third from the end, but appearing to rise from a bend in the discocellular; lower radial from the angulation in the discocellular, upper from upper angle; veins 7, 8, 9, stalked; 10 and 11 stalked, anastomosing for a long distance with 12. Hindwings with costal free; first subcostal nervule from before the upper end of cell; last two medians close together from lower end; no radial; two internal veins; ovipositor of the ♀ exserted.

Type: *Clepsimelea phryganeoides* sp. nov.

The extraordinary insect which forms the type of this genus stands quite by itself; but, following the neuration and the shape of the palpi, I refer it for the present to the *Prosopopolophinae*; superficially it bears a remarkable resemblance to some of the *Phryganeidae*.

## 182. *Clepsimelea phryganeoides* sp. nov. (Pl. V. fig. 22, ♀).

*Forewings*: smoky brownish grey, with a central darker fascia three times as wide on costa as on inner margin, its centre on the costa again being paler, preceded and followed by a dark line; submarginal line paler, waved, preceded and followed by a darker shade; fringe dark grey.

*Hindwings*: uniform smoky grey, with slightly paler fringe; underside of both wings duller, without markings. Head, thorax, and abdomen concolorous.

Expanse of wings: 28—30 mm.

Four ♂♂, four ♀♀, from Moroka, British New Guinea, 3500 feet, October 1895 (Anthony).

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## ON THE BIRDS COLLECTED BY MR. EVERETT ON THE ISLAND OF SAVU.

By ERNST HARTERT.

THE little island of Savu is situated about midway between Rotti and Sumba, but nearer to Rotti, a small island S.W. of Timor. The channel between Sumba and Savu is about 45 miles wide. Savu, or Rai-Hawu, is about 20 miles in length, low near the coast, but moderately elevated in the interior, and visible at sea for about 20 to 25 miles. It has a sandy and barren aspect. Fresh water is scarce; but cattle, sheep, pigs, fowls, lemons, and cocoa-nuts can be obtained. In the Indian Archipelago Directory is a note saying that the little island of Banjoan, Banjoar, or Rai-Diuwa, 6 miles S.- $\frac{1}{2}$ -S. from Savu and 5 miles in length, is wooded; but Everett writes that it has the same vegetation as Savu, viz. Lontar palms with a little scrub, and therefore he did not consider it worth the expense of visiting it.

I am not aware of any birds having been collected on Savu before. Herr J. G. F. Riedel, who has done so much for ethnology and ornithology (see A. B. Meyer's various publications about his collections), explored the island, and wrote an interesting account of the manners and customs of the natives in the *Revue Coloniale Internationale* for 1885; but he seems not to have collected birds there.

Mr. Everett arrived in Savu on August 7th, 1896, and left again on September 11th. He writes from Sumba: "Savu has fallen sadly short of our hopes. Figure to yourself a bit of Socotra chopped off and planted down here, and you will have some idea of what the island is during the dry season, with a strong parching wind blowing over it all day and every day. The avifauna is scanty, and as for lepidoptera the few that are seen are nearly all blown into mere rags and fragments. Such as they are, however, I send them. There is a black-and-yellow *Troides* in the island, but none of us saw it, and the natives said that it was found only during the rainy season. Five weeks' search produced about a dozen species of beetles. For collecting insects Savu should be visited in the wet season, when there is more water and vegetation. The birds are poor, but some will interest you, I hope. I have sent specimens of every kind of bird I could obtain. Besides those sent, we saw also an *Ardetta*, a large white *Herodias*, and *Tachypetes* (? *minor*); and there exists also a second species of duck, which I failed to get. We collected both on the east and west end of the island, and at an intermediate station."

Besides birds and insects, Mr. Everett sent also some mammals, partly in skins, partly in spirits. They are, according to Mr. Oldfield Thomas, the following species:—

1. *Pteropus campyrus* L.
2. *Pteropus gouldi* Pet. (?).—Agreeing with some specimens in the British Museum marked by Dobson as *Pt. gouldi*, but being considerably smaller than the types.
3. *Scotophilus kuhli* Leach.
4. *Xantharpyia amplexicaulata* Geoff.
5. *Taphozous melanopogon* Hardw.
6. *Mus ephippium* Jent.

The following list of 51 birds clearly shows that the avifauna of Savu is practically the same as that of Timor. The occurrence of typical *Dicaeum mackloti*, *Philemon timoriensis*, *Myiagra rufigula rufigula*, and *Collocalia neglecta* prove this particularly.

None of the species is peculiar to the island, for even the newly described *Gerygone everetti* occurs also on Timor, where H. O. Forbes collected a specimen of it.

Several of the species, such as *Ninox ocellata*, *Strix flammea delicatula*, *Ptilinopus cwingi*, *Turnix maculosus*, *Nycticorax caledonicus*, and *Ardea norae-hollandiae*, are striking instances of Australian forms having remained entirely unchanged on the different islands of the Malayan Archipelago, while other more Malayan, Sundanese, or Moluccan forms are found in many more or less varied local forms on the various islands. These facts allow us to conclude that the Australian forms are not older, but more recent immigrants to the areas under consideration. On the whole the Australian element is small, and there is, from our ornithological knowledge, no absolute necessity to accept that there ever was a land-connection across the Timor Sea from Australia to Timor, in which case we should have to expect a much larger amount of Australian elements (cf. Nov. Zool. III. 1896, pp. 514 and 599).

High credit is due to our friend Mr. Everett for so diligently exploring such small unknown islands as Savu, thus filling out the gaps between the more or less known larger islands, and adding considerably to our knowledge of the fauna of the Eastern Archipelago.

### 1. *Pratincola caprata* (L.).

Several adult *males* and *females*.

### 2. *Cisticola cisticola* (Temm.).

A series showing no special peculiarities.

### 3. *Dicaeum mackloti* Müll. & Schleg.

A good series of both sexes. When recording this species from Lombok on p. 557 of Vol. III. of Nov. Zool. I said, "No difference between specimens from Lombok and Flores." There is, first of all, a penslip, for I meant to say Timor instead of Flores, the bird not being known to occur in Flores at all. Then it must be stated that, in spite of my statement, there are some slight differences, which I did not notice at the time, but now, having before me a good series of well prepared Lombok skins, and a still larger of Savu specimens, which agree with those from Timor, I have to state that Dr. Sharpe, in *Cat. B. X.* p. 26, most justly remarked that the Lombok *male* in the British Museum had a longer and more slender bill than his examples from Timor, and that all our Lombok birds differ in this same point from our Savu series. The majority of the skins from Savu and Timor are also very distinctly more buff on the abdomen, and the flanks are not so greyish. Under these circumstances I am obliged to separate the Lombok bird as

### *Dicaeum neglectum* sp. nov.

This form is evidently closely allied to *D. mackloti* from Timor and Savu, and it may be only a subspecies of it. The same may perhaps with some right be



suggested of *D. splendidum* Büttik. from Djampea (Nov. Zool. III. p. 167), which differs from *D. mackloti* in the lighter red throat, which is surrounded by a much narrower and not blue-black but blackish grey line, and of *D. wilhelminae* Büttik. of Sumba, differing from *D. mackloti* in the absence of the red rump and upper tail-coverts, the broader black line in the middle of the breast, the undoubtedly whiter (not so buff) abdomen and less extended whitish chin-spot, while the beak of both *D. wilhelminae* and *D. splendidum* is more like that of *D. mackloti* than of *D. neglectum*.

The *female* of *D. wilhelminae* has the red rump of its allies, which is absent in the *male* ! Therefore the bird enumerated as (?) *D. mackloti* on p. 581 of Vol. III. of this journal is also a *female* of *D. wilhelminae*, as a large series from Sumba now clearly shows. The *female* of *D. wilhelminae* differs from that of *D. mackloti*, which has the flanks like the abdomen, with only a shade of greyish olive, in having olive-grey flanks with a slight greenish tinge, but it closely resembles that of *D. neglectum*, which however seems to have no greenish tinge on the flanks. For the present it will perhaps be best to treat these forms as species, although they are all closely allied.

#### 4. *Stigmatops ocularis* (Gould).

Evidently common in Savu. ♂ juv. "Iris slate-grey; bill black; legs plumbeous grey."

#### 5. *Philemon timoriensis* (S. Müll.).

A small series from Savu. The *males* are conspicuously larger than the *females*. This species differs from *P. neglectus* Büttik. chiefly in having a conspicuous silvery white line along the sides of the crown, and in the crown itself being paler. Some of the Savu skins show broad whitish edges to the feathers of the interscapulum and sides of breast.

#### 6. *Zosterops citrinella* Bp.

The common *Zosterops* of Savu is *Z. citrinella*—at least I cannot find any characters by which to separate them from that species, though some are rather pale on the abdomen. "Iris sienna-brown; bill black, basal half of mandible lead-grey; legs blackish plumbeous."

#### 7. *Anthus rufulus medius* (Wall.).

This pipit is common in Savu. The specimens are almost pure white below, the spots on the chest well marked, very blackish, the superciliary stripe almost white. In these respects they agree with skins from Lombok, Sambawa, and Sumba, but on the whole they are a little more brownish above than the Sumba, Sambawa, and Lombok birds, which are very dark and very greyish. In any case they differ from *Anthus rufulus rufulus* and *A. r. malayensis*—if the latter can be separated, which is doubtful—in the colour of the underside and superciliary line, and are also above generally less tawny, so that they must be kept as *A. r. medius*. (Cf. Nov. Zool. III. pp. 558, 568, 580, 582.)

8. *Mirafrja horsfieldi parva* (Swinh.).

The small blackish lark mentioned before in Nov. Zool. III. pp. 568, 594, as being found in Lombok and Sambawa is also common in Savu, whence Mr. Everett sent a good series. I now doubt the possibility of separating these birds even subspecifically from the Australian *M. horsfieldi*, unless they are smaller. Whether this is the case or not I cannot decide before having a larger series of Australian specimens for comparison. Even *M. horsfieldi* is very closely allied to *M. jaranica*, being only, perhaps, less brownish and more blackish above. A series of Java specimens is also a special desideratum.

9. *Taeniopygia insularis* (Wall.).

A number of *males* and *females*, but none in full plumage. ♂ immature. "Irides cherry-red; bill coral-red; legs ochreous yellow."

10. *Munia punctulata* (?) *nisoria* (Temm.).

I am fully convinced that a series of immature specimens of a *Munia* of the *punctulata* group from Savu belongs to a distinct subspecies, as they are very pale and the edges of the feathers of the breast and sides of body of a purer black; but as there is no full plumaged adult bird before me I cannot be sure about it, and must record the Savu bird as doubtfully belonging to *M. p. nisoria*.

11. *Munia pallida* Wall.

Fully agree with those from other islands.

12. *Rhipidura celebensis sumbensis* Hart.

One adult *male* and two immature birds from Savu. ♂ ad. "Bill dark brown; maxilla almost black; legs dark brown." Wing 74 mm. (Cf. Nov. Zool. III. p. 585.)

13. *Myiagra rufigula* Wall.

A series of Savu, agreeing with the types from Timor (and the small island of Semaö, close to Timor) in the British Museum.

On p. 171 in Vol. III. of this journal I recorded *Myiagra rufigula* from Djampea and Kalao. When doing so I had noticed that the bills of the Djampea and Kalao skins were somewhat narrow, when compared with those in the British Museum; but as there are only three *males* of that species in the national collection, I did not consider myself justified to attach any importance to that slight difference, and did not even mention it. I now find that the Savu series agrees with the Timor birds in the width of their bills, and it becomes therefore necessary to call the Djampea and Kalao birds by a special subspecific term—

*Myiagra rufigula colonus* snbsp. nov.

Distinguished from *M. r. rufigula* by its bill being only about 7 mm. broad, or even less, at base, while that of *M. rufigula rufigula* is about 8 mm. broad at base. I do not see any other difference between the two forms, except that the tail seems

to me to be longer in *M. r. rufigula*, being generally over 70 mm. long, while it is below or not over 70 mm. long in *M. rufigula colonus*. Although the difference in the width of the bill is only about 1 mm., it is very conspicuous, as confirmed by a number of persons without any ornithological knowledge, who, when I showed them the two birds, have noticed the difference in size of their beaks at a glance.

#### 14. *Gerygone everetti* sp. nov.

A large series of a *Gerygone* from Savu belongs to an undescribed species. The fully adult bird resembles *G. inornata* Wall. from Timor, but it is easily distinguished by its considerably longer bill and more brownish upper surface. The lores are darker than the crown, but in front of them is a tiny whitish spot. Over the eye is a distinct though faint indication of a pale superciliary line. Crown pale brown; back and rump washed with rusty brown. Quills with whitish brown outer edges, secondaries with yellowish brown outer edges. Under surface white; sides of breast washed with brown, flanks with yellowish buff. Wing 50—53 mm.; tail 40—42; culmen from base 14,\* exposed culmen 11; tarsus 20. The *female* is like the *male*, though perhaps a little smaller.

The young of *G. everetti* is lemon-yellow below and slightly more brown on the back. The adult bird has the "iris white; bill black; legs very dark grey, almost black." The young birds have the "irides olive, or light olive yellowish; bill dark brown, basal half of lower mandible pale yellowish; legs dark blackish plumbeous."

Even this bird, though not before described, must not be considered to be peculiar to the island of Savu, as a specimen collected in Timor by Mr. H. O. Forbes belongs to it, and not to *G. inornata*, which name it has on the label.

#### 15. *Lalage timoriensis* (S. Müll.).

Specimens from Savu agree with those from Timor and other localities.

#### 16. *Hirundo javanica* Sparrm.

An old and two young birds, not showing any peculiarities.

#### 17. *Corvus macrorhynchus* Wagl.†

One *female*. Wing 327 mm. See Büttikofer's valuable remarks on the crows inhabiting the Malay Archipelago in *Notes Leyden Museum*, Vol. XVIII. pp. 185-9. These remarks are very correct, but they do not exclude the possibility that *C. macrorhynchus* might yet be separable into some local subspecies. The distribution of *C. enca*, i.e. "Java, Celebes, and Sula Islands," is most remarkable. This species will probably be also found in all the islands between Java and Celebes, or otherwise I should suspect that some differences, after all, exist between *C. enca* from Java and those from Celebes.

\* In *G. inornata* 10 mm.

† Mr. Everett sent this species also from *Lombok*.

18. *Collocalia fuciphaga* (Thunb.).

Two skins and a number of nests from Savu. The nests are "edible nests," built of saliva. Some are very clear, of "good quality" for the market; others have a bluish or purplish colour; and many are interwoven with feathers and bits of grass, forming what is called "second quality." These birds breed in Savu in caves, together with the following species of *Collocalia*; but they place their nests in different parts of the caves. In August they contained no eggs or young.

19. *Collocalia neglecta* G. R. Gray (or subsp. ?).

A number of skins of *C. neglecta* from Savu are above darker and of a deeper colour than the types from Timor in the British Museum, which I described (*Cat. B. XVI.* pp. 510, 511) as having the upper wing-coverts, back, and rump "dark plumbeous grey." That may be said of those collected by Wallace, which, however, are now forty years old, and which are probably faded to a certain degree; but it cannot be said of our fresh Savu skins. In these the upper parts are blackish brown, with a slight greenish gloss; but the narrow whitish edges to most of the feathers give it a sort of hoary, pale appearance. The freshly moulted rectrices are of a brownish black, with a steel-blue gloss. The rather elongated longest under tail-coverts are glossy greenish black, *with white edges*. These latter can also well be traced in one of the type-specimens, while in some of the others these feathers are absent. As it is, my Savu skins must stand as *C. neglecta*, although a fresh series from Timor might possibly show some constant though slight differences, and thus necessitate a subspecific separation.

The nests of this *Collocalia* are built of grass and fibre, with a few feathers and fragments of dry leaves, just held together by a small amount of saliva. They are found in the same caves as those of *C. fuciphaga*, but are placed in different parts of the caves. They contained (August 27th, 1896) no eggs.

20. *Caprimulgus affinis* Horsf.

A large series from Savu. The *males* are represented in different ages, although they were all shot in the month of August. Young *males* resemble the old *females*. The youngest *male* is above much greyer than old ones, somewhat like *C. griseatus* from Luzon. The white spots on the primaries are strongly shaded with buff, those on the third and fourth rusty buff throughout. The rectrices have *no white*, but are barred throughout, as in the adult *female*. The breast is somewhat pale and greyish, the spots on the throat buff instead of white. There are different stages between this and the old *male* with the outer rectrices chiefly white, as described in *Cat. B. XVI.* p. 550.

21. *Merops ornatus* Lath.

Evidently very common. ♀. "Irides lake-red; bill black; feet dusky black."

22. *Halcyon sanctus* (Vig. & Horsf.).

A large series. The colour of the upperside varies much, but it seems that the *female* has the back browner, the wings more greenish, while the *male* has the back

brighter, the wings deeper blue. ♂. "Iris dark chocolate; bill black; basal half of mandible, except edges, white; feet blackish brown."

### 23. *Halcyon chloris* (Bodd.).

A *male* and two *females*. The *male* is more blue and brighter on the crown, back, and wings; the *females* more greenish and brownish, wings and tail not so bright. Wing of ♂ 110 mm.; of the ♀♀ 108 and 110 mm.

### 24. *Centropus javanicus* Dumont.

A very young *male*, just from the nest, which is, I think, referable to *C. javanicus*.

### 25. *Ninox ocellata* (Hombr. & Jacq.).

See Sharpe, *Cat. B.* II. p. 170. A large series from Savu. I cannot find differences to separate them from the true Australian *N. ocellata*, inhabiting Northern and Western Australia. The adult *male* has the "iris golden yellow; bill and cere dark plumbeous, clouded with black; the feet grey, claws black." Young birds have the "irides pale yellowish green or slaty grey; the bill dark lead-colour to almost black; feet whitish to pale greenish grey, claws black."

The *males* are smaller than the *females*. The wing of *females* measures 214—225 mm.; the wing of *males* 208—210 mm. The tail from above looks very uniform, the central tail-feathers being only sometimes spotted with light patches, and the outer webs of the outermost rectrices only rarely having some pale spots, but as a rule not. Young birds are lighter; the dark rufous brownish spots below are paler, narrower, often indistinct; the down is white.

The occurrence of the typical form of this Australian owl in Savu is another corroboration of the theory that the Australian birds are later immigrants, being never or seldom differentiated, while the presumably (in contradiction to Wallace's theory) earlier Indo-Malayan (and Moluccan) elements appear often much changed.

### 26. *Strix flammea delicatula* (Gould).

If it is possible to separate successfully the various races of barn-owls all over the world—and I believe it will be possible to a certain extent—the above will be the name we shall have to give to the owl which is very numerous in Savu, for the specimens from that little island, of which Mr. Everett has sent a very fine series, are quite like Australian specimens, being above very pale and greyish, below white, with more or less, or even almost without, small blackish spots. The similarity between the great number of skins from Savu is very great and striking, although there is of course a certain amount of variation.

The bird from Kalao, mentioned on p. 177 of Vol. III. of this journal, differs from all these in being much more golden-brownish above, especially on the tail. It seems to be more like the Indian form, which is perhaps not separable from the European one.

On the other hand, the Sumba birds (one collected by Doherty, as mentioned on p. 588, and five sent since by Everett) differ in being slightly larger, the bill higher



and longer, and the tail extremely pale buff, almost white, with the dark bars very narrow and almost obsolete. It is necessary to distinguish them as a subspecies, and I call them

*Strix flammea sumbaënsis* subsp. nov.

I hope on a future occasion to return to the history of the various forms of the genus *Strix*, which is apparently very difficult.

27. *Astur torquatus* (Temm.).\*

A series of old and young, some of the latter still showing some down. The old individuals are very pale above and below. It is not impossible that they are separable as a local form, but as all old birds are in somewhat abraded plumage, it is unwise to bestow a name on them. Moreover the young birds agree with those from Djampea and Kalao. The iris of a ♂ ad. is "deep golden yellow; cere ochreous yellow, tinged at the base with green; bill black, median portion lead-grey, base dark green; legs wax-yellow, claws black." In the young birds with some down left (first plumage) the borders of the feathers above are of a very dark rusty rufous colour, while in the full plumaged young bird they fade to a pale rusty brown. On the young ♂ in first plumage the iris is marked as "olive; cere dark olive-green; bill black; legs pale greenish yellow." In a ♀ in the same age: "Iris olive; cere dark olive-green; bill black; legs pale greenish yellow." In a full plumaged much older young ♀: "Bill and cere blackish; legs greenish yellow, claws jet-black."

28. *Tinnunculus moluccensis occidentalis* Mey. & Wigl.

Several old and young. The young bird in first plumage is a little darker above, where it looks very much like a European *T. tinnunculus*, being longitudinally spotted with black on the crown, and with large cross-patches on the back, rump, scapulars, and secondaries. Below rather paler than old birds, and with large black longitudinal spots. The tail is grey with rusty buff tips and with broad subterminal black bars, and shows obsolete black cross-bars.

29. *Haliastur indus intermedius* (Gurney).

Two adult *males*.

30. *Ptilinopus ewingi* Gould.

A careful comparison of the very large series of this species sent by Everett from Savu with the material in the British Museum has convinced me that the so-called

\* Under the name of *Astur torquatus* (Temm.) I mentioned a hawk from Sumba, collected by Doherty. I was then not aware that A. B. Meyer, in an article on birds from German New Guinea and on other Papuan birds, on p. 7 of No. 3, *Abh. und Ber. Mus. Dresden*, 1892-93, had described an *Urospizias sumbaënsis* sp. nov., and I did not have enough material for comparison to separate the bird before me. I have now come to the conclusion that the Sumba bird sent by Doherty is not *A. torquatus*, and that it must bear Meyer's name, although that author described his species from a young bird in widely different plumage.

The old ♂ *A. sumbaënsis* (A. B. Meyer), as I should call this form, differs from *males* of *A. torquatus* principally in the under parts, which are white, barred across with rufous brown bars, slightly shaded with grey, the throat also being cross-barred, but more with a greyish colour, not rufous. Lower abdomen, belly, and under tail-coverts much lighter, but also distinctly barred.

The collar on the hindneck is of a darker rufous.

The thighs are white, with pale rufous cross-bars,

Wing 216 mm.; tarsus 55; tail 170.

*P. flavicollis* from Timor and Flores does not differ in anything from *P. ewingi* of Australia. Count Salvadori, on p. 98 of *Cat. B. XXI.*, says of *P. flavicollis*: "Similar to *P. ewingi*, from which it is doubtfully distinct; the only difference appears to be the slightly yellower tinge of the anterior part of the neck and crop-region." I have not been able to see this supposed difference at all, and our Savu series clearly shows that the yellower tinge is no specific character, even among the *mules* some being very strongly tinged with yellow on the foreneck, others hardly or not at all.

The *male* agrees well with the descriptions of *P. ewingi*, except that most of them (perhaps the older birds) have a distinct rose-purplish spot, of the same colour as the crown, at the base of the lower mandible, like *P. roseicapillus* and others. The nape and hindneck are sometimes strongly tinged with greenish, sometimes almost pure ashy grey. The adult *female* differs from the *male* only in being darker and somewhat more greenish on the crop-region and upper breast, and in the rosy lilac patch on the upper part of the abdomen being less brilliantly developed.

Young birds have the feathers of the upper parts edged with yellow, the head green like the back, the abdomen green with an orange-yellow area on the lower abdomen, the under tail-coverts yellow, not orange. The old *male*, according to Mr. Everett, has the "iris orange-yellow; orbital skin and bill dark leaf-green; feet greyish olive-green." The young birds have the "iris olive; bill dull blackish; feet dark olivaceous grey."

The generic name of this genus has lately been almost universally spelt "*Ptilopus*," but the first original spelling is "*Ptilinopus*."

### 31. *Geopelia maugeus* (Temm. & Knip.).

Several *males*.

### 32. *Turtur tigrinus* (Temm. & Knip.).

Several specimens.

### 33. *Synoicus raalteni pallidior* subsp. nov.

A large series of this rare quail from Savu is so distinctly paler than the specimens from Timor in the British Museum that they must be separated sub-specifically. They are much paler rufous below, and more greyish above. The adult *male* has the "irides dark lake-red; bill lead-grey, culmen black; legs olivaceous." The adult *female*: "Irides very dark lake-red; bill lead-grey, culmen clouded with black; legs light olive-yellow, claws grey." Wing ♂ ad. 88—95 mm.

### 34. *Turnix maculosus* (Temm.) (an subsp.?).

A number of this little *Turnix* from Savu are closely allied to *Turnix maculosus* of Australia, but most of them seem to be somewhat more greyish above, and with a lighter and more distinct middle line on the head. As there is no fully adult *female* in fresh plumage among them (unless the old *female* of the Savu bird never assumes the broad rufous collar?), it cannot be separated, but must stand as *T. maculosus*. A fairly old *female* has the "bill dark brown, base of maxilla and entire mandible greenish yellow; legs yellowish green; iris pale yellow." The old *male*: "Bill dusky horn-brown, yellowish green at base."

35. *Nycticorax caledonicus* (Gm.).

Several adult specimens, one *male* with the sides of the head and neck as dark cinnamon-chestnut as in *N. mandibularis* Grant, this colour almost reaching across the foreneck, but leaving the chest pure white in the middle. The Savu birds are in every respect like those from Australia. The other adult *males* have the sides of head and neck much paler. A young *female* in its first plumage has the "iris golden yellow; bill black, base and edge of maxilla and mandible green; legs pale whitish green, claws dark brown."

36. *Ardea novaehollandiae* Lath.

♂ ad. "Irides pale whitish yellow; eyelids dull green; bill black, basal half of mandible pale lead-grey; legs ochreous yellow, clouded with dark brown in front of tarsus and on upper surface of toes, claws horn-brown."

37. *Hypotaenidia philippensis* (L.).

Several middle-aged and rather young birds, but no fully adult ones. Middle-aged: "Iris burnt sienna-colour; bill brown, mandible paler; legs greenish grey, claws pale greyish brown." Young birds with the upper parts somewhat darker; sides and flanks, and whole breast and abdomen, except middle of lower abdomen, barred whitish and black. "Irides chocolate in a *female*, dark olive-yellow in a more advanced *male*; bill dark brown; legs greyish white, or dark olivaceous grey in the more advanced *male*."

38. *Hypotaenidia striata* (L.).

An adult *female*. "Irides orange-brown; bill slaty brown, base of maxilla and basal half of mandible dull pink; legs dark slate-grey, with brownish tinge."

39. *Poliolimnas cinereus* (Vieill.).

Two *females*. "Iris brown; bill greyish brown, nearly black on the culmen; legs greenish plumbeous."

There is also a quite black pullus in down, which I believe to belong to this species.

40. *Stiltia isabella* (Vieill.).

Several specimens from Savu.

41. *Arenaria interpres* (L.).

One *female*, September 7th.

42. *Charadrius dominicus fulvus* (Gm.).

Common in August and September.

43. *Ochthodromus geoffroyi* (Wagl.).

♂, ♀, shot on August 27th.

44. *Aegialitis peroni* (Bp.).

Common in August.

45. *Limonites ruficollis* (Pall.).

Young *male* and old *female* shot on August 27th.

46. *Tringoides hypoleucus* (L.).

One skin, August.

47. *Numenius phaeopus variegatus* (Scop.).

One *female*, August.

48. *Sterna bergii* Licht.

♀. "Iris dark brown ; bill greenish yellow ; feet black."

49. *Anas superciliosa* (Gm.).

Not rare on the island.

50. *Phalacrocorax melanoleucus* (Vieill.).

One specimen.

51. *Phalacrocorax sulcirostris* (Brandt).

One specimen. I am following Salvadori and others in calling this bird *P. sulcirostris*. It certainly differs conspicuously from *P. fuscicollis* of India, which it resembles very much at first sight in the colour of the wing-coverts and upper parts generally, and especially in its shorter bill; but some skins from Australia have shorter and finer beaks again, while otherwise resembling our specimens from the Malay Archipelago. There is probably one species in India, *P. fuscicollis*, and one in the Archipelago reaching to Australia, which is found in two forms—a finer billed one in Australia, a stouter billed one in the Malayan Islands.

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## DIE PASSALIDEN DICHOTOMISCH BEARBEITET.

VON A. KUWERT.

2<sup>TER</sup> THEIL.—DIE ARTEN.

(1 Theil siehe Nov. Zool. III. p. 209.)

## 1. GRUPPE: AULACOCYCLINAE.

**Ceracupes** Kaup, *Mon.* p. 16.

1 (1a). Das Kopfhorn ist an der Spitze ausgekerbt, auf der Rückseite flach, granulirt, etwas gebogen. Das Halsschild mit stark vorgezogenen Vorderecken, tiefen Randfurchen und Buchten und winkliger, schräge nach vorne ziehender, tiefer Narbe. Die gewölbten Flgd. punktirt gefurcht. Hinterlappen des Prosternums dornartig lang. Metasternum abgerundet, ohne Punkte. Seitenfurchen desselben schmal. Die Zacken des Vorderzahns der Maxillen scharf. Die Rückseite des Oberzahns der Maxillen schräge der Länge nach cannelirt oder gerunzelt.

Länge ohne das Geweih 22 mm., mit dem Geweih 23·3 mm.; Breite 8·7 mm.; Flgdlänge 13 mm.

*Hab.* Tibet; Nepal.

1. *C. fronticornis* Westw., *Ent. Mag.*

p. 124 (1841); Kaup, *Mon.* t. 3. f. 2.

Syn.: *bihastatus* Perch., *Mag. Zool.* 1844. t. 134. f. 3; Burm., *Handb.* V. p. 517.

1a. Das Kopfhorn ist an der Spitze nicht ausgekerbt, sondern gerundet; sein oberer Rand ist punktirt, länger und schmaler als bei *fronticornis*. Die Zähne auf den Maxillen sind auf der Hinterseite rauh gestreift, vorne convex und glatt. Die Narben des Halsschildes bilden ein punktirtes S. Das glänzende Schildchen an den Seiten dicht punktirt. Mittelschienen mit 2, Hinterschienen mit 1 Dörnchen.

Alles nach Stoliczka; mir fremd.

L. 22 mm.; Br. 6·8 mm.; Flgdl. 12·3 mm.

*Hab.* Bengalen.

2. *C. austeni* Stol., *Journ. As. Soc. Beng.* 1873.

**Caulifer** Kaup, *l.c.* p. 22.

Clypeusrand granulirt. Die vertiefte Stirn glatt. Hinter den Augen und am Rande des Hinterkopfes punktirt. Nur hinter der Spitze der Augenwände nach vorn in der Mitte vorspringend, mit behaarten Punkten (*also wohl hinter dem Kopfhorn?*). Halsschild vorn abgerundet, mit schmaler, unregelmässiger Bucht und schmaler, schief nach vorne gerichteter, punktirter Narbe. Schildchen und Taille glatt. Flgd. (in den Streifen) namentlich an den Seiten deutlich punktirt. Vorderschienen mässig breit. Mittel- und Hinterschienen gedorn. Behaarung dürrig.

Anscheinend bisher erst 1 Stück gefunden, das im Darmstädter Museum sein dürfte. Mir ist die Art fremd geblieben. Alles nach Kaup.

L. 27 mm.; Br. ?; Flgdl. 17 mm.

*Hab.* Sydney.

1. *C. macleani* Kaup, *l.c.* t. 3. f. 7.



**Taeniocerus** Kaup, *l.c.* p. 20.

1 (1a). Vordertibien nach aussen gerundet und spatenförmig verbreitert. Clypensleiste ziemlich breit und granuliert; Stirn mit Querrunzeln. Die stumpfen Leisten des niedern Kopfhorns bilden ein breites, glattes Thal. Prothorax mit wulstigem Rand, tiefer Bucht und sehr grosser punktirter Narbe, die fast bis zur Bucht des vordern Randes reicht. Schildchen glatt. Flgd. mit deutlichen Furchen und feinen Punkten.

Nach Kaup; mir fremd.

L. 21 mm.; Flgdl. 13 mm.

*Hab.* Borneo. 1. *T. platypus* Kaup, *Col. Hefte* III. p. 5 (1868); *Mon.* p. 21.

1a. Vordertibien, wenn auch breiter als gewöhnlich, doch nie spatenförmig verbreitert.

2 (2a). Die Halsschildnarbe klein, eiförmig, etwas schräg. Clypensvorderrand granuliert. Tailenlatzseiten mit Quereindruck, welcher sich auf die Seitenstücke der Taille fortsetzt.

3 (3a). 26 mm. lang. Die Granulirung des geraden Clypensvorderrandes gröber; hinter ihm das Stirnfeld, zumal an den Seiten, deutlich punktirt. Die Augenwand abgerundet, stumpfwinklig. Halsschildbuchten ohne grosse Punkte. Halsschd. dicht mikroskopisch fein punktirt und reticulirt. Flgd. mit flachen Furchen und an den Seiten ziemlich deutlich darin punktirt. Intervalle faltig. Unterlippe in der Mitte glänzend, an den Seiten ohne Narben, dicht punktirt und behaart, mit vorne zugespitzten Lappen. Hinterer Prosternallappen spitzig. Mittelschienen mit 1 starken Dörnchen. Von den Vorderseiten des Kopfhorns eine Kante oder feine Leiste gegen die aufgebogenen Enden des Clypensvorderrandes vor dem Abhang der Augenwand hinweg. Diese auf ihrem Kamme dicht und fein punktirt.

L. 26 mm.; Br. 8 mm.; Flgdl. 15 mm.

*Hab.* St. Denis, Réunion.

2. *T. deyrollei* Kaup, *Col. Hefte* III. p. 7 (1868); *id.*, *Mon.* p. 20.

3a. 23 mm. lang. Die Granulirung des mehr einwärts gebogenen Clypensvorderrandes etwas feiner. Hinter ihm das Stirnfeld unpunktirt. Die auf ihrem Kamme nicht punktirte Augenwand ganz abgerundet. Die tiefen Halsschildbuchten auf dem Grunde mit einigen grössern Punkten. Auch die Rückenfurchen der Flgd. mit ziemlich kenntlichen Punkten. Intervalle wenig oder nicht faltig. Unterlippe wie beim vorigen; desgleichen das Prosternum. Mittelschienen mit 1 Dörnchen. Von den Vorderseiten des Kopfhorns eine Kante gegen die aufgebogenen Enden des Clypensvorderrandes vor dem Abfall der Augenwand hinweg.

L. 23 mm.; Br. 7.5 mm.; Flgdl. 13 mm.

*Hab.* Gayndah, Queensland.

3. *T. mastersi* MacLeay, *Tr. Ent. Soc. N.S.W.* II. p. 174.

2a. Die Halsschildnarbe grösser, haken- oder S-förmig, oder geweih-förmig.

4 (4a). Die Halsschildnarbe haken- oder S-förmig.

5 (5a). Tailenlatz auf der Mitte mit Längsfurche, an den Seiten mit zerstreuten, groben Punkten, ebenso die Mesosternalseitenstücke mit zerstreuten Punkten.

Halsschild mit tiefen, punktirten Buchten und Seitenfurchen, tiefen S-förmigen, punktirten Narben. Das Kopfhorn mit ziemlich langem, punktirtem, schmalem Thal zwischen den Leisten. Sämtliche Flgdfurchen gleichmässig deutlich punktirt. Unterlippe auf der Mitte rechtwinklig vorgezogen und eingedrückt, mit behaarten und punktirten spitzen Seitenlappen. Mittelschienen mit 1 Dorn. Unterseite der breiten Vorderschienen vorne querrunzlig, daselbst ohne Kiel oder Längsfurche. Schildchen an den Seiten punktirt.

6 (6a). Die aufgebogenen Enden des Clypeus vor der Augenwand rechtwinklig oder ziemlich rechtwinklig.

L. 27 mm. ; Br. 9 mm. ; Flgdl. 17 mm.

*Hab.* Malacca; Labuan.

4. *T. bicanthatus* Perch., *Mag. Zool.*

p. 41. t. 79. f. 3 (1841); Burm., *Handb.* V. p. 516; Kaup, *Col.*

Hefte III. p. 6 (1868); id., *Mon.* p. 21. t. 3. f. 6.

6a. Die aufgebogenen Enden des Clypeus vor der Augenwand abgerundet oder nach hinten stumpfeckig. Der Clypeusrand granulirt.

7 (7a). Die Seitenrinnen des Metasternums vorne grob und zerstreut punktirt.

L. 27 mm. ; Br. 9 mm. ; Flgdl. 17 mm.

*Hab.* Borneo.

5. *T. bicanthatus* ab. *perturbans* Kuw., ab. nov.

7a. Die Seitenrinnen des Metasternums vorne fein und dichter punktirt.

L. 23—24 mm. ; Br. 8 mm. ; Flgdl. 15 mm.

*Hab.* Borneo.

6. *T. imitator* Kuw., *Berl. Ent. Zeit.* 1892.

5a. Taillenlatz auf der Mitte ohne Längsfurche, mit einem sich über die Nähte hin fortsetzenden Quereindruck an den Seiten, glänzend, unpunktirt. Halsschild mit tiefen, punktirten Buchten und Seitenfurchen und tiefen S-förmigen, punktirten Narben. Der überaus fein gerandete Clypeusvorderrand an den Seiten vor der Augenwand zu gerundeten Lappen aufgebogen. Die Augenwände abgerundet. Die Furchen der Flgd. ziemlich tief, oben ohne Punkte, an den Seiten fein punktirt. Metasternal Schild auf der Mitte mit feinem Längskielchen. Die Kopfhornleisten ein kurzes Hufeisen bildend.

L. 15.5 mm. ; Br. 5 mm. ; Flgdl. 9.5 mm.

*Hab.* Malacca ; Borneo.

7. *T. parvus* Kuw., *l.c.*

4a. Die Halsschildnarben sind hirschgeweihähnlich, indem sich aus der Biegung derselben nach oben noch Zacken entwickeln. Taillenlatz an den Seiten mit einem sich über die Naht fortsetzenden Quereindrucke.

8 (8a). Käfer klein. Metasternal Schild mit Anfang feiner Kielung auf der Längsmitte. Dem vorigen überaus ähnlich, indess sind die Furchen der Flgd. überall stark punktirt und die Kopfflächen überall fein granulirt. Die Mitte der Unterlippe glänzend, mit rechtwinkliger Spitze. Mittelschiene mit Dorn.

L. 18 mm. ; Br. 6 mm. ; Flgdl. 11 mm.

*Hab.* Malacca.

8. *T. pygmaeus* Kuw., <sup>Kaup</sup> *l.c.*

8a. Käfer grösser. Metasternal Schild ganz glänzend, auf seiner Mitte mit oder ohne einige feine Punkte. Die Kopfflächen glänzend. Halsschild mit tiefen, punktirten Buchten, punktirten Randfurchen und rennthierhornartig geformten, punktirten Narben. Mittelschienen mit einem stärkeren, Hinterschienen mit einem

schwachen Zähuchen. Clypeusleiste nicht oder kaum granuliert. Schildchen glatt. Die Leisten des Kopfhorns nach vorne allmählich aufgerichtet und isolirt.

L. 22·5 mm.; Br. 7·2 mm.; Flgdl. 13 mm.

*Hab.* Sikkim; Assam; Malacca; Siam. 9. *T. bicuspis* Kaup, *Col. Hefte* III. (1868); id., *Mon.* p. 21.

**Aulacocyclus** Kaup, *Col. Hefte* III. p. 4 (1868).

1 (1a). Der Taillenlatz des 41 mm. langen Thieres in den hintern Ecken neben der Naht punktiert, auch ausserhalb der Naht die Taille daselbst punktiert. Hinterschienen ohne Ansatz zur Zahnbildung. Das hoch aufgerichtete Kopfhorn in der Mitte etwas nach hinten übergelegt, dann nach vorne sich neigend, auf dem Rücken des obern Theiles ausgefurcht und mit getheilter Spitze. Clypeusrand stark granuliert. Die beiden ersten Fühlerlappen etwa  $2\frac{1}{4}$  mal so lang als einzeln dick. Kopfflächen glänzend, unpunktirt. Halsschild mit unpunktirten Buchten, kleinen Narben und einzeln punktirten Seitenrandfurchen. Obere Flgdfurchen durchaus unpunktirt, Seitenfurchen mit Punktirungsandeutung. Metasternum vorne in der Hüftenumgebung dicht punktiert. Lang gebaut.

L. 41 mm.; Br. 13 mm.; Flgdl. 26 mm.

*Hab.* Australien. 1. *A. teres* Perch., *Mag. Zool.* p. 39 (1841); Burm., *Handb.* V. p. 515; Kaup, *l.c.* III. p. 9 (1868); id., *Mon.* p. 15.

1a. Taillenlatz niemals in den hintern Ecken deutlich punktiert. Käfer immer kleiner.

2 (2a). Taillenlatz vorne neben der Naht schmal und dicht punktiert, und daselbst dicht und meistens kurz behaart.

3 (3a). Mittel- und Hinterschienen mit einem starken Dorne. Das hoch aufgerichtete Kopfhorn gleichmässig nach vorne gebogen, auf seinem Rücken meistens der ganzen Länge nach ausgefurcht. Der gerade Clypeusrand sehr fein granuliert. Unterlippe auf der Mitte ausgefurcht. Die Kopfflächen glänzend, unpunktirt. Halsschild glatt, mit kleinen, nierenförmigen, punktirten, tiefen Narben, mit undicht gereiht punktirten Buchten und Seitenrandfurchen. Obere Flgdfurchen mit sehr schwacher, Seitenfurchen mit etwas deutlicherer Punktirung. Die beiden ersten Flaggenlappen etwa  $2\frac{1}{2}$  mal so lang, als einzeln dick. Ob nur Variation von *edentulus*?

L. 28 mm.; Br. 11 mm.; Flgdl. 17 mm.

*Hab.* Australien. 2. *A. tercoides* Kuw., *Deutsche Ent. Zeit.* 1892.

3a. Nur die Mittelschienen mit 1 Dorne. Das Kopfhorn als Säule steil aufrecht, unten hinten etwas überhängend, an seiner Spitze ausgerandet, auf der Rückseite schräge abfallend. Die S- oder bogenartig geformten Narben des Halsschildes punktiert; seine Randfurchen und Buchten undeutlich punktiert. Oberlippe ziemlich tief ausgeschnitten. Flgdl. oben mit unpunktirten, an den Seiten mit punktirten Furchen. Vorletztes Bauchsegment hinten weit gerundet nach hinten auf seiner Mitte vorgeschoben und daselbst mit dem Hinterrande des Abdominalsegments parallel. Die sehr schmale Seitenpunktirung des äussern Taillenlatzrandes ist meistens ohne deutliche Behaarung. Flaggenglieder etwa 3 bis  $3\frac{1}{2}$  mal so lang als dick. Metasternalplatte hinten auf der Mitte mit kielartiger Erhöhung und

jederseitig daneben etwas eingedrückt, daselbst mikroskopisch punktiert. Das Kopfhorn in seiner Stärke etwas divergirend.

L. 26 mm.; Br. 8·3 mm.; Flgdl. 16 mm.

*Hab.* Australien.

3. *A. alicornis* Kuw., *l.c.*

2a. Taillenlatz entweder gar nicht oder in den Grübchen neben der Seite punktiert.

4 (4a). Taillenlatz in den Grübchen nahe der Naht punktiert. Das Kopfhorn hinten kaum überhängend, steil aufgerichtet, oben rückwärts abgeschrägt und gefurcht. Die Halsschildnarben klein, gekrümmt, punktiert. Mittelschienen mit stärkerem, hintere mit schwächerem Dorne. Randfurchen und Buchten des Halsschildes punktiert. Flgdfurchen sichtlich punktiert. Schildchen nur vorne an den Seiten mit feinen Längspunkten.

L. 25 mm.; Br. 8 mm.; Flgdl. 16 mm.

*Hab.* Australien.

4. *A. foveipunctatus* Kuw., *l.c.*

4a. Taillenlatz unpunktirt oder nur mit einzelnen unsichern Punkten zu den Seiten der Mitte.

5 (5a). Die 2 ersten Lappen der Flagge sind, abgerechnet die Dicke des Fühlergliedes, nur etwa 3 mal so lang als breit, oder sehr wenig länger, niemals 4 bis 6 mal so lang.

6 (6a). Der Clypeusrand in der Nähe der Augenwände im schwachen Bogen zurückgebogen, stark granulirt. Mittelschienen mit einem deutlichen, Hinterschienen mit einem sehr feinen Dörnchen. Das Kopfhorn erst gerade in die Höhe steigend, dann plötzlich nach vorne geneigt und auf diesem nach vorne geneigten Theile (und zwar bei einem Stücke auf der Mitte mehr grubenartig) ausgefurcht. Das glänzende, unpunktirte Halsschild mit bogenartigen, punktirtten, schrägen, linearen Narben und unsicher punktirtten Buchten und Seitenrandfurchen. Sämtliche Flgdfurchen deutlich an den Seiten stärker punktiert. Metasternum vor den Hinterhüften (immer?) mit einem Grübchen. Zweiter Bauchring auf der Mitte mit einem starken Wärrchen.

L. 22 mm.; Br. 7·1 mm.; Flgdl. 13 mm.

*Hab.* Cap York, Australien.

5. *A. rotundatoclypeatus* Kuw., *l.c.*

6a. Der Clypeusrand vor den Augenleiten nicht zurückgebogen, höchstens etwas anwärts gebogen.

7 (7a). Derselbe trägt auf seiner Mitte eine nach innen gerichtete schwache Verstärkung und erscheint mehr durch diese als durch wirkliche Biegung sehr schwach 2bogig; er ist nicht granulirt. Mittelschienen mit einem schwachen Dörnchen, hintere mit schwachem Ansatz zu einem solchen. Taille mit schwachem Quereindruck an den Seiten. Kopfhorn senkrecht, an der Spitze nach hinten schräge abgeschnitten, auf der Abschnittfläche mit tiefem Längsgrübchen. Halsschild mit schrägen, bogigen, unpunktirtten Narben und unpunktirtten Buchten und Seitenrandfurchen. Alle Flgdfurchen deutlich und ziemlich gleichmässig stark punktiert. Die Znnge des ersten Bauchringes zwischen den Hinterhüften löffelförmig ausgehöhlt; der 2te dahinter mit Andeutung einer Längswarze.

L. 22 mm.; Br. 7·2 mm.; Flgdl. 13 mm.

*Hab.* Fly-River, Neuguinea.

6. *A. arcuatoclypeatus* Kuw., *l.c.*



7a. Der Clypeusraud in der Mitte ohne Verstärkung nach rückwärts.

8 (8a). Käfer nur 22·5 mm. lang. Hinterende der Metasternalplatte sehr fein (fast mikroskopisch) punktiert und mit schwachem Mittelkiele. 2ter Hinterleibsring auf der Mitte mit sehr schwacher, warziger Anschwellung. Mittel- und Hinterschienen mit 1 Dörnchen. Die Zunge des ersten Leibringes zwischen den Hinterhüften löffelförmig ausgehöhlt. Das Kopfhorn erst steil ansteigend und dann fast rechtwinklig gebrochen, oben schwach ausgefurcht. Halsschild mit schrägen, bogigen, unpunktirten Narben, unpunktirten Buchten und Randfurchen. Flgdfurchen oben fast punktlos oder schwach punktiert, an den Seiten deutlich punktiert. Taillenlatz an den Seiten mit wenigen Pünktchen. Abdominalnarbe linienartig, an jedem Ende zugespitzt. Kopfhäler glatt. An der Augenwand in der Richtung des Kopfhornes eine grosse Beule. Die 2 ersten Lappen der Flagge nur  $2\frac{1}{2}$  mal so lang, als einzeln dick. (1 Stück).

L. 22·5 mm. ; Br. 7·3 mm. ; Flgdl. 13 mm.

Hab. Anstralien (?).

7. *A. fracticornis* Knw., l.c.

8a. Käfer immer grösser.

9 (9a). 24 mm. lang.

10 (10a). Das kleinere Kopfhorn ähnlich wie bei *A. alicornis* vorne steil ansteigend, von der Spitze nach hinten abgedacht, an der Spitze nach hinten ausgekehlt, mehr hügelartig. Die kürzere Zunge des ersten Segments zwischen den Hinterhüften breiter, tief ausgehöhlt, nicht zugespitzt. Die obere Furchen der Flügeldecken ohne Punktirung. Nur die Mittelschienen mit 1 Dörnchen. Das glatte Halsschild mit kleinen, bogigen, undeutlich punktirten, tiefen Narben, tiefen Buchten und kaum punktirten Randfurchen. Unterlippe mit Furchenandeutung auf der Mitte. Oberlippe stark ausgeschnitten. Taillenlatz hinten matt und längsrinzig, nach den Seiten zu mikroskopisch punktiert. Die 2 ersten Flaggenlappen stark  $3\frac{1}{2}$  mal so lang als dick. Kopfhäler glatt; die feine Clypensleiste ohne erkennbare Granulation.

L. 24 mm. ; Br. 8 mm. ; Flgdl. 14·5 mm.

Hab. Nias.

8. *A. rosenbergi* Kaup, Col. Hefte III.

p. 7 (1868) ; id., Mon. p. 16.

Syn. : *percheroni* Kaup, Col. Hefte III. p. 8 (1868).

10a. Das etwas höhere Kopfhorn vorne weniger, hinten etwas stärker überhängend, auf seiner abgeschrägten, hintern Fläche von der Spitze herab mit Längsfurche. Die längere Zunge des 1. Segments zwischen den Hinterhüften nach vorne spitzig. Obere Furchen der Flgdn. ohne Punktirung. Mittelschienen mit einem Dörnchen. Halsschild mit kleinen, bogigen, punktirten Narben, undeutlich punktirten Buchten und Seitenrandfurchen. Taillenlatz glatt, glänzend. Oberlippe stark ausgeschnitten. Kopfhäler glatt. Clypensleiste ohne erkennbare Granulation. Dieselbe ist am Ende vor dem Augenkiele zu einem rechtwinkligen Zahne aufgebogen, von welchem eine feine Furche unter das Kopfhorn zieht und welcher bei *rosenbergi* weniger scharf und niedriger ist. Mittelschienen mit einem Dörnchen, hintere mit einem Ansatz zu einem solchen. Metasternalplatte hinten mit Längskielandeutung auf der Mitte, daneben seitwärts etwas niedergedrückt.

L. 25·2 mm. ; Br. 8 mm. ; Flgdl. 15·8 mm.

Hab. Australien.

9. *A. alicornis* ab. *sulcatipons* Kuw., l.c.



9a. 29 mm. lang.

11 (11a). Das hohe Kopfhorn vorne mit bogigem Ausschnitte, nach vorne ziemlich weit, nach hinten weniger weit überhängend, vorne ziemlich hoch angerichtet, oben auf der schrägen, nach hinten abgedachten Fläche mit Längsfurche. Obere Furchen der Flgdn. mit schwächerer Punktirung als die Seitenfurchen. Mittel- und Hinterschienen mit 1 Dörnchen. Halsschild mit punktirten, bogenförmigen Narben, punktirten Buchten und Seitenrandfurchen. Tailenlatz glänzend, hinten auf der Mitte matt, an den Seiten bisweilen mit einzelnen Punkten. Clypensleiste fein, glänzend, nicht granulirt. Innere, auch äussere, Augenwand gegen den Clypensrand zu schwachem Zähnechen erhoben, so dass an jeder Seite 2 Zähne sind.

L. 28—29 mm.; Br. 9 mm.; Flgdl. 17·5 mm.

Hab. Gayndah, Queensland.

10. *A. kaupi* MacLeay, Tr. Ent. Soc. N.S.W. II. p. 173.

11a. Kopfhorn hoch, bogig, nach vorne übergelegt, nach oben sich ziemlich gleichmässig verschmälernd, mit ausgefurehtem Rücken und ausgefurehter Spitze. Der vorne schwach concave Clypensrand ziemlich breit, granulirt. Kopfhäler und Flächen glatt. Zwischen Kopfhorn und Augenwand ein tiefer, grubenartiger Punkt auf dem Grunde des Thales. Halsschild mit gebogenen, schräg nach vorne gerichteten punktirten Narben, punktirten Buchten und Randfurchen, sehr fein mikroskopisch reticulirt. Obere Flügeldeckenfurchen sehr fein, Seitenfurchen fein punktirt. Erster Bauchring hinter dem zwischen die Hinterhüften hineinreichenden, breiteren, rauhen, ausgehöhlten Vorsprung fein und dicht punktirt. Metasternum mit Längsrinne auf der Mitte. Mittelschienen mit 1 Dörnchen, hinten mit 1 Zähnechen.

L. 28—29 mm.; Br. 10 mm.; Flgdl. 17 mm.

Hab. Australien.

11. *A. edentulus* MacLeay, in King's Surv. Austr.

II. p. 439; Burm., Handb. V. p. 515; Perch., Mag. Zool. p. 39 (1841).

Syn.: *cylindraceus* Percheron, Mon. p. 103. t. 7. f. 8 (1835).

*furcicornis* Boisd., Voy. Astrol., Col. p. 242 (1835) (Port Jackson); Fanvel, Bull. Soc. Norm. VII. p. 135 (1862).

5a. Die 2 ersten Lappen der Flagge sind mehr als 4 mal so lang, als einzeln dick.

12 (12a). Die obern Furchen der Flgdn. ohne Punktirung, nur nach hinten zu mit schwacher Andeutung einer solchen. Das Kopfhorn erst gerade ansteigend, dann kurz gebrochen, nach vorne mehr überhängend, hinten wenig übergeneigt, vorne auf dem nach hinten abgeschrägten Rücken der Oberseite wenig ausgekehlt und in der schwachen Auskehlung sehr fein zerstreut punktirt. Halsschild mit schrägen, unpunktirten Narben, Buchten und Randfurchen. Der 1. Bauchring hinter der spitzen, zwischen die Hinterhüften reichenden Zunge sehr dicht punktirt, der 2. daselbst angeschwollen. Unterlippe auf der Mitte glatt, winklig vorgezogen und ausgehöhlt. Mittel- und Hinterschienen mit 1 Dörnchen. Metasternalplatte sehr schwach gewölbt.

L. 26 mm.; Br. 9·7 mm.; Flgdl. 16 mm.

Hab. Aru Inseln.

12. *A. glabriusculus* Kuw., l.c.

12a. Auch die obren Furchen der Flgdn. immer mit deutlichen Punkten.

13 (13a). Der zwischen die Hinterhüften hineinragende Vorsprung des 1. Bauchringes ist scharf, spitzig, nicht ausgehöhlt. Käfer nur 20 mm. lang. Kopfhorn, wie bei *rosenbergi*, ist ein hoher, an seiner Spitze ausgekehrter Höcker. Neben den Stirnwänden dem Kopfhorn gegenüber stehend, wie bei den meisten Arten, eine abgerundete Auftreibung des Kopfes. Alle Kopfflächen glatt, die Clypeusleiste granulirt. Mittelschienen mit einem kleinen Dörnchen, hintere mit einem kleinen Ansatz zu einem solchen. Unterlippe mit stumpfer, schwach concaver Spitze auf der Mitte.

L. 20 mm.; Br. 7 mm.; Flgdl. 13 mm.

Hab. Philippinen.

13. *A. dilatus* Kuw., l.c.

13a. Der zwischen die Hinterhüften hineinreichende Vorsprung des 1. Bauchsegments ist nicht scharf zugespitzt, sondern an seiner Spitze etwas abgerundet; hinter ihm trägt der 2. Bauchring oft auf seinem Vorderrande oder in der Mitte eine glatte, warzenartige Erhöhung. Die schräge, bogige Halsschildnahe, die Buchten und Randfurchen derselben mit Punkten auf dem Grunde. Die Oberlippe ausgeschnitten. Mittel- und Hinterschienen mit einem Dörnchen.

14 (14a). Kopfhorn steil ansteigend, hakenförmig nach vorne übergebogen.

15 (15a). Dasselbe ist nur an seiner Spitze ausgefurcht. Der deutlich granulirte Clypeusrand wenig convex vorgebogen. Die Zunge des 1. Segments zwischen den Hinterhüften stark concav, dahinter dasselbe stark granulirt und das 2. Segment auf der Mitte mit schwacher, warziger Auftreibung. Die winklig vorgezogene Mitte der Unterlippe auf der Spitze concav. Das Kopfhorns etwas variirend und oft dem von *aruensis* ähnelnd, hängt dann auch hinten etwas über.

L. 25—26 mm.; Br. 9·3 mm.; Flgdl. 15·7 mm.

Hab. Molnken.

14. *A. parryi* Kaup, Col. Hefte III. p. 8 (1868);  
id., Mon. p. 16.

15a. Dasselbe ist an seiner ganzen Ober- und Rückseite ausgefurcht. Die stark concave Zunge des 1. Segments zwischen den Hinterhüften mit stark wulstigen glatten Rändern, dahinter das 1. Segment glänzend, mit stärkerer Granulation, und das 2. mit warziger Längskielung nach vorne. Die in der Mitte gerundet winklig vorgezogene, convexe Unterlippe daselbst concav. Der feine, sehr fein granulirte Clypeusrand ganz gerade. Die Seitenfurchen der Flgdn. mit starken Punkten.

In der Form des Kopfhorns wahrscheinlich ebenso variirend, als der vorige und folgende. Mir stand nur 1 Stück zur Verfügung, das ich für identisch mit dem Kaup'schen *perlatus* halte.

L. 24 mm.; Br. 8 mm.; Flgdl. 15 mm.

Hab. Neuguinea.

15. *A. perlatus* Kaup, Col. Hefte III. p. 7 (1868);  
id., Mon. p. 15.

14a. Das Kopfhorn oben bald mehr, bald weniger gedrückt und ausgefurcht, hinten etwas, vorne stärker überhängend, oben wenig schräge nach hintend abfallend oder etwas gebogen.

16 (16a). 23—24 mm. lang. Die Unterlippe auf der schwach concaven Mitte stumpfwinklig vorgezogen und auf der Spitze schwach gefurcht. Der erste Leibesring hinter der Zunge matt dnreh sehr dichte Granulation, dahinter der 2. Leibesring mit bald mehr, bald weniger warzenartiger Anschwellung an der Vorderseite. Durch

die Variationen des Kopfhorns sich sowohl an *parryi*, als an *perlatus* anlehnend und vielleicht nur Variation.

L. 23 mm.; Br. 8 mm.; Flgdl. 15 mm.

*Hab.* Am Inseln.

16. *A. aruensis* Kuw., l.c.

16a. 20—21 mm. Die Unterlippe in der Mitte nach vorne zu einer spitzen Ecke vorgezogen. Die der Naht zunächst gelegenen Furchen der Flgdn. wenig kenntlich punktirt. Der erste Leibesring hinter der Zunge matt durch dichte Granulation, der 2. dahinter ohne Anschwellung. Der feine Clypeusrand glatt, schwach bogig nach hinten. Sämtliche Kopfhäler glatt. Die breiten Halsschildbucht, die Randfurchen und halbbogenförmigen Narben mit angedeuteter feiner Punktirung. Mittelschienen mit 1 starken, hintere mit schwachem Dorne. *A. dilatus* sehr ähnlich.

L. 20 mm.; Br. 6 mm.; Flgdl. 13 mm.

*Hab.* Neuguinea.

17. *A. variolosus* Kuw., l.c.

**Anmerkung:** Bei der grossen Schwierigkeit, diese Thiere richtig zu bestimmen, folgt, zumal die Proportion zwischen Länge und Dicke der ersten Flaggglieder leicht zu Täuschungen Veranlassung giebt, zur Prüfung richtiger Determination in gedrängter Kürze nach einem andern Modus die diagnostische Tabelle von 4 ab:—

4 (4a). Taillenlatz unpunktirt oder nur mit einzelnen unsichern Punkten zu den Seiten der Mitte.

5 (5a). Die Rückenstreifen der Flgdn. ohne Punktirung.

6 (6a). Das Kopfhorn ist ein hoher, nur an der Spitze ausgekehrter Buckel.

L. 24 mm.

4. *A. rosenbergi* Kaup.

6a. Das Kopfhorn ist hinten wenig übergeneigt, nach vorn stärker überhängend, oben gefurcht.

7 (7a). Mittelschienen allein mit Dörnchen. Halsschildseitenrandfurchen undeutlich punktirt.

L. 25·2 mm.

5. *A. sulcatipons* Kuw.

7a. Auch die Hinterschienen mit einem Ansatz zum Zahne. Halsschildseitenfurchen ohne Punktirung.

L. 26·2 mm.

6. *A. glabriusculus* Kuw.

5a. Rückenstreifen der Flgdl. mit undeutlicher oder deutlicher Punktirung.

8 (8a). Rückenstreifen mit undeutlicher oder sehr schwacher Punktirung.

9 (9a). Zwischen Kopfhorn und Augenwand im Thale ein grosser Punkt. Halsschildrandfurchen punktirt. Kopfhorn eine krumme Säule.

L. 29 mm.

7. *A. edentulus* MacLeay.

9a. Zwischen Kopfhorn und Augenwand kein solcher Punkt. Halsschildrandfurchen unpunktirt. Kopfhorn nach vorne umgebrochen.

L. 22 mm.

8. *A. fracticornis* Kuw.

8a. Rückenstreifen der Flgdn. deutlich punktirt.

10 (10a). Clypeusrand schwach convex geformt.

L. 22 mm.

9. *A. rotundatoclypeatus* Kuw.

10a. Clypeusrand nicht convex.

11 (11a). Clypeusrand in der Mitte rückwärts verstärkt.

L. 22 mm.

10. *A. arcuatoclypeatus* Kuw.

11a. Clypeusrand weiter vorwärts ausgebogen, noch in der Mitte verstärkt.

12 (12a). Das Kopfhorn ein hoher, nur an seiner Spitze ausgekehrter Buckel.

L. 20 mm.

11. *A. dilatus* Kuw.

12a. Das Kopfhorn immer nach vorne übergelegt.

13 (13a). 29 mm.

12. *A. kaupi* MacLeay.

13a. Kleiner.

11 (11a). Kopfhorn nur an der Spitze ausgefurcht, ein kurzes Horn.

25 mm.

13. *A. parryi* Kaup.

14a. Kopfhorn auf dem Rücken ausgefurcht

15 (15a). Kopfhorn ein krummes Horn.

24 mm.

14. *A. perlatus* Kaup.

15a. Kopfhorn ein gebrochenes Horn.

23 mm.

15. *A. aruensis* Kuw.

**Tristorthus** Kuw., *l.c.*

Dem Genus *Aulacocyclus* sehr nahe stehend. Die Kopfflächen unpunktirt und ohne Haare, das Schildchen und die Taille ohne die tiefen Punkte von *Comacupes*. Die Taille an den Seiten mit Quereindruck, wie bei *Aulacocyclus*. Das Kopfhorn entweder oben mit Längsfurche, dann 3spitzig; oder 1spitzig, dann schmalgedrückt wie bei *Comacupes*. Unterlippe auf der Mitte ohne Längskiel.

1 (1a). Kopfhorn ohne Längsfurche, wie bei *Comacupes basalis* gebaut, hinten ziemlich steil ansteigend und wenig vorwärts geneigt, vorne unter der überhängenden Spitze gerade abfallend, hinten mit glänzender, abgerundeter Ecke. Augenwand auf der Mitte scharfwinklig, vorne mit kleiner Spitze endigend. Unterlippe auf der Mitte glänzend, am Vorderrande mit Eindruck. Tailenlatz an den Seiten fein punktirt, sonst ganz glänzend. Mittel- und Hinterschienen mit Dörnchen. Mir fremd; nach Stoliczka.

L. 22.5 mm.; Br. 6.8 mm.; Flgdl. 13.2 mm.

*Hab.* Philippinen (?). 1. *T. felderi* Stol., *Journ. As. Soc. Beng.* p. 152 (1873).

1a. Kopfhorn mit Längsfurche.

2 (2a). Die Längsfurche tief, bis zur Spitze des Hornes gehend, welches dadurch vorne, ohne dass die Sohle der Furche zur Spitze vorgezogen ist, dreizählig erscheint. Der Clypeusrand fein, an den Seiten meistens zu einem spitzen Zähnchen vor der Augenwand aufgebogen. Diese vor der Mitte zu einer stumpfwinkligen Spitze sich erhebend. Halsschild mit tiefen Buchten und Narben, sehr fein und undicht punktirt. Flügeldeckenfurchen oben ziemlich fein, an den Seiten viel gröber punktirt. Unterlippe mit gewölbter, glatter, unbehaarter Mitte, vorne daselbst ziemlich breit und eckig vorgezogen. Metasternalplatte und Hinterecken glatt. Tailenlatz gänzlich unpunktirt, glänzend, nur hinten zu beiden Seiten der Mitte mit wenigen Pünktchen und Härchen. Mittel- und Hinterschienen mit 1 Dörnchen.

L. 22.5 mm.; Br. 7.7 mm.; Flgdl. 12.7 mm.

*Hab.* Penang; Malacca.

2. *T. caricornis* Kaup, *Col. Hefte III.* p. 5

(1868); id., *Mon.* p. 19.

Syn.: *laevicornis* Kaup, *Col. Hefte III.* p. 6 (1868); id., *Mon.* p. 19.

2a. Die flache Längsfurche trägt auf der Mitte des Horns zu jeder Seite einen stumpfen Zahn, während das Horn selbst vorne zu längerer Spitze übergeht, welche vor- und abwärts geneigt ist. Clypeus ohne deutliche Randung. Augenwand vor der Mitte abgerundet stumpfwinklig; vor ihr der Clypeusrand mit stumpfem oder ohne Zahn.

3 (3a). Käfer 30 mm. lang. Halsschildnarben ganz unpunktirt. Unterlippe zu den Seiten der Aushöhlung ihrer Mitte vorne in je einen ziemlich scharfen Zahn vorgezogen. Seitenfurchen der Flgdn. nicht gröber punktirt als die Rückenfurchen. Tailenlatz ganz ohne Punktirung, glänzend. Clypeusrand vor der Augenwand zu einem rechtwinkligen Zahne aufgebogen.

L. 30 mm.; Br. 11—12 mm.

*Hab.* Neucaledonien.

3. *T. fortis* Kuw., *l.c.*

3a. Käfer immer kleiner. Halsschildnarben punktirt. Unterlippe nur der Länge nach in der Mitte ausgehöhlt, ohne in einen Zahn jeseitig vorgezogen zu sein.

Auch die Seiteränder des Halsschildes, wenn auch undeutlich, punktirt. Clypeusrand vor der Augenwand abgerundet aufgebogen.

4 (4a). Käfer e. 23—25 mm. lang. Die Halsschildnarben schmal, mit wenigen grösseren Punkten. Schildchen ganz vorne auf der Mitte, Tailenlatz hinten an den Seitennähten fein punktirt. Flgdfurchen ziemlich grob punktirt. Clypeusrand vorne ziemlich gerade.

L. 24.5 mm. ; Br. 8 mm. ; Flgdl. 14 mm.

*Hab.* Nenealedonien.

4. *T. tricuspis* Kaup, *Col. Hefte* III. p. 7 (1868);  
id., *Mon.* p. 18.

4a. Käfer nur 17 mm. lang. Die Halsschildnarben breiter, fein, dicht und deutlich punktirt. Schildchen vorne mit Mittellinie und daselbst punktirt. Tailenlatz mit starker Einschnürung an den Seiten und unpunktirt. Clypeusrand vorne stark ausgebeuchtet. Flgdfurchen grob punktirt.

L. 17 mm. ; Br. 6.3 mm. ; Flgdl. 10.5 mm.

*Hab.* Neucaledonien.

5. *T. severini* Kuw., *l.c.*

### Comacupes Kaup, *Mon.* p. 17.

Die Unterlippe ist auf ihrer Längsmitte immer gekielt.

1 (1a). Das Kopfhorn ist dreizählig und trägt auf seinem Rücken eine Furche. Von den 3 Zähnen entstehen die beiden oberen durch das Aufhören der Seitenwände der Furche, während die Sohle der Rinne als Spitze oder dritter Zahn vorne das Kopfhorn beendigt.

2 (2a). Käfer nur 17 mm. lang. Das Halsschild mit tiefen, grossen Buchten, mit geweihförmigen, tiefen Narben, und ausserdem noch mit runden, grubchenartigen Vertiefungen unregelmässig versehen. Das Kopfhorn kurz ; seine vorspringende Spitze lang. Flgdn. in allen Furchen mit grossen Punkten. Tailenlatz nur an den Seiten punktirt und behaart. Unterlippe überall dicht behaart. Mittel- und Hinterschienen mit 1 Dorne. Nur 1 Stück.

L. 17 mm. ; Br. 5.8 mm. ; Flgdl. 10 mm.

*Hab.* Borneo.

1. *C. foreicollis* Kuw., *l.c.*

2a. Käfer immer grösser. Die zaekige Halsschildnarbe ist flacher, fast unpunktirt; Buchten und Randfurchen breit, mit flachen Punkten. Das Kopfhorn hinten steil abfallend, mit tiefer Scheitelfurche und kürzerer Spitze. Clypeusrand stark wulstig, glänzend, ohne grosse Punkte. Augenkiel zu einem langen, stumpfen Dorne erweitert. Flgdn. mit sehr feinen Punkten in den Furchen ; Intervalle mit schwachen Falten. Tailenlatz überall tief und grob punktirt und lang behaart. Unterlippenmitte mit nach hinten stark ansteigendem, hohem Kiele. Die Bauchringe an den Seiten stark punktirt. Die Augenwände hoch, vorne und hinten fast rechtwinklig abfallend.

L. 27.5 mm. ; Br. 9.5 mm. ; Flgdl. 16 mm.

*Hab.* Padang, Sumatra ; Lahore.

2. *C. westermanni* Kuw., *l.c.*

1a. Das schmalgedrückte Kopfhorn immer ohne starke Furche auf seinem Scheitel; es endigt, ohne mehrere deutliche Zähne zu bilden, entweder in einer längeren nach vorne gerichteten Spitze, oder ist daselbst ziemlich senkrecht abgeschnitten.

3 (3a). Dasselbe endigt in einer längeren nach vorne gerichteten Spitze.

4 (4a). Der Tailenlatz des grössern, breitem Käfers ist auf seiner Mitte



beinahe unpunktirt, oder zerstreut punktirt. Das Kopfhorn mit nach vorne gebogener Spitze hat auf seiner Mitte einen schwachen Ansatz zweier Knötchen, welche quer gegenüber stehen. Die stark punktirte und behaarte Stirn hat vor dem Kopfhorn eine erhabene, glatte, unpunktirte Stelle. Die Augenwand stumpfwinklig auf ihrer Mitte. Unterlippe mit hohem, vorne und hinten abgerundeten Kiele. Metasternum von den Seiten bis auf die Platte herauf punktirt. Flgdn. zwischen den gewölbten Intervallen mit fein punktirten Furchen. Mittelschienen mit starkem, hintere mit schwachem Dorne.

L. 34 mm.; Br. 12 mm.; Flgdl. 21 mm.

*Hab.* Philippinen.

3. *C. basalis* Smith, *Cat. Pass.* p. 15. t. 1. f. 5.

Syn.: *comatus* Kaup, *Col. Hefte* III. p. 9 (1868).

4a. Der Taillenlatz des beträchtlich schmäleren Käfers ist mit Ausnahme der schmalen, glänzenden Längsmittle dicht und stark punktirt. Das schmal zusammengedrückte Kopfhorn hinten wenig übergeneigt, oben wagerecht, vorne mit etwas abgesetzter, langer, etwas niederwärts gerichteter Spitze. Augenwände oben wagerecht, vorne und hinten stumpfwinklig abfallend. Halsschild mit tiefen Buchten und tiefen, etwas gebogenen Narben. Flgdn. mit fein punktirten Furchen. Metasternum mit Ausnahme der glänzenden Platte überall dicht und stark punktirt. Unterlippen dicht behaart, hoch, beinahe zugerundet gekielt. Mittelschienen mit starkem Dorne, hintere mit stumpfem Zähnchen.

L. 27·5 mm.; Br. 8·4 mm.; Flgdl. 16 mm.

*Hab.* Java; Malacca; Singapore?

4. *C. cylindraceus* Perty, *Obs. Col.*

*Ind.* 1831. p. 36. t. 1. f. 3; *Perh., Mag. Zool.* p. 40. t. 79. f. 4 (1841);

Burm., *l.c.* p. 516.

Syn.: *punctifrons* Hope, *Cat. Lucanid.* p. 29 (1845).

3a. Das Kopfhorn ist vorne ziemlich senkrecht abgeschnitten, meistens flach von den Seiten zusammengedrückt, hinten steil ansteigend und wenig übergeneigt, vorne frei. Halsschild mit tiefen, punktirten Buchten und unpunktirten Narben. Flügeldeckenfurchen fein punktirt. Metasternum mit unpunktirter Platte, in den Hinterecken wenig oder nicht, an den Seiten dicht punktirt.

5 (5a). Der Taillenlatz, vorne mit schmalen Kiele, ist überall dicht punktirt. Das schmale Kopfhorn bildet vorne oben einen spitzen, unten einen stumpfen, stark abgerundeten, Winkel, und hat oben in der Mitte Andeutung einer Furche; vor demselben die Stirn mit erhabener, glatter, begrenzter Stelle. Die Augenwände oben wagerecht, hinten beinahe rechtwinklig, vorne in sehr stumpfem Winkel abfallend. Breiter als der vorige, mit welchem er von Kaup zusammengeworfen zu sein scheint. Metasternalplatte mit Mittelfurchenandeutung. Mittel- und Hinterschienen mit 1 Dörnchen.

L. 30 mm.; Br. 11·5 mm.; Flgdl. 17·5 mm.

*Hab.* Malacca.

5. *C. angusticornis* Kuw., *l.c.*

5a. Der Taillenlatz in der Mitte undicht punktirt, kaum mit Kielandeutung. Das schmale Kopfhorn ist vorne oben hoch abgerundet, unten mit abgerundet spitzem Winkel. Vorderkopf ziemlich undicht punktirt. Halsschildseitenfurchen mit Punkten. Sternalplatte ohne Mittelfurche. Mittel- und Hinterschienen mit 1 Dörnchen. Kiel der Unterlippe vorne und hinten abgerundet.

L. 27 mm.; Br. 10 mm.; Flgdl. 17 mm.

*Hab.* Borneo; Lahore.

6. *C. masoni* Stol., *Journ. As. Soc. Beng.* p. 151 (1873).

## 2. GRUPPE: PASSALINAE.

*Passalus* F., *Ent. Syst.* II. p. 240 (1793).

Keine Spnr von Stirnleisten vorhanden. Die Oberlippe vorne tief ausgeschnitten. Das meistens lange Kopfhorn erst in die Höhe steigend, dann nach vorne gerichtet. Unterer Seitenrand des Halsschildes und Mittelschienen stark behaart.

1 (1a). Oberlippe niemals so weit ausgeschnitten, dass die Lappen so lang als breit sind. Amerikanische Thiere.

2 (2a). Halsschild stärker gewölbt, deutlich breiter als die Flügeldecken. Die Taillennarben fehlend, an ihrer Stelle am Vorderrande der Naht ein linearer, matter, Streif. Hinterecken des Metasternums ohne Punkte. Oberlippe etwas tiefer eingeschnitten. Mit mikroskopisch feiner Punktirung auf dem ganzen, stark glänzenden, Metasternum. Die Seitenrinnen desselben sehr schmal, noch etwas schmaler als bei den folgenden, von denen derselbe wesentlich durch seine Grösse zu unterscheiden ist, sowie durch das stärkere Halsschild. Der Clypeusrand in der Mitte weniger verstärkt.

L. 38 mm.

*Hab.* Brasilien.

1. *P. bos* Knw., *l.c.*

2a. Halsschild, wenn auch stark gewölbt, doch nicht breiter als die Flgdn. Die Taillennarben aus seichten, grossen, an einander gereihten, matten Punkten bestehend, ziemlich schmal und lang. Hinterecken des Metasternums meistens mit etlichen Punkten, bisweilen punktfrei: seine Seitenrinnen meistens um ein weniges schmaler, als beim vorigen. Käfer sonst demselben sehr gleichend. Der Clypeusrand nach vorne in der Mitte mehr verstärkt.

3 (3a). Das Kopfhorn sehr lang, vorne weit überhängend, vor seiner Spitze verbreitert.

L. 35 bis 37 mm.

*Hab.* Durch ganz Nordamerika sehr verbreitet, selten in Südamerika.

2. *P. cornutus* F., *Syst. Ent.* II. p. 256;

Beauv., *Ins. Afr. et Amer.* I. p. 1. t. 1. f. 1; Burm., *l.c.* pp. 451. 510; Kaup, *Mon.* p. 106.

Syn.: *interruptus* Linné, *Mus. Lud. Ulr.* p. 35; Oliv., *Ent.* I. 1. p. 25. t. 3. f. 5.

*distinctus* Perch., *Mon.* p. 99. t. 7. f. 6; Chap. et Caud., *Mém. Liège* VIII. p. 467. t. 4. f. 5.

3a. Das Kopfhorn kürzer, vorne weniger weit übergelegt, vor seiner Spitze nicht verbreitert.

L. 30—32 mm.

*Hab.* Wie der vorige verbreitet.

3. *P. cornutus* ab. *distinctus* Weber,

*Obs. Ent.* I. p. 79.

Syn.: *disjunctus* Illiger, in Oliv. I. edit. Illig. p. 78.

1a. Die Oberlippe so tief ausgeschnitten, dass die Lappen bisweilen fast so lang als breit sind. Der linke Kiefer unten an der Aussenseite wenig stärker gekantet, als bei den amerikanischen Arten. Vom Vorderzahn die 2 untern Zäckchen durch eine schärfere und tiefere Furchung geschieden. Im übrigen *cornutus* F. ganz gleichend.

Wiewohl mir nach Aufstellung dieser Art einige Sendungen vom Congo

zugingen, ist es mir nicht gelungen, darin diese von Herrn Händler Kricheldorf bezogene Art wiederzufinden; die Richtigkeit der Herstammung vom Congo ist mir fest versichert worden.

L. 29—30 mm.

*Hab.* ? Congo.

4. *P. stanleyi* Kuw., *l.c.*

### **Rimor** Kanp, *Mon.* p. 119.

1 (*1a*). Schildchen mit feiner Längslinie auf der Mitte. Kopfhorn hinten hoch halbkugelig, vorne von oben gesehen den Clypensrand nicht ganz erreichend und stark abwärts geneigt. Die Nebenhöcker tiefliegende, herabziehende, schwache Reliefflinien, die in einem nach hinten gerichteten Bogen sich mit dem verschmälerten, ebenfalls gebogenen Ende des Augenwulstes verbinden. Die Taille mit hochgelegener, rundlicher Narbe. Die punktförmigen Halsschildnarben mit quерem Grunde.

L. 30—32 mm.

*Hab.* Mexico.

1. *R. sargi* Kanp, *l.c.* p. 119.

*1a*. Schildchen ganz glatt. Kopfhorn hinten halbkugelig, mit der Spitze den Clypensvorderrand nicht erreichend, vorne stark abwärts geneigt. Die Nebenhöcker als Querkiele sich nach den Seitenthälern herabsenkend und dann hinten im Bogen mit dem Ende des Augenwulstes verbindend. Das Grübchen der Stirn unter der Kopfhornspitze klein und deutlich; zwischen ihm und dem Clypensrand ein vorne durch eine sehr breite, flache und etwas granulirte Furche begrenzter ziemlich schmaler Wulst. Der Clypensrand am Ende zu einem rechteckigen Zahne scharf in die Höhe gebogen. Über den schmalen, schrägen Halsschildnarben ein Conglomerat von Punkten. Taillennarben bogig und schmal, glänzend, wie der ganze Taillennatz. Mittelschiene mit 1—2 Dornen, Hinterschienen mit 1 Dorn. Metasternalhinterecken unpunktirt, Seitenstücke schmal.

L. 27 mm.

*Hab.* Costa Rica.

2. *R. honestus* Kuw., *l.c.*

### **Rimoricus** Kuw., *l.c.*

Vor dem weit überhängenden Kopfhorne ein flacher, grubchenartiger Eindruck. Stirnleisten immer undeutlich oder fehlend. Das Kopfhorn hinten immer sehr breit. Der Clypens, welcher bei *Passalus* fast immer etwas nach vorne auf seiner Mitte aus- oder vorgebogen oder erweitert ist, tritt daselbst bei *Rimor* immer etwas zurück. Die Taille ist punktirt und behaart.

Der Taillennatz an den Seiten immer punktirt und behaart. Das Kopfhorn an seiner Wurzel nicht halbkugelig.

1 (*1a*). Das Kopfhorn, längs seinem ganzen Rücken mit breiter Längsfurche, erreicht von oben gesehen den Clypensrand nicht ganz. Die Nebenhöcker hohe, an den Seiten etwas nach vorne gerichtete Kiele. Halsschildnarben quere, auf dem Grunde punktirte Furchen. Die undeutlichen Stirnleisten gehen vorne in die Brücke zwischen Clypenshöcker und Augenwand über. Hinterecken des Metasternums mit feinen Punktchen. Schildchen hinten jederseits neben der glatten Mitte durch feine Punktirung etwas runzlig. Der Clypens vor dem Wulst ziemlich breit schneidenartig auf die Lippe gelegt, ähnlich wie bei den *Popilius*-Arten. Seiten des Metasternums ohne begrenzte Rinnen.

L. 35—36 mm.

*Hab.* Central America.

1. *R. ridiculus* Kuw., *l.c.*

1a. Das Kopfhorn lang, dünner, ohne Furche, von oben gesehen über den Clypensrand hinausreichend. Die Nebenhöcker bestehen aus reliefartigen, vom Kopfhorn sich in das Seitenthal herabsenkenden Linien, welche im Bogen gegen die Augenwand ziehen. Die Stirne sehr kurz. Schildchen mit Längsmittelfurche, glatt. Die kurzen, queren Halsschildnarben neben sich oben mit wenigen Punkten. Aussere Augenwand vorne mit einem Zähnchen, oben mit 2 stumpfen Tuberkeln. Seitenfurche des Metasternums breit, begrenzt. Hinterecken mit wenigen grossen Punkten. Oberlippe stark ausgeschnitten. Die Epipleuren des Metasternums dicht punktirt und behaart. Unterer Halsschildseitenrand, Mitteltibien und äusserste Schulterecken der Flügeldecken dicht behaart.

L. 36 mm.

Hab. Mexico.

2. *R. sagittarius* Smith, *Cat. Brit. Mus.*; Kaup, *Mon.* p. 120.

Syn.: *rimator* Truq., *Rev. Zool.* p. 266 (1857).

**Oileus** Kaup, *Col. Hefte* V. p. 3 (1869); *Mon.* p. 58.

Nur 1 Species bisher bekannt:—

Oberlippe vorgestreckt, tief ausgeschnitten. Clypensrand aus 2 sehr schwachen, gebogenen, nach aussen convexen Leisten gebildet, die an der Mitte zusammenstossen, daselbst einen schwachen Eindruck bilden und an den äussern Enden als Zähnchen sich erheben, das auf einem Wulst auf der Brücke zur Augenwand sitzt. Das starke, der Länge nach gefurchte Kopfhorn krümmt sich von der Wurzel an und neigt sich mit der freien Spitze nach unten. Stirnleisten durch undeutliche Wülste angedeutet. Flügeldecken mit breiten Rippen, schwachen feinen Furchen und feinen Pünktchen in diesen. Bei der vorliegenden Species wird das 3. Intervall der Flügeldecken hinten von dem 2. und 4., das 6. von dem 5. und 7. umschlossen, so dass sich vereinigen hinten die Furchen 1 und 4, 2 und 3, 5 und 8, 6 und 7. Schildchen in der Mitte glatt, am Ende gefurcht, an den Seiten punktirt. Nächst der Naht des Taillenlatzes eine schwache, längliche Narbe. Sternalschild nach hinten mit einigen Punkten, rundlich, die Hinterecken grob und stark punktirt. Mittel- und Hinterschienen mit kräftigem, kurzem Dorne. Halsschildnarbe klein und glatt.

L. 42 mm.: Br. 15 mm.: Halsschd. 11 mm.

Hab. Huanchinango in Mexico (im März).

1. *O. heros* Truq., *Rev. Zool.* p. 262 (1857).

**Passalotaenius** Kuw., *l.c.*

Der Clypens auf seiner Mitte ohne Zahn; hierdurch von *Chilontotaenius* getrennt.

1 (1a). Die Enden der kurzen, im stumpfen Winkel aneinandergehenden Stirnleisten sind dicht unter dem Kopfhorn durch eine wenig unterbrochene Querleiste verbunden. Der Clypensrand entsendet auf den Seitenrand der Oberlippe einen stumpfen Zahn und richtet sich oberhalb seitwärts von diesem zu einem starken Zähnchen auf. Die Kopfhäler vor den Nebenhöckern punktirt. Das Kopfhorn hinten tropfenartig auf die von den Nebenhöckern gebildete Platte gelegt, vorne als gerundeter freier Zapfen erscheinend. Taillennarbe linienartig schmal. Die punktirte Halsschildnarbe mit einem Punktschwarm über sich. Aussere Augenwand

mit 3 Tuberkeln, von denen der vordere einen Zahn bildet. Schildchen neben der glatten Mitte mit breitem, punktirtem Längsstreifen.

L. 39 mm.

*Hab.* Mexico.

1. *P. cuspidatus* Truq., *l.c.* p. 310; Kaup, *Col.* Hefte IV. p. 22; id., *Mon.* p. 106.

1a. Die Stirnleisten dicht unter dem Kopfhorn nicht durch eine feine Leiste verbunden.

2 (2a). Die Clypeusleiste in der Mitte bauchig und an den Enden zahnig erweitert. Die Stirnleisten beinahe rechtwinklig aneinanderlaufend. Das Kopfhorn mit kurzer freier Spitze, hinten tropfenartig zwischen den beiden spitzen Nebenhöckern liegend. Die kleine punktirte Halsschildnarbe mit einem Punktschwarm über sich. Äussere Augenwand mit 2 zahnartigen Tuberkeln. Die Stirn vorne fein punktirt. Schildchen punktirt. Die Taille vorne matt, mit kurzem glänzenden Längskeile, ohne Narben. Hinterecken des Metasternums fein punktirt. Mittelschienen mit 1 Dorne.

L. 27 mm.; Br. 9 mm.; Flgdl. 16 mm.

*Hab.* Mexico.

2. *P. falsus* Kuw., *l.c.*

2a. Die Clypeusleiste ist geschwungen, aber nicht erweitert. Die Enden der Stirnleisten sind vorne durch einen Querwulst verbunden, hinter welchem, da die Stirnleisten sehr breit aneinanderlaufen, sich ein sehr kurzes, breites Thal unter der langen runden Kopfhornspitze bildet. Die Nebenhöcker sehr klein. Das Thal zwischen diesen und der Augenwand rauh. Die äussere Augenwand mit 3 Tuberkeln, von denen der vorderste zahnartig ist. Die punktirten Halsschildnarben tragen über sich einen gedrängten Fleck starker Punkte. Schildchen mit Mittelfurche, hinten dicht längspunktig. Hinterecken des Metasternums mit Punkten. Der Clypeusrand, wie beim vorigen, je einen stumpfen Zahn über den Lippenrand schiebend, seitwärts von diesem oberhalb sich zu einem Zahnchen aufrichtend.

L. 35 mm.

*Hab.* Mexico.

3. *P. zodiaceus* Truq., *l.c.*

### **Odontotaenius** Kuw., *l.c.*

Durch die Stirnleisten und den auf der Mitte zahnartig vorgezogenen Clypeusrand von *Passalus* verschieden. Die Stirnleisten hören weit vom Clypeus mit einem Knötchen auf. Dieser mit einem aufwärts gerichteten Zahnchen an den Seiten. Nebenhöcker fehlend.

1 (1a). Die Dorsalrippen der Flgdn. nach hinten zu immer deutlich gewölbt. Die Stirnleisten laufen im rechten Winkel aneinander.

2 (2a). Das Kopfhorn, hinten etwas knollig, mit lang überhängender Spitze, ohne Nebenhöcker. Der vorletzte Bauchring an den Vorderrandseiten ohne tiefe Falte oder Furche. Die Flaggenlappen kurz behaart. Die Bucht fein und undeutlich punktirt. Die feine Punktirung der Oberfläche des Halsschildes ist stärker, als beim folgenden. Die Flügeldecken immer proportionell länger. Halsschild hinter der Narbe mit grösserem Punktschwarm.

L. 30 mm.

*Hab.* Mexico.

1. *O. striatopunctatus* Perch., *Mon.* p. 101, t. 7, f. 7; Truq., *l.c.* p. 311; Kaup., *Mon.* p. 106; Burm., *l.c.* p. 510.



2a. Das Kopfhorn an seiner Basis etwas schmaler, mit weniger langer Spitze. Der vorletzte Banchring an den Seiten nicht sehr fern vom Vorderrande mit tiefer Falte oder Furche. Die Bucht deutlich grob punktirt. Die Flaggenlappen um ein Weniges länger behaart. Die feine Punktirung der Oberfläche des Halsschildes nicht so stark. Die Flgdn. proportionell kürzer als beim vorigen. Halsschild über der Narbe mit wenigen Punkten.

L. 26 mm.

Hab. Mexico.

2. *O. brevioripennis* Kuw., l.c.

1a. Die Intervalle der Flgdn. sämtlich ganz flach. Die im hohen Knötchen endigenden schwachen Stirnleisten im etwas weniger als rechten Winkel an einander laufend. Das an seiner Basis breite Kopfhorn mit breiter, kurzer, wenig freier Spitze, hinten etwas gefurcht. Bucht punktirt. Über der Halsschildnarbe und hinter ihr ein grosser Punktschwarm.

L. 26 mm.

Hab. San Salvador (Haber leg.).

3. *O. haberi* Kuw., l.c.

### Petrejoïdes Kuw., l.c.

Dem Genus *Petrejus* durch das häufig stärker auf die Stirn gedrückte, lange, freie Kopfhorn und die kurze Stirn, dem Genus *Popilius* durch seine Gestalt und die flache, feine Clypeusfurche hinter der mehr oder weniger sehr feinen Clypensleiste, welche sich an den Enden zu einem Zähnechen aufbäumt, ähnlich.

In der Form *Petrejus* und *Popilius* ähnlich.

1 (1a). Etwa 19 mm. lang, in der Form dem *Petrejus gracilis* Kaup sehr ähnlich.

2 (2a). Halsschild mit abgerundeten Ecken, mit unpunktirten Buchten und Randfurchen und punktirten Narben, über denen ein Punktschwarm steht. Die Stirn sehr kurz,  $3\frac{1}{2}$  bis 4 mal so breit als lang; das lange, bis zum Vorderrand des Clypens reichende, hinten gefurchte Kopfhorn auf dieselbe herabgedrückt, mit 2 spitzen Nebenhöckerchen. Alle Kopfflächen glänzend, fein rau; die Kopfhäler zwischen Augenwand und Nebenhöckern mit einigen Punkten. Die äussere Augenwand mit 3 kleinen Zähnechen, einem auf der Mitte der Augenwand, einem seitwärts vom Clypensknötchen, dem dritten zwischen beiden gelegen. Die Rückenfurchen der Flgdn. mit feiner, die Seitenfurchen mit etwas gröberer Punktirung. Taillennarbe fehlend. Metasternum schwach abgewölbt, glatt, mit wenigen feinen Punkten zu den Seiten der durch dieselben angedeuteten Platte. Die unter dem Kopfhorn sehr stumpfwinklig auseinandergehenden Stirnleisten enden auf halbem Wege zu dem Clypensknötchen mit ihrem eigenen deutlichen Knötchen. Die Clypensleiste ist nach der Stirn zu überaus fein linienartig abgesetzt.

L. 19 mm.; Br. 6 mm.; Flgdl. 12·3 mm.

Hab. Costa Rica.

1. *P. tenuis* Kuw., l.c.

2a. Halsschild mit beinahe rechtwinkligen, abgerundeten Vorderecken, mit punktirten Buchten, Randfurchen und Narben: über letztern ein Punktschwarm. Die Stirn etwa noch einmal so breit als lang; das hinten breite, vorne spitze Kopfhorn ohne oder mit kurzer Furche auf dem Rücken. Die im breiten Bogen unter dem Kopfhorn aus einander gehenden Stirnleisten endigen dicht vor den hohen Endknötchen des Clypens. Unterlippe dicht grob punktirt. Metasternum unpunktirt. Taillenzahn ohne Narben, mit kleiner, dicht punktirter Stelle vor den Mittel-

hüften. Prosternum zwischen den Vorderhüften behaart. Metasternalseitenrinnen schmal, punktirt. Durch die Form des hinten breit abgeplatteten Kopfhorns an das Genus *Rimor* erinnernd.

L. 19 mm.; Br. 6.6 mm.; Flgdl. 13 mm.

Hab. Orizaba, Mexico. Im Wiener Museum. 2. *P. orizabae* Kuw., l.c.

1a. 28 mm. lang. Stirn etwa 3 mal so breit als lang. Das den Clypeusvorderrand nicht ganz erreichende Kopfhorn ist an seiner Spitze etwas aufgebogen, etwas derber und hierin der Gattung *Rimor* ähnelnd. Alle Kopfhäler sind glänzend, glatt, nur zwischen Augenwand und den nur durch eine feine thalwärts ziehende Leiste angedeuteten Nebenhöckern das Thal in der Tiefe mit 2 bis 3 Punkten und Runzeln. Die Clypensfurchen ziemlich stark. Taillenlatz vorne zu den Seiten einer schmalen, erhabenen Mitte dicht punktirt, ohne erkennbare Narben. Halsschild mit stark abgerundet rechtwinkligen Vorderecken, zerstreut oder einzeln punktirten Randfurchen und Buchten, mit queren, langen, auf ihrer Mitte punktirten Narben und wenigen Punkten daneben. Hinterecken des Metasternums punktirt, die Platte vor dem Ende mit queren Eindrücke. Die Stirnleisten ziemlich verlaufend, in sehr stumpfem Winkel unter dem Kopfhorn aneinandergehend, haben kein Endknötchen und sind nur auf 2 Dritttheile der Länge zum Clypensknötchen kenntlich. Die äussere Augenwand, wie beim vorigen, dreizählig.

L. 28 mm.; Br. 9.6 mm.; Flgdl. 17 mm.

Hab. Costa Rica.

3. *P. decipiens* Kuw., l.c.

### 3. GRUPPE: PROCULEJINAE.

*Ogyges* Karp, *Mon.* p. 69.

Käfer stark gewölbt. Kopfhorn unfrei mit kieligen Nebenhöckern. Die starken Stirnleisten reichen nur bis zur Knötchengegend. Der Clypens als undeutliche Leiste erhebt sich an den Enden mehr oder weniger zahnartig. Das ganze Metasternum glänzend, unpunktirt. Taillenlatz mit langen, nicht breiten Narben längs den Nähten. Mittelschienen mit 1 starken Dorne und darüber einem kleinen Dörnchen, Hinterschienen mit 1 Dorne. Furchen der Flgdn. unpunktirt, diese zusammengewachsen.

1 (1a). Kopfhorn des grössern Käfers ohne Längsfurche. Nebenhöcker sehr klein, sich rückwärts zur Augenwand wendend. Kopf fein runzlig. Seitenzähne des Clypens etwas aufwärts gerichtet. Stirnleistenknötchen fehlend. Halsschild durch sehr feine, mikroskopische Reticulation matt. Halsschildnarben und Randfurchen unpunktirt. Flgdn. mit Ausschluss der tiefen Nahtfurchen fast furchenlos, nur gereiht punktirt.

L. 35 mm.; Br. 13 mm.; Halsschl. 4.5 mm.; Flgdl. 18 mm.

Hab. Guatemala; Nicaragua.

1. *O. laevissimus* Karp, *Col. Heft* IV. p. 15 (1868); id., *Mon.* p. 69.

1a. Kopfhorn bis auf seine Mitte herauf und hinter sich mit tiefer, breiter Furche. Die feinkieligen Nebenhöcker quer. Alle Kopfflächen ziemlich matt. Die Seitenzähne des Clypens sehr klein. Clypens und Vorderkopf querfaltig. Halsschild und Flügeldecken weniger matt als beim vorigen. Halsschildnarben, Buchten und Randfurchen unpunktirt. Vorderrand der Flgdn. in der Mitte

zusammen gerundet vorgezogen, ebenso die Schnlterecken, dadurch zweibuchtig erscheinend. Flgdn. mit tiefen Furchen und stark gewölbten Intervallen.

L. 33 mm. ; Br. 11 mm. ; Halsschl. 9.2 mm. ; Flgdl. 17 mm.

*Hab.* San Salvador ; Guatemala.

2. *O. laevior* Kaup, *l.c.*

Grössere Stücke mit kielig begrenzter Brücke in den äussern Clypensvorderecken aus San Salvador nannte ich :

*Hab.* San Salvador.

3. *O. laevior* ab. *vincolatena* Kuw., *l.c.*

### **Proculejoïdes** Kuw., *l.c.*

1 (1a). Das wenig erhabene Kopfhorn seitlich zusammengedrückt, conisch, hinten breit gefurcht, vorne abschüssig. Die Stirnleisten kurz, divergirend, mit den starken Knötchen weit vom Clypensrand bleibend. Käfer kurz oval, mit grossem Halsschild. Dieses mit überall glatten Randfurchen. Flgdn. fast oval, tief gestreift. Die Furchen auf dem Grunde fein punktirt. Taillenlatz glatt und unpunktirt. Mittelschienen mit 2, hinten mit 1 Dorne.

L. 30 mm. ; Halsschild 9 mm. ; Flgdl. 18 mm.

*Hab.* Guatemala ; Vera Paz, 4000 Fuss.

1. *O. championi* Bates, *Biol.*

*Centr. Amer.* p. 5.

### **Proculejus** Kaup, *Mon.* p. 60.

1 (1a). Das vorletzte Intervall der Flgdn. punktirt und behaart, das letzte sehr schmale, d. i. die Randrippe, fast gekielt. Die Clypensleiste vorne zugespitzt ("Clypeo acute marginato," Bates). Die Stirn ganz glatt. Käfer kurz oval.

2 (2a). Das ziemlich lange Kopfhorn vorne frei und seitlich zusammengedrückt, etwas erhaben, mit abgerundeten Nebenhöckern. Die divergirenden Stirnleisten, kaum scharfkielig, reichen bis zum Endhöcker des Clypens, woselbst sie einen Höcker bilden. Halsschild mit ziemlich schmalen, punktirten Seitenfurchen und behaarten und punktirten Narben. Flgdn. proportionell sehr kurz, aber vorne auf der Mitte weniger vorragend als bei den verwandten Arten, mit fein punktirten Furchen. 1<sup>tes</sup> bis 6<sup>tes</sup> Intervall 6 mm. breit, eben, das 7<sup>te</sup> schmaler, glatt, das 8<sup>te</sup> 10 mm. breit, punktirt und behaart, das 9<sup>te</sup> sehr schmal, fast gekielt. (Alles nach Bates).

L. 28 mm. ; Thorax 8 mm. ; Flgdl. 15 mm.

*Hab.* Orizaba, Mexico.

1. *P. pubicostis* Bates, *l.c.* p. 5.

2a. Das Kopfhorn ganz unfrei, breit, mit abgerundeter Spitze, mit flachen, erhabenen, rundlichen Nebenhöckern. Die stumpfen, starken Stirnleisten halbkreisförmig, bis zum Vorderrande des Clypens ziehend. Alle Kopfhäler glatt, fast ganz unpunktirt. Halsschild ohne Buchten, mit sehr schmalen, punktirten Randfurchen, mit kleinen, fein punktirten und behaarten Narben. Schildchen nur vorne auf der Mitte punktirt. Taille ganz glatt, ohne Narben. Abdominalnarbe linear. Die abwechselnden Intervalle der Flgdn. etwas schmaler als die übrigen, das über der Randrippe gelegene Intervall von vorne bis zur Flgdmitte punktirt und sparsam behaart. An dem einzigen vorhandenen Stücke sind zwar sämtliche Behaarungen abgeschnitten, doch ist bei näherer Untersuchung ihr früheres Vorhandensein zu constatiren. Die Suturfurche verbindet sich hinten mit der Randfurche, die 2<sup>te</sup>

mit der 3<sup>ten</sup>, die 4<sup>te</sup> mit der 7<sup>ten</sup>, die 5<sup>te</sup> mit der 6<sup>ten</sup>, die 8<sup>te</sup> mit der 9<sup>ten</sup>. Metasternalhinterecken unpunktirt.

L. 32 mm. ; Halsschild 10 mm. ; Flgdl. 16.5 mm.

Hab. Mexico.

2. *P. acapulcae* Kuw., sp. nov.

1a. Die Behaarung der Seitenrippen der Flgdn. ist immer umfangreicher. Clypeus vorne nicht zugespitzt.

3 (3a). Die beiden äussersten, breiten Intervalle der Flgdn. sind dicht punktirt und behaart, von dem vorbergehenden nur der vorderste Theil. Die 2<sup>te</sup> und 3<sup>te</sup>, 5<sup>te</sup> und 6<sup>te</sup>, 7<sup>te</sup> und 8<sup>te</sup>, 4<sup>te</sup> und 10<sup>te</sup> Furehe verbinden sich hinten. Das Kopfhorn als kielige Leiste erscheinend ; die Nebenhöcker flügelartig. Die Stirnleisten von einem kurzen Stiele vor dem Kopfhorn rechtwinklig aus einander laufend, mit hohen Endknötchen. Die Clypeusfurehe an den Enden etwas nach vorne geschwungen. Die Kopfflächen glatt, unpunktirt. Das grosse Halsschild mit punktirten Randfurchen. Unter der kleinen punktirten Halsschildnarbe dichte Punktirung des Halsschildes bis zur Randfurehe mit Behaarung. Furchen der Flgdn. überall punktirt. Der Clypeus zeigt übrigens ausser der tiefern, vor der Stirnleiste gelegenen Furehe ganz vorne noch ein flacheres, mattes, an den Seiten der Oberlippe nach unten ziehendes, furchenartiges Band. Metasternum ohne Punktirung der Hinterecken, glatt, hinten mit Quereindruck.

L. 30 mm. ; Br. 11 mm. ; Halsschildlänge 9 mm. ; Halsschildbreite 10.5 mm. ; Flgdl. 16 mm.

Hab. Miradore, Mexico.

3. *P. brevis* Truq., l.c. p. 263 (1857).

3a. Immer mehr als die 2 äussersten Intervalle der ganzen Länge nach punktirt und behaart.

4 (4a). Die 4 äussersten Intervalle sind überall dicht punktirt und behaart. Der Clypeus fällt vor der Leiste schief ab, seitlich nächst der schwach ausgeschnittenen Oberlippe sich abwärts senkend. Die Brücke zur Augenwand faltig. Das Kopfhorn steigt sehr schief aufwärts, ist an der Wurzel des Rückens gefurcht, nach der unfreien Spitze zusammengedrückt und an der Spitze schief abfallend. An der Wurzel dieser Spitze die bogigen, sehr divergirenden Stirnleisten, die vor ihrem Ende zu einem starken Knötchen sich erheben, das mit der scharfen Clypeusleiste verbunden ist und durch eine seitwärts laufende Leiste mit dem äussern Knötchen des Clypeus sich verbindet. Unter der punktirten Halsschildnarbe reicht die Punktirung bis zum Furchenrande. Taillennarbe, schmal und lang, endet oben in einer runden Vertiefung. Sternplatte mit 3 unregelmässigen Eindrücken vor dem hintern Rande. (Alles nach Kaup).

L. 30 mm. ; Halsschild 9 mm. ; Flgdl. 18 mm.

Hab. Mexico. 4. *P. truquii* Kaup, Col. Hefte IV. p. 6 ; id., Mon. p. 62.

4a. Entweder ist das äusserste Intervall, d.i. die Randrippe, der Flgdn. unpunktirt und unbehaart, oder es ist auch noch das 5<sup>te</sup> Intervall von der Seite grösserentheils dicht punktirt und behaart.

5 (5a). Die äussere Randrippe der Flgdn. ist nicht punktirt und behaart. Der Clypeus zeigt 2 durch eine Furehe getrennte Leisten, wovon die vordere an ihrem Ende sich an den Seiten der Oberlippe herabbiegt, die 2<sup>te</sup> breitere als aufgerichtetes Knötchen vor dem Knötchen der Stirnleiste auf der Brücke zur innern Augenwand endigt. Das Kopfhorn erhebt sich ziemlich hoch aus 2 kugeligen Seitenhöckern .

und fällt vorne steil ab; an seine Wurzel setzen sich in weitem Bogen die Stirnleisten an, die in einem Knötchen endigen. Zwischen den Knötchen eine Querleiste, welche durch eine breite, unebene Furche von der obern Clypensleiste getrennt ist. Die Sternalplatte hinten mit Quereindruck, ohne Punktirung der Hinterecken. Die Furchen der Flgdn. etwas weniger tief als bei *brevis*; die Flgdn. selbst auf dem Rücken etwas flacher als bei diesem. Taillennarben, längs der Naht gelegen, schmal und lang.

L. 30 mm.; Halsschild 8 mm. lang, 11 mm. breit; Flgdl. 17 mm. lang, 10—11 mm. breit.

*Hab.* Mexico.

5. *P. sartorii* Kaup, *l.c.*

5a. Die 4 äussersten Intervalle sind ganz, das 5<sup>te</sup> vorne zum Theil, die übrigen alle hinten punktirt und behaart. Flgdn. oval, mit tiefen Furchen und starker Punktirung in denselben. Die Knötchen der Stirnleisten von den Endknötchen des Clypeus deutlich getrennt, als bei *truquii*. Das Schildchen ausser einem glatten Mittelstreifen und dem Rande grob punktirt. Metasternalschild hinten mit 2 tiefen Eindrücken. Mittel- und Hinterschienen mit 2 Dornen. (Nach Kaup; mir fremd).

L. 26—28 mm.; Halsschild 8 mm.; Flgdl. 14—15 mm.

*Hab.* Huachinango, Mexico. 6. *P. hirtus* Trnq., *l.c.* p. 264; Kaup, *Mon.* p. 62.

#### 4. GRUPPE: POPILINAE.

##### Soranus Kaup, *l.c.*

1 (1a). Die Stirnleisten gehen von der Spitze des kurzen, unfreien Kopfhorns im spitzen Winkel abwärts und endigen in einem vom Clypeus entfernten Knötchen.

2 (2a). Von den Knötchen der Stirnleisten geht schief nach aussen eine Leiste zu den Knötchen oder Zähnen des Clypeus. Zwischen den Knötchen der Stirnleisten ist die Stirn vertieft, wodurch eine stumpfe Querleiste entsteht. Halsschild mit kleiner punktirter Narbe, ohne Punkte darüber. Die ziemlich tiefe Bucht punktirt. Narbe der Taille nach oben erweitert. Mitte des Taillennetzes vorne gefurcht, die Furche nach hinten erweitert und gestrichelt; Taillennarbe nach oben erweitert. Metasternalschild mit stumpfen Knoten und wenigen Punkten an seinen hintern Ecken. Nebenhöcker gewölbt. (Alles nach Kaup).

L. 22 mm.

*Hab.* Mexico.

1. *S. expositus* Kaup, *Col.* Hefte V. p. 4 (1869);  
id., *Mon.* p. 77.

2a. Von den Knötchen der Stirnleisten geht keine Leiste zu den Clypenshöckern. Die im spitzen Winkel vom Kopfhorn herabkommenden Stirnleisten schwingen sich im weitem Verlaufe mehr als rechtwinklig aus einander und schliessen im Stirnfeld einen Höcker ein. Stirnfeld und Clypeus unpunktirt, dieser auf der Mitte vorn mit kleinem Ausschnitt. Das Kopfhorn gleichmässig nach vorne und hinten abfallend. Die nach den Seiten abfallenden Nebenhöcker ziemlich scharfkantig, nach hinten zu mit dem kaum abgesetzten Kopfhorn gleichmässig abgedacht. Das Thal zwischen ihnen und der Augenwand fein und dicht punktirt. Diese ohne deutliche Zähne oder Höcker. Halsschild mit einem Punktschwarm um die punktirte Narbe herum. Seine schmale Randfurche und die tiefe Bucht fein punktirt, seine Vorderecken schwach abgerundet. Flgdfurchen fein punktirt. Taillennarbe klein, glänzend. Das Metasternum ohne abgesetzte Platte und mit wenigen feinen Punkten an den



Hinterecken. Die Metasternalseitenfurchen linienartig schmal. Unterlippe mit sehr kleinen Narben und nur an den Seiten punktirten Lappen.

Nur 1 Stück im Berliner Museum.

L. 22 mm.

*Hab.* Para, Brasilien.

2. *S. sieberi* Kuw., *l.c.*

1a. Die Stirnleisten ziehen niemals im spitzen Winkel vom Kopfhorn ab, sondern immer im grossen Bogen.

3 (3a). Immer nur etwa 19 bis 24 mm. lang.

4 (4a). Das Kopfhorn ist an der Wurzel sehr breit gewölbt und wie aufgesetzt auf den querrügelartigen Nebenhöckern.

5 (5a). Die Nebenhöcker fallen gegen die Seiten hin ab. Die freie Spitze vorragend. Die kurzen, im Bogen divergirenden Stirnleisten endigen mit einem Knötchen. Halsschild mit spitzen Vorderecken und breiter punktirtir Randfurchen. Die Seiten über der punktirten Narbe reich punktirt. Am Metasternal Schild die Hinterecken reich punktirt. Die Clypeusleiste einen schwachen Bogen bildend. Schildchen gewölbt, mit wenigen Punkten. Taille ohne Narben. Mittel- und Hinterschienen mit Dorn. (Alles nach Kaup).

L. 22 mm.

*Hab.* Chontales, Nicaragua.

3. *S. wagneri* Kaup, *Col. Hefte IV. p. 30*;  
id., *Mon. p. 108.*

5a. Die Nebenhöcker fallen nach den Seiten nur wenig ab, tragen jedoch an ihrem Ende eine zahnartige Erhöhung. Hinter dem Clypeus fast immer eine vertiefte Querfurchen, welche hinten von einem mehr oder weniger erhabenen Wulst begrenzt wird.

6 (6a). Die Stirnleisten, in sehr flachem Bogen auseinandergehend, umschliessen ein breiteres, kürzeres Stirnfeld, das vorne meistens von einem fast geraden Wulst begrenzt und hinten von einem kurzen Längskielchen oder Wärzchen getrennt wird, und endigen mit den Knötchen seitwärts und innerhalb vor den stark zahnartigen Clypeustuberkeln. Das nnfreie Kopfhorn vorne ziemlich steil abfallend mit schwach angerichteter Spitze. Halsschild um die punktirtir Narbe herum mit grobem Punktschwarm und über sich auf dem Discus mit feineren Punkten, mit breiter, einzeln grob punktirtir Randfurchen, grob punktirtir Bucht und hinter dieser mit einigen groben Punkten. Schildchen neben der glatten Mitte dicht punktirt. Metasternalplatte nicht abgesetzt, an den Hinterecken beiderseits mit einigen Punkten. Taillennarbe nicht vorhanden. Mittelschienen mit 1 bis 2 Dörnchen. Kopfhäler zwischen Nebenhöckern und Augenwand fein runzlig.

Das Stirnfeld sehr kurz. Das ungekielte Kopfhörnchen hinten am Grunde mit Anfang einer Längsfurchen. Clypeuswulst hinten in der Mitte etwas einwärts gebogen. Die obern Seitenfurchen auf der hintern Hälfte mit Andeutung von Stäbchenbildung.

*Hab.* Mexico; Guatemala; San Salvador.

4. *S. intergens* Bates, *l.c.*

6a. Die Stirnleisten gehen halbkreisförmig oder stumpfwinklig geradlinig aneinander, umschliessen ein längeres Stirnfeld.

7 (7a). Das Stirnfeld von einem mehr einwärts gebogenen Wulst begrenzt und von einem kurzen Längskielchen getheilt. Auch die Clypeusplatte ist in der Mitte mehr einwärts gebogen, wie beim vorigen, und trägt auf der Einbiegungsstelle

hinten einen Punkt. Schildchen, wie beim vorigen, zu den Seiten des glatten Mittelstreifs punktirt. Halsschild wie beim vorigen punktirt und gebant, desgleichen das Metasternum. Mittelschienen mit 2 Dörnchen. Auch die Kopfhäler zwischen Nebenhöckern und Augenwand runzlig. Die Stirnleisten geradlinig im stumpfen Winkel aneinanderziehend.

L. 21 mm.

*Hab.* Mexico.

5. *S. huagi* Kaup, *Col. Hefte IV.* p. 21 (1868):  
id., *Mon.* p. 107.

7a. Die Stirnleisten genau halbkreisförmig, in ihrem Winkel eine kurze vertiefte Längslinie. Der glatte wulstige Clypeus in der Mitte verstärkt und nach aussen gebogen, auf der Rückseite mit eingedrücktem Punkte. Schildchen punktirt, mit glatter Längsmitte. Kopfhorn hinten ohne Furchenanfang. Halsschild mit tiefer Vorderrandfurchen, ohne ausgeprägte Bucht, feinen, unpunktirten Randfurchen und punktirten Narben. Kopfhorn nicht überhängend, vorne steil abfallend. Metasternum hinten mit Längseindruck auf der Mitte und wenig punktirten Hinterecken.

L. 25 mm.

*Hab.* Mexico.

6. *S. tikotepekensis* Kuw., *l.c.*

4a. Das Kopfhorn hinten nicht als breite Beule oder Warze auf die Nebenhöcker gelegt, sondern schmaler und mit ihnen verlaufend, hinten mit Grube oder Furchen, vorne als hohe, etwas nach vorne gelehnte Spitze erscheinend. Die Nebenhöcker scharfkügelig, nach aussen scharfzählig. Die Stirnleisten, im Bogen aus einander laufend, mit kleinem, sich auf der Brücke ansetzendem Knötchen. In der Stirnwinkelmittle ein Kielchen, zu dessen Seiten der Stirnwinkel etwas vertieft ist.

8 (8a). Schildchen mit schwacher Mittellinie nach oben. Halsschild mit Punktschwarm über den Narben. Narbe der Taille lang und schmal. Der Bogen der Stirnleisten sehr breit und flach. Die Querrinne hinter dem Clypeus tief.

L. 19—20 mm.

*Hab.* Mexico.

7. *S. recticornis* Burm., *Handb. V.* p. 508; Kaup, *Col. Hefte IV.* p. 21; id., *Mon.* p. 108; Traug., *l.c.* p. 316.

8a. Das Schildchen nach vorne neben der breiten, glatten Mitte zerstreut punktirt. Die Stirnleisten genau halbkreisförmig, in ihrem Winkel ein erhabenes Kielchen. Halsschild mit schwachen Buehten und dicht punktirten Narben. Die Querrinne hinter dem flachen, breiten, ebenen Clypeus dicht vor den Knötchen liegend, linienartig fein. Oberlippe lang und dicht roth beborstet. Seiten des Metasternums unpunktirt und unbehaart, desgleichen die Hinterecken desselben.

L. 23 mm.

*Hab.* Guatemala.

8. *S. subrecticornis* Kuw., *l.c.*

3a. Käfer 30—33 mm. lang.

9 (9a). Das Kopfhorn horizontal, an der Spitze etwas aufgebogen. Die Nebenhöcker stark niedergedrückt, vorne ziemlich abschüssig. Die starken Stirnleisten wie bei *recticornis* aneinandergehend, vor den Clypeusknötchen endigend. Seiten des Halsschildes unpunktirt, Randfurchen punktirt. Zwischenräume der Flgdn. ziemlich eben. Metasternalhinterecken grob punktirt. Mittelschienen mit 1 Dorne. Flgdn. proportionell länger als bei *recticornis*, dem das Thier sehr ähnelt.

Metasternum am Vordertheile jeseitig punktirt und behaart; seine Hinterecken mit grossem Punktschwarme. Die Fahnenlappen kurz. (Alles nach Bates).

L. 35 mm.

*Hab.* Yucatan.

9. *S. yucatanus* Bates, *l.c.*

9a. Das Kopfhorn an seiner zusammengedrückten Spitze meistens etwas gerundet herabgebogen. Das Metasternum hinten auf der nicht abgesetzten Platte mit einzelnen Punkten. Die Stirnleisten, welche bei nicht herabgebogener Kopfhornspitze (nach Kaup) bisweilen undeutlich oder fehlend sind, in etwas über rechtem Winkel aus einander laufend und in einem deutlichen Knötchen vor den Clypeustuberkeln endigend. Hinterecken des Metasternums mit Punkten. Über der punktirten Halsschildnarbe zerstreute grobe Punktirung. Schildchen zu den Seiten der glatten Mitte mit ziemlich derber Punktirung. Das Stirnfeld ganz eben, ohne Längskiel auf der Mitte. Die Stirnleisten hören dicht vor dem Fusse des Kopfhorns auf, daselbst einen Zwischenraum zwischen ihren Anfängen offen lassend.

L. 30 mm.

*Hab.* Mexico.

10. *S. tropicus* Perch., *Mon.* p. 97. t. 7. f. 4;

Trug., *l.c.* p. 312; Kaup, *Mon.* p. 109; Hope, *Cat. Lucanid.* p. 29 (1845).

Die Stücke mit nicht herabgebogenem, sondern vorne etwas freiem Kopfhorn sind  
ab. *subcornutus* Hope, *Cat. Luc.* p. 29 (1845).

### **Popilius** Kaup, *l.c.*

1 (1a). Die queren, breiten Nebenhöcker sind oben der ganzen Breite nach gefurcht. Stirn immer ohne Längskiel.

2 (2a). Das Kopfhorn vorne verlängert und mit freier horizontaler Spitze, hinten verbreitert. Die Nebenhöcker vorne abschüssig. Die Stirnleisten kurz, stumpf, am Ende vorne ohne Knötchen. Metasternum weitläufig punktirt und behaart, ohne deutliche Seitenfurchen.

Nach Bates; mir lag kein Stück vor.

L. 35 mm.

*Hab.* Parula, Guatemala.

1. *P. championi* Bates, *l.c.*

2a. Das Kopfhorn ohne horizontale freie Spitze. Das Metasternum an den Seiten mit eingedrückter Rinne.

3 (3a). Unter der Kopfhornspitze eine kurze Längsfurche, von deren Seiten vorne die Stirnleisten entspringen, welche zuerst fast rechtwinklig gegen diese Furche gestellt und erst kurz vor den Knötchen zu diesen herabgebogen sind. Der Clypeus in der Mitte etwas eingebogen, ebenso die dahinter liegende Furche. Die Oberlippe etwas ausgeschnitten. Das glatte Halsschild über der queren Narbe mit 1—2 grossen Punkten. Taille ohne deutliche Narbe, ganz vorne dicht punktirt und (bei dem einzigen Stücke des Berliner Museums) mit kurzer Längsfurche dahinter. Der Hinterlappen des Prosternums sehr spitz. Metasternum ohne abgesetzte Platte und ohne Punktirung der Hinterecken. Mittelschienen mit 1 Dorne, behaart. Bucht des Halsschildes tief, unpunktirt.

L. 32 mm.

*Hab.* Costa Rica.

2. *P. frantzi* Kuw., *l.c.*

3a. Der vom Kopfhorn herab kommende Kiel geht niemals in eine Furche über, sondern es entwickeln sich von ihm aus die Stirnleisten.

4 (4a). Die Stirnleisten laufen im spitzen Winkel von der vom Kopfhorn herab kommenden Leiste aus einander, um dann geschwungen einen kreisabschnittförmigen, grossen Bogen zu bilden. Das Schildchen ist zerstreut fein punktirt, mit oder ohne Andeutung einer Mittellinie. Über oder neben der Halsschildnarbe immer einige Punkte. Das Metasternum ohne begrenzte Platte, ohne Punkte in den Hinterecken, mit schmalen Seitenfurchen. Das Abdominalsegment hinten neben einer nur angedeuteten Kielung jederseits punktirt. Hinter- und Mittelschienen mit 1 Zahne.

5 (5a). Das vorne steiler abfallende Kopfhorn mit mehr rechtwinkliger Spitze. Der Bogen der Stirnleisten breiter.

Der Augenkiel über dem Auge mit schärferem Zahne.

L. 31 mm.

Hab. Mexico; Guatemala; Columbia.

3. *P. eclipticus* Truqui, *Rev.*

*Zool.* p. 311 (1857); Kamp, *Col. Hefte* IV. p. 22; id., *Mon.* p. 108.

5a. Der Bogen der Stirnleisten etwas schmaler. Der Augenkiel über dem Auge mit stumpferem Zahne. Das Kopfhorn nach vorne weniger steil abfallend.

L. 28 mm.

Hab. Guatemala.

4. *P. eclipticus* ab. *falschei* Kuw., *l.c.*

4a. Der Stirnleistenbogen legt sich, ohne einen spitzen Winkel zu bilden, an die vom Kopf herunter kommende Leiste. Schildchen auf der Längsmitte ohne zerstreute feine Punktirung. Das Kopfhorn mehr in die queren Nebenhöcker hineingedrückt, nach vorne und hinten gleichmässig sanft abfallend. Sonst den vorigen Arten gleichend. Mit unpunktirter Bucht.

L. 27 mm.

Hab. Amazonengebiet.

5. *P. varius* Kuw., *l.c.*

1a. Die queren Nebenhöcker haben auf ihrer Kielung keine Furche.

6 (6a). Unter der Kopfhornspitze eine kurze Längslinie, welche die beiden Stirnleisten verbindet. Die verbreiterte Halsschildbucht punktirt. Kopfhornspitze zusammengedrückt. Halsschildseiten mehr oder weniger punktirt. Die sehr breiten Nebenhöcker vorne abschüssig. Metasternum mit breiten, punktirten, rauen Seitenfurchen; Hinterecken mit einigen oder keinen grossen Punkten versehen. Mittelschienen mit 1 Dorn. (Alles nach Bates).

L. 25 mm.

Hab. Guatemala, in 1000 Fuss Höhe.

6. *P. mysticus* Bates, *l.c.*

6a. Es ist keine solche Linie vor dem Fusse des Kopfhorns vorhanden.

7 (7a). Von der Spitze des Kopfhorns gehen gegen die Mitte des Bogens der Stirnleisten 2 etwa um die Kopfhornbreite von einander entfernte, meistens unentliehe, parallele Leisten. Hinten am Fusse des Kopfhorns eine Längsrinne auf der Mitte. Halsschildnarbe und die Umgebung, besonders nach hinten zu, punktirt. Die Bucht tief.

8 (8a). Die Stirnleisten bilden einen Bogen, der weniger als ein Halbkreis ist. Das Kopfhorn vorne ein wenig überhängend. Vorderzahn des Kiefers mit starken Zacken. Seitenpunktirung des Metasternums schwach, mit lichten Härchen

durchsetzt. Metasternalplatte gewölbt, nicht begrenzt, öfters hinten durch einige Punkte der Hinterecken angedeutet. Taille mit einem grossen flachen Punkt auf der Mitte.

L. 25 mm.

Hab. Columbia.

7. *P. marginatus* Perch., *Mon.* p. 87. t. 7. f. 1;  
Burm., *Handb.* V. p. 507; Kaup, *Col. Hefte* IV. p. 26.

8a. Die scharfen Stirnleisten bilden vor dem von einem sehr kurzen Kopfhorne herab kommenden Doppelleistchen einen ziemlich richtigen Halbkreis.

9 (9a). Die Stirnleisten endigen mit einem Knötchen weit vom Clypeusdorne. Kopfhorn nicht überhängend. Halsschildvorderecken abgerundet stumpfeckig. Taille mit Längsfurche. Metasternum an den Seiten vorne weitläufig punktirt, nicht behaart. Hinterecken desselben fast oder ganz unpunktirt. Mittel- und Hinterschienen ohne Dörnchen. Im Stirnwinkel ein schwacher Kiel. Der Clypeus flach und breit. Schildchen mit Längsfurche.

L. 23 mm.

Hab. Venezuela.

8. *P. moritzi* Kuw., *l.c.*

9a. Die Stirnleisten bilden einen Halbkreis und wenden sich von den Knötchen rückwärts nach den Clypeusnubkeln. Das Kopfhorn nicht überhängend. Metasternum an den Seiten vorne weitläufig punktirt, nicht behaart, jedoch durch Punktirung der Hinterecken die Platte angedeutet. Taille (immer?) mit 2 hinter einander liegenden Grübchen auf der Mitte. Vorderzahn der Kiefer wenig deutlich gezackt. Im Stirnleistenwinkel eine schwache Linie. Sonst der vorigen Art ähnelnd, aber das Schildchen ohne Längsfurche.

L. 22 mm.

Hab. Columbia.

9. *P. novus* Kuw., *l.c.*

7a. Von der Spitze des Kopfhorns zur Mitte des Stirnleistenbogens entweder nur eine einfache Längsleiste, oder es ist keine Leiste, sondern nur eine matt rauhe Stelle vorhanden.

10 (10a). Auf der Mitte des Bogens und dicht vor demselben, sich im spitzen Winkel vereinigend, 2 kleine nahe aneinander stehende Leistchen, bisweilen nur durch einen Längseindruck in einem Wulste angedeutet, selten ganz fehlend. Das Kopfhorn hinten immer mit tiefer Längsrinne.

11 (11a). Vor den Stirnleisten die Stirne stark gedrückt, so dass dieselbe zwischen Leisten und Clypeus etwas aufwärts gewölbt erscheint. Bogen der Stirnleisten etwas breiter. Die plötzliche Längsrinne des Kopfhorns kurz, tief und breit; das infolgedessen sehr kurze Kopfhorn niedriger als beim Folgenden. Kopfflächen glänzender. Die vorne stark gewölbte Taille mit punktartigem Eindrücke hinter der Wölbung. Die Seiten des Metasternums punktirt und leicht behaart, neben der kaum angedeuteten Platte mit oder ohne kleine Punkte. Halsschild glatt, mit tiefer Narbe und einem Punkt darüber, mit tiefer, schmaler, unpunktirter Bucht.

L. 26 mm.

Hab. Columbia.

10. *P. gibbosus* Burm., *Handb.* V. p. 507; Kaup,  
*Col. Hefte* IV. p. 24; id., *Mon.* p. 76.

11a. Die Stirn zwischen Clypeus und Stirnleisten eben, glatt.



12 (12a). Der Stirnleistenbogen breiter, als beim vorigen. Das Clypeusband breit. Das Kopfhorn mit langer Furche, vorne als kurze Spitze erscheinend. Halsschild unpunktirt, mit glatter Narbe und glatten Randfurchen. Die Leisten auf der Mitte des Stirnbogens fein und scharf. Dem *gibbosus* sehr ähnlich, doch bedeutend grösser. Der Discus des Halsschildes mit einigen punktförmigen Eindrücken.

L. 29 mm.; Br. 10 mm.; Flgdl. 17 mm.

Hab. Ecuador.

11. *P. cillei* Kuw., l.c.

12a. Der Stirnleistenbogen schmaler. Die Längsrinne des etwas längern und höhern Kopfhorns nicht so plötzlich und schwächer, das Kopfhorn dadurch länger. Die Taille auch auf der Mitte der Wölbung vorne noch mit einem separirten schwachen Längseindruck. Die Leisten auf der Mitte des Stirnbogens undeutlich. Sonst dem vorigen gleichend.

L. 27 mm.

Hab. Central Amerika.

12. *P. hebes* Kuw., l.c.

10a. Auf der Mitte des Bogens niemals solche sich vor dem Bogen im spitzen Winkel vereinigende 2 Leisten, sondern fast immer eine mehr oder weniger verkürzte Längsleiste.

13 (13a). Diese Längsleiste reicht bis zu dem die Clypeusfurche auf der Rückseite begrenzenden Wulst und bildet mit diesem zusammen ein grosses lateinisches T. Dazwischen die Stirn vertieft. Das Thal zwischen Augenwand, Kopfhorn und Stirnleisten fein punktirt. Die übrigen Kopfflächen glatt. Halsschild mit Gruppen von Punkten über der Narbe und an der vordern abgerundeten Ecke. Die kleinen, nach hinten erweiterten Buchten sowie die Randfurchen punktirt. Seitenwand des Metasternums fein ehagriniert, ohne Haare. Die scharf entwickelten Nebenhöcker an den Seiten mit einer Spitze endigend. Kopfhorn an seiner Wurzel auf dem Rücken gefurcht.

L. 22 mm.

Hab. Columbia.

13. *P. tau* Kaup, Col. Heft V. p. 26 (1869);  
id., Mon. p. 75.

13a. Wenn eine solche Längsleiste vorhanden, reicht sie nie bis zu der Clypeusrandfurche.

14 (14a). Schildchen immer punktirt.

15 (15a). Schildchen auf der Mitte hinten grob punktirt, ohne glatte Mittellinie. Mittelschienen mit 1 bis 2 Dörnchen. Halsschild mit schmaler, fein punktirtirter Bucht, fein punktirtirter Narbe und zerstreuten Punkten über derselben. Metasternum durchaus glatt, nur an den hintern Ecken mit Spuren von Punkten. Vom Kopfhorn keine Leiste zum Stirnleistenbogen, welcher weit von demselben ableibt und vor seiner Mitte den breit zahnartig erscheinenden Anfang einer Längsleiste zeigt. Das Kopfhörnchen warzenartig klein zwischen den seitwärts etwas nach vorne ziehenden Nebenhöckern stehend.

L. 22 mm.

Hab. Mexico.

14. *P. klingelhoferi* Kaup, Col. Heft V. p. 3 (1869).

15a. Schildchen punktirt, mit breiter, glatter Mittellinie.

16 (16a). Mittel- und Hinterschienen mit 1 Dörnchen. Von der Spitze des Kopfhorns ein sich am Fusse spaltender Kiel herabgehend, an welchen die ganz

queren, hoch erhabenen Stirnleisten sich anschliessen, welche auf ihrem Ende ein starkes Knötchen tragen. Die Clypeusleiste an ihrem Ende zu hohem Zahne aufgerichtet. Buchten, Randfurchen, Narben des Halsschildes punktiert, auch über den letzten einige Punkte. Statt der Taillennarben jederseits 1 Längsreihe flacher Punkte. Hinterecken des Metasternums nicht grob punktiert. Im Stirnleistenbogen kein Längskiel. Kopfhäuter ganz glatt.

L. 26 mm.

Hab. Cocos Insel.

15. *P. lenzi* Kuw., l.c.

16a. Mittel- und Hinterschienen ohne Dörnchen. Von der Spitze des mehr oder weniger fein gekielten Hörnchens eine einfache Leiste gegen die stumpfwinklig aus einander gehenden, wenig gebogenen Stirnleisten ziehend, welche im schwachen Knötchen bei  $\frac{2}{3}$  der Entfernung von den Clypeuszähnen endigen. Die breiten Buchten des Halsschildes grob, die schmalen Seitenrandfurchen fein, die Narben grob und dicht punktiert; über den letzten ein grösserer Punktschwarm. Taillenlatz ohne Narben. Die flach gestreiften Flgdn. mit nicht stark gewölbten Intervallen, nicht stark punktiert. Clypeus gerade, auf der Mitte mit oder ohne Grübchen oder Eindruck. Im Stirnleistenbogen weder Längskiel, noch Längsfurche. Kopfhäuter glatt. Abdominalsegment ohne Narben, gleichmässig hoch gerundet. Hinterecken des Metasternums punktiert.

L. 22 mm.

Hab. San Salvador.

16. *P. scutellopunctatus* Kuw., l.c.

17a. Schildchen glatt, unpunktirt. Mittelschienen ohne Dornen. Sämtliche Streifen der Flgdn. gleichmässig ziemlich stark punktiert. Halsschild mit punktirter Narbe und einigen Punkten darüber, mit tiefer, unpunktirter Bucht und unpunktirter Randfurchen. Kopfhorn an der unfreien Spitze seitlich zusammengedrückt, glatt in die Nebenhöcker verlaufend. In dem flachen Bogen der Stirnleisten und auf dessen Mitte eine sehr kurze Längsleiste. Alle Kopfflächen unpunktirt. Taille auf der Längsmitte mit 2 Grübchen, ohne Narben. Metasternalhinterecken glatt; das Metasternum ohne Seitenfurchen.

L. 20 mm.

Hab. Neugranada.

17. *P. thiemei* Kuw., l.c.

### **Chondrocephalus** Kuw., l.c.

Das Stirnfeld ist hinter dem vorne glatten Clypeus, von welchem es nicht oder kaum durch eine Furchen oder Linie getrennt ist, ganz körnig rauh. Ist das Stirnfeld lang, so wird es im Stirnleistenwinkel wieder glatt und glänzend. Der Clypeus ist wie bei *Popilius* gebaut, mit welchem Bates diese Thiere vereinigt hat. Bei den bisher bekannt gewordenen Arten entspringen die Stirnleisten immer von einem vom Kopfhorn sich herabsenkenden Kiele.

1 (1a). Das Stirnfeld zwischen den Stirnleisten im Winkel derselben glänzend und unpunktirt vor dem granulirten Querbande.

2 (2a). 28 mm. lang. Die Halsschildbucht tief, aber wenig verbreitert, nicht oder kaum punktiert; seine Seiten unpunktirt, nur die Narbe mit einzelnen Punkten. Schildchen auf der Mitte stark punktiert. Die Stirnleisten laufen im spitzen Winkel aus einander; die Knötchen bleiben weit ab vom Clypeus: bis zu ihnen ist das Stirnfeld glänzend. Von den Knötchen gehen geschwungene, schwache Leisten zu den Seitentuberkeln des Clypeus. Hinterecken des Metasternums punktiert.

Mittel- und Hinterschienen mit 1 Dorne. Clypeus auf seiner Mitte mit einem kleinen Aussehnitte.

L. 28 mm.

Hab. Guatemala, Totonicapan, 10,000 fuss. 1. *Ch. granulifrons* Bates, l.c.

2a. Käfer immer viel kleiner.

3 (3a). 22 mm. lang. Die Halsschildbucht verbreitert und grob punktiert. Halsschildseiten grob punktiert. Flgdn. tief punktiert gestreift. Sonst dem vorigen gleichend. Nach Bates; mir unbekannt.

L. 22 mm.

Hab. Guatemala; am Vulkan von Fuëgo, 4000 Fuss.

2. *Ch. debilis* Bates, l.c.

3a. 18 mm. lang. Die Halsschildbuchten tief, stark verbreitert, grob punktiert. Seine Narben klein, dicht und grob punktiert, daneben das Halsschild mit grossem, ausgebreitetem Punktschwarm. Die Stirn im Winkel schwach ausgehöhlt, die Stirnleisten geradlinig zu den Clypeuszähnen ziehend und bei den als Körnchen auf dieselben gelegten Knötchen und vorder glänzenden Aushöhlung des Stirnfeldes durch eine auf der Mitte verschmälerte Leiste verbunden. Die Nebenhöcker nach aussen etwas erhöht. An der Augenwand hinter der Brücke ein grosser, vertiefter Punkt; sonst die Kopfhäler ziemlich glatt. Schildchen glatt. Taillenlatz mit mattem Längsfleck statt der Narbe. Abdominalsegment ohne Abdominalnarbe, gleichmässig hoch gerandet. Mittel- und Hinterschienen mit 1 bis 2 kleinen Dörnchen. Flgdn. tief punktiert gestreift mit gewölbten Intervallen. Der Clypeus vor dem granulirten Stirnfelde sehr schmal, fast ganz von der Granulation bedeckt.

L. 18 mm.; Br. 6 mm.

Hab. San Salvador.

3. *Ch. granulum* Kuw., l.c.

1a. Das Stirnfeld zwischen den stumpfwinklig aus einander laufenden Leisten sehr kurz und ganz granuliert. Das Kopfhorn auf die Nebenhöcker gelegt, mit rechtwinklig anfrechter Spitze. Nebenhöcker an den Enden mit vorstehender Spitze. Halsschildbuchten tief, verbreitert, grob punktiert; Randfurchen fein punktiert, Narbe mit wenigen Punkten. Schildchen zu den Seiten der Mitte mit einigen ungeordneten feinen Punkten. Taille mit schmalen, langen Seitennarben und tiefer Mittelrinne auf dem vordern Theile. Metasternalplatte durch wenige feine Punkte vor den Hinterecken angedeutet.

L. 22 mm.

Hab. Guatemala.

4. *Ch. parulensis* Bates, Biol. Centr. Amer. p. 13.

## 5. GRUPPE: SERTORIINAE.

**Sertorius** Kaup, Mon. p. 114.

Taillenlatz matt, ohne Narben.

1 (1a). Von dem Fusse des Kopfhorns eine starke, bisweilen wenig deutliche, Leiste zum Clypeuswulste, mit demselben ein grosses lateinisches T bildend. Nebenhöcker ziemlich schräge nach vorne gerichtet und durch eine feine Leiste mit der hintern Augenwand verbunden. Halsschildnarbe kurz, buchtig, unpunktirt. Metasternum ohne begrenztes Schild, unpunktirt, dicht vor den Hinterhüften mit kleinem, queren Eindruck. Furchen der Flügeldecken fein punktiert. Kopfhorn unfrei, vorne steil abfallend; von seinem seitlichen Vorderrande die Stirnleisten in breitem Bogen ziehend, stark erhaben, mit dem Knötchen weit vom Ende des

Clypeuswulstes fernbleibend. Kopfhäler ziemlich tief, wenig uneben. Taille mattschwarz. Seitenfurchen des Halsschildes schmal.

L. 32 mm. ; Br. 10 mm.

*Hab.* Guatemala.

1. *S. agassizi* Kaup, *l.c.* p. 114.

1a. Kein Längskiel, sondern eher eine feine Furche auf der Stirn. Nebenhöcker ganz fehlend, eher durch einen kleinen Eindruck angedeutet. Die geschwungene Halsschildnarbe unpunktirt. Kopfhäler glatt, wenig uneben. Kopfhorn, Stirnleisten, Tailenlatz wie beim vorigen. Flügeldecken proportionell etwas kürzer, sonst dem vorigen gleichend, den Übergang bildend zum Genus *Peturius*.

L. 30 mm. ; Br. 11.5 mm.

*Hab.* San Salvador.

2. *S. assmanni* Kuw., *l.c.*

#### 6. GRUPPE: UNDULIFERINAE.

**Undulifer** Kaup, *Col. Hefte V.*; id., *Mon.* p. 103.

1 (1a). Das Kopfhorn auf dem hintern Theile tief gefurcht, vorne mit freier Spitze. Schildchen dicht punktirt mit glatter Längsmatte. Das Halsschild mit tiefer, glatter Bucht furche am Vorderrande, über und hinter der punktirten Narbe mit groben Punkten und mit abgerundeten Vorderecken. Oberlippe vorne ziemlich gerade. Alle Flgdufurchen fein punktirt. Alle Kopfflächen runzlig; in den Runzeln die Nebenhöcker und Stirnleisten wenig kenntlich.

2 (2a). Augenwand mit stärkerem Zahn auf der Mitte. Das ganze Metasternum punktirt und behaart. Die convexen Bogen des Clypeus stärker.

Nach einem Kaup'schen Exemplare.

L. 35 mm.

*Hab.* Mexico.

1. *U. incisus* Trnqui, *Rev. Zool.* p. 266 (1857).

2a. Augenwandmitte nur gehoben, zahnlos. Das Metasternum hinten mit breit glatter Mittelfläche. Der Prosternalkiel zwischen den Vorderhüften gefurcht. Die Stirnleisten und Nebenhöcker trotz der starken Kopfrunzeln doch ziemlich kenntlich. Die Bogen des Clypeus schwächer. Die Kopfhornfurche tief.

L. 32 mm.

*Hab.* Mexico.

2. *U. acapulcae* Kuw., *l.c.*

1a. Kopfhorn ungefurcht, mit erhabener und angerichteter Spitze. Die vorderen Kopfflächen glatt, die hintern punktirt und gerrunzelt. Die Randflächen des Halsschildes auch hinter den Augen an der Buchtstelle punktirt. Ohne Stirnleisten; Nebenhöcker unendlich. Metasternalplatte vorne dicht, hinten mehr zerstreut punktirt und lang behaart. Augenwand in der Mitte ziemlich stark zahnartig erhaben. (1 Stück).

L. 28 mm.

*Hab.* San Salvador.

3. *U. salvadoris* Kuw., *l.c.*

#### 7. GRUPPE: SPURIINAE.

**Spurius** Kaup, *Mon.* p. 75.

Ohne Kopfhorn. Die Nebenhöcker durch eine nach rückwärts durchgebogene feine Leiste verbunden. Stirnleisten schwach, nur oder kaum angedeutet. Die Clypeusleiste sehr fein, trägt am Ende ein kleines Dörnchen.

Metasternum glatt, ohne abgegrenztes Metasternal Schild Schildehen fein zerstreut punktirt. Taille mit Narbe. Dem Genus *Popilius* ähnlich, doch durch den Mangel des Kopfhorns geschieden. Halsschild mit grosser Narbe und Punkten darüber. Mittelschiene ohne Dorn. Körper flach. Fühlerkeule 3-lappig.

L. 18 mm. ; Br. 66 mm.

Hab. Mexico; Guatemala.

1. *S. bicornis* Truqui, l.c. ; Kamp, l.c.

### **Cylindrocaulus** Fairm., *Le Naturaliste* p. 164 (1880).

Körper dick, convex. Mit ganzer Halsschildrandfurche. Fühlerkeule 3-lappig. Vordertibien mässig breit, nach aussen stark gezähnt. Mandibeln mit zweizackigem Vorderzahn. Clypens vorne nicht gezahnt, breit ausgebuchtet, mit vorgezogenen Ecken. Augen beinahe zweitheilig. Scheitel auf jeder Innenseite der Augenwand jeseitig mit einem aufgerichteten Horne bewaffnet, ohne Kopfhorn auf der Mitte. Der Clypens (nach brieflicher Mittheilung der Herrn Fairmaire) mit Leiste. Das Prosternum zwischen den Vorderhüften als erhabener Kiel sichtbar und hierdurch von den Anlacocyclinen getrennt. Körper fast cylindrisch, glänzend, glatt. Kopf sehr glatt, schwach concav, vorne gerandet, jeseitig mit einem zierlichen, schräge angerichteten Hörnchen. Halsschild stark convex, mit gerundeten Hinterecken und vorgezogenen Vorderecken, mit Mittelfurche, die vorne verkürzt und auseinanderlaufend ist. Flgdn. tief gefurcht und in den Furchen tief punktirt. Hinterschienen kaum mit Dorn versehen. Metasternalhinterecken ohne Punktirung.

Alles nach Fairmaire, in dessen Sammlung sich das einzige Stück befindet, welches bisher bekannt wurde.

L. 17 mm.

Hab. China.

1. *C. bucerus* Fairm., l.c.

### 8. GRUPPE: PSEUDACANTHINAE.

#### **Pseudacanthus** Kamp, *Col. Hefte* V.; id., *Mon.* p. 73.

Durch die Querfurche zwischen den innern Zähnen wird der Clypens von dem Stirnfelde geschieden. Das vorne weit freie Kopfhorn ist mit den Nebenhöckern zusammen hinten beinahe bogenförmig abgerundet. Diese mit den im Bogen weit auseinander und nach den äussern Clypensvorsprüngen ziehenden Stirnleisten beinahe zusammenfallend. Die innern Clypensdorne in ähnlicher Weise wie bei *Erionomus* sich nach vorne allmählich verstärkend aus der Stirn nach dem Clypensrande entwickelt. Die Furche am Vorderrande des Clypens setzt sich oft auch zwischen dem äussern und Binnenzahne fort.

1 (1a). Hinterschienen undeutlich gezähnt. Kopfhorn an der Basis breit dreieckig, seine Nebenhöcker sehr klein, seine Spitze frei. Stirnleisten undeutlich, wenig erhaben, breit gekrümmt.

Mir fremd geblieben.

L. 29 mm.; Br. 10 mm.; Flgdn. 16 mm.

Hab. Mexico.

1. *P. laticornis* Truq., *Rev. Zool.* p. 316 (1857); Kamp, *Mon.* p. 74.

1a. Hinterschienen nicht gezähnt oder gezähmelt. Mittelschienen dicht behaart.

2 (2a). Die innern Zähne des Clypens überragen den Clypensrand nicht, sondern



sind an demselben senkrecht abgebeilt, die äussern Clypeus vorsprünge sehr stumpfeckig. Die Stirnleisten undentlich. Die Seiten der Unterlippe wenig behaart. Die Nebenhöcker hoch, kielig, im Bogen gestellt. Die Tailleurnarben lang, linienartig schmal. Die untern Halsschildseiten mit starker Haarwulst. Narben der Unterlippe unbegrenzt, mit der Umgebung punktirt. Halsschild glatt mit kleiner Narbe. Das Schildchen zu den Seiten der glatten, gefurchten Mittellinie mit länglichen Punkten. Das Kopfhorn etwas schmaler, mit weit überhängender Spitze; darunter die glänzende Stirnfläche mit schwacher Längsanshöhlung.

L. 31 mm.; Br. 10·5 mm.

Hab. Mexico. 2. *P. mexicanus* Truq., l.c. p. 315; Kaup, Mon. p. 73.

2a. Die innern Zähne überragen den Clypeusrand sichtbar, sind nicht an ihm steil abgebeilt.

3 (3a). Käfer 31 mm. lang. Im Wesentlichen gleiche Kopfbildung wie der Vorige. Das Schildchen auf der nicht gefurchten Mitte breiter glatt, zu den Seiten punktirt. Das Kopfhorn breit dreieckig, vorne weit überhängend, unter ihm die glatte Stirne ohne Längsanshöhlung. Die äussern Clypeusvorsprünge scharfeckig. Die Stirnleisten vorne unterhalb der hohen Nebenhöcker dentlicher und zumal auf der linken Seite dentlich gezähnt zu den Vorsprüngen ziehend. Die obern Flgdfurchen, wie beim vorigen, fast oder ganz unpunktirt, die Seitenfurchen ziemlich fein punktirt. Die Seiten der Unterlippe mit der Narbe dichter und länger behaart als bei *mexicanus*.

(1 Stück im Stuttgarter Museum).

L. 31 mm.; Br. 10·5 mm.

Hab. Mexico.

3. *P. traquii* Kuw., l.c.

3a. Käfer nur 23—25 mm. lang.

4 (4a). Mittel- und Hinterschienen ungezähnt. Die Kopfhäler mit grossen Unebenheiten. Die Stirnleisten nach vorne in der rauhen Umgebung verschwindend. Der Raum zwischen den Stirnleisten fein und sparsam punktirt. Das fast dreieckige Kopfhorn mit weit freier Spitze, die mit ihm verbundenen Nebenhöcker scharfkielig. Die Augenwand dreizählig, der vorderste Zahn den äussern Clypeuszahn bildend. Mittelschienen und unterer Halsschildseitenrand dicht behaart. Die äussern Furchen der Flgdn. stärker als die obern. Nach Truqui.

L. 23 mm.; Br. 8·5 mm.

Hab. Mexico. 4. *P. aztecus* Truq., l.c. p. 314; Kaup, Mon. p. 74.

4a. Mittelschienen oben nach der Mitte zu allmählich erhöht und dicht behaart, mit 2 Zähnen. Die Stirnleisten breit gekrümmt, nicht scharf, in die den Clypeus überragenden Dorne anlaufend. *P. laticornis* sehr ähnlich, kleiner, mit proportionell kürzern Flgdn. Wenig convex, glänzend. Kopfhorn an der Wurzel breit, mit weit freier Spitze; mit sichtbaren, kurzen, wenig erhabenen Nebenhöckern. Flaggeulappen mässig lang. Halsschildseitenrandfurchen überall dicht fein punktirt; seine Seiten und Narben glatt. Die stark punktirt gestreiften Flgdn. glänzend, mit fast glatten Zwischenräumen. Metasternum mit Ausschluss der gross punktirten Achselhöhlen der Mittelschienen sehr glänzend.

Alles nach Bates.

L. 25 mm.; Halsschild 6·5 mm.; Flgdl. 13 mm.

Hab. Jalappa, Mexico.

5. *P. jalappensis* Bates, l.c.

**Eriopterus** Knw., *l.c.*

Von *Pseudacanthus* und *Triaenurgus* hauptsächlich dadurch leicht zu unterscheiden, dass die äussersten Seitenintervalle der Flgdn. dicht punktirt und behaart sind. Jeseitig am Clypeus stehen dicht aneinander 2 kleine Zähne, von denen die Binnenzähne durch eine feine Furche verbunden sind wie bei *Triaenurgus*.

Die Oberlippe stark gerundet ausgeschnitten. Das Kopfhorn rund, lang übergelegt wie bei *Petrejus*. Von seinem Fusse geht jeseitig eine starke Leiste zur vordern Augenwand, während eigentliche Stirnleisten fehlen. Die Nebenhöcker sind ziemlich klein, abgerundet. Das Brustschild mit kleinen behaarten Narben und punktirten Randfurchen. Metasternum mit sehr schmalen Seitenrinnen, unpunktirt, auch mit unpunktirten Hinterecken, mit tiefer Quergrube (immer ?) vor den Hinterhöften. Im Wiener Musenn.

L. 32 mm.; Halsschild 9 mm.; Flgdl. 17 mm.; Br. 11 mm.

*Hab.* Orizaba, Mexico.

1. *E. ganglbaueri* Knw., *l.c.*

**Triaenurgus** Bates, *Biol. Centr. Amer.* p. 8.

An dem vierzähligen Clypeus die Mittelzähne sehr weit aus einander stehend. Kopfhorn ähnlich wie bei *Rimor*, breit, niedergebogen, weit frei, mit hohen, kieligen, an den äussern Ecken abgerundeten und nach vorne gebogenen Nebenhöckern versehen. Die Flgdn. ganz unbehaart und mit einander verwachsen. Halsschild proportionell sehr gross. Keine Stirnleisten vorhanden. Halsschildnarben klein und ganz glatt. Taillenlatz an den Seiten punktirt und behaart. Metasternum an den Seiten dichter punktirt und behaart, mit gross und ziemlich weitläufig punktirten Hinterecken. Flaggen dreilappig. Der Vordertheil des Vorderkopfs einen breiten Querwnst bildend.

1 (1a). Das 6<sup>te</sup> und 7<sup>te</sup> Intervall an den Flgdn. sind die schmalsten. Die Flgdn. sind fast matt, stark punktirt gefurcht. Mittelschienen mit einem starken und 2 schwachen Dörnchen, Hinterschienen mit 1 Dörnchen. Halsschild mit punktirter Randfurche, welche am Vorderrande sehr schmal ist.

Mir fremd; nach Bates.

L. 37 mm.; Thorax 11 mm.; Flgdl. 19 mm.

*Hab.* Totonicapan, Guatemala, 10,000 Fuss.

1. *T. subopacus* Bates, *l.c.*

1a. Das 6<sup>te</sup> Intervall der Flgdn. ist vorne beträchtlich schmaler als das 5<sup>te</sup> und 7<sup>te</sup>, das 8<sup>te</sup> fängt erst hinter der Schulter an, indem das 7<sup>te</sup> und 9<sup>te</sup> sich in der Schulterschwiele vereinigen. Hinter dem Kopfhorne eine feine Längsfurche. Die Flgdn. stark glänzend, wie der ganze Käfer. Das stark gewölbte Schildchen hinten zu beiden Seiten einer angedeuteten Längsmittelfurche fein punktirt. Mittel- und Hinterschienen mit 1 Zähnen. Nach hinten zu verschmälern sich das 7<sup>te</sup> und 8<sup>te</sup> Intervall der Flgdn. sehr beträchtlich; die Furchen fein punktirt.

L. 38-50 mm.; Thorax 11 mm.; Br. 13 mm.; Flgdl. 20-5.

*Hab.* Guatemala.

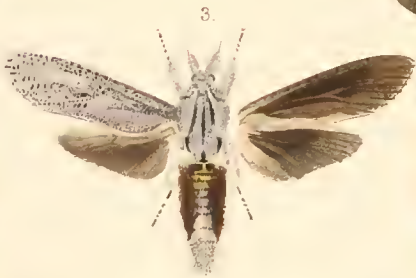
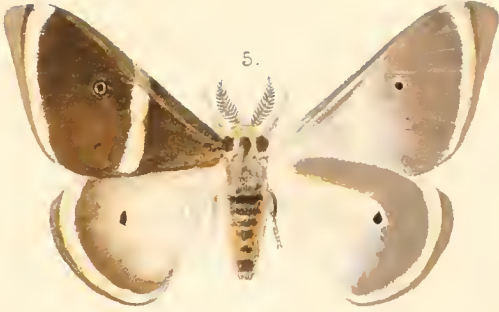
2. *T. junctistriatus* Knw., *l.c.*

(Fortsetzung folgt).



# EXPLANATION OF PLATE VII.

- Fig. 1. *Sphinx arthuri*, p. 307. n. 1.  
 „ 2. *Xyleutes donovani*, p. 307. n. 3.  
 „ 3. „ *pulchra* ♂, p. 308. n. 4.  
 „ 4. „ „ ♀, „ „  
 „ 5. *Ceranchia ansorgei*, p. 309. n. 5.  
 „ 6. *Chalcusia* (?) *albomedia*, p. 309. n. 6.  
 „ 7. *Mimeusemia lombokensis*, p. 310. n. 8.  
 „ 8. *Phalaenoides restrictus*, p. 311. n. 10.  
 „ 9. *Aegocera ansorgei*, p. 311. n. 11.  
 „ 10. *Copidryas marginalis*, p. 312. n. 13.  
 „ 11. *Milionia dohertyi*, p. 313. n. 14.







SOME NEW SPECIES OF *HETEROCERA*.

BY THE HON. WALTER ROTHSCHILD.

(Pl. VII.)

## SPHINGIDAE.

1. *Sphinx arthuri* sp. nov. (Pl. VII. fig. 1).

♂. *Forewings*: pale grey, strongly sprinkled with orange and black scales, giving a decided olive tinge. An indistinct stigma on the discocellulars, from which a faint dark streak runs into the cell. Across the disc of the wing runs an indistinct zigzag transverse line, from which horizontally proceed two dark lines about 5 mm. long between veins 2 and 4.

*Hindwings*: black, crossed by two bands of pearl-grey 3 mm. wide: outer margin suffused with grey scales: fringe creamy white.

*Underside*: as above, but more uniform grey.

Head and thorax like upperside of forewing; abdomen dark grey, with five black and five light grey lateral spots placed alternately; underside of abdomen whitish grey, with a median row of small black dashes.

Expanse: forewing, length 52 mm.; width 19 mm.

„ hindwing, „ 32 „

*Hab.* La Paz, Bolivia (caught at electric light); 1 ♂.

Named after Mr. Arthur Maxwell Stuart.

2. *Daphnis dohertyi* sp. nov.

♂. Closely allied to *D. hypothous* and *magnifica*, but easily distinguished from both by the very differently shaped discal dark green area. The basal edge of this patch is straight; the outer edge is deeply sinuate between veins 4 and 5, this sinus filled up with white; in front of the sinus the patch measures only 7 mm. in width, and between veins 2 and 3 only 2 mm. The pale line situated between the dark green patch and the apex of the wing is very strongly curved between veins 4 and 5, the line reaching vein 4 at a distance of 7 mm. from the outer margin; the space between this line and the discal patch is partly scaled white, especially close to the dark green patch. The cellule between veins 3 and 4 is, in *hypothous* and *magnifica*, olive-green or dark green, except a trapezoidal submarginal spot of fawn-colour; in *dohertyi* this latter spot is much enlarged and almost eern-drab. Hindwing more reddish than in the allied species.

*Underside*: as in *hypothous*, the three discal brown lines of the forewing more prominent: hindwing with two white dots at costal margin.

*Hab.* Kapaur, Dutch S.W. New Guinea, December 1896 (W. Doherty); 1 ♂.

## COSSIDAE.

3. *Xyleutes donovani* sp. nov. (Pl. VII. fig. 2).

♂. *Upperside*: forewing without the yellowish tint which is present in *X. lituratus* Don., the nearest ally of *donovani*; costal margin with about twenty

black spots, which become smaller and scarcer towards the apex of the wing ; before middle of cell there is an ill-defined black patch which penetrates into the cell ; another, smaller, patch midway between the first and the apex of the cell ; outside the second patch a black dot ; a submarginal row of elongate black patches between veins 2 and 8, the posterior one the longest ; hinder margin with transverse black lines, about six to eight in basal half, twelve to fourteen in outer half, the latter lines either connected with one another by means of two irregular longitudinal lines, or more or less merged together ; behind the middle of vein 1c, where there stands a black stripe in *lituratus*, is a space bare of black lines ; outside this white patch is an elongate black mark of 3 mm. length and 1 mm. breadth ; upper half of cell with very few minute black linear spots ; all the cellules with black transverse irregular lines, fewer in number than in *lituratus*, mostly joined to each other along the middle line of the cellules ; end of veins with square blackish brown spots.

Hindwing nearly as in *lituratus* ; abdominal margin, especially at anal angle, more extended white ; black network of lines less dense, with square blackish brown spots at the ends of the veins.

*Underside* : similar to upperside, but disc of forewing brown, and the blackish brown areas present on the upperside of the hindwing between cell and hinder margin and between cell and apex of wing less strongly marked.

Antennae scaled white above, twenty-seven joints with lateral branches, forty joints simple ; branches blackish, fine hairs of underside grey (in *lituratus* about forty-five joints have lateral processes, and forty joints are simple ; fine hairs of underside of branches with a yellowish tint). Head greyish white (in fresh specimens of *lituratus* ochraceous), black close to the eyes and at anterior margin. Prothorax and patagia grey, densely mixed with brown ; mesothorax whitish laterally, with two black bands bordering a pale brown median area ; no white median line. Abdomen much more grey than in *lituratus*. Breast, underside of abdomen, and legs white ; anterior coxae, upperside of anterior tibiae, part of middle tibiae, and all the tarsi brown, the latter obviously ringed white.

♀. Resembles the ♂, but the white discal spaces of the forewing are much overpowdered with black scales, and the black costal patches are more extended. Hindwing brown all over, except costal region as far as covered by forewing ; anal margin and interspaces between the very prominent brown square spots at the ends of the veins whitish grey. Sides of mesothorax darker than in ♂ ; abdomen scaled grey and brown.

Varies in size like *lituratus*. The posterior angle of the forewing is somewhat less rounded than in *lituratus*, and the hindwing is slightly narrower.

*Hab.* Brisbane district, Queensland ; a good series of both sexes.

This species is often confounded with *lituratus* in collections.

#### 4. *Xyleutes pulchra* Rothsch. (Pl. VII. fig. 3, ♂ ; 4, ♀).

This species I described from the *female* in Nov. Zool. III. p. 232 (1896). I have now received a small *male* which has been obtained, together with several ♀ ♀, out of the same kind of tree. This *male* differs, as the figures show, from the ♀ especially in the absence of the discal patch of black spots from the forewing and in the darker hindwing and abdomen. The *male* antennae consist of about sixty joints, of which the last thirty are devoid of lateral processes.

*Hab.* Brisbane district, Queensland ; the *male* bred November 1896.

## SATURNIIDAE.

5. *Ceranchia ansorgei* sp. nov. (Pl. VII. fig. 5).

♂. *Upperside*: forewing hair-brown, with a slight tint of eern-drab in costal region; just before middle of wing there is an almost straight transverse white band, expanded between costal and inner margin, faintly curved behind, and slightly edged with yellow basally; width of band  $2\frac{1}{2}$  mm.; a second band runs, in a slight curve, from the costal margin, where it begins 5 mm. short of the apex, to the end of vein 2, gradually tapering off behind; the anterior portion of the band is bordered outwardly by a brick-red line; upon the discocellulars there is a small eye-spot, 2 mm. in diameter, consisting of a yellow, a black, and a white ring surrounding a black centre.

Hindwing white from base to apex of cell, gradually becoming dark greyish drab; a submarginal white band similar to that of the forewing, edged outwardly with pale yellow; a small black spot at end of cell.

*Underside*: forewing dark greyish drab, white towards base; median band not distinctly marked; outer band as above; outer two rings of eye-spot absent. Hindwing as above, but costal region dark greyish drab to near base, the white colour thus being restricted to a large patch extending from base to apex of cell, bordered anteriorly by the subcostal nervure; stigma bordered with white; submarginal band as above.

Head, underside of abdomen and legs drab-colour; legs faintly yellowish; pronotum, sides of sterna and abdomen white; meso- and metanotum and upperside of abdomen greyish drab.

Length: forewing 40 mm., hindwing 29 mm.

*Hab.* Kiboko River, Uganda Protectorate, November 5th, 1896 (Dr. I. W. Ansorge); 1♂.

Differs from *C. mollis* Butl., its nearest ally, especially in the presence of the submarginal white band on both wings.

## CHALCOSHDAE.

6. *Chalcosia* (?) *albomedia* sp. nov. (Pl. VII. fig. 6).

♀. *Upperside*: forewing black, with a slight metallic green gloss at the base; a longitudinal band running from the base to beyond the apex of the cell, where it is widest, white; the band is constricted at its basal third. Hindwing white; outer margin bordered with black; at the inner edge of this border there are bluish green scales, especially between veins 3 and 6 and at the anal angle; abdominal margin of wing with black and metallic bluish green scales; base with black hairs.

*Underside*: forewing metallic blue-green except outer fourth; white median band reduced in length, basal third wanting, rest of band separated into two patches by means of a transverse bar in the middle of the cell. Hindwing bluish green at the base, abdominal margin, and edge of the white area; black outer border narrower behind than it is above.

Head and end of abdomen ochraceous; prothorax, front part of mesothorax, and a dot near hind edge of mesothorax white; rest of body bluish green.

Forewing: length 31 mm., breadth 15 mm.

Hindwing:    "    24    "       "    16    "

*Hab.* Kapaur, Dutch S.W. New Guinea, January 1897 (W. Doherty); 1 ♀ at low altitude.

This species does not fit in any of the genera of *Chalcosiidae* hitherto erected. The scales of the wing are very long compared with those of other *Chalcosiids*, those of the prothorax and patagia are hairlike. In venation the insect agrees best with *Pompelion*, veins 2 to 6 being free, 7 being stalked [with 8 and 9, and 11 anastomosing shortly with 12; the veins 2 to 7 of the hindwing originate from the cell. The branches of the joints of the antennae become gradually, but considerably, shorter towards the apex.

#### AGARISTIDAE.

##### 7. *Episteme sumbana* sp. nov.

♂. Closely resembling *E. adulatrix* from North India. Forewing narrower, median band broadest at the submedian nervure; series of white spots in outer half of wing situated closer to the cell than in *adulatrix*, the three anterior spots of this row elongate, twice as long as in *adulatrix*. Hindwing above with a row of six white spots, of which the third and fourth are situate 1 mm. from the apex of the cell; two small orpiment-orange spots near anal angle.

*Underside*: as above, the white spots in outer half of wings larger.

Head, palpi, and prothorax as in *adulatrix*; patagia as in *nigripennis* from Ceylon: abdominal segments 5, 6, and 7 with orpiment-orange scales beneath and on the sides.

*Hab.* Sumba, December 1896 (A. Everett); 1 ♂.

The occurrence of this insect on the island of Sumba is very remarkable, as hitherto no representative of *E. adulatrix* has been found in the Malayan Subregion, the various forms of *adulatrix* being restricted to Continental India and Ceylon.

##### 8. *Mimeusemia lombokensis* sp. nov. (Pl. VII. fig. 7).

♂. *Upperside*: forewing black, with some dispersed yellowish scales; a triangular mark at base of cell, a transverse bar beyond middle of cell, and a straight, anteriorly narrowed, band beyond apex of cell, extending from areole to vein 2, measuring  $2\frac{1}{2}$  mm. in width at vein 3, cream-yellow; two basal spots before costal nervure, a spot in middle of cell, a line upon the discocellulars, and two transverse lines behind cell, metallic blue; fringe at apex of wing white. Hindwing bright cadmium-yellow, costal and outer region black: this black border fills the costal and subcostal interspaces, and measures 5 mm. at vein 6,  $3\frac{1}{2}$  mm. at vein 2; base of wing dusted over with black scales; fringe at apex of wing white.

*Underside*: forewing nearly as above; the creamy markings a little more extended and paler. Hindwing with the yellow area not dusted over with black at the base: costal black border narrow at base, then dilated so as to touch the anterior angle of the cell, and again sinuate.

First joint of palpi cream-colour; second black, sides cream-colour; third black, with very few creamy scales. Head black, cream-colour at the sides and behind the eyes. Thorax covered with a mixture of olive-yellow and black, hairlike, scales. Abdomen bright cadmium-yellow, middle of basal segments metallic black. Underside cadmium-yellow, abdomen brighter; tarsi black above, with the tips of the joints white.



♀. Like the *male*, but the basal creamy mark of the forewing is absent.

*Hab.* Sapit, Lombok, 2000 feet, May and June 1896 (H. Fruhstorfer): 4 ♂♂, 3 ♀♀.

The specimens vary slightly *inter se* in the size of the markings of the forewing. This species agrees structurally closely with *M. peshwa* (from India) and allies.

#### 9. *Mimeusemia puciolia* (Druce).

*Agarista puciolia* Druce, *Ann. Mag. N. H.* (6). XV. p. 42 (1895) (Philippine Is. *ex err.!*).

*Mimeusemia fruhstorferi* Rothschild, *Nov. Zool.* IV. p. 183. n. 7 (1897) (S. Celebes).

The *habitat* "Philippine Islands" as given in the description of *puciolia* is stated by mistake; the type-specimen bears the label "Minal., Plat.," which means Minalhassa, North Celebes (Platen). It is a Staudingerian specimen. The differences between *puciolia* and *fruhstorferi* are very slight; *puciolia* has, in fact, all the characters mentioned in my description of *fruhstorferi* and not mentioned in the description of *puciolia*, except that it is smaller. The two specimens represent perhaps a northern and a southern subspecies of the same species; but this can only be decided on receipt of more material. For the present it is best to sink *fruhstorferi* as a synonym.

#### 10. *Phalaenoides restrictus* sp. nov. (Pl. VII. fig. 8).

♂. The representative form of *Ph. megisto* Boisd., from which it differs as follows:—

*Upperside*: forewing with a very strong blue metallic gloss, except in outer third; a transverse band before middle of cell as in *megisto*, but only half the width, a spot beyond middle of cell, and a discal ovate patch, pointed at both ends, reaching from vein 6 to the submedian nervure, a streak upon the inner margin at the base, and nervules in outer region of wing, white. Hindwing as in *megisto*, but more metallic blue.

*Underside*: forewing with the spot in the apex of the cell and the discal patch as above, the latter larger. Tibiae darker than in *megisto*, more metallic; foretibiae without yellow hairs. Second joint of palpi with very few black scales above.

*Hab.* Kinigunang, New Pommern (Carl Ribbe); 1 ♂.

#### 11. *Aegocera ansorgei* sp. nov. (Pl. VII. fig. 9).

♂. Closely allied to *A. menete* (Gram.), but has a narrower and differently marked forewing. The longitudinal band beyond the cell is narrower than in *menete*; it is separated into four portions—a basal spot, two elongate markings of 5 and  $4\frac{1}{2}$  mm. length respectively, and a transverse small spot; the outer mark of *menete* is wanting. Besides the almost rectangular spot in the apex of the cell there is a rounded mark before the middle of the cell; two faint transverse lines in middle of cell, and a third at apex of cell creamy buff like the other markings. Transverse band beyond apex of cell narrow, forming a very blunt angle at vein 5; outside this band, which reaches as far as vein 3, there is a short costal band and a complete submarginal band of creamy buff scales. Costal and inner margins dusted

over with creamy buff scales. Nervules close to the fringe with metallic scales; the metallic spots in the cell and on the disc are very pale, and much less prominent than in *menete*. Hindwing as in *rubida* Feld., but the border and the central spot deeper in colour. Abdomen as in *menete*. The antennae are as thick towards the apex as in *A. obliqua* Mab.

*Hab.* Muaní, Uganda Protectorate, November 11th, 1896 (Dr. I. W. Ansorge); 1 ♂.

Named in honour of the collector.

## 12. *Crinala floresiana* sp. nov.

♂ ♀. *Upperside*: both wings black, with a strong metallic blue gloss in side light. Forewing with a spot before costal nervure near base, an oblique streak beyond cell, a short bar in middle of cell, and a line at the apex of cell plumbaginous blue. Ciliae of both wings white, extreme edge of outer margins also white, the white scaling a little more extended at apex of forewing.

*Underside* of forewing with an indistinct transverse short line outside the apex of the cell, composed of ochreous scales.

Body black, with metallic blue gloss. Head with some scales behind eyes, two spots in front of the antennae, and frontal margin white. First and second joints of palpi scaled white beneath. Anterior coxae, part of collar, and end of abdomen bright orange in ♂, orpiment-orange in ♀.

Agrees in colour almost exactly with *Scrobigeria albomarginata*; but the neuuration is as in *Crinala*, except that vein 10 of the forewing is very shortly stalked with 8 and 9 in ♀, while in ♂ it arises from the areole. Hindwing of ♂ without the longitudinal fold present in *Scrobigeria*; abdominal region only hairy.

Length of forewing: ♂, 25 mm.: ♀, 30 mm.

*Hab.* South Flores, October and November 1896 (A. Everett): 1 ♂, 1 ♀.

## 13. *Copidryas marginalis* sp. nov. (Pl. VII. fig. 10).

♂. *Upperside*: forewing dark brown; costal region creamy buff, overpowdered with brown scales; this creamy buff area is dilated midway between base and vein 2, forming an acute angle behind cell; from here to the upper angle of the cell it is gradually narrowed, and then dilated again; its outer edge is nearly parallel to the outer margin of the wing. Hindwing chrome-yellow, with a black border all round (except base); this border is 5 mm. wide at vein 7, 1½ mm. at vein 2, and 3½ mm. at anal angle.

*Underside*: forewing blackish brown; a large triangular basal patch, 3½ mm. broad at apex and 6 mm. long, and a broad band outside the cell, extending from costa to outer margin, reaching the latter between veins 16 and 3, about 4 mm. wide, chrome-yellow. Hindwing as above.

Head and underside of palpi, middle line of thorax, underside of thorax, and legs grey; upperside of palpi and sides of thorax above brown. Abdomen nearly black, somewhat greyish towards the tip. Front of head with a prominent, obliquely truncate cone.

Forewing: length, 20 mm.; breadth, 9 mm.

*Hab.* Espirito Santo, Brazil; 1 ♂.

## GEOMETRIDAE.

14. *Milionia dohertyi* sp. nov. (Pl. VII. fig. 11).

♂. Closely allied to *M. elegans*, Nov. Zool. II. p. 498. t. vii. f. 1. 2 (1895), but wings and body much less metallic blue. Median band of forewing nearly as in *elegans*, somewhat rounded at both ends; the subapical band is twice as broad as in *elegans*, consisting of three spots, of which the middle one is 5 mm. long; a small white mark near hinder angle, as in *elegans*.

Hindwing black, with a very large pale ochre-yellow area extending from hinder margin, where it measures 11 mm. in width, to vein 7: its outer edge rufous red; a faint black spot at the end of the cell.

*Underside*: as above, but hindwing with a more distinct black dot upon the discocellulars, and black outer border of hindwing dilated behind vein 2. Abdomen paler yellow (? faded) than in *elegans*: middle segments yellow also beneath, edged with black.

*Hab.* Kapanr, Dutch S.W. New Guinea, January and February 1897 (W. Doherty); 2 ♂♂, at low elevation.

## TWO NEW SPECIES OF BUTTERFLIES IN THE TRING MUSEUM.

By H. GROSE SMITH, B.A., F.E.S., F.Z.S., etc.

1. *Tenaris mailua* sp. nov.

♂. *Upperside*: both wings dark fuliginous grey. Anterior wings crossed obliquely beyond the cell by a large subapical diffused white patch, the white area not extending over the subcostal nervules anteriorly, or quite reaching the outer margin posteriorly. Posterior wings with a large diffused yellowish white patch from near the base, extending over the cell and the lower part of the disc, but not quite reaching the outer and abdominal margins, which are dark fuliginous grey; between the two lowest median nervules is a small ocellus with a pale violet pupil and a bright fulvous outer ring.

*Underside*: darker and brighter than on the upperside. On the posterior wings are two very bright ocelli with broad fulvous outer rings; the lower ocellus is larger than on the upperside, and the pupil, which is white, is surrounded by a ring of violet scales.

Antennae black; palpi and abdomen fulvous.

♀ resembles the ♂, but on the upperside the white areas on both wings are rather more extended, and the ocellus on the posterior wings of the ♂ is absent.

Expanse of wings: ♂, 3 inches; ♀, 3½ inches.

*Hab.* Mailu, British New Guinea (Anthony, July 1895).

Nearest to *T. anableps* Voll. and *T. uranus* Stgr., but the position and extent (on the posterior wings) of the white patches readily separate it from these species.

Described from two ♂ and two ♀ specimens.

2. *Thysonotis phroso* sp. nov.

♀. *Upperside*: anterior wings with the base, costal margin, and apical third greyish black, the black area extending rather broadly down the outer margin to

a little above the submedian nervure, whence it extends broadly along the inner margin to one-half the distance from the base; the remainder of the wings is white, with a basal patch of blue scales which extends broadly along the costal and inner margins about half the distance. Posterior wings grey-black, with a white patch above the costal nervure; the basal third is densely irrorated with bright blue scales extending over and below the cell.

*Underside*: anterior wings with the costa and apical third broadly black, thence along the outer margin narrowly black; the dark costal and apical area is centred with a curved rather broad band of shining blue scales, interrupted about the middle. Posterior wings with the outer two-thirds and a broad subbasal band black; in the outer black area is a very broad band of shining blue, centred by seven elongate oval black spots between the veins; a white band crosses the wings before the middle, and extends more narrowly along the costal margin nearly to the apex; the basal third is densely irrorated with blue scales, and there is a blue streak at the base. Cilia of both wings black.

Expanse of wings:  $1\frac{1}{2}$  inch.

*Hab.* Etna Bay, Dutch New Guinea (Webster, August 1896).

Described from four ♀ specimens; the ♂ remains to be discovered.

The ♀ on the upper wings resembles *T. wallacei* Feld., but the white area is more extended, and the broad irroration of blue scales on the upperside of both wings, the absence of the subbasal white band on the upperside of the posterior wings, the much wider blue area on the underside of those wings, and the black cilia of both wings, which are white in *T. wallacei*, as well as minor differences, separate it from that species.

## NOTES ON *HETEROCERA*, WITH DESCRIPTIONS OF NEW GENERA AND SPECIES.

By THE HON. WALTER ROTHSCHILD AND DR. KARL JORDAN.

(Plate IV.\*)

AGANAIDAE (= HYPSIDAE) (*continued from Vol. III. p. 208*).

AT first sight it would appear that the species of *Asota* must be arranged into two groups, the one group containing those species the *males* of which have the antennal joints provided with a groove on each side, the other embracing the species with not-grooved antennae. Such an arrangement would, however, bring species like *clara* and *jacana*, or *versicolor* and *plaginota*, together into one group, which in other respects are not nearly related; while, again, otherwise close-allied species like *antennalis* and *dohertyi*, *renalba* and *heliconia*, would be widely separated. If we except a number of aberrant forms (*versicolor*, *curicae*, *contorta*, etc.) which stand more isolated than the rest of the species of *Asota*, we may divide the remaining species into three groups, which, however, are not sharply definable, represented respectively by *egens*, *heliconia*, and *clara*, each group containing species with grooved and with not-grooved *male* antennae. In the following diagram the

\* Pl. IV. fig. 1 is a copy of Oberthür's figure of *Papilio ree*, *Et. d'Ent.* XII. t. 1. f. 1 (1888), while fig. 2 represents my species *Papilio mimeticus*, *Entom.* XXX. p. 165 (1897). A comparison of the two figures will show the differences between the species as pointed out by me *loc. cit.*—W. R.





#### EXPLANATION OF PLATE IV.

- Fig. 1. *Papilio rex*, p. 314, note.  
„ 2. „ *mimeticus*, p. 314, note.  
„ 3. *Asota suffusa*, p. 364. n. 34.  
„ 4. „ *clara*, p. 363. n. 33.  
„ 5. „ *paliura*, p. 339. n. 24.  
„ 6. „ *tortuosa*, p. 365. n. 36.  
„ 7. „ *eyens macrosticta*, p. 324. n. 5. *k*.  
„ 8. „ *orbona discoidalis*, p. 327. n. 8. *h*.  
„ 9. „ *avacta*, p. 325. n. 6.  
„ 10. „ *dohertyi*, p. 340. n. 27.  
„ 11. „ *paphos paphos*, p. 337. n. 20. *a*.  
„ 12. „ *heliconioides*, p. 338. n. 21.





species standing in the same horizontal column are considered to belong to the same group, being apparently more nearly related to one another than to the species standing in the other horizontal columns:—

Antennae of ♂ without lateral grooves.	Antennae of ♂ laterally grooved.
1. <i>A. caricæ</i> .	
2. <i>A. plaginota</i> .	4. <i>A. producta</i> .
3. <i>A. strigosa</i> .	5. <i>A. egeus</i> .
	6. <i>A. aracta</i> .
	7. <i>A. darsania</i> .
	8. <i>A. orbona</i> .
	9. <i>A. tigrina</i> .
	10. <i>A. australis</i> .
	11. <i>A. diana</i> .
	12. <i>A. alienata</i> .
	13. <i>A. jurana</i> .
	14. <i>A. celebensis</i> .
	15. <i>A. iodamia</i> .
18. <i>A. fulvia</i> .	16. <i>A. plagiata</i> .
	17. <i>A. woodfordi</i> .
19. <i>A. versicolor</i> .	
20. <i>A. paphos</i> .	27. <i>A. dohertyi</i> .
21. <i>A. heliconioides</i> .	28. <i>A. albirena</i> .
22. <i>A. sericea</i> .	29. <i>A. heliconia</i> .
23. <i>A. canaraica</i> .	30. <i>A. subsimilis</i> .
24. <i>A. paliura</i> .	
25. <i>A. venalba</i> .	
26. <i>A. antennalis</i> .	
31. <i>A. plana</i> .	33. <i>A. clara</i> .
32. <i>A. albiformis</i> .	34. <i>A. suffusa</i> .
	35. <i>A. isthmia</i> .
	36. <i>A. tortuosa</i> .
	37. <i>A. contorta</i> .
	38. <i>A. kinabaluensis</i> .

### 1. *Asota caricæ*.

*Aganais caricæ*, Boisduval, *Voy. Astrolabe*, *Ent.* p. 248, n.1 (1832) (Bengal; Java; Amboina; Papuan Is.); Kirby, *Cat. Lep. Het.* I. p. 385 (1892).

*Hypsa (Damalis) caricæ*, Butler, *Trans. Ent. Soc. Lond.* p. 319, n. 18 (1875) (N. India; Moulemein; Borneo; Java; Ceram; Celebes).

*Hypsa alciphron*, Hampson, *Moths of India* I. p. 502, n. 1148 (1892) (*Pro p.*).

*Damalis alciphron* (!), Swinhoe, *Cat. Lep. Het. Oef.* p. 94, n. 417 (1892) (India; Cambodia; Celebes; Ceram).

The peculiar development of the abdomen of the ♀ and the antennae have been described in Vol. III. pp. 294-296.

This common insect, described in 1775 by Fabricius as *caricæ* from *India orientalis*, and two years after by Cramer as *alciphron* from Tranquebar, ranges from Ceylon and North India all over the Indo-Australian Islands as far east as the New

Hebrides. The species has developed, as far as we can see, only into two subspecies, a western one (*caricae*) and an eastern one (*euroa*), which are distinguished by very slight differences, as noted below. The individuals from the Sunda Islands, though intermediate in respect to some of the characters which distinguish *caricae euroa* from *caricae caricae*, appear to be on the way to develop into a special race, about 25 per cent. of the specimens from Borneo, Java, and the lesser Sunda Islands being entirely devoid of submarginal black spots to the hindwing, while among the two hundred individuals in the Tring Museum from India, the Papuan Islands, and North Queensland there is not one in which all the submarginal black spots are obliterated.

The individual variation in the size and number of the black markings is considerable in every locality; the submarginal spots are sometimes enlarged so as to form a marginal band resembling that of *Asota paphos*; the spot between veins 2 and 3 is the last submarginal spot to disappear; the three large discal spots are well marked in all our specimens.

K. J.

*a. A. caricae euroa* subsp. nov.

*Phalaena Noctua caricae*, Donovan (*nee* Fabricius, 1775), *Ins. N. Holl.* t. 39. f. 2 (1805).  
*Damalis alciphron*, Butler, *Ann. Mag. N. H.* (5). XI. p. 425. n. 91 (1883) (Wild I., Admiralty Is.).  
*Hypsa alciphron*, Ribbe, *Iris* I. p. 87 (1885) (Aru); Pagenst., *Jahrb. Nass. Ver. Nat.* p. 115. n. 254 (1888) (Amboina); Hamps., *Moths of India* I. p. 503. n. 1148 (1891) (*Pro p.*).  
*Hypsa caricae*, Meyrick, *Pr. Linn. Soc. N.S.W.* p. 769. n. 111 (1886) (Cape York; Cooktown); Lucas, *ibid.* p. 1086 (1889) (Cape York to Mackay).

Sir George Hampson (*l.c.*) remarks that "the form from New Guinea and the neighbouring groups of islands is darker and brighter." The ground-colour of the forewing is darker in the eastern than in the western form, hence the whitish nervular lines are a little more prominent; the basal orange area is slightly more extended and brighter; on the underside the orange area of the forewing extends beyond the black patch at the apex of the cell in most specimens. Hindwings brighter. Head and thorax of the bright colour of the base of the forewing, while in *caricae caricae* from Continental India and Ceylon these parts are nearly of the dark ground-colour of the forewing.

*Hab.* Solomon Islands: Alu (*type*), Guadalcanar; New Ireland; Duke of York Island; New Britain; New Guinea; North Queensland; Arn; Key; Northern and Southern Moluccas; Tenimber; Celebes; New Hebrides.

In the specimens from the New Hebrides in the Tring Museum, only five in number, the forewing is considerably paler than in the individuals from the other localities, being of an ochraceous fawn-colour. We have here perhaps another subspecies, the characters of which would be very interesting in so far as the form agrees in the colour of the thorax and base of the forewing with *euroa*, while in the peculiar ochraceous fawn-colour of the rest of the forewing it differs more widely from *euroa* than *caricae* does. As I shall probably receive more material from the New Hebrides in the course of this or the next year, I prefer for the present to include the *caricae* specimens from that group of islands in *caricae euroa*.

W. R.

*b. A. caricae caricae.*

*Noctua caricae* Fabricius, *Syst. Ent.* p. 596. n. 23 (1775) (in Fien Ind. or.); *id.*, *Syst. Ent.* III. 2. p. 27. n. 63 (1793).  
*Phalaena Attacus alciphron* Cramer, *Pap. Escot.* II. p. 58. t. 133. f. e (1777) (Tranquebar).  
*Phalaena Noctua caricae*, Goeze, *Ent. Beytr.* III. 3. p. 229. n. 267 (1781).



- Hippocrita vulgaris caricac*, Hübner, *Samml. Ec. Schmett.* I. t. 190. f. 1-4 (1806).  
*Damalis caricac*, id., *Verz. bek. Schm.* p. 172. n. 1780 (1816).  
*Hypsa (Damalis) caricac*, Walker, *Cat. Lep. Het. B. M.* II. p. 454. n. 13 (1854) (N. India ; Java ; *nec* Ceylon, Penang, according to Butler, *Tr. Ent. Soc.* p. 319, 1875).  
*Hypsa alciphron*, Moore, *Cat. Lep. Het. Mus. E. I. C.* II. p. 292. n. 669. t. 13. f. 6 (*l.*). *6a* (*p.*) (1859) (Java ; N. India ; Canara) ; id., *Journ. As. S. Beng.* p. 235. n. 29 (1884) (Cachar) ; Snell., *Tijdschr. v. Ent.* p. 130. n. 13 (1888) ; Pagenst., *Iris* III. p. 11. n. 22 (1890) (Palawan) ; Swinh., *Tr. Ent. Soc. Lond.* p. 15. n. 691 (1895) (Shillong) ; Snell., *Iris* VIII. p. 149. n. 114 (1895) (Deli, Sumatra).  
*Damalis alciphron*, Moore, *P. Z. S.* p. 598 (1877) (Pt. Blair, And. Is.) ; id., *l.c.* p. 847 (1878) (Burma ; Tenasserim) ; id., *Lep. Ceyl.* II. p. 52. t. 102. f. 1. *1a, 1b* (*l., p., ♂, ♀*) (1882) (Ceylon) ; Swinh., *P. Z. S.* p. 292. n. 40 (1885) (Bombay, August to November, very plentiful ; *important biological note*).  
*Hypsa caricac*, Piepers & Snelten, *Tijdschr. v. Ent.* XX. p. 6. n. 22 (1877) (Batavia, common ; *l. and p. descr.*) ; Rüber, *ibid.* XXXIV. p. 327 (1891) (Flores).  
*Damalis alciphron* (?), Swinhoe, *Tr. Ent. Soc. Lond.* p. 180. n. 95 (1890) (Burma).

Many individuals from the Malayan Islands are still paler as regards forewings than the specimens from Ceylon and S. and N. India, while in the colour of the head and thorax the Malayan individuals stand intermediate between *caricac* and *euroa*. There is no line of distinction between the two forms, and the specimens from Celebes and Tenimber, which we have enumerated under *euroa*, could just as well be regarded as *caricac caricac*.

*Hab.* In the Tring Museum from Ceylon ; S. India ; Bluntan ; Assam ; Burma ; Tenasserim ; Malacca ; Penang ; Andaman Islands ; Formosa ; Sumatra ; Borneo ; Palawan ; Philippine Islands ; Java ; Lombok ; Sambawa ; Sumba ; Flores ; Adonara ; Timor. K. J.

## 2. *Asota plaginota*.

- Hypsa caricac*, Walker (*nec* Fabricius, 1775), *Cat. Lep. Het. B. M.* II. p. 454. n. 13 (1854) (*ex p.*).  
*Hypsa plaginota* Butler, *Tr. Ent. Soc. Lond.* p. 320. n. 19 (1875) (India) ; Suell., *Tijdschr. v. Ent.* XXXI. p. 131. n. 15 (1888).  
*Aganais plaginota*, Kirby, *Cat. Lep. Het.* I. p. 386. n. 3 (1892) (India).  
*Damalis plaginota*, Swinhoe, *Cat. Lep. Het. Orf.* I. p. 94. n. 415 (1892) (India).  
*Hypsa alciphron*, Hampson, *Moths of India* I. p. 502. n. 1148 (1892) (*ex p.*).  
*Asota plaginota*, Rothschild & Jordan, *Nov. Zool.* III. p. 206. t. IV. f. 46. 47 (abdomen) (1896).

We have already pointed out, *l.c.*, some structural characters in which this species differs widely from *A. caricac* (= *alciphron*), with which it has been confounded.

The base of the forewing has the four black dots normally present in the species of *Asota* ; the first and especially the third dot are liable to obliterate ; between the subcostal and the median nervures there is one black dot, and behind the median nervure two more. The white patch at the apex of the cell is generally rather elongate, but varies much in size in both sexes ; it is not always larger in the ♀ than in the ♂, as Dr. Butler states (*l.c.*) ; in front of this patch, just behind the areole, there appears in most specimens another, but small, white spot, as in *A. paliura*. All the veins are white, the submedian one especially broadly so, but in many individuals veins 3 and 4 are white only close to the discal white patch. The variability of the hindwing in respect to the black markings is considerable ; in all our specimens there is one rounded black spot at the end of the cell and two postmedial spots ; the greater number of individuals have, moreover, submarginal black spots, which often form a more or less complete series ; the spot between veins 7 and 8 and that between veins 2 and 3 are the largest ; the spot before and that behind

vein 2 stand farther away from the margin than the other spots, so that the inner edge of the macular band, when the band is complete, is convex in that place. A third postmedial spot close to the anal angle is also often present.

On the underside, the basal two-thirds of the forewing are white, this colour shading into yellow towards the base; there are three rounded black spots present, one in the centre of the cell, the second upon the discocellular veinlets, the third behind vein 2; the first spot is either inside the white region, or the white area does not extend beyond the spot. The hindwing is sometimes whitish (instead of yellow) towards the outer margin.

There are two geographical races known to us, both of which vary apparently to the same extent. K. J.

*a. A. plaginota kuluensis* subsp. nov.

*Hypsa plaginota* Butler, l.c. (1875) (*ex parte*; "N.W. India," *nee* "India").

Differs from *plaginota plaginota* in the head, thorax, and base of forewing above being cream-colour instead of chrome-yellow.

*Hab.* Kulu district; 7 ♂, 4 ♀ (*type* ♀).

W. R.

*b. A. plaginota plaginota.*

*Hypsa plaginota* Butler, l.c. (1875) (*ex parte*; India); Moore, *Journ. As. Soc. Beng.* p. 235. n. 30 (1884) (Cachar); Swinh., *Tr. Ent. Soc. Lond.* p. 15. n. 692 (1895) (Khasia Hills).

*Damalis plaginota*, Moore, *P. Z. S.* p. 847 (1878) (Tenasserim); Butl., *Ill. Lep. Het. B. M. V.* p. 42. t. 87. f. 7 (1881); Swinh., *Tr. Ent. Soc. Lond.* p. 181. n. 98 (1890) (Tenasserim).

In this form there appears rather often a small black spot at the inner margin of the forewing above at the edge of the yellow basal area. The submarginal black spots of the hindwing are in one of our *females* from the Khasia Hills so enlarged that they form a marginal black border to the wing which is wide anteriorly and is traversed by yellow veins.

*Hab.* Assam, 4 ♂, 5 ♀ Sikkim (*ex coll.* Felder), 2 ♂; Bhutan, 7 ♂, 5 ♀ Tenasserim.

We have not seen specimens from Tenasserim, which probably differ slightly from North Indian individuals. K. J.

3. *Asota strigosa.*

*Aganotis strigosa* Boisdual, *Voy. Astrolabe, Lép.* p. 250. n. 2 (1832) (N. Guinea); Ribbe, *Iris* I. p. 87 (1885) (Aru; = "*radiata* Boisd.") ; Pagenst., *Jahrb. Nass. Ver. Nat.* p. 123. n. 35 (1886) (Aru); Kirby, *Cat. Lep. Het. I.* p. 386. n. 13 (1892) (Papua).

*Hypsa strigosa*, Walker, *List Lep. Het. B. M.* 11. p. 459. n. 23 (1851) (N. Guinea); Butl., *Tr. Ent. Soc. Lond.* p. 322. n. 29 (1875) (N. Guinea); Snell, *Tijdschr. v. Ent.* XXXI. p. 128. n. 11 (1886) ("Probably the same species as *egens*").

Apparently rare in collections. The forewing is above of a buffish clay-colour, with an obvious purplish gloss in side view; all the veins, and the submedian fold, strongly streaked with cream-buff; a small cream-buff patch at the lower angle of the cell is prolonged along middle of cell towards base. The hindwing is unicolorous, buffish yellow, in the two specimens from Waigen (*ex coll.* Dr. Standinger), while in our two *females* from Humboldt Bay there is a small fuscous spot near the anal angle. On the underside both wings are pale yellow; the apical and outer-marginal region of the forewing fuscous; the fuscous colour extends along

costal margin halfway down to the base; this costal streak is dilated before the end of the cell; the hindwing has a fuscous costal patch in the middle, and has the outer half of the costal margin also more or less fuscous.

The prothoracic lobes are not spotted; the black dot on the mesothoracic lobe is small; mesothorax with a black median spot. Dorsal black dots of abdomen not or slightly larger than the ventral black dots.

Antennae of the *male* without lateral grooves and tufts of hair, similar to the antennae of *canaraica*.

*Hab.* Waigen (♂, ♀, in coll. Standinger); Aru (acc. to Pagenstecher); New Guinea: Humboldt Bay (W. Doherty, September and October 1892), 2 ♀. K. J.

#### 4. *Asota producta*.

The forewing is more elongate than in *plaginota*, the hinder margin shorter, the cavity closer to the tip of vein 1*b*. The joints of the antennae of the *male* have deep lateral grooves, and tufts of long hairs upon the ridges bordering the grooves. The basal yellow area of the forewing is more extended than in *plaginota*, especially at the costal margin, the outer costal black dot standing 6 to 7 mm. from the base.

We distinguish three subspecies of *producta*, each of which varies individually in the number and size of the submarginal black spots of the hindwing. K. J.

##### a. *A. producta producta*.

*Hypsa caricae*, Walker (nec Fabricius, 1775), *List Lep. Hct. B. M.* II. p. 454. n. 13 (1854) (*ex p.*).  
*Hypsa producta* Butler, *Tr. Ent. Soc. Lond.* p. 320. n. 20 (1875) (Ceylon); Hamps., *Moths of India* I. p. 503. n. 1150 (1892) (*ex p.*).  
*Damalis producta*, Moore, *Lep. Ceyl.* II. p. 52. t. 101. f. 1 (♂). 1*a* (♀). 1*b* (l., p.) (1882) (Ceylon); Swinh., *Cat. Lep. Hct. Orf.* I. p. 94. n. 414 (1892) (Ceylon).  
*Damalis strigivenata*, Swinhoe, *P. Z. S.* p. 292. n. 41 (1885) (Poona, Belgaum, Bombay).

The base of the forewing and the thorax are much too bright yellow in Moore's figures. The black submarginal spot before vein 6 of the hindwing is the largest of the submedian row of spots, but the spot before vein 2 is the last to disappear.

*Hab.* Ceylon, 3 ♂, 4 ♀; S. India as far north as Bombay, 2 ♂. K. J.

##### b. *A. producta strigivenata*.

*Hypsa caricae*, Walker, *l.c.* (1854) (*p. parte*).  
*Hypsa strigivenata* Butler, *l.c.* p. 321. n. 21 (1875) (Penang; also Sikkim and Silhet); Moore, *Journ. As. Soc. Beng.* p. 98. n. 9 (1886) (Tavoy); Snell., *Tijdschr. v. Ent.* XXXI. p. 130. n. 14. t. 2. f. 1 (♂) (1888) (Sumatra).  
*Damalis strigivenata*, Swinhoe, *Tr. Ent. Soc. Lond.* p. 180. n. 99 (1890) (Tavoy); id., *Cat. Lep. Hct. Orf.* I. p. 94. n. 416 (1892) (Sumatra).  
*Hypsa producta*, Hampson, *l.c.* p. 503. n. 1150 (1892) (*p. parte*).

Differs from *producta producta* in the thorax and the base of the forewing being much brighter yellow.

A *female* from Palawan in the Tring Museum has the forewing slightly paler than specimens from other localities, and the spot at the end of the cell is small; the discal black spots on the hindwing are somewhat reduced in size, and the submarginal macular band is represented by three small spots, one before vein 6, the other two before and behind vein 2.

The *male* has the forewing mostly much darker brown than it is in the *female*.

*Hab.* Sikkim, 1 ♂ (*ex coll.* Felder); Khasia Hills, 2 ♂, 2 ♀; Shan States, 1 ♂; Bunguran, 1 ♂; Palawan, 1 ♀. K. J.

c. *A. producta stigmatica* subsp. nov.

*Hypsa strigivenata*, Snellen (nec Butler, 1875), l.c. p. 131. sub n. 14 (1888) (Java).

Differs from *producta strigivenata* in the colour of the thorax and base of the forewing being slightly paler, in the veins of the forewing not being white, except the submedian nervure and the costal margin, and in the spot at the apex of the cell being extremely small. In the type, a *female*, the hindwing has above four black spots—a very small discal one at the apex of the cell, a submarginal one, also small, behind vein 3, and two larger postmedian spots behind vein 2 and before vein 4 respectively, the latter spot traversed by vein 5. In the *male* (in Dr. Staudinger's collection) the submarginal series of black spots is complete, and there is also a linear mark at the anal angle.

*Hab.* Java, 1 ♀; also in Dr. Staudinger's collection from Magelan, Java. W. R.

5. *Asota egens*.

The range of this species extends from Sikkim to Timor, Celebes, the Philippine Islands, Formosa, and the Rin Kin Islands; in South India and Ceylon, as well as in China, *A. egens* does not occur. The differences between the various subspecies are not very pronounced except in the case of the forms from Engano, Nias, and Timor. The subspecies from India, Borneo, and Celebes resemble each other very closely, and so do again the forms from Java, Palawan, and the Loo Choo (= Rin Kin) Islands. K. J.

a. *A. egens confinis* subsp. nov.

♂. Veins of forewing striped whitish yellow as in *egens egens*, but the veins forming the areole less so than in Indian *egens*: besides a costal spot which is at least as large as in Indian *egens*, the hindwing is devoid of spots, or there is a small spot on disc between veins 5 and 6, or, besides, a small linear mark upon the discocellulars, and sometimes also a slight mark behind vein 2; the four discal spots, if present, very much smaller than in *egens indica*. The two black spots on the forewing below are mostly produced in a basal direction, often merged together; the outer one of the two stands sometimes at the basal side of the discocellulars instead of upon these veins.

♀. The two black spots of the forewing below as in *egens indica*; hindwing with one spot only at the costal margin: the diameters of the spot are at least 1 and 2 mm.

*Hab.* Loo Choo = Rin Kin Islands, 6 ♂, 5 ♀; Mindanao.

A *male* specimen from Mindanao in Dr. Staudinger's collection agrees much better with *confinis* than with *reducta*. W. R.

b. *A. egens reducta* subsp. nov.

*Hypsa egens*, Pagenstecher (nec Walker, 1854), *Iris* III. p. 11. n. 23 (1890) (Palawan).

Nearest to *confinis*, but with the black spots of the underside still more reduced in number and size.

♂. Veins striped whitish yellow, more distinctly white than either in *egens confinis* or *egens egens*, those forming areole more obviously striped than in *confinis*. Underside: forewing with the two spots smaller than they are in *confinis*; hindwing with a costal spot of 2 mm. in length and 1 mm. in breadth; sometimes with another, small, spot on the disc outside the cell.



♀. Veins in the costal region of the forewing more distinctly striped than in *confinis*, the five basal black dots smaller than in that subspecies; underside of forewing with two small black dots, hindwing with one very small costal spot.

*Hab.* Palawan, 2 ♂ (including *type*), 3 ♀; Mindoro, 1 ♀.

W. R.

*c. A. egens egens* subsp. nov.

*Hypsa egens* Walker, *List Lep. Het. B. M.* II. p. 453. n. 12 (1854) (Java: *nec* N. India and Silhet); Horsf. & Moore, *Cat. Lep. Het. Mus. E. I. C.* II. p. 292. n. 670. t. 13. f. 7 (l.). 7a (p.) (1859) (Java); Butl., *Tr. Ent. Soc. Lond.* p. 323. n. 30 (1875) (Java; *nec* N. India and Silhet); Snell., *Tijdschr. v. Ent.* XXXI. p. 132. n. 20 (1888) (*Pro p.*): Hamps., *Moths of Ind.* I. p. 501. n. 1144 (1892) (*Pro p.*).

*Damalis egens*, Swinhoe, *Cat. Lep. Het. Mus. Oxf.* I. p. 93. n. 413 (1892) (*Pro p.*).

*Aganais egens*, Kirby, *Cat. Lep. Het.* I. p. 387. n. 17 (1892) (*Pro p.*)

Compare what is said under *egens indica*.

♂. Stands intermediate between *confinis* and *indica* in the number and size of the black spots of the hindwing below, there being present, besides the costal spot, two or three other spots, situated at end of cell, outside cell on disc, and in middle of cell respectively.

♀. Basal black dots three or four in number, extremely small, as in the Timor race of *egens*. Underside: black spots of forewing as small as in *reducta*; hindwing with one small costal spot or without spots. Colour of forewing above faintly brighter than in *reducta*, the veins a little more pronounced white.

*Hab.* Java (H. Fruhstorfer: Palabnan and Mount Gede at 4000 feet), 2 ♂, 2 ♀; Bali (W. Doherty, March and April 1896), 1 ♀.

The great similarity between the specimens from Palawan, Java, and the Loo Choo Islands is very remarkable, since the form inhabiting Borneo is easily distinguishable.

The Bali specimen has the black spots on the underside of the hindwing more strongly developed, and thus forms a transition to *egens indica*.

W. R.

*d. A. egens indica* subsp. nov.

*Hypsa egens* Walker, *List Lep. Het. B. M.* II. p. 453. n. 12 (1854) (N. India, Silhet; *nec* Java); Horsf. & Moore, *Cat. Lep. Ins. Mus. E. I. C.* II. p. 292. n. 670 (1859) (Penang, Bhutan; *nec* Java); Butl., *Tr. Ent. Soc. Lond.* p. 323. n. 30 (1875) (N. India, Silhet, Moulemein; *nec* Java); id., *P. Z. S.* p. 672. n. 46 (1880) (Formosa); Snell., *Tijdschr. v. Ent.* XXXI. p. 132. n. 20 (1888) (*Pro p.*); Hamps., *Moths of Ind.* I. p. 501. n. 1144 (1892) (*Pro p.*); Swinh., *Tr. Ent. Soc. Lond.* p. 15. n. 690 (1895) (Khasia Hills).

*Damalis egens*, Butler, *Ill. Lep. Het. B. M.* V. p. 43. t. 87. f. 8 (1881) (Silhet, Moulemein; *nec* Java); Swinh., *Tr. Ent. Soc. Lond.* p. 181. n. 96 (1890) (Burma); id., *Cat. Lep. Het. Mus. Oxf.* I. p. 93. n. 413 (1892) (*Pro p.*).

*Aganais egens*, Kirby, *Cat. Lep. Het.* I. p. 387. n. 17 (1892) (India; *nec* Java).

Walker's description of *egens* applies both to the form inhabiting India and to that found in Java; as Walker, however, says of his *egens* that the hindwing has from one to six black spots beneath, we refer the subspecific name *egens* to the Javan form, which has one or two spots on the hindwing, not to the Indian form, which has the greater number of spots. Strict priority!

♂. The veins of the forewing are obviously whitish; the spaces between them are often, especially towards the outer margin, somewhat fuscous. On the underside the hindwing has sometimes light fuscous submarginal streaks; of the six black spots the two between the end of the cell and the anal angle are often obliterated.

♀. Brighter than the *male*. The hindwing below is apparently always devoid



of a black spot near the anal angle; that beyond vein 2 is also often absent. There are no fuscous streaks either on fore- or hindwing.

*Hab.* Sikkim; Bhutan, 5 ♂, 1 ♀; Assam, Khasia and Naga Hills, 6 ♂ (including *type*), 2 ♀; Burma; Tenasserim; Malacca, 1 ♂, 1 ♀; Singapore, 1 ♀; Penang, 3 ♂, 2 ♀; Formosa.

Formosan specimens we have not seen.

K. J.

*e. A. egens nebulosa.*

*Hypsa nebulosa* Butler, *Tr. Ent. Soc. Lond.* p. 322. n. 29 (1875) (Sarawak); Snell., *Tijdschr. v. Ent.* XXXI. p. 133. n. 22 (1888) (*Pro parte*; Sarawak, *nec* Nias).

*Aganais nebulosa*, Kirby, *Cat. Lep. Het. I.* p. 386. n. 16 (1892) (*Pro p.*; Sarawak, *nec* Nias).

*Hypsa egens*, Hampson, *Moths of Ind. I.* p. 501. n. 1144 (1892) (*Pro p.*).

*Hypsa egens*, Snellen, *Iris VIII.* p. 140. n. 115 (1895) (Deli, Sumatra).

♂. The veins of the forewing above are less obviously whitish than in *egens indica*, the fuscous streaks between the veins more pronounced and on the underside often more extended. The black spots of the hindwing below are large; the anal one is apparently always present and much larger than in Indian *egens*; there are always fuscous submarginal streaks marked, which are sometimes very heavy and appear on the upperside as well. Behind the apex of the cell of the forewing, above, there appears often a pale patch which reminds one of the outer pale patch of *A. australis* and *orbana*.

♀. Forewing less bright yellow than in *egens indica*, the veins less white; in one ♀ from N. Borneo there are fuscous streaks between the veins both on upper- and underside, also in the marginal region of the underside of the hindwing. The spot beyond vein 2 of the hindwing below is present in all our *females*, but the anal one is absent from one individual.

*Hab.* Bunguran, Natuna Islands (July to October 1894, Hose *leg.*), 3 ♂, 1 ♀; N. Borneo, 4 ♂, 3 ♀; Pulo Lant, S.E. Borneo (W. Doherty, May 1891), 1 ♂; Sumatra.

K. J.

*f. A. egens biformis* subsp. nov.

*Aganais egens*, Snellen (*nec* Walker, 1854), *Tijdschr. v. Ent.* XXII. p. 80. n. 41. t. 7. f. 4 (1879) (Maros, Takalar, Macassar).

*Hypsa egens*, Snellen, *l.c.* XXXI. p. 132. n. 20 (1888) (Celebes; *nec* Java); Hamps., *Moths of India I.* p. 501. n. 1144 (1892) (*Pro p.*).

*Damalis egens*, Swinboe, *Cat. Lep. Het. Mus. Orf. I.* p. 93. n. 413 (1892) (*Pro p.*; Macassar).

*f<sup>1</sup>. A. egens biformis* ab. *biformis* ab. nov.

There occur on Celebes at the same time and in the same district two aberrational forms, one resembling closely the preceding subspecies from Borneo, the other coming near the subspecies from the lesser Sunda Islands.

♂. Agrees with the ♂ of *egens nebulosa*, but the posterior spots of the hindwing below are very small, the anal one often absent (*type*); hindwing not fuscous in marginal region.

♀. Differs from that sex of *nebulosa* in the spots of the underside being smaller and the two posterior ones of the hindwing being absent; no fuscous streaks on the hindwing.

W. R.

*f*<sup>2</sup>. *A. egens* *biformis* ab. *discolor* ab. nov.

♂. Forewing above with a blackish fuscous outer border of from 5 to 7 mm. width ; from this border a streak runs along vein 5 down to the subbasal black dot in the cell ; a second streak is situated upon the submedian fold, and is divided by this fold, which is yellow ; a third streak is situate beyond the submedian vein. By these streaks the yellow surface of the wing is separated into four areas, of which the anterior one is either connected with the yellow basal area (type) along the costal margin, or not. In a specimen from Dr. Standinger's collection there stands a subbasal black dot at the hindmargin of the wing. Hindwing with blackish fuscous border of irregular width, broadest anteriorly, and dilated again at vein 2 ; the disc with the black spots of the underside indistinctly (type) or distinctly marked.

Underside with the blackish marginal region of the forewing prolonged along the costal margin to near the middle of cell (type), or to the base of the wing, and extended along vein 5 to the black spot in the apex of the cell, which spot is joined to the spot in the middle of the cell. Behind vein 2 there is a small discal spot, which in Dr. Standinger's example is connected with the marginal area. The black markings on the hindwing below are large : the black marginal band runs along the costal margin ; in Dr. Standinger's specimen there is also a black streak between veins 1*a* and 1*b*.

♀. Upperside of forewing without whitish nervular lines : a fuscous streak between veins 5 and 6 extends from near the outer margin beyond the middle of the cell, a few slightly fuscous, very short, streaks in apical region, a long fuscous streak divided by the submedian fold, and a short streak beyond the submedian vein. Hindwing uniform in colour, without fuscous border.

Underside with the spot in the centre of the cell of the forewing prolonged towards base in both specimens before me ; the costal spot of the hindwing also extended basally, but much more so in my specimen than in that of Dr. Standinger's collection ; the spot in middle of cell and that between cell and outer margin very small ; anal spot absent, the spot behind vein 2 small and linear, or also absent.

*Hab.* ab. *biformis* : S. Celebes (W. Doherty, August and September 1891), 3 ♂, 2 ♀ ; Macassar (H. Fruhstorfer, March 1896), 1 ♂. ab. *discolor* : S. Celebes (W. Doherty, August and September 1891), 1 ♂ ; Patumang, S. Celebes (H. Fruhstorfer, January 1896), 1 ♀ ; Minahassa (1 ♂, 1 ♀, in Dr. Standinger's collection) ; Tawaya, Palos Bay (W. Doherty, August and September 1896), 1 ♀. W. R.

*g*. *A. egens* *intermissa* subsp. nov.

♂. Upperside : forewing fuscous near outer margin ; this colour extending along costal margin, vein 5, and the submedian fold ; the fold itself whitish yellow, the veins on the disc slightly streaked with whitish yellow. Hindwing uniform in colour. Underside : apical region of forewing fuscous ; the two postcostal spots smaller than in the preceding subspecies, the one in the middle of the cell often a mere dot. Hindwing with a small costal spot ; besides, there is often a dot at the end of the cell, or on the disc ; very seldom are there more than two spots marked.

♀. Forewing without fuscous sealing ; black dots of basal region small, five in number, sometimes the second costal one absent : veins very faintly paler than the rest of the forewing. Underside : forewing with two black spots, of which that in

the centre of the cell is sometimes very small; hindwing with one costal black spot; seldom with a small spot at the apex of the cell.

*Hab.* Lombok (H. Fruhstorfer, April to June 1896; A. Everett, June and July 1896; W. Doherty, June 1896) up to 2000 feet, a long series of both sexes; Sambawa (W. Doherty, February 1896), 4 ♂ (including *type*), 1 ♀; S. Flores (A. Everett, October to December 1896), a series of both sexes; Adonara (W. Doherty, November 1891), 2 ♂; Pura (W. Doherty, October 1891), 2 ♂. W. R.

*h. A. egens sumbana* subsp. nov.

*Aganix egens*, Pagenstecher (*nee* Walker), *Jahrb. Nass. Ver. Nat.* p. 58 (1885) (Sumba).

♂. Differs from *intermissa* in the veins of the disc of the forewing not being streaked whitish yellow, in the fuscous double streak behind the cell being broader, and the apical region of the cell being more extended fuscous. Underside as in *intermissa*, with one black costal spot in the hindwing. Centre of cell of forewing above with a trace of a black dot.

♀. Forewing as in ♀ of *biformis* ab. *discolor*, with traces of fuscous streaks; five small basal black dots. Two black spots of forewing below much smaller than in *marginata*; hindwing with one small black costal spot.

*Hab.* Sumba, low country (W. Doherty, February 1895), 3 ♂, 2 ♀.

Comes also very near the following form.

W. R.

*i. A. egens inversa* subsp. nov.

♂. Upperside: forewing with fuscous outer border and fuscous streaks, as in the preceding subspecies; the streaks vary much in length; the yellow areas mostly very pale buff-colour (*type*), often overpowdered with fuscous scales; a black dot in centre of cell as a rule, besides the normal five basal dots; of the latter the outer one of the two costal dots is sometimes absent; veins not paler. Outer margin more convex than in the other forms of *egens*. Upon discocellular veinlets there is sometimes a small fuscous spot. Hindwing brighter yellow than forewing, except in one specimen, not paler.

On the underside the two black spots of the forewing are as in *intermissa* and *sumbana*; hindwing with one, two, or three very small black spots; in a uniformly yellow specimen in my collection the right hindwing is without spots, while the left one has a faint costal spot.

♀. Uniform in colour. Four extremely small basal black dots, the exterior one of the two costal dots absent. Underside with two small spots to the forewing, as in *intermissa* and *sumbana*; hindwing with one or two extremely small spots, in one of the three *females* before me represented by a very few black scales.

*Hab.* Timor: Oinainisa (W. Doherty, November and December 1891), 6 ♂ (including *type*), 2 ♀, Dili (W. Doherty, May 1892), 4 ♂, 1 ♀; Wetter (W. Doherty, May 1892), 1 ♂; Letti (in coll. Standing). W. R.

*k. A. egens macrosticta* subsp. nov. (Pl. IV. fig. 7).

♂. Forewing above similarly streaked with fuscous as the *female* of *A. egens biformis* ab. *discolor*; no fuscous border to the wing; five black dots at base, the two situated in and behind cell respectively enlarged. Veins not paler than rest of wing. Underside: forewing with faint traces of two fuscous streaks in apical region; hindwing with five spots of variable size, without anal spot, the discal one and the

two in cell generally small. In one specimen there is a black dot in the centre of the cell of the forewing above.

♀. No lines upon the veins, no fuscous streaks; basal black dots, especially the outer ones, larger than in other subspecies. Below, forewing with the two black spots of the same size as in ♀ *biformis* ab. *biformis*; hindwing with five spots, which are minute, except the costal one.

*Hab.* Engano I. (W. Doherty, September 1891), 5 ♂, 1 ♀.

Easily distinguished from all other subspecies of *egens* by the subbasal dots of the forewing being large and the veins not being paler yellow than the rest of the wing. W. R.

#### l. *A. egens onusta*.

*Damalis onusta* Weymer, *Stett. Ent. Zeit.* p. 276. t. 2. f. 6. 7 (1885) (Nias).

*Hypsa nebulosa*, Snellen, *Tijdschr. v. Ent.* XXXI, p. 133. n. 22 (1888) (*Pro p.*).

*Aganais nebulosa*, Kirby, *Cat. Lep. Het.* 1. p. 386. n. 16 (1892) (*Pro p.*).

*Hypsa egens*, Hampson, *Moths of India* I. p. 501. n. 1144 (1892) (*Pro p.*).

*Damalis egens*, Swinhoe, *Cat. Lep. Het. Mus. Oxf.* I. p. 93. n. 413 (1892) (*Pro p.*).

In the *male* the whole forewing, except the base and the veins, becomes more or less dark fuscous; in our single ♂ specimen there is a black subbasal dot at the hind-margin of the forewing; the hindwing has a fuscous border. The underside of the forewing is black, and the greater part of the hindwing is also black.

In the *female* the blackish fuscous colour is less extended than in the ♂ and much paler, but the wings are much more fuscous than in the *female* sex of any other race of *egens*.

*Hab.* Nias I., 1 ♂, 2 ♀.

K. J.

#### m. *A. egens andamana*.

*Hypsa andamana* Moore, *P. Z. S.* p. 593. t. 59. f. 5 (1877) (Andaman Is.); Hamps., *Moths of India* I. p. 502. n. 1145 (1892) (Andamans).

*Hypsa egens*, Snellen, *Tijdschr. v. Ent.* XXXI, p. 132. n. 20 (1888) (*Pro p.*).

The black dot in the middle of the cell of the forewing above which so very often appears in the Timorese form of *egens* is always marked in *andamana*; there is also a fuscous spot at the end of the cell. In the reduction of the size and number of the spots of the hindwing below *andamana* comes nearest to the forms from the lesser Sunda Islands.

*Hab.* Andaman Islands, 5 ♂, 4 ♀.

K. J.

#### 6. *Asota avacta* (Pl. IV. fig. 9).

*Hypsa avacta* Swinhoe, *Cat. Lep. Het. Mus. Oxf.* I. p. 92. n. 409 (1892) (Batjan).

*Aganais semipars* Snellen, *Tijdschr. v. Ent.* XXXVIII, p. 181 (1896) (Halmahera).

Differs from *A. egens* in the first and second joints of the palpi being wholly black on the upperside, instead of having a black apical spot; the base of the forewing bears five large black spots, which are situated as in *egens*.

♂. We have only one specimen which has nearly the apical half of the forewing below black: on the hindwing there is, besides the costal patch, a small black spot before vein 5.

♀. This sex varies in the size of the black patches of the underside of both

wings; in one of the Batjan specimens there is a small patch of black scales upon the median vein of the forewing.

*Hab.* Morotai, 2 ♀; Halmahera (W. Doherty, August 1892), 1 ♂; Ternate, 1 ♀; Batjan (W. Doherty, March 1892), 2 ♀. K. J.

#### 7. *Asota darsania*.

*Hypsa darsania* Druce, *Ann. Mag. N. H.* (6). XIV. p. 24 (1894) (Celebes).

The type is said to have come from Celebes. The only specimens with reliable locality we have seen were from Batjan, and Dr. Standinger informs us that he has this species from Batjan and Halmahera.

Antennae of ♂ as in *egens*.

*A. darsania* is easily distinguishable from its allies by the forewing being uniformly wood-brown (see Ridgway, *Nomencl. of Colours*, Pl. III. 19), with cadmium-yellow base, which is sharply limited. The upperside of the second joint of the palpi is black.

*Hab.* Batjan; Halmahera; Celebes (according to Druce).

K. J.

#### 8. *Asota orbona*.

The darkest specimens of this species resemble *A. australis* very much; *A. orbona* is, however, always distinguishable from that species, besides the broader forewing and slightly different harpe of ♂, by the much more extended basal orange ochraceous area and the broad orange ochraceous abdominal margin of the forewing. *A. orbona* occurs on the Northern and Southern Moluccas, the Kei and Arn Islands, New Guinea and Queensland. We divide the species into five subspecies, which are difficult to distinguish owing to the great variability of each subspecies and the occurrence of intergraduate specimens; the differences in colour between the *females* of the various subspecies are more obvious than those between the *males*. The blackish parts of the underside of the wings have in certain lights a purplish gloss.

There are three black costal dots present in the basal ochraceous area of the forewing, the outer one of which stands much farther from the base than the outermost spot in *australis*, *avacta*, and *egens*; the outer spot is sometimes connected with the dot behind the subcostal vein, especially in the race from the Northern Moluccas.

K. J.

#### a. *A. orbona orbona*.

*Hypsa orbona* Vollenhoven, *Tijdschr. v. Ent.* VI. p. 137. t. 9. f. 4 (♂) (1863) (Halmahera, Morotai); Snell., *ibid.* XXXI. p. 133. n. 21 (1888) (*Pro porte*); Swinh., *Cat. Lep. Het. Oxf.* I. p. 91. n. 407 (1892) (*Pro p.*).

*Hypsa significans* vars. ♂. γ, Walker, *List Lep. Het. B. M.* XXXI. p. 215 (1864) (Morty, Batjan).

*Aganais significans*, Kirby, *Cat. Lep. Het.* I. p. 386. n. 10 (1892) (Moluccas; *nec* Papua).

*Aganais orbona* Kirby, *l.c.* p. 386. n. 15 (1892); Snell., *l.c.* XXXVIII. p. 181 (1896) (*orbona* distinct from *egens*).

♂. The three outer black dots of the base of the forewing are generally rather large, the two first often connected with one another; the two patches on the disc white, with a faint tint of ochraceous; the brown internervular streaks sometimes very prominent, sometimes almost absent except near the white patches. The hindwing is mostly uniformly orange ochraceous, but Dr. Standinger lent us a



specimen for inspection from Batjan in which the outer border is broadly black. On the underside the ochraceous area of the forewing varies much in extent; it is usually larger than in *orbana significans*, and occupies in one specimen from Halmahera nearly the whole wing; the fuscous apical area is traversed by yellow nervular lines; the costal black spot on the hindwing is more or less produced towards the base.

♀. The brown streaks of the forewing are much reduced. The two pale patches are tinged with yellow, and mostly larger than in the *male*; in a ♀ from Morotai the outer patch is scarcely traceable. There are no brown streaks in apical area of the wing. The hindwing has no black border in our specimens. On the underside the costal spots on fore- and hindwing are nearly equal in size and mostly produced towards the base of the wing.

*Hab.* Morotai, 1 ♀; Halmahera (W. Doherty, August 1892), 2 ♂, 1 ♀; Ternate (W. Doherty), 1 ♂; Batjan (W. Doherty, March 1892), 2 ♂, 1 ♀. K. J.

*b. A. orbana discoidalis* subsp. nov. (Pl. IV. fig. 8).

(?) *Aganais orbana* Pagenstecher (*nee* Vollenhoven, 1863), *Jahrb. Nass. Ver. Nat.* p. 115. n. 255 (1888) (Amboina).

♀. *Upperside*: forewing with two black costal dots only, the outer one of *orbana orbana* being absent; basal area deeper orange than in *orbana orbana*; the dark tawny streaks merged together, entirely filling up the space between the two white patches and surrounding them; the median veins not yellow as in the other subspecies of *orbana*, subcostal veins very narrowly yellow; the dark fuscous area extends at the costal margin as far as about 5 mm. short of the apex of the wing, its outer edge is concave before and again behind the outer discal white patch; the outer region of the wing without a trace of brown lines as in *orbana orbana*. Hindwing unicolorous, like the *underside*; the latter, however, with a small costal black spot both to the fore- and hindwing.

*Hab.* Ceram, 1 ♀; Amboina.

Specimens from Amboina are not known to me.

W. R.

*c. A. orbana significans.*

*Hypsa significans* Walker, *List Lep. Het. B. M.* XXXI. p. 215 (1864) (Aru, New Guinea, Mysol; *nee* Morty and Batjan); Butl., *Tr. Ent. Soc. Lond.* p. 322. n. 27 (1875) (Aru; "type in B. M." *ex err.*).

*Aganais orbana*, Ribbe, *Iris* I. p. 87 (1885) (Aru); Pagenst., *Jahrb. Ver. Nass.* p. 123. n. 33 (1886) (Aru).

*Hypsa orbana*, Snellen, *Tijdschr. v. Ent.* XXXI. p. 133. n. 24 (1888) (*Pro p.*).

*Aganais significans*, Kirby, *Cat. Lep. Het. I.* p. 386. n. 10 (1892) (Papua; *nee* Moluccas).

*Hypsa orbonis* (!), Swinhoe, *Cat. Lep. Het. Mus. Off. I.* p. 91. n. 407 (1892) (*Pro p.*).

♂. Differs from *orbana orbana* in the two patches of the forewing above being more or less tinged with ochraceous, and in the black costal spot of the underside of the hindwing not being produced towards the base. The brown streaks of the forewing vary very much in extent, but they are apparently never so much reduced as in certain specimens—so-called *typical* specimens—of *orbana*. The yellow lines in the apical region of the wing are sometimes very thin, in one Waigen individual nearly absent. The two pale patches are seldom as white as in *orbana orbana*. The hindwing has often a black border of variable breadth; the inner edge of the border

is sometimes dentate upon the veins, more often indented, and also often separated into spots or dots ; from none of our twenty-one *males* is the border entirely absent.

♀. The brown streaks of the forewing are much more reduced than in the *male*, but they are not absent from the outer-marginal region of the wing as in the ♀ of *orbona orbona* ; in one *Aru female* the brown streaks are as well developed as in the palest *male* of *significans*. The hindwing is either without indication of a black outer border, or has a band of small marginal spots. On the underside the outer region of the forewing is not quite so extended fuscous as in the *male*, the veins traversing this area yellow ; mostly the fuscous colour is nearly or altogether replaced by yellow ; there is always a black spot each at the costae of the fore- and hindwing ; these spots vary in size, but are generally much smaller than in the *male*.

*Hab.* *Aru Islands* (H. C. Webster, April to July 1897), 3 ♂, 3 ♀ ; *Dutch New Guinea* : Kapaur (W. Doherty, December 1896), 6 ♂, 8 ♀, *Humboldt Bay* (*id.*, September and October 1892), 2 ♂, 2 ♀ ; *Fergusson Island*, *D'Entrecasteaux Islands* (A. S. Meek, September to December 1894), 8 ♂, 3 ♀ ; *Kiriwina*, *Trobriand Islands* (*id.*, March to May 1895), 4 ♂, 1 ♀. K. J.

*d. A. orbona queenslandica* subsp. nov.

(?) *Hypsa australis*, Meyrick (*nec* Boisduval, 1832), *Pr. Linn. Soc. N. S. W.* p. 770. n. 112 (1886) (*N. S. Wales* ?) : *Luc.*, *ibid.* p. 1086 (1889) (Mackay).

♂. Resembles *orbona significans* very much, but the two patches of the upper-side of the forewing are more distinctly white, being seldom somewhat tinged with ochraceous ; the brown streaks, which are much more extended than the ochraceous ones in all our specimens, are less dark fuscous, having an obvious yellow tint ; the two yellow stripes upon and behind vein 2 are narrower than in *orbona significans*. The hindwing has mostly a narrow black border, cut by yellow veins (*type*), or is uniform in colour ; the black border varies very much in extent, but does not seem to become ever so broad as it sometimes is in *significans*. On the underside the fuscous apical area of the forewing is traversed by yellow veins, and is less blackish than in *orbona significans* ; in a specimen from Mackay the fuscous colour is nearly absent. The black costal spots are as in the *New Guinea* form.

♀. A specimen in Dr. Standinger's collection agrees with the *females* from *Fergusson Island*, but has the brown colour in the middle of the forewing much less broken up by the veins.

*Hab.* *N. Queensland* : Cedar Bay, 30 miles south of Cooktown (A. S. Meek), 15 ♂ ; Mackay, 1 ♂ ; Cairns, 1 ♀ in coll. Standinger. W. R.

*e. A. orbona ochrealis*.

(?) *Aganais egens* (?), Ribbe (*nec* *egens* Walker, 1854), *Iris* I. p. 87 (1885) ("Aru" loco "Kei" ?). *Aganais egens*, Pagenstecher, *Jahrb. Nass. Ver. Nat.* p. 123. n. 32 (1886) (Kei ; "Aru" *err. loc.*). *Hypsa ochrealis* Swinhoe, *Cat. Lep. Hrt. Mus. Oxf.* I. p. 92. n. 408 (1892) (Goram Ceram).

Though we have not compared specimens from Goram Island, where the *type* of *ochrealis* came from, we believe we are right in identifying the Kei Islands specimens with *ochrealis*.

♂. The variability is very great. There occur specimens which have the forewing streaked brown, like the average specimen of *significans*, and the two ochraceous or whitish ochraceous patches well marked, while there are also specimens in which

neither the streaks nor the patches are present : between these extremes there exist all intergradations, as our series of specimens shows. The hindwing has in the darkest specimens an indication of a fuscous border. On the underside the apical fuscous area of the forewing is as in *significans*, or is reduced or absent. The costal black spot of the hindwing is small.

♀. Only in one specimen are the two patches of the forewing surrounded by short, brown, more or less confluent lines; in a second specimen the patches are just traceable, being of a paler tint than the rest of the wing, while in the other *females* the patches have altogether disappeared. The underside of the wings is entirely without spots, or there is a minute postcostal spot on the forewing, or there is, besides, such a spot on the hindwing. The basal joint of the palpi has in four specimens a black lateral dot, while in five specimens the dot is absent.

*Hab.* Goram Island; Kei Islands (H. C. Webster, January to March 1896), 13 ♂, 9 ♀. K. J.

#### 9. *Asota tigrina*.

*Demalis tigrina* Butler, *Ann. Mag. N. H.* (5). X, p. 160 (1882) (N. Britain).

*Aganais tigrina*, Kirby, *Cat. Lep. Hct.* I, p. 386, n. 12 (1892) (N. Britain).

Closely allied to *A. orbona*, but easily distinguished by the absence of the antemedian patch from the forewing, the absence of some of the basal black dots, and by the entirely black palpi.

*Hab.* New Britain, 1 ♂, 1 ♀.

K. J.

#### 10. *Asota australis*.

*Aganais australis* Boisduval, *Voy. Astrolabe, Lép.* p. 252, n. 5, t. 5, f. 3 (1832) (N. Guinea *ex err.*?).

It appears to us to be very doubtful which race of the present species Boisduval had before him. The description is so short that it applies to all the races except the Australian one. As *habitat* Boisduval gives New Guinea in the text and on the plate, but the *figure* differs from New Guinea specimens in the forewing being without luteous nervular lines and in the black border of the hindwing being denticulate, with the tooth upon vein 2 enlarged. These characters of the figure are found only in the race from Amboina and Bnn (and probably Ceram). However, though the denticulation of the black border is as distinct in the figure as it is in Amboina individuals, the denticles stand in the latter *upon* the veins, while in the figure, most certainly in consequence of a mistake on the part of the artist, they stand *between* the veins. Under these circumstances we think it best to adopt the way proposed in Nov. Zool. 1896, p. 455—namely, to accept the name *australis* for the entire species and to give a name of its own to each subspecies.

The external white patch on the forewing above is more or less reniform in the *male*; in the *female* it is larger and mostly irregularly pentagonal. On the underside the yellow area of the forewing is more extended in the *female* than in the *male*. At the costa of the forewing there are four black dots marked; in many examples the first and third dots are absent.

K. J.

#### *a. A. australis sinuosa* subsp. nov.

(?) *Aganais australis* Boisduval, *l.c.*

*Hypsa australis*, Walker, *List Lep. Hct. B. M.* 11, p. 459, n. 25 (1854); Butl., *Tr. Ent. Soc. Lond.* p. 322, n. 26 (1875); Snell., *Tijdschr. v. Ent.* XXXI, p. 128, n. 10 (1888) (Amboina; *nee* N. Guinea); Swinh., *Cat. Lep. Hct. Oxf.* I, p. 91, n. 405 (1892) (*Pro p.*).

*Agonais australis*, Pagenstecher, *Jahrb. Nass. Ver. Nat.* p. 69 (1884) (Amboina); id., *l.c.* p. 115. n. 256 (1888) (Amboina); Kirby, *Cat. Lep. Hel.* 1. p. 386. n. 8 (1892) (*Pro p.*).

♂. Black spots on patagia small. Forewing above without whitish nervular lines. Black border to hindwing sinuate between the veins, triangularly produced upon vein 2.

*Underside*: forewing with the yellow discal area between veins 2 and 6 much reduced, being represented only by three small spots; hindwing with the black border extending along the costal margin to halfway to the base; costal and subcostal veins black. The external white patch on the forewing varies a good deal in size and shape, being in one specimen 2 mm. broad and  $3\frac{1}{2}$  mm. long, while in another the numbers are 4 and  $4\frac{1}{2}$  respectively: the type-specimen holds an intermediate position. The yellow discal area of the forewing below is also variable in size, but is always cut up into spots by black veins. There are often black postmedian spots marked on the underside of the hindwing.

♀. The black border to the hindwing is generally narrower than in the *male*; it reaches close to the anal angle. On the *underside* the black border is mostly indented at the veins; the discal part of the yellow area of the underside of the forewing is wider than in ♂.

*Hab.* Amboina (W. Doherty, February 1892), 6 ♂, 6 ♀; Baru, 1 ♀.

In a *male* ex coll. Felder, also from Amboina, the exterior patch of the forewing above includes a black dot. W. R.

#### *b. A. australis septentrionalis* subsp. nov.

Agrees with *sinuosa* in the veins of the forewing above not being whitish, but differs in the black spots on the patagia being three times the size of those of *sinuosa*, in the basal creamy white patch of the forewing being larger, and in the discal part of the yellow area of the forewing beneath being much more extended, and not cut by black veins in ♂. The black border to the hindwing is indented at the veins above and below, especially in ♀, sometimes entire in ♂; in ♀ the border does not reach beyond the submedian fold, is narrower than in *sinuosa*, and not or scarcely dilated at vein 2: below, the costal black spot is either separated from the border in ♀, or connected with it by a thin marginal line. A *female* from Gilolo in coll. Felder, otherwise agreeing with *septentrionalis*, has the border of the hindwing sinuose, as it is in *sinuosa*.

*Hab.* Halmahera (W. Doherty, August 1892), 1 ♂, 1 ♀; Ternate, 2 ♂, 1 ♀; Batjan (W. Doherty, March 1892), 1 ♂ (*type*), 2 ♀. W. R.

#### *c. A. australis lineata* subsp. nov.

*Agonais australis*, Pagenstecher (*nee* Boisduval, 1832), *Jahrb. Nass. Ver. Nat.* p. 123. n. 31 (1886) (Kei).

Closely resembling *aequalis*, but all the veins of the forewing are creamy white. In the *female* there occurs an interesting variation, the two creamy white patches of the forewing being sometimes connected with one another by means of a streak situated upon the median vein.

It is worthy of note that *lineata* differs from *aequalis* in the same character in which *glara* differs from *doryca*, although *lineata* and *glara*, and *aequalis* and *doryca*, are not "minicking" each other respectively. The presence of the whitish

lines upon the veins in the two Kei Islands forms must therefore be accounted for by causes other than "mimetic" resemblance.

*Hab.* Kei Tocal (H. C. Webster, January to March 1896), 2 ♂, 6 ♀ (*type* ♀, W. R.

*d. A. australis aequalis.*

(?) *Aganais australis* Boisduval, *l.c.*

*Hypsa aequalis* Walker, *List Lep. Het. B. M.* XXXI. p. 214 (1864) (Aru); Butl., *Tr. Ent. Soc. Lond.* p. 322, n. 25 (1875) (Aru; *type* in B. M.); Swinh., *Cat. Lep. Het. Mus. Oxf.* I. p. 91, n. 406 (1892) (Aru; *type* in Oxf. Mus.).

*Hypsa australis*, Butler, *l.c.* p. 322, n. 26 (1875) (N. Guinea); Snell., *Tijdschr. v. Ent.* XXXI. p. 128, n. 10 (1888) (N. Guinea; *nec* Amboina); Swinh., *l.c.* p. 91, n. 405 (1892) (N. Guinea, Aru, Mysol; *nec* Amboina).

*Aganais australis*, Ribbe, *Iris* I. p. 87 (1885) (Aru); Kirby, *Cat. Lep. Het.* I. p. 386, n. 8 (1892) (*Pro p.*).

*Aganais aequalis*, Kirby, *l.c.* n. 9 (1892) (Aru).

The veins of the forewing are whitish, except between outer patch and apex of wing of ♂ and in marginal region of ♀; the nervular lines less distinct than in *lineata*. The black border to the hindwing is evenly convex between submedian fold and vein 3, as in *lineata*.

The specimens from Aru do not seem to us to be separable, subspecifically, from New Guinea examples.

*Hab.* Aru (H. C. Webster, April to July 1896), 1 ♂, 1 ♀; Waigen, 2 ♂; Dutch New Guinea: Humboldt Bay (W. Doherty, September and October 1892), 1 ♂, 3 ♀; Fergusson Island (A. S. Meek, November and December 1894), 4 ♂, 3 ♀; Kiriwina, Trobriand Islands (A. S. Meek, March to May 1895), 1 ♂.

Butler, *l.c.*, says that the type of *aequalis* is in the British Museum, while according to Swinhoe, *l.c.*, the type is in the Oxford Museum. K. J.

*e. A. australis assimilis* subsp. nov.

(?) *Hypsa australis*, Meyrick (*nec* Boisduval, 1832), *Pr. Linn. Soc. N. S. W.* p. 770, n. 112 (1886) (N. S. Wales?); Lucas, *ibid.* p. 1086 (1889) (Mackay).

I quote Messrs. Meyrick and Lucas here with a ?, as I believe that the insects these authors refer to do not belong to the present form of *A. australis*, but to a representative of *A. orbona* which is very similar to *assimilis* and apparently not rare in Queensland. I have received *assimilis* only from Port Darwin.

♀. Head, thorax, and base of forewing brighter ochreous than in the other forms of *australis*. Forewing with a yellowish tint; the veins marked white nearly as in *lineata*. Hindwing with the fringe black between apex and submedian fold. *Underside*: forewing pale ochreous, a spot upon the discocellular veinlets black, this spot of nearly even breadth, continued in type beyond median vein; apical region of wing fuscous, its inner edge concave; it measures in width 10 mm. at costal margin, 4 mm. at vein 5, and 2½ mm. at vein 2. Hindwing with a black dot in middle of costal margin.

*Hab.* Port Darwin, N.W. Australia, 2 ♀.

W. R.

11. *Asota diana*.

*Hypsa diana* Butler, *Ann. Mag. N. H.* (5), XIX. p. 220 (1887) (Alo and Makita).

*Aganais diana*, Kirby, *Cat. Lep. Het.* I. p. 386, n. 6 (1892) (Solomon Is.).

This fine species occurs apparently all over the Solomon Islands and does not



seem to vary according to locality. The individual variability is also but slight; the orange basal spot behind the median vein of the forewing above is often well marked and often scarcely indicated.

*Hab.* Solomon Islands: Guadalcanar, 1 ♂, 5 ♀; islets near Isabel, 1 ♂; N. Georgia=Rubiana, 2 ♂, 6 ♀; Alu, 4 ♂, 2 ♀. K. J.

## 12. *Asota alienata*.

*Agarista alienata* Walker, *List Lep. Het. B. M.* XXXI. p. 46 (1864) (Aneiteum, N. Hebrides).

*Hypsa agarista* Snellen, *Tijdschr. v. Ent.* XXXI. p. 129. n. 12. t. 1. f. 4 (♀) (1888) (Aneiteum, N. Hebrides).

*Aganais* (?) *alienata*, Kirby, *Cat. Lep. Het.* I. p. 387. n. 20 (1892) (N. Hebrides).

*Aganais* (?) *agarista*, id., *l.c.* n. 21 (1892) (N. Hebrides).

*Damalis alienata*, Swinhoe, *Cat. Lep. Het. Ocf.* I. p. 95. n. 418 (1892) (Aneiteum; "Sydney" *loc. err.*).

In the *female*, which is figured by Snellen, there is on the upperside a trace of the kidney-shaped white patch of the forewing. The black thorax distinguishes this species from all other *Asota*.

We have only two *males*, one from Aneiteum, the other from New Britain: the latter specimen has the orange area of the underside of the hindwing more extended, and the spot at the apex of the cell, which is joined to the area, ochreous instead of white. If these differences hold good, *alienata* has developed into two subspecies.

*Hab.* Aneiteum, New Hebrides, 1 ♂; New Britain, 1 ♂. K. J.

## 13. *Asota javana*.

The antennae and claspers of the ♂ resemble those of *A. orbona*. The species varies apparently a good deal according to locality, and will doubtless be split up in future in a number of subspecies. For the present, owing to the absence of sufficient material, we cannot recognise more than two forms, keeping the Celebesian representative as a distinct species.

### *a. A. javana flaviventris* subsp. nov.

*Hypsa* (*Aganais*) *javana*, Pagenstecher, *Iris* III. p. 10. n. 21 (1890) (Palawan).

The black dots at the base of the forewing are small; that at the abdominal margin is absent or very small; there is no dot in the cell, except in one of our Palawan specimens, in which the cellular black dot is marked by a few scales. The apical edges of the five black basal segments of the abdomen, above, are narrowly edged with yellow; underside of abdomen all yellow, except a row of dots on each side.

In the specimens from Mindoro, Luzon, and Mindanao the brown area of fore- and hindwing is a little more extended than in Palawan specimens; on the underside of the forewing the yellowish spot in the centre of the cell is small, and is surrounded by brown colour in the Palawan individuals, while that spot is joined to the yellow costal area in the individuals from the other localities.

*Hab.* N. Luzon (J. Whitehead, 1894), 2 ♀; Mindoro, 1 ♂ (*type*), 1 ♀; Mindanao (in coll. Dr. Standinger): Palawan, 2 ♂. W. R.

### *b. A. javana javana*.

*Phalaena Bombyx javana* Cramer, *Pap. Exot.* III. p. 146 t. 274. f. c (1780) (Java).

*Asota jabensis*, Hübner, *Verz. bek. Schmett.* p. 164 (1816-22).

*Hypsa javana*, Walker, *List Lep. Het. B. M.* II. p. 454 (1854) . Butl., *Tr. Ent. Soc. Lond.* p. 321. n. 34 (1875) (Moulmein) ; Snell., *Tijdschr. v. Ent.* XXXI. p. 128. n. 8 (1888) (Java) ; Hamps., *Moths of India* I. p. 502. n. 1147 (1892) ; Snell., *Iris* VIII. p. 140. n. 113 (1895) (Deli. Sumatra).

*Damalis javana*, Swinhoe, *Tr. Ent. Soc. Lond.* p. 181. n. 97 (1890) (from Moulmein in Brit. Mus.).

*Agape javana*, Kirby, *Cat. Lep. Het.* I. p. 387. n. 3 (1892) ; Swinh., *Cat. Lep. Het. Mus. Oxf.* I. p. 93. n. 412 (1892) (*Pro p.*).

♂. Java and Bali: forewing above with two costal black dots, instead of one: a dot in the cell at the basal edge of the brown area: outer one of the two dots behind the median vein transverse as in *A. celebensis*. The yellow border to the hindwing is somewhat narrower than in the preceding subspecies. There is scarcely a trace of yellow scales at the hinder edges of the first five segments of the abdomen above, while below segments 2 to 4 (except tip of 4) and a ring on 5 are black. Forewing beneath with the brown area extending outside the apex of the cell to vein 7.

♂. Burma: differs from our Javan *male* in the yellow outer border of the hindwing being narrower, in the brown area of the forewing below being broader outside the apex of the cell, and in the ventral plate of the fourth abdominal segment being all black.

♀. A specimen ex coll. Felder, said to be from Malacca, has segments 2, 3, and 4 of abdomen edged with yellow beneath, and the brown area of the forewing below is very feebly marked outside the cell.

*Hab.* Palabuan, Java merid. (H. Fruhstorfer, 1892), 1 ♂; Bali (W. Doherty, March and April 1896), 1 ♂; Malacca, 1 ♀; Bhamo, Burma (1 ♂ in coll. Dr. Standinger); Sumatra; Borneo (in coll. Druce).

The only specimen of *A. javana* in the British Museum, recorded by Walker as coming from E. India and by Butler as being found near Moulmein in Burma, has the base of the abdomen beneath yellow, not black. Is the *hab.* Moulmein of this specimen correct ?

K. J.

#### 14. *Asota celebensis*.

*Aganais celebensis* Hopffer, *Stett. Ent. Zeit.* p. 43. n. 140 (1874) (Celebes) ; Piep. & Snell., *Tijdschr. v. Ent.* XXII. p. 79. n. 38 (1879) (Balangnipa).

*Hypsa celebensis*, Snellen, *l.c.* XXXI. p. 128. n. 9. t. 1. f. 3. 3a (♀) (1888) (S. and N. Celebes).

*Agape celebensis*, Kirby, *Cat. Lep. Het.* I. p. 387. n. 4 (1892) (Celebes).

*Agape javana*, Swinhoe, *Cat. Lep. Het. Mus. Oxf.* I. p. 93. n. 412 (1892) (*Pro p.*; Menado).

Differs, as pointed out by Snellen, *l.c.*, from *A. javana* in the following characters: second joint of the palpi with a black lateral stripe instead of a black apical dot ; segments 1—7 of abdomen above black, with the hinder edges broadly yellow ; the two creamy patches of the forewing above much larger, the brown area more extended, but not prolonged along vein 5 ; on the underside the spot in the centre of the cell is merged together with a large triangular basi-costal patch, and the spot at the apex of the cell is large and joins the costal yellow border ; outside this spot the brown colour of the disc of the wing extends to near the costa, forming a broad curved band ; on the hindwing the curved line upon the discocellulars of *A. javana* is here enlarged to a patch which is joined to another large streak-like patch that extends from the base to the apex of the cell, being limited in front by vein 8 and behind usually by the middle fold of the cell.

The brown area of both wings varies in extent ; its outline is also variable in shape. In our only *male*, from S. Celebes, the yellow border to the forewing is

almost restricted to the fringe from the hinder angle to vein 5, and then widens out, being 5 mm. wide at vein 8; the outer border to the hindwing is also narrower than in the *females*, and there are two black costal dots to the forewing instead of one: on the underside the greater part of the costal margin of the forewing is black.

In the single *female* from Toli-Toli, N. Celebes, in the Tring Museum, there are some indistinct yellow discal spots within the black area of the hindwing below.

*Hab.* Celebes: S. Celebes (W. Doherty, August and September 1891), 1 ♂, 3 ♀; Toli-Toli, N. Celebes (H. Fruhstorfer, November and December 1895), 1 ♀.

As the differences in colour between this form of *Asota* and *Asota javana* are quantitatively much greater than those found between many other species of this genus, it is, at least for the present, better to consider *celebensis* distinct from *javana*.

It is worthy of note that in the black dorsal segments of the abdomen being edged with yellow the Philippine form of *A. javana* is closer related to *A. celebensis* than the Javan form is; while, on the other hand, the Javan form agrees more with the Celebes insect in the size of the black dots at the base of the forewing than the Philippine subspecies does.

K. J.

### 15. *Asota iodamia*.

*Aganais borbonica* ♀, Herrich-Schäffer, *Auss. Schmelt.* f. 119 (1854) (*Err. typogr.*).

*Aganais iodamia*, id., *l.c.* text p. 79 (1858) (Australia).

*Hypsa sphaerifera* Butler, *Tr. Ent. Soc. Lond.* p. 329 (1875) (*Nom. nov.*).

*Hypsa nesophora* Meyrick, *Pr. Linn. Soc. N.S.W.* p. 770. n. 113 (1886) (Newcastle and Sydney; common); Lucas, *ibid.* p. 1086 (1889) (Brisbane; N. S. Wales).

*Hypsa iodamia*, Snellen, *Tijdschr. v. Ent.* XXXI. p. 132. n. 18 (1888).

*Aganais sphaerifera*, Kirby, *Cat. Lep. Het. I.* p. 386. n. 7 (1892).

By an unfortunate but very obvious misprint the *female* of *Aganais borbonica*, described by Boisduval as *insularis* in 1834, but queried by him as ♀ of *borbonica*, stands as f. 120 instead of 119 on Herrich-Schäffer's plate, while the names given on the cover of that number of *Auss. Schmelt.* are: 119 *borbonica* ♀ and 120 *iodamia*; therefore the *new species* figured is represented by f. 119, but the *new name* (*iodamia*) is given to f. 120, which represents the species described already in 1834. In the text of *Auss. Schmelt.* issued in 1858 the names are corrected, f. 119 being here named *iodamia* and f. 120 *borbonica* ♀. As there cannot be the slightest doubt that the name of *iodamia* was meant by Herrich-Schäffer for the then new insect represented by f. 119, we follow Snellen in applying the name of *iodamia* to this Australian species.

*Hab.* N. S. Wales, 1 ♂; S. Queensland, Brisbane district, 4 ♂.

K. J.

### 16. *Asota plagiata*.

*Hypsa plagiata* Walker, *List Lep. Het. B. M.* II. p. 457. u. 19 (1854) (New Holland); Meyr., *Pr. Linn. Soc. N.S.W.* (2). I. p. 768. n. 110 (1886) (Bowen and Rockhampton, Queensland; Clarence River, N.S.W.; rather common); Lucas, *l.c.* (2). IV. p. 1086 (1889) (Bowen to Brisbane).

*Hypsa discreta* Walker, *l.c.* XXXI. p. 216 (1864) (N. Australia); Butl., *Tr. Ent. Soc. Lond.* p. 321. n. 22 (1875) (N. Australia).

*Petalia plagiata*, Butler, *l.c.* p. 326. n. 1 (1875) (Moreton Bay); Kirby, *Cat. Lep. Het. I.* p. 385 (1892) (Australia); Swinh., *Cat. Lep. Het. Gxf. I.* p. 95. n. 421 (1892) (Moreton Bay).

The pattern of the base of the forewing is comparable to that of *A. heliconia*, the black spots corresponding to those of *heliconia*, and the yellow markings

separating them are homologous to the yellow respectively white markings of *heliconia*, but are in *plagiata* much enlarged, especially the yellow border of the outer black spots, which forms an undulate transverse band. The hinder portion of the band is usually joined to the spot standing near the abdominal margin upon the outer portion of the cavity of the wing. The patch beyond the apex of the cell varies somewhat in size and shape, and is in one of our *females* connected with the waved transverse band by a streak in the cell; a similar longitudinal streak is in the same specimen marked behind vein 2. There is sometimes a black dot in the patch in ♂ and ♀. The two black macular bands of the hindwing vary considerably; the spots of the outer band are sometimes merged together, with the veins between them either faintly marked yellow or partly also black, while in other specimens the spots are small and well separated from one another; the largest mark is that behind vein 2. The inner band consists of three spots, which either stand separate or are joined to each other by means of some small additional spots; the two posterior spots are often produced basally in ♂ and ♀. The antennae as in *A. heliconia*; the claspers and harpe of the ♂ similar to those of *heliconia*, but the harpe much flatter, less curved dorsally, and in a view from above more equally rounded.

*Hab.* North Australia, as far south as Clarence R., N. S. Wales; 14 ♂, 6 ♀.  
K. J.

#### 17. *Asota woodfordi*.

*Hypsa woodfordi* Druce, *P. Z. S.* p. 221. t. 13. f. 2 (1888) (Viti Levu).

We know this handsome species only from the figure, and cannot tell whether it is allied in structure to *plagiata* or not.

*Hab.* Suva, Viti Levu, Fiji Islands, 1 ♀ in Mr. H. Druce's collection. K. J.

#### 18. *Asota fulvia*.

*Noctua fulvia* Donovan, *Ins. N. Holl.* t. 39. f. 4 (1805) (N. Holland).

*Chelonia fulvia*, Boisduval, *Œy. Astrolabe*, *Lép.* p. 214. n. 2 (1832) (N. Holland).

*Spilosoma* (?) *fulvia*, Walker, *List Lep. Het. B. M.* 111. p. 679. n. 35 (1855) (N. Holland).

*Aganais fulvia*, Kirby, *Cat. Lep. Het. I.* p. 386. n. 14 (1892) (*Pro p.*).

Butler as well as Snellen do not mention this species in their revision of the *Aganaidæ*; Kirby enumerates it correctly among the *Aganaidæ*, but puts as a synonym to it Boisduval's *Chelonia costata*, which is a true *Arctiid*.

*A. fulvia* is known to us only from New Britain and New Ireland, and it is not improbable that Donovan's locality (New Holland) is erroneous. Our specimens agree very well with Donovan's figure, except that the outer black costal spot of Donovan's figure is absent from all our specimens but one.

There are no black spots on the thorax; the dorsal spots of the abdomen are also obliterated, there being only a trace of them at the very base of the middle segments; the ventral abdominal spots are very slightly marked. The palpi are black, with the under and outer sides of the first two joints buff-colour.

The veins of the forewing are fuscous, except close to the base; the submedian fold is also more or less extended fuscous, while there is mostly no fuscous line in the median cell; at the base of the cell there is sometimes a small black dot. Hindwing uniform in colour above, but the extremities of the veins are sometimes obviously fuscous.

On the underside the apical region of the forewing more or less fuscous ; there are also fuscous scales at the costal margin of the hindwing from middle to apex, and sometimes the outer-marginal region of the hindwing is also dusted over with fuscous scales.

The antennae are without lateral grooves in the *male*. The clasper and harpe of the *male* are of a peculiar structure in this species : the clasper is slender, tapering to a point, instead of being sole-shaped as in the other species of *Asota* ; it is raised into a keel in its middle line ; the harpe is three times as long as in *A. heliconia*, constricted near the base, then dilated and then gradually narrowed to a point, thus having somewhat the appearance of a knife with handle.

*Hab.* N. Britain, 2 ♂, 7 ♀ ; N. Ireland, 4 ♂, 1 ♀ ; Australia (?).

K. J.

### 19. *Asota versicolor*.

The white transverse postmedian band of the forewing distinguishes this species from all other species of *Asota*. The antennae are as in *paphos* and allies. There are at least two geographical forms distinguishable, perhaps three, of which the New Guinea one is the first described.

#### *a. A. versicolor versicolor*.

(?) *Noctua versicolor* Fabricius, *Ent. Syst.* III. 2. p. 49. n. 134 (1793) ("in Americae Insulis").

*Noctua versicolor* var. Donovan, *Ins. N. Holl.* t. 39. f. 3 (1805).

*Aganais versicolor*, Boisduval, *Voy. Astrolabe, Léop.* p. 250. n. 5 (1832) (N. Guinea).

*Aganais eusemioides* Felder, *Reise Novara, Lep.* II. t. 106. f. 1 (1874) (N. Guinea).

*Hypsa versicolor*, Walker, *List Lep. Hbt. B. M.* II. p. 459 (1854) (N. Guinea) ; Butl., *Tr. Ent. Soc.*

*Lond.* p. 323. n. 32 (1875) (N. Guinea) ; Snell., *Tijdschr. v. Ent.* XXXI. p. 127. n. 7 (1888) (N.

Guinea ; Salawatti ; "New Holland" loc. err.) ; Swinh., *Cat. Lep. Hbt. Oxf.* I. p. 91. n. 403

(1892) (N. Guinea) ; Pagenst., in Seimon, *Forschungsreisen* V. p. 214. n. 33 (1895) (N. Guinea).

*Methypsa eusemioides* (!), Butler, *l.c.* p. 324 (1875).

*Hypsa eusemioides*, Butler, *Ann. Mag. N. H.* (5). X. p. 159 (1882).

*Hypsa eusemioides* (!), Kirby, *Cat. Lep. Hbt.* I. p. 389. n. 28 (1892) (Papua ; "Australia" loc. err.).

The description given by Fabricius does not fit this insect, and as the habitat "in Americae Insulis" also does not agree with that of the present species, Donovan must be quoted as "the author" of *Asota versicolor*.

The band of the forewing is in the *male* somewhat narrower than in the *female*. The black dorsal spots of the abdomen are often enlarged to half-rings. In the specimens from Huon Golfe, German New Guinea, the underside of the hindwing bears a small patch of white scales in the anal region beyond vein 2 ; this patch is more often marked in the *female* than in the *male*, and occurs also sometimes in individuals from Constantinhafen.

Three of our six *males* from Fergusson Island have the band of the forewing very narrow, and constricted at vein 2, and are not distinguishable from certain specimens of the following subspecies ; a fourth *male* is very interesting, as it has a narrow band on the left wing and a broad one on the right wing.

*Hab.* N. and S.W. Dutch New Guinea, 5 ♂, 5 ♀ ; Salawatti ; German N. Guinea, 23 ♂, 12 ♀ ; Fergusson I., D'Entrecasteaux Is. (A. S. Meek, September to December 1894), 6 ♂, 1 ♀. Not yet recorded from British N. Guinea (mainland) ; apparently not occurring in Australia.

K. J.



*b. A. versicolor subrupta* subsp. nov.

♂. Differs from typical *versicolor versicolor* in the band of the forewing being much narrower and at vein 2 interrupted (*type*) or constricted.

♀. Band slightly narrower than in average *females* of New Guinean *versicolor*.

The band varies in the *male* considerably and approaches in certain New Britain examples the band of *versicolor versicolor*, being sometimes not constricted at vein 2.

*Hab.* Duke of York I. (*type*), 3 ♂, 4 ♀; New Britain, 12 ♂, 6 ♀. W. R.

20. *Asota paphos*.

Though the *type* of this species is in the Banksian collection, most entomologists have followed the Walkerian erroneous identification and treated this species as *heliconia* L., in spite of the fact that, as Snellen correctly points out, the description of *heliconia* does not at all fit the present insect. Kirby was the first to recognise and to correct Walker's error. Snellen, in *Tijdschr. v. Ent.* XXXI. p. 137 (1888), does not mention *paphos* F.; he has apparently overlooked the footnote 2 in Aurivillius's paper (see below), as he describes a form of *paphos* as a new species. Hampson, *Moths of India* I. p. 501 (1892), does not take any notice of Aurivillius's critical remarks, but, following Walker, accepts the name of *heliconia* L. for the present species.

*A. paphos* is especially distinguished by the forewing being devoid of a white median streak or patch, but having a rather broad white inner margin, and by the marginal band of the hindwing including a white spot at vein 2. The antennae are, as in *A. plaginota*, *canaraica*, etc., without lateral grooves.

There are two geographical forms known; in both forms the black markings on the hindwing are smaller in the *female* than in the *male*, and the amount of white on the underside of the forewing is larger in the *female* than in the *male*. K. J.

*a. A. paphos paphos* (Pl. IV. fig. 11).

*Noctua paphos* Fabricius, *Manit. Ins.* II. p. 137. n. 24 (1787) (Siam; Mus. Banks); id., *Ent. Syst.* III. 2. p. 18. n. 33 (1793).

*Hyppsa heliconia* var. *a*, Walker, *Cat. Lep. Hbt. B. M.* II. p. 452. n. 11 (1854).

*Hyppsa heliconia*, Moore, *Journ. As. Soc. Beng.* p. 235. n. 31 (1884) (Cachar); Swinh., *Tr. Ent. Soc. Lond.* p. 180. n. 91 (1890) (Burma); Hamps., *Moths of Ind.* I. p. 501. n. 1142 (1892) (Sikkim, Assam, Burma, Singapore, Borneo; "Ceram," "New Guinea," *loc. err.*).

*Hyppsa paphos*, Kirby, in Auriv., *Rec. Crit. Lep. M. L. U.* p. 159. note 2 (1882).

*Hyppsa leuconota* var., Snellen, *Iris* VIII. p. 139. n. 11 (1895) (Deli, N.E. Sumatra).

The veins of the forewing are white, but the white scaling of veins 2 to 6 disappears sometimes before the veins reach the margin of the wing. The hindwing of the *female* has, besides a black border that is more or less interrupted at the veins, two postmedian black markings and two spots in the cell, and an anal spot: the latter is often continued along the abdominal margin. In the *male* the spots are larger; the first postmedian one and the two cellular ones are joined to one another by black scaling, and the second median and the anal spot are connected with the base of the wing by means of black streaks: the veins on the disc are partly black.

On the *underside* the basal three-fourths of the forewing are white, with the exception of a rounded spot in the cell, a transverse mark on the discocellular veinlets, and a spot behind the base of vein 2; in the *male* the white colour is much

reduced; there is often only a square spot in the cell and a flexuose macular band on the disc.

*Hab.* Sikkim, 1 ♀; Assam, 3 ♂, 1 ♀; Burma, 2 ♂; Malacca, 2 ♂, 2 ♀; Borneo, 4 ♂; Sumatra.

The Borneo specimens are apparently not distinguishable from Indian ones.

K. J.

#### *b. A. paphos leuconota.*

*Aganais heliconia*, Snellen (*rev* Linnaeus, 1758), *Tijdschr. v. Ent.* XXII. p. 78. sub n. 35 (1879).

*Hypsa leuconota* Snellen, *l.c.* XXXI. p. 135. n. 23. t. 2. f. 2. 2a (1888) (Java; Sumatra).

*Aganais leuconota*, id., *l.c.* XXXVIII. p. 182 (1896).

Differs from *paphos paphos* in the forewing being paler in colour and having the veins less white, in the black markings of the hindwing being very small and partly absent, in the head and thorax having nearly the colour of the forewing, and in the pale abdomen being above banded with black.

We have some specimens, said to be also from Java, which have the base of the forewing and the body as bright orange as *paphos paphos*, and the black spots of the hindwing well developed, but smaller than they are in *paphos paphos*.

It is worthy of note that *paphos leuconota* differs from *paphos paphos* in a similar way as the Javan *heliconia intacta* does from the Indian *heliconia clarata*.

*Hab.* Java, 2 ♂, 2 ♀; and, according to Snellen, Sumatra.

K. J.

#### 21. *Asota heliconioides* (Pl. IV. fig. 12).

*Neochera heliconioides* Moore, *P. Z. S.* p. 6 (1878) (Luzon); Kirby, *Cat. Lep. Het.* 1. p. 390. n. 9 (1892) (Luzon).

*Neochera heliconoides* (!), Pagenstecher, *Iris* III. p. 9. n. 19 (1890) (Palawan).

*Hypsa heliconioides*, Swinhoe, *Cat. Lep. Het. Oxf.* I. p. 88. n. 393 (1892) (Philippines).

Swinhoe, *l.c.*, was the first to recognise that this species has nothing to do with the genus *Neochera*. In structure *A. heliconioides* is closely allied to *A. paphos*, and agrees in the pattern of the hindwing especially with *paphos paphos*, but the black colour is much more extended. However, the shape and colour of the forewing remove *heliconioides* so far from *paphos* that there cannot be any doubt about the specific distinctness of the two insects.

Our series of specimens is much too small to enable us to say whether the species has developed into subspecies. Our seven specimens show some individual variation in the amount of grey on the hindwing, while an eighth specimen, from Mindanao, lent to us by Dr. Standinger, has the hindwing nearly exactly marked as *paphos paphos*, and represents most probably a separate subspecies.

*Hab.* Philippine Islands: Luzon: Mindoro, 1 ♂, 1 ♀; Mindanao; Palawan, 4 ♂, 1 ♀; also on Jolo and Balabac according to Dr. Standinger *in litt.* K. J.

#### 22. *Asota sericea*.

♂. *Hypsa sericea* Moore, *P. Z. S.* p. 3 (1878) (Canara); Hamps., *Moths of Ind.* 1. p. 503. n. 1149 (1892) (Bombay; Poona; Canara; Nilgiris); Kirby, *Cat. Lep. Het.* 1. p. 388 (1892) (Canara).

♀. *Damalis concana* Moore, *l.c.* p. 4 (1878) (Canara); Waterh., *Aid.* 11. t. 132. f. 7 (1883); Hamps., *Moths of Ind.* 1. p. 502. n. 1146 (1892) (Canara; Nilgiris).

*Damalis sericea* Swinhoe, *l.c.* p. 292. n. 42 (1885) (Poona, Nov.; Bombay, Oct. Nov.).

*Aganais concana*, Kirby, *l.c.* 1. p. 386. n. 2 (1892) (Canara).

Mr. Moore's *Hypsa sericea*, of which only *males* are known to science, and his *Damalis coucana*, of which *females* only have been found, agree so well with one another, especially in the peculiar style of marking of the hindwing, that we do not see a valid reason against their being sexes of one species. Antennae of ♂ as in the preceding species. We have only seen one ♂, kindly lent to us by Mr. Ernest Swinhoe, besides the few specimens in the British Museum. It is a near ally of *A. paphos*.

*Hab.* South India, as far north as Bombay.

K. J.

### 23. *Asota canaraica*.

*Hypsa canaraica* Moore, *P. Z. S.* p. 3 (1878) (Canara); Kirby, *Cat. Lep. Het.* I. p. 388. n. 10 (1892) (Canara); Hampson, *Moths of Ind.* I. p. 500. n. 1139 (1892) (Canara, Nilgiris).

The antennae of the *male* are as in the two following species, from which *canaraica* differs chiefly in the forewing having a more or less oblong white patch at the lower angle of the cell instead of the large triangular white median streak. The three postmedial black spots of the hindwings are mostly, not always, connected with one another by means of some small additional spots. The "middle black basal costal spot" is, according to Hampson, absent; three of our four specimens have the spot, however, marked.

*Hab.* South India : Canara, Nilgiris, 1 ♂, 3 ♀.

K. J.

### 24. *Asota paliura* (Pl. IV. fig. 5).

*Hypsa paliura* Swinhoe, *Ann. Mag. N. H.* (6). XII. p. 214 (1893) (China).

The antennae of the *male* are like those of *venalba*, to which *paliura* is very closely allied. The white median streak is shaped as in *venalba*, and the veins are white as in that species. In many specimens of both sexes the forewing bears above mostly a small, rather indistinct, white spot just beyond the upper angle of the cell behind the arcole. The basal area of the forewing is yellow, with the black dots smaller than in *venalba*; thorax and abdomen are also more yellow. The black spots of the cell of the forewing, which are always marked on the underside, are often visible on the upperside. The black border of the hindwing varies very much in breadth, being in some specimens almost twice as broad as in others: the fringe is white: there are three postmedial black spots, as large as or larger than the spot at the end of the cell: the position of the anterior one of the three is variable in so far as the spot stands sometimes close to the apex of the cell, sometimes midway between the cell and the outer margin; in a few of our specimens this spot is enlarged transversely, reaching from vein 3 to near vein 7; in other individuals the spot is enlarged longitudinally; in both cases the increase in size is much more considerable on the upperside of the wing than below. The first abdominal segment has no dorsal black spot; the two following segments are also often without black dots.

*Hab.* Central and Western China, as far as Mupin; seems to be very common from May to July; 66 ♂, 20 ♀.

K. J.

### 25. *Asota venalba*.

*Hypsa venalba* Moore, *P. Z. S.* p. 598 (1877) (Andaman Is.); Snell., *Tijdschr. v. Ent.* XXXI. p. 141. n. 29 (1888) ("Nicobar Is." *err. loc.*); Kirby, *Cat. Lep. Het.* I. p. 389. n. 27 (1892) (Andamans).

*Hypsa aonycha*, Hampson, *Moths of Ind.* I. p. 499. n. 1137 (1892) (*ex p.*).

Sir George Hampson (*l.c.*) regards this insect also as a variety of *A. heliconia* (= *mongcha* Hamps.): if this be so, it would be a very remarkable case of variation, as in the *male* of *venalba* there is only an extremely faint trace of the lateral impressions and brush-like tufts of fine hairs of the antennal joints which are invariably strongly marked in all the insects treated in this paper as *heliconia*-forms. The harpe resembles that of *heliconia clavata*, but is decidedly broader; the clasper is also a little broader than in *clavata*.

In colour *venalba* seems to be pretty constant. The median streak of the forewing is triangular, its outer edge sinuate. The veins in the costal region and the submedian nervure are white; the breadth of the submedian white line varies considerably. The border to the outer margin of the hindwing reaches close to the anal angle, and is cut by white veins; vein 2 is especially broadly white; besides two black spots in the cell, there are in two of our three specimens faint indications of two postmedial black spots standing, one beyond vein 2, the other upon vein 5.

*Hab.* Andaman Islands, 1 ♂, 2 ♀.

K. J.

## 26. *Asota antennalis* sp. nov.

♂. *Upperside*: forewing comparatively broader than in both *albirena* and *dohertyi*, marked as in *A. albirena*, the veins somewhat less heavily white; fringe to hinder margin up to vein 2 consisting of brown and white scales; no white border to hinder margin. Hindwing marked as in *A. albirena*, fringe brown and white; spot at apex of cell conspicuous.

*Underside*: forewing with a very few white scales behind lower angle of cell. Hindwing yellow at extreme base (like forewing); marginal band and cellular spots as in *albirena*.

Head, thorax, and abdomen above as in *dohertyi*; no black spots on prothorax, and no dot behind centre of mesothorax; abdominal (dorsal) spots slightly transverse, not band-like; the dorsal segments bear, besides, a row of large black spots at the stigmata. Palpi black; basal half of first joint and under and inner side of second joint ochraceous. Underside of thorax and abdomen ochraceous; the latter with large black spots on each side; the ventral spots on segments 4 to 7 merged together, or nearly so, to transverse bands.

Antennae of *male* without lateral impressions and tufts of fine hairs, while in both *albirena* and *dohertyi* the lateral impressions and tufts of fine hairs are strongly developed. Harpe nearly as in *A. heliconia*, asymmetrical at the tip.

Forewing: length 33 mm.; breadth 15 mm.

*Hab.* Indralaman, Bonthain, 2000 feet (A. Everett, October 1896), 1 ♂.

*A. antennalis*, *dohertyi*, and *albirena* resemble each other superficially so closely that one can easily mistake one for the other, though on closer examination they are easily enough distinguishable. The most interesting form of the three is certainly *A. antennalis*, on account of the different structure of the *male* antennae (the ♀ of *antennalis* is unknown).

W. R.

## 27. *Asota dohertyi* sp. nov. (Pl. IV. fig. 10).

Comes in colour close to *A. albirena* Walk., with which it occurs together. It is a larger insect, and can be distinguished as follows:—

*Upperside*: forewing with the costal margin quite straight from the base to beyond the middle; veins white, the two lines between the median and submedian

nervures broader than in *albivena*: four costal black dots as in *albivena*, rather heavily bordered with white; three separate spots behind the median vein, the first small and round, the second transverse, especially in ♂, the third also transverse and angle-shaped; an oblique line at hinder margin; a very narrow border to hinder margin as well as fringe at hinder margin and hinder angle up to vein 2 (♂) or 3 (♀) white. Hindwing with a black outer border as in *cecalba*, but the border is narrower; in ♂ an indistinct spot at the end of the cell, traces of postmedian spots between veins 5 and 6 and behind vein 2, and an indistinct spot near anal angle, blackish; in ♀ with the spots seldom indicated; fringe white, anteriorly mostly mottled with black.

*Underside*: forewing in ♂ with a white patch of 3 mm. length behind the cell between veins 2 and 3, and with two more patches of small size between veins 3 and 5; there are also a few white scales outside the apex of the cell, especially in or before the areole; the posterior region of the wing as far as it is covered by the hindwing also white; in ♀ the white colour much more extended, and there is a large white patch in the apical half of the cell; at the basal side of this patch there stands a black spot or patch; the white colour forms a rather broad white macular band outside the cell. Hindwing in ♂ with the discal black markings distinct, the anal mark merged together with the marginal band; there is a spot in the centre of the cell, to which is sometimes joined a short line at the base; the cellule formed by veins 7 and 8 is white only to the apex of the median cell; in ♀ there is a short line at the base, a spot in the centre, and a larger, mostly divided, mark at the apex of the cell, and sometimes also one or two postmedian spots and an anal one.

Head, thorax, and abdomen above bright orange. Prothoracic lobes without black dots; black spots on mesothoracic lobes round, in ♀ with white scales in front; mesothorax with a black dot in middle line, and often with white scales in centre; abdominal segments 2 to 7 with transverse black spots, which are larger in ♂ than in ♀, reaching down in two specimens to the stigmata. Front of head and underside of abdomen white, the latter with a row of black round spots on each side; palpi black, inner side and part of underside of first and second joints white.

Forewing: length 33 mm.; breadth  $13\frac{1}{2}$  mm.

The harpe is slenderer and longer than that of *A. heliconia*, and not asymmetrical at the apex; it is about half the breadth of the harpe of *A. albivena*.

*Hab.* Celebes: S. Celebes (W. Doherty, August and September 1891), 4 ♂, 5 ♀; Samanga, S. Celebes (H. Frlstorfer, November 1896), 1 ♂, 2 ♀; Dongala, Palos Bay (W. Doherty, August and September 1896), 1 ♂.

The forewing is similar in shape to that of *A. producta*; the hinder angle is strongly rounded, so that the outer margin of the wing appears to be much longer than in allied species.

W. R.

## 28. *Asota albivena*.

*Hypsa albivena* Walker, *Cat. Lep. Het. B. M.* XXXI. p. 213 (1864) (Tondano); Swinh., *Cat. Lep. Het. Oxf.* I. p. 88. n. 394 (1892) (Tondano; *type* in Mus. Oxford identical with Snellen's figure of *ritessoides*).

*Neochera albivena*, Butler, *Tr. Ent. Soc. Lond.* p. 328. n. 3 (1875); Kirby, *Cat. Lep. Het.* I. p. 390. n. 5 (1892) (Tondano).

*Aganthis ritessoides* Snellen, *Tijdschr. v. Ent.* XXII. p. 78. n. 36. t. 7. f. 1 (1879) (Maros; "♂" *ex err.*).

*Hypsa ritessoides*, id., *l.c.* XXXI. p. 140 (1888).

*Hypsa monycha*, Hampson, *Moths of Ind.* I. p. 499. n. 1137 (1892) (*sub syn.*).



The description of *albirena* by Walker refers unmistakably to the same insect which Snellen described again and figured in 1879 (*l.c.*). Snellen's figure, which is stated to be taken from a *male*, represents most certainly a *female*, judging from the form of the forewing and the apparent absence of a costal retinaculum.

*A. albirena* is very closely allied to *A. heliconia*, and has by several authors been considered identical with certain forms of *heliconia*, such as *heliconia ghara* from the Kei Islands (Pagenstecher, Röber) and *heliconia intacta* from Java (Hampson), and the differences in colour are certainly not such that they alone would justify a specific separation of *albirena* from *heliconia*. However, as *albirena* differs in the form of the *male* clasper and harpe from all races of *heliconia*, and as further those *heliconia*-forms which occur together, like *intacta* f. *intacta* and f. *lana*, and *heliconia* f. *heliconia* and f. *lanceolata*, are identical in those organs, we do not see that there is much justification to treat *albirena* as a Celebesian form of *heliconia* beside *lanceolata*, which is also a Celebesian insect. The various subspecies of *heliconia* differ slightly from one another in the *male* copulatory organs; *albirena* stands decidedly outside the range of variation as exhibited by the insects treated in this paper as forms of *heliconia*; the harpe is much broader and flatter at the apex, much less curved upwards, and the ventral edge of the clasper is less arched. Our three *males* from S. Celebes agree with one another in colour very closely; while, however, in two of them there are, on the underside of the forewing, two small white spots behind the apex of the cell between veins 2 and 4, the third specimen has, besides, a white streak along the basal partition of the median nervure and a white patch in the apex of the cell. The specimen from Palos Bay has no white markings on the underside of the forewing (a northern subspecies?).

*Hab.* Celebes: S. Celebes (W. Doherty, August and September 1891), 3 ♂; Tawaya, Palos Bay (W. Doherty, August and September 1896), 1 ♂. K. J.

## 29. *Asota heliconia*.

If one looks at the synonymy (as given below) of the various forms of *Asota* which we unite here to one species, it will become obvious that these Aganaisids must have been a puzzle to Lepidopterists. And we confess that, before we had dissected a good number of specimens and studied the antennae, genital armature, and other parts of the body, we were very uncertain about several of the forms with a very distinct appearance. However, as we have found that the differences between these *Asota* forms are only such of colour and wing-form, and as further there exist specimens which stand intermediate, either by combining the distinguishing characters of two forms, or by having the characters in question more developed than the one form and less than the other, we had necessarily to come to the conclusion that the differences, though often considerable, between the various *Asota* forms here united are not of specific value. It was especially the occurrence of two forms in the same locality and at the same time of the year which led us first to the belief that there were two instead of one species on the Sunda Islands and the Moluccas.

This kind of dimorphism in both sexes is certainly very remarkable, and no less misleading. The differences between the two kinds of forms relate to the colour of the body, size of the black abdominal and thoracic markings, shape of the white area of the forewing, and sometimes (especially in Timor) to the shape of the forewing: the white area of the forewing above is generally either prolonged along vein 2, or in the other form along vein 3: in the latter case the area is basally narrow, often

obsolete, and dilated at the end of the cell into a more or less rounded patch, thus appearing club-shaped : while in the former case the area becomes gradually broader towards the end of the cell, and has therefore more the form of a long triangle.

Linné described the Amboina form in 1758 as *heliconia*; this name has therefore to stand for the species. Cramer's *silcandra* (1782) is the same form, while his *monycha* (1779) is a different form of the present species.

The habitat Coromandel which Cramer gives to *monycha* is certainly erroneous. The figure agrees best in colour with the paler form of the Javan subspecies, while in the form of the white patch on the forewings it comes also near the Indian subspecies ; but the figure is not correct enough to enable us to say with certainty which subspecies of *heliconia* it represents. The name *monycha*, therefore, is not acceptable for any subspecies, and we have accordingly treated it as a query synonym of that pale aberration of the Javan *A. heliconia intacta* which Colonel Swinhoe has described as a distinct species under the name of *lura*, and also as a query synonym of the Indian *heliconia clavata*.

Walker referred the name of *heliconia* to a species which Fabricius has described as *paphos*, though Linné's descriptions of *heliconia* in *Syst. Nat.* and in *Mus. Lud. Utr.* do not agree with *paphos*. The Walkerian erroneous identification has been rectified by Aurivillius with his usual exactness in 1882 (*Recessio Lep. Mus. Lud. Utr.*); but in spite of this rectification, we find in Hampson, *Moths of India* I. p. 501, the Walkerian mistake repeated with the addition of an erroneous habitat.

K. J.

#### a. *A. heliconia clavata*.

(?) *Phalaena Attacus monycha* Cramer, *Pap. Ex. H.* p. 52. t. 131. f. c (1779) (Coromandel *loc. err.* ; *fig. mala*).

*Phalaena Noctua heliconia*, Esper (*acc* Linné, 1758), *Eur. Schm.* IV. 2. p. 440. n. 162. t. 139. f. 5 (1786).

*Hypsa silcandra*, Walker (*acc* Cramer), *Cat. Lep. Het. B. M.* II. p. 450. n. 7 (1854) (*ex p.*) ; Moore, *Cat. Lep. Ins. Mus. E. I. C. H.* p. 293. n. 673 (1859) (Penang ; *acc* Java).

*Hypsa monycha*, Moore (*acc* Cramer), *l.c.* p. 294. n. 674 (1839) (Cherra Pungi) ; Swinh., *Tr. Ent. Soc. Lond.* p. 15. n. 686 (1890) (Khasia Hills) ; Hamps., *Moths of Ind.* I. p. 499. n. 1137 (1892) (*ex p.*).

*Hypsa clavata* Butler, *Tr. Ent. Soc. Lond.* p. 317. n. 10 (1875) (Hongkong ; Silhet) ; Moore, *Journ. As. Soc. Beng.* p. 235. n. 32 (1884) (Cachar) ; Hamps., *l.c.* p. 500. n. 1138 (1892) (Hongkong ; Cachar ; Silhet) ; Swinh., *l.c.* p. 15. n. 687 (1895) (Khasia Hills).

*Hypsa venalbat*, Swinhoe, *Tr. Ent. Soc. Lond.* p. 180. n. 94 (1890) (Upper Tenasserim).

Sir George Hampson, *l.c.*, says that there are in North India two closely allied species of *Asota*, one which he calls *monycha* Cram., and another which he records as *clavata* Butl.; the latter is said to differ from the former in the palpi having a black lateral stripe, in the veins below the costa of the forewing being streaked with white, and in the hindwing having two black postmedial spots, besides the spots at the end and in the middle of the cell. Sir George is certainly right that there occur specimens in North India which have no "postmedial" spots on the hindwing, and also individuals which are almost devoid of white nervular lines to the forewing, but the specimens with those spots present are sometimes devoid of the lines and the individuals which have the lines marked are just as often without the spots. The difference in the palpi as given in *Moths of India* is incorrect ; the Indian specimens have, like the individuals of *heliconia* from all the other localities, a black dorso-lateral stripe to the first and second joints of the palpi, and the third joint is wholly black except some buffish scales at the inner side. In some individuals the

black scaling of the second joint is reduced to an apical spot, and very often the first joint is almost wholly black. The variation in the colour of the palpi is quite independent of the variation of the wing-colour. The postmedial spots of the hindwing are sometimes extremely faint, sometimes there is only one spot present, and the same amount of variation is exhibited by the white nervular lines. Therefore it will be evident that Hampson's *monycha* and *clavata* are the same species.

The white middle fascia of the forewing is rather constant in the Indian form; it is a long triangle that reaches beyond the apex of the cell and is mostly sinuate between veins 2 and 3. The submedian vein is sometimes rather more heavily white than the other veins. The dorsal black spots of the abdomen are apparently always rather small, and do not form transverse rings as is often the case in various Eastern subspecies. The black marginal band of the hindwing is usually indented posteriorly at the nervules; sometimes the median and submedian veins are wholly white. On the underside the black postmedial spots of the hindwing are occasionally joined to the black margin, and the white area of the forewing is sometimes, especially in Hongkong individuals, scarcely larger than on the upperside.

*Hab.* Khasia Hills, 9 ♂, 3 ♀; Naga Hills, 1 ♂, 1 ♀; Chittagong Hills, 1 ♀; Tenasserim; Malacca: Hongkong, 3 ♂. K. J.

#### b. *A. heliconia dicta*.

*Hypso dicta* Butler, *Tr. Ent. Soc. Lond.* p. 316. n. 4 (1875) (Borneo; *nee* Philippines); Swinh., *Cat. Lep. Hel. Oxf.* I. p. 86. n. 385 (1892) (*ex n.*); Kirby, *Cat. Lep. Hel.* I. p. 389. n. 14 (1892) (Borneo; *nee* Philippines).

*Aganais dicta*, Snellen, *Tijdschr. v. Ent.* XXXI. p. 143. n. 33 (1888) (Borneo; *nee* Philippines).

*Hypsa monycha*, Hampson, *Moths of Ind.* I. p. 499. n. 1137 (1892) (*ex n.*).

Many specimens come very near Indian examples. There occur two forms which, however, are not distinctly separated.

#### b<sup>1</sup>. *A. heliconia dicta* f. *dicta* Butler, *l.c.*

This form has the forewing of a deeper blackish colour than it is in *heliconia clavata*; the white streak of the forewing is as narrow as in our Hongkong specimens of *clavata*, and is generally convex externally between veins 2 and 3, not sinuate: there are no, or only faint, white nervular lines in the basal half of the forewing. The marginal band of the hindwing varies in breadth as in *clavata*; on the upperside it is not indented at the veins, but very often sinuate between the veins, the black colour in that case being extended a little way along the nervules: the postmedial black spots are very seldom marked, and the spot at the apex of the cell is often, but by no means always, absent from the upperside. On the underside the basal portion of the discal streak of the forewing is mostly obsolete in the ♂.

In a ♂ specimen from the Kina Balu, N. Borneo, the prothorax is devoid of the two black spots which are present in all our other Bornean individuals, and the upperside of the mesothorax is more clay-colour than in ordinary specimens: moreover, the white streak on the forewing is, on the underside, as much enlarged as it is in most females. A female from the same mountain, in Dr. Standinger's collection, resembles so closely the Javan *A. heliconia intacta* f. *intacta* that we at first thought of an error of locality; it has the same peculiar fawn-colour as *intacta* f. *intacta*: the discal streak of the forewing consists, as it often does in the male of the aforesaid Javan form, of a line behind the cell and an oval spot between veins 2 and 3; both markings are absent, or almost so, from all the Javan females before us. K. J.

*b*<sup>2</sup>. *A. heliconia dicta* f. *extensa* forma nov.

This form is apparently much rarer than f. *dicta*. As *type* we take a specimen in Dr. Standinger's collection (from the Kina Balu, 1200—1500 m., Waterstradt 1892) which has the following characters: It is similar to such Indian individuals of *clarata* which have the streak of the forewing wide and the marginal band to the hindwing narrow. The white streak occupies on the upperside the posterior half of the cell, reaches at vein 4 about 2 mm. beyond the apex of the cell, and extends along vein 2 for 9 mm., having at the apex, which is bisinuate, a width of nearly 6 mm. The border of the hindwing is from vein 6 to the anal angle very narrow, measuring at that vein  $2\frac{1}{3}$  mm. and at vein 4 scarcely more than 1 mm.; at veins 4 and 5 it is indented. The subcostal and submedian nervures are whitish in the basal half of the forewing.

In a *male* from Sarawak in the Tring Museum the streak of the forewing is slightly narrower, less obviously bisinuate, than in the before-described ♀, and the border of the hindwing is of nearly the same width as in *dicta* f. *dicta*. In neither the ♀ nor the ♂ here mentioned is the abdominal region of the hindwing below suffused with blackish scales.

*Hab.* Borneo: N.E. and N.W. Borneo, 8 ♂, 1 ♀.

W. R.

*c.* *A. heliconia nicobarica*.

*Hypsa nicobarica* Swinhoe, *Cat. Lep. Het. Orf.* I. p. 87. n. 387 (1892) (Great Nicobars).

Differs from *A. heliconia dicta* f. *dicta* in the two outer black dots of the basal yellow area of the forewing being merged together, thus forming a black border to the yellow area.

A specimen in Dr. Standinger's collection has the veins in the basal half of the wing faintly striped white, and there is a white angle-shaped spot behind the median nervure outside the transverse black subbasal line. The pro- and mesothorax have black spots.

*Hab.* Nicobar Islands, 1 ♂.

K. J.

*d.* *A. heliconia enganensis* subsp. nov.

♂. Resembles *A. heliconia dicta* f. *dicta* from N. Borneo; but the basal half of the costa is deeper black, the three basal black dots at the costa scarcely visible; the outer one of the two black dots behind the median nervule not angle-shaped, and not encircled with white. The forewing has no white nervular lines; the white longitudinal streak is club-shaped as in *dicta*, and between veins 2 and 3 sinuate as in *clarata*. Border of hindwing above as broad as in *dicta*, extended a short distance along the abdominal margin, with a faint blackish longitudinal line in the middle extending straight from the base across the black cellular spot to the marginal band; the band a little dilated at the nervules. On the underside the basal portion of the longitudinal mark of the forewing is obsolete; hindwing with a broad black border all round. Body bright orange above; abdominal black spots as in *clarata*; anterior pair of legs blackish. Our series of ♂♂ varies as follows: In one specimen the white streak of the forewing is convex between veins 2 and 3 as in *dicta*, the longitudinal median line of the hindwing above is much more heavily marked, and the underside of the hindwing is for the greater part black, there remaining only a long



triangle between the submedian fold and vein 5, and an ovate patch beyond the apex of the cell, white. In another individual, which otherwise resembles the before-mentioned one, the two black dots behind the median nervure of the forewing are connected with one another.

♀. Hindwing without a distinct longitudinal black median line. The white area of the underside of the forewing is not much larger than it is above, but gradually shades into the grey colour of the abdominal region of the wing. Hindwing below with a streak at the base and spot at the apex of the cell, and a border all round blackish; the border at the abdominal margin is rather pale; the white discal area penetrates into the cellule formed by veins 6 and 7.

In some individuals (♀ ♀) the costa of the forewing is less black at the base than in the *males*, and the hindwing has no trace of black median line.

*Hab.* Engano Island, September 1891 (W. Doherty), 6 ♂, 4 ♀. W. R.

*e. A. heliconia natunensis* subsp. nov.

♂. Head, thorax, abdomen, and base of forewing as in *clarata*, but the black dots on the thorax much smaller. White median streak of forewing above reduced to a minute linear mark at the lower angle of the cell; hindwing with the black border as in *dicta*, dilated at the anal angle, disc with a black spot at the end of the cell. Below, the forewing has a white triangular patch in and behind the outer half of the cell: the hindwing is black with a white patch outside the upper angle of the cell, a long triangle, which reaches the base beyond the black median line, and a line between veins 1a and 1b, white. In one individual the white patch on the forewing below is very small.

♀. Similar to the ♂, but the forewing above with the white spot somewhat larger, measuring  $1\frac{3}{4}$  mm. in length, the veins streaked with white except in the outer region; black border of hindwing indented at the veins; below, the white colour much more extended than in the ♂, especially on the hindwing.

*Hab.* Bunguran, Natuna Islands (A. Everett, September and October 1894), 4 ♂, 1 ♀.

Nearest to *perimele* Weymer, but easily distinguished by the more extended white underside of the wings. W. R.

*f. A. heliconia perimele*.

*Hypsa dama*, Snellen ( *nec* Fabricius, 1775). *Tijdschr. v. Ent., Verst.*, XXVII. p. 82. n. 9 (1884) (Nias); *id.*, *Iris* VII. p. 139. n. 112 (1895) (Deli, Sumatra).

*Hypsa perimele* Weymer, *Stett. Ent. Zeit.* p. 275. t. 2. f. 3 (1885) (Nias); Swinh., *Cat. Lep. Het. Oxf.* I. p. 88, n. 389 (1892).

*Ayanis sileandra*, Snellen, *Midden-Sumatra* p. 33. n. 1 (1892) (Soepajang, Boea).

The white median streak of the forewing is in the ♂ entirely obliterated; in the ♀ it is indicated on the underside by some whitish scales between veins 2 and 3. The underside of the hindwing is often all black except a white streak behind the cell; in the ♀ the white colour is more extended than in the ♂. In not one of our eleven specimens from Nias and Sumatra are the black dorsal dots of the abdomen dilated to black rings; the black spot at the end of the cell of the hindwing is well marked above.

*Hab.* Nias, 1 ♂, 2 ♀; Sumatra, 7 ♂, 1 ♀.

K. J.



*g. A. heliconia intacta.*

*Hyppsa intacta* Walker, *Cat. Lep. Het. B. M.* II. p. 451. n. 10 (1854) (Java); Butl., *Tr. Ent. Soc. Lond.* p. 315. n. 2 (1875) (Java).

*Hyppsa silvandra*, Moore, *Cat. Lep. Ins. Mus. E. I. C.* II. p. 293. n. 673 (1859) (Java; *near Penang*); Butl., *Tr. Ent. Soc. Lond.* p. 315. n. 1 (1875) (Java).

*Hyppsa monycha*, Piepers & Snellen, *Tijdschr. v. Ent.* XX. p. 5. n. 20 (1877) (Batavia; very common; *larva and pupa described*).

*Aganais intacta*, Snellen, *Tijdschr. v. Ent.* XXXI. p. 138. n. 25. t. 2. f. 3. 4. 4a (1888) (Java).

*Hyppsa dama*, id., *l.c.* XXXIII. p. 308. n. 86 (1890) (Billiton).

Mr. Snellen, *l.c.*, figures the two forms of the present subspecies, which are now known as *intacta* Walk. and *lara* Swinh.

*g<sup>1</sup>. A. heliconia intacta f. intacta.*

This is the darker form. Head and thorax are almost of the same colour as the forewing; the base of the latter is not distinctly yellow; the abdomen is usually of a yellowish cream-colour, sometimes more whitish, and is in the greater percentage of specimens banded with black. The white median streak of the forewing either totally absent from the upperside, or more or less indistinctly marked; on the underside the streak is often also absent from the *male*; in the *female* sex, which has the median streak seldom visibly developed on the upperside, the underside of the forewing is mostly much more extended white than in the *male*; in one *female* there is a white line behind the costa at the base of the forewing below. The black dot at the end of the cell of the hindwing is sometimes well marked on both sides in ♂ and ♀.

*g<sup>2</sup>. A. heliconia intacta f. lara.*

*Hyppsa lara* Swinhoe, *Ann. Mag. N. H.* (6). XII. p. 215 (1893) (Java).

The abdomen is in this form more whitish than in the former; it is either ringed with black as in *f. intacta*, or has a median row of black dots. The forewing bears in both sexes a long white triangle above, the lower external angle of which stands either between veins 2 and 3 or on vein 2. The border to the hindwing is posteriorly narrower than in *f. intacta*; there is as a rule no trace of black cellular dots on the upperside, and sometimes these spots are also absent from the underside. The forewing is below in both sexes more white than in *f. intacta*, in fact in the ♂ of *f. lara* more white than in the ♀ of *f. intacta*.

*Hab.* Both forms, *f. intacta* and *f. lara*, occur in the same locality at the same time of the year all over Java up to 4000 feet, also on Bali; 15 ♂, 15 ♀. K. J.

*h. A. heliconia murina* subsp. nov.

Two forms, of which the second one is apparently very rare.

*h<sup>1</sup>. A. heliconia murina f. murina.*

This form has the same peculiar dull colour which we observe in the Javan *A. heliconia intacta f. intacta*, but the head and abdomen are brighter yellow, the black spots on the patagia are generally larger, and the black border of the hindwing is mostly more or less extended along the abdominal margin. The median white

mark of the forewing consists in the *type* of a line behind the median nervure, a spot between veins 2 and 3, and an indistinct spot in the apex of the cell.

♂. There are 25 *males* in the Tring Museum. The forewing is in one example without white mark on the upperside, in another individual there are some white scales between veins 2 and 3, in most others the mark resembles that of the *type*-specimen (see above), and in a few specimens there are white scales in the cell along the median nervure. In every case the white mark is ill-defined. The veins of the forewing are usually without white scaling, except at the very base, but in some examples there are distinct white nervular lines in the basal half of the wing. The basal area is as a rule a little more yellow than in *intacta*. The black spot at the end of the cell of the hindwing is, on the upperside, often well marked (as in *type*-specimen), sometimes absent: the black border is beyond vein 1*b* dilated, and very often extended along the abdominal margin to the base; the discal black spot is sometimes connected with the border of the wing by means of a longitudinal streak. On the underside the longitudinal white mark of the forewing is seldom smaller than above, the basal portion especially being sometimes obliterated; in the specimens in which the mark is very small above or absent it is larger below, as it is in nearly all the other examples. The hindwing is below more suffused with blackish scales than it is on the upperside.

The mesothorax has usually a more yellow tint than the base of the forewing; but in a few individuals it is as dull brown as the wing, while in one specimen head, thorax, abdomen, and base of forewing are bright orange as in *clavata*. The abdomen is mostly brighter yellow than the thorax: in one example it is of the same pale buff colour as in *intacta* f. *intacta*; the dorsal black dots of segments 4, 5, 6, and 7 have mostly developed (as in the *type*-specimen) to transverse bands, and the segments 2 and 3 are dorsally suffused with blackish brown scales, except in a small number of individuals: the before-mentioned specimen with bright orange body has the abdomen spotted like *clavata*.

♀. Resembles generally the *male*, but the wings below are mostly more extended white; forewing above in Lombok specimens often without white streak; the black rings of the abdomen are laterally sometimes dilated into spots, a character which is constantly present in several more Eastern subspecies of *heliconia*. Body and base of forewing in one ♀ bright orange.

## *h<sup>2</sup>. A. heliconia murina* f. *diluta* forma nov.

♀. Corresponding to *A. heliconia intacta* f. *lara*, from which it differs in the abdomen being of the same colour as in *intacta* f. *intacta*. White patch of forewing prolonged along vein 2; black border to hindwing rather deeply and broadly indented at vein 2; abdomen with a dorsal row of rather small black spots.

*Hab.* *A. hel. murina* f. *murina*: Sambawa (*type* ♂) (W. Doherty, 15 ♂, 10 ♀; Lombok (H. Fruhstorfer, April to June 1897; W. Doherty, June 1897; A. Everett, May to July 1897), a long series of both sexes; Flores (A. Everett, October to December 1897), 4 ♂, 3 ♀; Pura (W. Doherty, October 1891), 2 ♂; Alor (W. Doherty, October 1891; A. Everett, March and April 1897), 8 ♂, 6 ♀; Adonara (W. Doherty, November 1891), 4 ♂, 1 ♀. *A. hel. murina* f. *diluta*: Lombok (H. Fruhstorfer, Sapit, 2000 feet, April 1896), 1 ♀

The specimens from Alor are partly scarcely distinguishable from the Timorese subspecies.

W. R.

i. **A. heliconia timorana** subsp. nov.

On the island of Timor the representative of *A. heliconia* is again dimorphic.

i<sup>1</sup>. **A. heliconia timorana f. timorana.**

Differs from *murina f. murina*, which it resembles very closely, in the head and thorax being nearly of the brown colour of the forewing; the yellow colour at the base of the forewing of *murina* from Sambawa is here replaced by tawny olive. The white median streak of the forewing is much reduced; in the *type*-specimen there is only a spot between veins 2 and 3 and another in the apex of the cell, the basal portion of the streak being absent; in another specimen there is a spot between veins 2 and 3, and a line behind the median nervure. In the ♀ the streak is altogether absent. The abdomen is duller yellow than in Sambawa specimens of *murina*.

i<sup>2</sup>. **A. heliconia timorana f. brevipennis** forma nov.

In both sexes the forewing is above somewhat darker than in *intacta*: the yellow colour has almost entirely disappeared from the base; the basal half is more or less visibly streaked with a number of white lines on and between the veins; the median white area is reduced to a conspicuous white dot at the lower angle of the cell. The black border of the hindwing is more sharply defined than in *murina*, but of the same width as in that subspecies; it is not prolonged along the abdominal margin, but is in one individual dilated near the anal angle. On the underside the white colour of the forewing is as much extended as in *intacta f. larva*, occupying part of the apex of the cell, the base of the cellule between veins 2 and 3, and the greater half of the space between the median vein and the abdominal margin; the white area is larger in the ♀ than in the ♂. The disc of the hindwing is pure white; the black spots in the cell are small, the external border is indented at the veins, and there are black scales along vein 1b in most individuals. The head and thorax are nearly as dark as the forewing, while the abdomen is above orange with black rings. In one *male* the thorax and base of the forewing are more yellow than in the other specimens. In another *male* the white spot at the apex of the cell of the forewing above is absent. The black spot at the end of the cell of the hindwing is either absent from the upperside (*type*), or slightly marked.

One of our specimens differs from the normal ♀ of *brevipennis* in having on the forewing above, besides a white dot at the lower angle of the apex of the cell, a long narrow white triangle extending from near the base along the median nervure and vein 2 to near the outer margin, touching with its anterior angle the before-mentioned spot.

*Hab.* Timor: Dili, Portuguese Timor (W. Doherty, May 1892), Oinainisa, Dutch Timor (W. Doherty, November and December 1891), 11 ♂, 5 ♀; both forms occur together. W. R.

k. **A. heliconia kalaonica** subsp. nov.

We have four *females* of this subspecies; no *males*. The *type*-specimen resembles the ♀ of *murina f. murina* in the size of the median white streak on the forewing; it differs both from *murina f. murina* and *intacta f. intacta* in the following characters: the base of the forewing is not yellow; the black basal dots are of nearly

the same colour as the rest of the wing, and hence very inconspicuous : there are a white angle and a white dot at the base behind the median nervure, which are very prominent ; the black border of the hindwing is as broad as in *murina*, and prolonged along the abdominal margin. On the underside the white area of the forewing resembles that of *intacta* f. *intacta* in width ; the fold which corresponds to vein 1c is black ; on the hindwing the black spots in the cell are minute, the basal one is absent ; the black border is dilated at some of the veins. Thorax nearly as in *intacta* f. *intacta*, abdomen more yellow. The three other specimens are faded ; the white streak is absent from the forewing above, but the specimens agree otherwise well with the *type* individual ; in one of them the abdominal region of the hindwing is not blackish on either side, and the thorax is more yellow than in the *type* ; in another the black dots of the cell of the hindwing are entirely obliterated.

*Hab.* Kalao Island, south of Celebes (A. Everett, December 1895), 4 ♀.

W. R.

*l. A. heliconia riukiunana* subsp. nov.

Agrees with *A. heliconia philippina* f. *philippina*, but has the thorax much brighter orange, and in most specimens the white markings at the base of the forewing larger ; the submedian vein is in only one of our individuals white in the basal half, in all the other specimens the veins are not streaked white. The median white streak is shaped as in f. *philippina* : it is always produced along vein 3. The hindwing is as in f. *philippina*, but the black spot at the end of the cell is more often marked on the upperside. The black dorsal spots have very often developed to half-rings, as in *type*.

We know only of one form of this subspecies.

*Hab.* Rin Kiu Islands (= Loo Choo Islands), 10 ♂, 10 ♀.

W. R.

*m. A. heliconia zebrina*.

*Hypsa zebrina* Butler, *P. Z. S.* p. 815. (1877) (Formosa) ; Kirby, *Cat. Lep. Het.* I. p. 388. n. 8 (1892) (Formosa).

*Hypsa monycha*, Hampson, *Moths of India* I. p. 499. n. 1137 (1892) (*Pro p.*).

Monomorphic. The thorax is almost as brown as the forewing. The narrow portion of the median white streak of the forewing is dusted over with brown scales, and hence less white than in the preceding subspecies. The hindwing is nearly as in *A. heliconia riukiunana*, *A. heliconia philippina* f. *philippina*, and *dicta* f. *dicta*, but the base is slightly tinted with black. The abdomen is ringed black above, and more ochraceous than the thorax ; the legs are streaked black.

*Hab.* Formosa : Keelung, July 1896 (Jonas *leg.*), 1 ♂, 2 ♀.

K. J.

*n. A. heliconia philippina* subsp. nov.

*Hypsa dicta* Butler, *Tr. Ent. Soc. Lond.* p. 1875. n. 5 (1875) (*ex p.* ; Philipp., *nee* Borneo) ; Swinh., *Cat. Lep. Het. Oef.* I. p. 86. n. 385 (1892) (*ex p.*).

*Aganais dicta*, Snellen, *Tijdschr. v. Ent.* XXXI. p. 143. n. 33 (1888) (Philippines, *nee* Borneo).

*Hypsa danai*, Pagenstecher (*nee* Fabricius, 1775), *Iris* III. p. 11. n. 25 (1890) (Palawan).

*Hypsa intacta*, Pagenstecher, *l.c.* p. 11. n. 24 (1890) (Palawan).

The Philippine subspecies is obviously dimorphic ; the first (darker) form resembles that from the Loo Choo Islands very much, while the other (lighter) form comes close to *dicta* f. *extensa* from Borneo.

**n<sup>1</sup>. A. heliconia philippina f. philippina.**

The basal area of the forewing has only a trace of yellow at the very base, the yellow colour being replaced by white : in this respect f. *philippina* agrees with the forms from Formosa, the Loo Choo Islands, Celebes, the Moluccas, and the islands farther east, and disagrees with *dicta* from Borneo, *clarata* from India, and other western subspecies. The white streak on the forewing is shaped as in *dicta* f. *dicta*, but obviously produced along vein 3. The veins are not white, except the basal half of the submedian nervure. The hindwing is as in *dicta* f. *dicta*; but the postmedial black spots are apparently always absent. The thorax is slightly darker than in f. *dicta*, but much brighter than in *zebrina*; the abdomen as in f. *dicta*. In our three specimens from Bongao, Sulu Islands, the white streak on the forewing is less produced along vein 2 than in the specimens from Palawan, Luzon, and Mindoro.

**n<sup>2</sup>. A. heliconia philippina f. nervosa forma nov.**

Very near f. *extensa* from Borneo, with the base yellow as in that form; the wide streak of the forewing is, however, produced along vein 2, and all the veins are more extended white, the white nervular lines reaching in the ♀ close to the outer margin; the black border to the hindwing is as broad as in f. *philippina* and very rarely indented, more often (in ♂, *type*) dentate. The prothoracic lobes are mostly devoid of black spots. On the *underside* the outer edge of the white area on the forewing is in the *female* almost straight; the costal margin is more or less scaled white at the base; the hindwing has in the *male* (*type*) traces of the two black postmedial spots of *clarata*. This form perhaps does not occur in the Philippines proper.

*Hab.* Form *philippina*: Palawan (*type*), Luzon, Mindoro (in coll. Standinger), Bongao (Sulu Is.), 12 ♂, 4 ♀; Jolo (in coll. Standinger). Form *nervosa*: Palawan, 3 ♂, 2 ♀; Balabac (in coll. Standinger). W. R.

**o. A. heliconia sangirensis subsp. nov.**

Very close to *A. heliconia heliconia* f. *lanceolata*, but differs in the veins in the costal region of the forewing being white, the submedian vein being more heavily streaked with white than it is in any of our *lanceolata* specimens, and the thorax being brighter ochraceous, with the patagia provided with a rounded black dot. The abdomen is in the ♀ (*type*) black, with very narrow yellow rings; in the ♂ the yellow colour of the posterior half of the abdomen is more extended than the black colour.

*Hab.* Sangir Is. (W. Doherty), 1 ♀. A *male* in Dr. Standinger's collection. W. R.

**p. A. heliconia heliconia.**

The two forms which we unite here to one subspecies are still more different-looking insects than the Javanese *A. heliconia intacta* f. *intacta* and f. *lura*, and there is no difficulty in distinguishing every individual of the one form from every specimen of the other; moreover, one of the two forms, namely f. *heliconia*, is apparently confined to Amboina and Ceram (and perhaps some other island of the Southern Moluccas), while the second form, f. *lanceolata*, is found on the Southern



Moluccas, Mangiola, and Celebes: hence f. *heliconia* is much more restricted in distribution than *lanceolata*, a phenomenon which, though very remarkable, is not so rare amongst Lepidoptera; f. *heliconia* is a localised form of a dimorphic subspecies, and therefore termed "f. loc." (see Nov. Zool. 1895, p. 189, and 1896, p. 457).

The abdomen has a more or less complete row of black dots at the spiracles, besides the dots of the ventral plates of the segments.

*ρ<sup>1</sup>. A. heliconia heliconia f. loc. heliconia.*

- Phalaena Noctua heliconia* Linnaeus, *Syst. Nat.* ed. X. p. 511. n. 82 (1758); id., *Mus. Lud. Ulr.* p. 366. n. 184 (1764).  
*Phalaena Bombyx silvandra* Stoll, in Cramer, *Pap. Ex.* IV. p. 155. t. 369. f. n (1782) ("Coromandel" loc. err.).  
*Hyppa silvandro*, Hübner, *Verz. bek. Schmett.* p. 172. n. 1778 (1822); Snell, *Tijdschr. v. Ent.* XXXI. p. 141. n. 31 (1888); Kirby, *Cat. Lep. Het. Orf.* I. p. 388. n. 1 (1892) ("Coromandel" loc. err.).  
*Hyppa heliconia*, Hübner, *l.c.* p. 172. n. 1778 (1822) (*Cit. Esp. excl.*); Auriv., *K. Sr. Vet. Akad. Handb.* 19. 5. p. 158. n. 203. t. 1. f. 6 (1882) (*Syn. ex parte*); Butl., *Ann. Mag. N. H.* (5). XIII. p. 200. n. 60 (1884) (Amboina); Swinh., *Cat. Lep. Het. Orf.* I. p. 88. n. 392 (1892) (*Syn. ex p.*; Ceram, Milete); Kirby, *l.c.* p. 388. n. 9 (1892) (*Syn. ex p.*; "N. India" loc. err.).  
*Hyppa dorycea*, Butler, *Tr. Ent. Soc. Lond.* p. 316. n. 4 (1875) (Ceram).  
*Aganais silvandra*, Pagenstecher, *Jahrb. Nass. Ver. Nat. p.* 69 (1884) (Amboina; *syn. ex p.*).  
*Aganais heliconia*, id., *l.c.* p. 114. n. 253 (1888) (Amboina).  
*Hyppa (Aganais) heliconia*, Snellen, *Tijdschr. v. Ent.* XXXI. p. 144. n. 35 (1888) (*Syn. ex p.*).  
*Hyppa nympha*, Pagenstecher, in Semon, *Forschungsreisen V.* p. 114. n. 31 (1895) (Amboina; *syn. excl.*).

Linné's description of *heliconia*, in *Mus. Lud. Ulr.* at least, the figure which Aurivillins gives (*l.c.*) of a Linnean specimen preserved in the collection of the Queen Ludovica Ulrica, and Stoll's figure of *silvandra*, agree very well with the present form; the absence of a distinct yellow area at the base of the forewing above, the very broad border to the hindwing, of which the discal edge is straight, and the black abdominal margin of the hindwing are an association of characters with which we meet only in the present Moluccan insect, and in the forms from the Solomon Islands and the Bismarek Archipelago, whence Linné and Cramer certainly did not have any specimens. The variability of this form is not inconsiderable. The black dots on the thorax are sometimes very large, those on the patagia occupying nearly the whole patagia; the abdomen has usually a dorsal row of spots; in one of our individuals the spots are enlarged, forming broad black rings. The yellow basal area of the forewing is either absent, or reduced to a short streak upon the submedian nervure; the black basal dots behind the median vein are sometimes merged together to a small black patch, which is mostly conspicuously bordered with a white. The median white streak of the forewing is nearly always club-shaped, seldom more or less linear. The amount of black on the hindwing varies considerably; sometimes the black outer border is not broader than in *dicta* and distinctly concave in the middle, while in other individuals the border occupies nearly the outer half of the wing, is straight at its discal side, somewhat dilated at the nervules, and sends out to the base a black streak in the middle and another beyond the cell. The underside is in the ♂ sometimes as extended black as in *perimela* from Nias.

*p*<sup>2</sup>. **A. heliconia heliconia f. lanceolata.**

*Hypsa lanceolata* Walker, *Cat. Lep. Het. B. M.* VII. p. 1675 (1856) (Celebes or Mindanao); Butl., *Tr. Ent. Soc. Lond.* p. 316. n. 6 (1875) (Celebes); id., *Ann. Mag. N. H.* (5). XIII. p. 200. n. 61 (1881) (Amboina); Kirby, *Cat. Lep. Het.* I. p. 339. n. 15 (1892) (Celebes; "Aru" loc. err.); Swinh., *Cat. Lep. Het. Oxf.* I. p. 87. n. 386 (1892) (Celebes or Mindanao, type; Celebes; Ceram; Sula).

*Hypsa doryca*, Walker, *l.c.* XXXI. p. 212 (1864).

*Aganais wanycha*, Snellen, *Tijdschr. v. Ent.* XXII. p. 79. n. 39 (1879) (Celebes).

*Aganais lanceolata*, Pagenstecher, *Jahrb. Nass. Ver. Nat.* p. 115. n. 257 (1888) (Amboina); Snell., *l.c.* XXXI. p. 141. n. 32. t. 2. f. 5 (1888) (Celebes).

Differs constantly from f. loc. *heliconia* in the base of the forewing being marked behind the median nervure with a white spot and a white angle outside the spot. The wings above are generally deeper black than in f. loc. *heliconia*: the large white median streak is triangular, its outer edge somewhat indented at vein 3; its lower outer angle stands upon vein 2 or a little before it; at the base the external white (angle-shaped) spot is often merged together with the streak. In one Amboina ♂ the streak is club-shaped, being narrower and shorter than in ordinary specimens of f. *lanceolata*, and externally rounded; it is not prolonged along vein 3 as in f. loc. *heliconia*. The black border to the hindwing varies as in f. loc. *heliconia*; in the ♀ the abdominal margin is usually much less extended black than in the ♂. The black markings of the thorax and abdomen have much increased in size: the thorax is often all black except the narrower yellow border of the prothoracic and mesothoracic lobes and the metathorax. In most individuals the black abdominal rings join the lateral spots of the dorsal plates of the segments, but in a good many individuals the rings do not reach so far down, and in one example, in which the thoracic black spots are also rather smaller, there is a series of dorsal black dots instead of rings.

*Hab.* of f. loc. *heliconia*: Amboina (W. Doherty, February 1892), 9 ♂, 6 ♀; Ceram, 2 ♂, 2 ♀; Burn. Of f. *lanceolata*: Amboina (W. Doherty, February 1892), 6 ♂, 3 ♀; Ceram, 1 ♀; Mangiola, 1 ♀; S. Celebes: Maros district (W. Doherty, August and September 1891); Bonthain, 2000 feet (A. Everett, October 1895); Macassar (A. Everett, September 1895); Samanga (H. Fruhstorfer, November 1895); N. Celebes: Toli-Toli (H. Fruhstorfer, November and December 1895); Dongala, Palos Bay (W. Doherty, August and September 1896), 18 ♂, 12 ♀.

There is a ♂ from Burn in Dr. Standinger's collection which has the thorax and abdomen as extended black as the average specimen of f. *lanceolata*, while the median streak of the forewing is shaped as in f. *heliconia*. The specimen differs from both forms in the base of the forewing being black with some yellow scales close to the thorax and a white angle-shaped spot behind the median vein, and represents perhaps a separate subspecies.

K. J.

**q. A. heliconia malisa.**

*Aganais lanceolata* var., Snellen, *Tijdschr. v. Ent.* XXXI. p. 143. sub n. 32 (1888) (Morotai, Halmahera).

*Hypsa malisa* Swinhoe, *Cat. Lep. Het. Oxf.* I. p. 87. n. 388 (1892) (N. Halmahera, Ternate).

The light spots at the base of the forewing are often almost entirely absent. The submedian vein is broadly streaked white in all our specimens, while Snellen says that such a line is present only in two of his four specimens (*l.c.*); the other veins are not white. The median white streak stands intermediate in shape between

that of *heliconia* f. loc. *heliconia* and *heliconia* f. *lanceolata*; it is usually produced along vein 3 as in f. loc. *heliconia*, f. *philippina*, etc., but sometimes the point which is farthest from the base lies between veins 2 and 3 (as in f. *dicta*), while in no specimen does this point lie upon vein 2 (as it does in f. *lanceolata*). In the *male* the abdominal margin of the hindwing is sometimes as broadly black as in *doryca*; the outer black border is dentate at vein 2, but not rounded convex near this vein as in most other subspecies.

The mesothorax is mostly black in the middle. The black spots on the patagia occupy in one individual nearly half the lobes. The dorsal plates of the abdominal segments are ringed black: the black rings are often broader than the yellow ones. In one of our Batjan specimens (♀) there is a white scaling behind the subcostal vein of the forewing above, which is condensed to a patch behind the areole.

*Hab.* Morotai (Bernstein, ex coll. Felder), 2 ♀; Halmahera (W. Doherty, August 1892), 1 ♂; Ternate (W. Doherty, May 1892), 2 ♂, 3 ♀; Batjan (W. Doherty, March 1892), 2 ♂, 3 ♀. K. J.

*r. A. heliconia bandana* subsp. nov.

Thorax and abdomen much paler yellow than in the allied subspecies. The veins of the forewing streaked white as in *ghara*; the white lines are, however, somewhat shorter externally: the white median streak is shaped as in *doryca*; the white patch on the underside of the forewing is also as in *doryca*. The hindwing again is as in *ghara* and *doryca*, but the black spot at the end of the cell below is more heavily marked than it usually is in the other two subspecies. Thorax and abdomen are spotted black as in *ghara* and *doryca*; the dorsal spots of the abdomen are transverse, but do not reach down to the spiracles.

*Hab.* Banda Islands (W. Doherty, August 1892), 3 ♀. W. R.

*s. A. heliconia ghara*.

*Aganais vitessoides*, Pagenstecher (*unc* Snellen, 1879), *Jahrb. Nass. Ver. Nat.* p. 123. n. 36 (1886) (Kei).

*Hypsa vitessoides*, Röber, *Tijdschr. v. Ent.* XXXIV. p. 327 (1891) (Kei).

*Hypsa ghara* Swinhoe, *Cat. Lep. Het. Oxf.* I. p. 89. n. 395. t. 3. f. 1 (1892) (Kei).

*Aganais vitessoides* var., Snellen, *Tijdschr. v. Ent.* XXXVIII. p. 183 (1896) (Kei).

The white nervular lines of the forewing are always well marked, but sometimes they are obliterated near the outer margin: in many specimens the discocellular veinlets have, as in Swinhoe's figure, more white than the other veins; the white increases at the lower angle of the cell gradually in our series, and forms often a rather large rounded patch 4 mm. in width; in one of our *females* this patch extends along the median nervure to near the base as in *doryca* from New Guinea and Arn. The forewing is on the underside often uniform in colour in the ♂, but has sometimes a white mark at the lower angle of the cell; in the *female* the white patch is always present (diameter at least 4 mm.). The spot at the apex of the cell of the hindwing is seldom marked, and then only slightly so, on the underside.

*Hab.* Kei Islands: Little Kei (H. C. Webster, January to March 1896), 6 ♂, 9 ♀. K. J.

*t. A. heliconia doryca*.

*Aganais doryca* Boisduval, *Voyage Astrolabe, Lép.* p. 251. n. 4 (1832) (N. Guinea).

*Hypsa doryca*, Walker, *Cat. Lep. Het. B. M.* II. p. 459. n. 24 (1854) (N. Guinea).

(?) *Hypsa dama*, Moutrouzier, *Essai Faune de Woodlark* p. 132 (1857) (Woodlark).

- Hypsa dama*, Butler, *Tr. Ent. Soc. Lond.* p. 315. n. 3 (1875) (Aru; *see* Rockingham Bay); id., *Ann. Mag. N. H.* (5). XI. p. 425 (1883) (Aru); Swinh., *Cat. Lep. Het. Oxf.* I. p. 86. n. 382 (1892) (*ex p.*).
- Hypsa lanceolata*, Kirsch, *Mith. Mus. Dresden* I. p. 132. n. 154 (1877) (Ansus); Pagenst., in Semon, *Forschungsreisen* V. p. 114. n. 32 (1895) (N. Guinea).
- Hypsia (1) silvandra*, Druce, *P. Z. S.* p. 612 (1878) (N. Guinea).
- Aganais leuconura*, Ribbe, *Iris* I. p. 87 (1885) (Aru); Pagenst., *Jahrb. Nass. Ver. Nat.* p. 123. n. 37 (1886) (Arn).

The forewing is deeper black than in the preceding subspecies; the veins are much less white, though in some individuals the white lines reach close to the outer margin of the wing. In all our specimens from New Guinea and Arn there is a rounded white patch at the lower angle of the cell, mostly prolonged along vein 3; the median vein is obviously marked white in nearly all the specimens, except in one from Arn (♂) and another from German New Guinea (♂) in which the median nervure is very thinly white. The white streak upon the median nervure is mostly of even width, while in one example from Arn (♂) it gradually widens out towards the white discal patch: such a specimen as the latter Kirsch must have had before him, as he enumerates the form from Ansus (N. Guinea) as *lanceolata*. Both sexes have a rounded white patch on the underside of the forewing. The hindwing has a black border all round. The thorax is darker above than in *ghara*, and decidedly darker above and below than in *dama* (from Queensland). In many Arn specimens the thorax is somewhat brighter orange than in New Guinea individuals. The dorsal black spots of the abdomen are transverse: in not one of our specimens do they reach down to the black spots upon the spiracles; the latter are much more heavily marked in the *female* than in the *male*.

*Hab.* All over New Guinea, 5 ♂, 16 ♀; Arn Is. (H. C. Webster, April to July 1896), 8 ♂, 4 ♀; Fergusson I., D'Entrecasteaux Is. (A. S. Meek, September to November 1894), 1 ♂, 3 ♀.

K. J.

#### u. *A. heliconia dama*.

- Noctua dama* Fabricius, *Syst. Ent.* p. 596. n. 26 (1775) (N. Holland, Mus. Banks); id., *Ent. Syst.* III. 2. p. 29. n. 69 (1793); Donov., *Ins. N. Holl.* t. 39. f. 1 (1805) (*fig. of the Banksian specimen*).
- Aganais dama*, Boisduval, *Voyage Astrolabe*, *Lép.* p. 250. n. 3 (1832) (*loc. err.*); Snell., *Tijdschr. v. Ent.* XXXI. p. 139. n. 26 (1888) (*ex p.*).
- Hypsa dama*, Walker, *Cat. Lep. Het. B. M.* II. p. 449. n. 6 (1854) (*loc. err.*); Butl., *Tr. Ent. Soc. Lond.* p. 315. n. 3 (1875) (Rockingham Bay; *see* Arn); Meyr., *Proc. Linn. Soc. N.S.W.* p. 768. n. 109 (1886) (Cape York and Cooktown); Lucas, *ibid.* p. 1086 (1889) (Cape York to Mackay); Swinh., *Cat. Lep. Het. Oxf.* I. p. 86. n. 382 (1892) (*ex p.*); Kirby, *Cat. Lep. Het.* I. p. 388. n. 6 (1892) (*ex p.*).
- Hypsa silvandra*, Walker, *l.c.* II. p. 450. n. 7 (1854) (*ex p.*); id., *l.c.* VII. p. 1674 (1856) ("N. S. Wales" *loc. err.*?).
- Hypsa monycha*, Hampson, *Moths of Ind.* I. p. 499. n. 1137 (1892) (*Pro p.*).

Walker (*l.c.*) and Swinhoe (*l.c.*) record this form from New South Wales; Meyrick (*l.c.*), as well as Lucas (*l.c.*), knew it only from North Queensland, and the fifty odd specimens in the Tring Museum are all from North Queensland, mostly from Mackay, Cooktown, and Cairns.

The difference between this and the preceding subspecies is very slight, the only obvious distinguishing character of *dama* being the decidedly brighter yellow thorax. The white patch at the apex of the cell of the forewing is in all our specimens prolonged along vein 3, and connected with the base by a streak upon the median nervure; this streak varies in breadth, being mostly linear, but often gradually widens distally. The white lines upon the veins are sometimes very

prominent in the *female* sex, reaching in two of our ♀♀ to near the outer margin as in the Kei Islands form. The dorsal black spots of the abdomen are always transverse, and form in one *female* from Cairns half-rings reaching down to the black spots on the spiracles.

*Hab.* Queensland, 40 ♂, 17 ♀.

K. J.

*x. A. heliconia kiriwinae* subsp. nov.

♂. Thorax and abdomen orange as in *heliconia dama*. Forewing above with the veins faintly white in basal half; median nervure more distinctly white; a very small patch at the lower angle of the cell as in *A. heliconia ghara* from the Kei Islands; base of wing black, spots scarcely visible. Hindwing above black, with a rather small white discal area beyond cell; this area does not extend to the base: it is much shaded with black scales. Underside of both wings black: hindwing with a small triangular white patch at the lower angle of the cell.

Varies considerably in the amount of white of the fore- and hindwing, but the hindwing is in the lightest specimen less extended white than in any individual of *leuconeuræ* and *semifusca*: in the white area there is beyond vein 2 a black spot, mostly confluent with the black border of the wing; the forewing has in one example a white patch like *semifusca*.

♀. Differs from *A. heliconia semifusca* in the white patch of the forewing being very small, sometimes nearly absent, and in the hindwing having, above and below, a black postmedian spot beyond vein 2; this spot is in one individual joined to the black border of the wing.

*Hab.* Kiriwina, Trobriand Islands (A. S. Meek, March 1895), 6 ♂, 3 ♀.

This subspecies combines the characters of *A. heliconia ghara* from Kei and *A. heliconia semifusca* from the Solomon Islands, resembling the former in the colour of the forewing, the latter in the colour of the hindwing.

W. R.

*y. A. heliconia leuconeuræ.*

*Hypsa leuconeuræ* Butler, *P. Z. S.* p. 161 (1879) (N. Ireland); Kirby, *Cat. Lep. Het.* I. p. 388. n. 13 (1892).

*Aganix leuconeuræ*, Snellen, *Tijdschr. v. Ent.* XXXI. p. 143. n. 34 (1888) (N. Ireland).

*Hypsa monycha*, Hampson, *Moths of Ind.* I. p. 499. n. 1137 (1892) (*ex p.*).

Head and thorax are bright ochraceous; the prothoracic lobes are devoid of black spots in nearly all our sixty specimens, and the mesothoracic spots are minute. The black spots at the base of the forewing often fuse together; the white markings between them are not nearly so obvious as in either *doryca* or *dama*. There is a rounded white patch at the apex of the cell; this patch is not produced along vein 3, or very slightly so, and is not connected with the base by a white band. The black border to the hindwing is generally broader than in the two preceding subspecies, resembling that of *A. heliconia heliconia*; the outer border is often dentate at the veins, and usually convex at vein 2.

*Hab.* Bismarck Archipelago: New Ireland, Duke of York, New Britain; 50 ♂, 12 ♀.

K. J.

*z. A. heliconia semifusca.*

*Hypsa semifusca* Butler, *Ann. Mag. N. H.* (5). XIX. p. 220 (1887).

In all our specimens from the Solomon Islands (nearly one hundred in number) the discal white patch of the forewing above is more or less obviously prolonged



along vein 3: the prothoracic lobes bear usually a black spot: otherwise this subspecies agrees with *leuconcura*. In a good many individuals of both sexes the median vein bears a well-marked white streak. The base of the hindwing is often black as far as the middle of the cell, in which case the white area is reduced to a transverse patch. The black spot at the end of the cell of the hindwing is, in our series, always present on the underside, and often also on the upperside.

*Hab.* Solomon Is.: Guadalcanar, New Georgia, Alu, Islets near Isabel, Ugi; 82 ♂, 16 ♀. K. J.

### 30. *Asota subsimilis*.

*Hypsa subsimilis* Walker, *List Lep. Het. B. M.* XXXI. p. 212 (1864) (Singapore); Butl., *Tr. Ent. Soc. Lond.* p. 317. n. 9 (1875) (Singapore); Moore, *P. Z. S.* p. 847 (1878) (Ahsown); Swinh., *Tr. Ent. Soc. Lond.* p. 180. n. 93 (1890) (Tenasserim); Kirby, *Cat. Lep. Het.* 1. p. 389. n. 17 (1892) (Singapore); Hamps., *Moths of India* 1. p. 501. n. 1143 (1892) (Tenasserim, Malacca, Singapore); Swinh., *Cat. Lep. Het. Mus. Oxf.* 1. p. 91. n. 401 (1892) (Singapore).

The lateral grooves of the antennal joints in the ♂ are shallower than in *A. heliconia*; the harpe is somewhat broader than in that species.

The black spots on the prothoracic lobes have sometimes nearly disappeared.

The black border of the hindwing is on the upperside obsolete beyond vein 2 in two of our specimens.

*Hab.* Tenasserim; Malacca, 6 ♂; Singapore.

K. J.

### 31. *Asota plana*.

The antennae agree with those of *A. canaraica* and allies, the joints being in the *male* without lateral grooves. The harpe has been said, in Vol. III. p. 297, to be similar to that of *A. egens* and *A. heliconia*; the specimens examined when I wrote that note belong to *A. albiformis*, not to *plana*; *A. albiformis* agrees almost exactly in colour with *plana*, and was not recognised by us as a distinct species until we saw more material. In *A. plana* the harpe is almost forked at the tip, the ventral process of the fork is short, the dorsal one long; *plana* and *fulcia* are the only instances in the genus *Asota* we know of in which the harpe deviates from the general form as illustrated in Nov. Zool. III. t. iv. f. 12 to 22. There are some peculiarities in the variation of *A. plana* which are worthy of note. The western forms of *plana*, inhabiting Continental India, Ceylon, Formosa, the Loo Choo Islands, the Philippine Islands, Borneo, Sumatra, and Nias, have the hindwing marked with black spots; in the form from Engano the spots are sometimes present, sometimes absent (except that one at the end of the cell), while in the subspecies ranging from Java to the Tenimber Islands only the spot at the end of the cell is present, and this spot is here very small; in the Celebesian form the spot at the end of the cell is large and the discal spots are absent, while in the Papuan Subregion there occur two subspecies in which the discal spots reappear in the *male* sex. In all the various subspecies the black spots of the hindwing are either more numerous in the *male* than in the *female*, or somewhat larger: the black dots at the base of the forewing and the thoracical black spots are also generally larger in the *male* than in the *female*, while in the latter sex the white patch near the upper angle of the cell of the forewing above is mostly larger than in the *male*.

K. J.

*a. A. plana persecta.*

- Hypsa plana* Walker, *List Lep. Het. B. M.* II. p. 450. n. 8 (1854) (Ceylon; *nee* Java, Silhet).  
*Hypsa persecta* Butler, *Tr. Ent. Soc. Lond.* p. 317. n. 12 (1875) (Ceylon; *nee* Silhet); Moore, *Lep. Ceylon* II. p. 51. t. 100. f. 1. 1a (l., p.) (1883) (Ceylon); Snell, *Tijdschr. v. Ent.* XXXI. p. 146. n. 38 (1888) (*Pro p.*); Swinh., *Cat. Lep. Het. Mus. Oxf.* I. p. 90. n. 402 (1892) (*Pro p.*); Kirby, *Cat. Lep. Het.* I. p. 389. n. 22 (1892).  
*Hypsa complana*, Hampson, *Moths of India* I. p. 500. n. 1140 (1892) (*Pro p.*).

The four costal black dots at the base of the forewing are mostly separated from one another; the two outer ones are, however, sometimes connected with each other by a black line situated along the costal nervure; between spots 2 and 3 there is a slight indication of a fifth costal dot. The white area of the forewing is rather deeply indented at veins 3 and 4, and the submedian fold is in most specimens more or less obviously marked with brown scales. The white patch at the anterior angle of the cell stands isolated from the white area; its length varies in our series from 3 to 4 mm.

The black spot in the middle of the cell of the hindwing is sometimes minute, sometimes as large as the spot at the apex of the cell.

*Hab.* Ceylon, 3 ♂, 3 ♀; S. India, Nilgiris, 1 ♀.

K. J.

*b. A. plana lacteata.*

- Hypsa plana* Walker, *List Lep. Het. B. M.* II. p. 450. n. 8 (1854) (Silhet; *nee* Java, Ceylon); Horsf. & Moore, *Cat. Lep. Ind. Mus. E. I. C.* II. p. 294. n. 675 (1859) (Darjiling; *nee* Java).  
*Hypsa persecta* Butler, *Tr. Ent. Soc. Lond.* p. 317. n. 12 (1875) (Silhet; *nee* Ceylon); Snell, *Tijdschr. v. Ent.* XXXI. p. 146. n. 38 (1888) (*Pro p.*); Swinh., *Tr. Ent. Soc. Lond.* p. 180. n. 92 (1890) (Burma); id., *Cat. Lep. Het. Mus. Oxf.* I. p. 90. n. 402 (1892) (*Pro p.*); Kirby, *Cat. Lep. Het.* I. p. 389. n. 23 (1892); Swinh., *Tr. Ent. Soc. Lond.* p. 15. n. 688 (1895) (Khasia Hills).  
*Hypsa lacteata* Butler, *Lep. Het. B. M.* V. p. 43. t. 87. f. 9 (1881) (Darjiling, Silhet).  
*Hypsa complana*, Hampson, *Moths of India* I. p. 500. n. 1140 (1892) (*Pro p.*)

The upperside of the thorax and the base of the forewing are generally brighter yellow than in the preceding subspecies; the basal black spots of the forewings are larger in most individuals, the two outer ones of the four costal dots are usually merged together; the white area is less indented at veins 3 and 4; the submedian fold has no brown scales within the white area; the white patch at the anterior angle of the cell is larger, measuring in length from 4 to 6 mm., and is nearly always connected with the white area by means of white scales between veins 5 and 6. The black spots of the hindwing vary much in size in the various specimens; the brown border of the hindwing is sometimes very narrow.

Our single specimen (♂) from Upper Tonkin has the white area of the forewing above only slightly sinuate at the submedian fold; on the underside the outer edge of this area is regularly convex, with indentations at the veins.

The specimens from the Loo Choo Islands agree partly very well with Indian examples, but in most of them the white patch at the apex of the cell is joined to the white area of the forewing; in one ♂ and two ♀♀ the white colour of the forewing above has so much increased in the costal region as to encircle the black spot at the apex of the cell.

In coll. Staudinger there is a *male* from Darjiling (ex coll. Atkinson) which has the basal half of the forewing below suffused with brown scales; on the hindwing below there is a broad brown streak extending from the central spot of the cell

to the upper discal spot: the second discal spot beyond vein 2 is prolonged basally, forming a triangular patch; the anal spot is also enlarged: moreover, there are brown scales scattered all over the upper- and underside of both wings.

*Hab.* Sikkim, 1 ♀ (ex coll. Felder); Bhutan, 6 ♂, 2 ♀; Assam, 4 ♂, 1 ♀; Van-bu, Upper Tonkin, 1 ♂; Formosa, Keelung (Jonas, July 1896), 1 ♀; Loo Choo Islands, 7 ♂, 5 ♀. K. J.

*c. A. plana intermedia* subsp. nov.

*Aganais albifera*, Snellen (*nee* Felder, 1867), *Tijdschr. v. Ent.* XXXVIII. p. 181. n. 183 (1896) (Nias).

♂. Differs from *persecta* in the outer black spots at the base of the forewing being merged together to form a transverse band, the two basal dots behind the median nervure merged into one; the submedian fold shaded with brown scales: the white area notched between veins 2 and 3. The black spots on the thorax larger than in *persecta*.

♀. The transverse black band bordering the basal yellow area of the forewing interrupted at the median and submedian nervures. Hindwing with the black spots less distinct than in ♂, and smaller than in *persecta* ♀, the spot in middle of cell wanting. Otherwise similar to the *male*.

*Hab.* Nias, 2 ♂, 1 ♀.

W. R.

*d. A. plana albifera*.

*Aganais albifera* Felder, *Reise Novara, Lep.* II. p. 1. t. 106. f. 3 (1874) (Borneo; *nee* Java, Celebes). *Hypsa albifera*, Pagenstecher, *Iris* III. p. 11. n. 26 (1890) (Palawan).

Felder's figure represents doubtless that form of *plana* which inhabits the Philippine Islands and Borneo (perhaps also Sumatra). The type-specimen of *albifera* bears two locality labels, the upper one "Manil. Lörq." = Manila, Lörquin, the other "Celebes." As a ♂ from Mindoro in the Tring Museum is almost exactly identical with the *type*, and as further all the Celebes specimens of *plana* known to us are quite different, there can be no doubt that the correct habitat of Felder's *type* is Manila.

Agrees with *intermedia* in the submedian fold of the forewing being marked with brown scales: the white patch at the apex of the cell is isolated; the black spots of the hindwing are smaller than in all the preceding subspecies, though the number of spots is the same as in *persecta* and *lacteata*.

*Hab.* Luzon, 1 ♂ (*type*, ex coll. Felder); Mindoro, 2 ♂ (A. Everett, December 1894); Palawan; North Borneo, Kina Balu, 1 ♀; Labuan (in coll. Staudinger).

K. J.

*e. A. plana transiens* subsp. nov.

♂. The exterior basal black spots confluent to a transverse band; the costal spots also more or less merged together; the two notches of the anterior edge of the white area less deep than in *persecta*; the white patch near the apex of the cell isolated, but the brown space between it and the white area very narrow; white area slightly notched between veins 2 and 3, not extending so far towards the outer margin of the wing as in the preceding races; submedian fold not marked with brown scales. Hindwing with one small and narrow spot at the apex of the cell (*type*), or besides with a minute dot in the middle of the cell and two postmedian

spots. The black mark at the apex of the cell of the forewing beneath scarcely larger than the round spot in the middle of the cell. Thoracic black spots more extended than even in *intermedia*, the prothoracic lobes being black with a narrow yellow border.

♀. Agrees with the ♂; hindwing below with a minute black dot in the middle of the cell, and a slender spot upon the discocellulars.

*Hab.* Engano (W. Doherty, September 1891), 3 ♂, 2 ♀.

This form is of great interest, as it leads over from the forms with spotted hindwings to those without postmedian spots. W. R.

### f. *A. plana centralis* subsp. nov.

*Aganais albifera* Felder, *Reise Novara, Lep.* II. p. 1 (1874) (*Pro p.*); Piep. & Snell., *Tijdschr. v. Ent.* XXII. p. 79. n. 40 (1879) (Bonthain; Macassar).

*Hypsa albifera*, Snellen (*nec* Felder, 1874), *l.c.* XXXI. p. 144. n. 36 (1888) (*Pro p.*; Celebes).

♂. Forewing as in *albifera*, but the outer black dots of the base of the forewing confluent as in *transiens*; outer part of submedian fold within white area faintly marked with brown scales; white area slightly notched between veins 2 and 3 (*type*), or not notched between these veins. Hindwing above with one spot at the end of the cell, this spot as large as in *persecta*; below, there is a second spot of variable size in the middle of the cell; no postmedian spots. Thoracic spots as in *transiens*. The brown ill-defined spot between veins 7 and 8 of the hindwing below is joined to the brown border of the wing.

In one *male* the white patch at the upper angle of the cell of the forewing above is shaded over with brown scales.

♀. Like ♂, but hindwing with one spot only, which stands at the apex of the cell; this spot somewhat smaller than in the ♂; the anterior half of the cellule formed by veins 7 and 8 of the hindwing below is all brown, instead of this cellule having merely a brown spot beyond the middle of the costal nervure.

*Hab.* S. Celebes: Lompa Battan, 3000 feet (H. Fruhstorfer, March 1896), 2 ♂; Macassar (*id.*, March 1896), 1 ♂; Bantimoerong (Ribbe), 1 ♀. W. R.

### g. *A. plana plana*.

*Hypsa plana* Walker, *List Lep. Het. B. M.* II. p. 450. n. 8 (1854) (Java; *nec* Ceylon, Silhet); Horsf. & Moore, *Cat. Lep. Ins. Mus. E. I. C.* II. p. 294. n. 675. t. 13. f. 9. 9a (*l. p.*) (1859) (Java; *nec* Darjeeling; feeds on *ficus*; abundant in January); Semp., *Verh. z. b. Ges. Wien.* p. 701. n. 18 (1867); Butl., *Tr. Ent. Soc. Lond.* p. 319. n. 16 (1875) (Java); Kirby, *Cat. Lep. Het.* I. p. 389. n. 26 (1892) ("E. Indies" *ex err.*); Swinh., *Cat. Lep. Het. Mus. Oxf.* I. p. 89. n. 397 (1892) (Timor; *syn. pro p.*).

*Hypsa complana* Walker, *l.c.* XXXI. p. 213 (♂, *nec* ♀) (1861) (Timor); Kirby, *l.c.* I. p. 389. n. 16 (1892) (Timor; *nec* Buru); Hamps., *Moths of India* I. p. 500. n. 1140 (1892) (*Pro p.*).

*Hypsa albifera*, Piepers & Snellen, *Tijdschr. v. Ent.* XX. p. 5 (1877) (Batavia; common; descr. of caterp. and pupa); Snell., *ibid.* XXXI. p. 144. n. 36 (1888) (*Pro p.*).

The specimens of *plana* from Pulo Lant (south of Borneo), Java, the lesser Sunda Islands, and the Tenimber Islands belong all to one subspecies. *A. plana plana* is distinguished from the preceding races especially by the hindwing below having only one very small black spot at the apex of the cell; seldom there is a second minute spot in the middle of the cell. The white patch at the upper angle of the cell of the forewing is mostly joined to the white area of the wing; the outer black spots of the basal area are merged together to a transverse band. The thoracic

spots are very large, the prothoracic and mesothoracic lobes being black with a yellow border. On the underside of the hindwing the black median spot between veins 7 and 8 is small, often absent. The yellow colour of the base of the forewing is sometimes replaced by white.

The insect which Snellen describes as *albifera* var. *suffusa* from Flores is not a variety of *albifera* Snell. nec Feld. = *plana* Wlk., but a species allied to *A. isthmia*.

*Hab.* In the Tring Museum from Java, Bali, Lombok, Sambawa, Sumba, Flores, Adonara, Alor, Timor, Timorlaut = Tenimber, and Pulo Laut (south of Borneo); 42 ♂, 28 ♀.

K. J.

#### *h. A. plana cincta* subsp. nov.

*Hypsa complana* Walker, *List Lep. Het. B. M. XXXI.* p. 213 (♀, nec ♂) (1864) (Buru; nec Timor); Butl., *Tr. Ent. Soc. Lond.* p. 316. n. 8 (1875) (Buru; nec Timor); Kirby, *Cat. Lep. Het.* I. p. 389. n. 16 (1892) (Buru; nec Timor); Hamps., *Moths of India* I. p. 500. n. 1140 (1892) (*Pro p.*); Swinh., *Cat. Lep. Het. Mus. Oxf.* I. p. 90. n. 398 (1892) (Buru).

The second joint of the palpi is more extended black than in *plana plana*; the black spots at the base of the forewing form two transverse bands; the white patch at the apex of the cell is rather widely separated from the white area; the latter is somewhat reduced in length, and its anterior edge is very feebly notched; the submedian fold is marked with brown scales. The black border of the hindwing is nearly of even width from the apex of the wing to the submedian vein, and broader than in any other race, measuring  $2\frac{1}{2}$  mm. in width at vein 2. On the underside the black spot at the apex of the cell of the forewing is small; hindwing with one small black spot only, situated at the apex of the cell. Thoracical spots as large as in *plana plana*; dorsal plates of all abdominal segments ringed with black; black rings twice as broad as the yellow rings; ventral plates with large black lateral spots.

As Walker describes as *complanata* first a specimen from Timor and then adds the description of a Buru specimen, believing his Timor and Buru individuals to be sexes of the same "species," the name of *complanata* must be kept for the Timor insect, and as the latter is, to our present knowledge, not separable from the Javan *plana*, has to sink as a synonym of *plana plana*.

*Hab.* Buru (W. Doherty, March 1897), 2 ♂, 3 ♀ (*type* ♀).

W. R.

#### *i. A. plana commixta* subsp. nov.

♂. The costal black spots at the base of the forewing merged together, the three spots at the base of the cell also confluent, the outer spots not forming a transverse band; white patch near apex of cell small ( $2\frac{1}{2}$  mm. long), widely separated from the white area; the latter as in *plana plana*, but the submedian fold with brown scales. Hindwing with a faint brown postmedian spot behind vein 2 and a small spot at the apex of the cell. On the underside the hindwing has an elongate mark in the middle between veins 7 and 8 (length of spot 4 mm.), a minute dot in the middle of the cell, a faint postmedian spot between veins 5 and 6, another behind vein 2, and a well marked though small spot at the end of the cell; the postmedian spots much smaller than in the Indo-Malayan races of *plana*. The black spots on the thorax smaller than in *plana plana*, especially those on the patagia; abdomen as in *plana plana*.



♀. Similar to the ♂, but the black basal dots in the cell not merged together, the black thoracical spots still smaller, and the hindwing only with one very small black spot at the end of the cell, no postmedian spots; black patch between veins 7 and 8 as long as in ♂, and therefore much more extended than in *plana plana*.

*Hab.* Dutch N. Guinea: Humboldt Bay (W. Doherty, August and September 1891), 1 ♂, 1 ♀; Etua Bay (H. C. Webster, August 1896), 1 ♂. W. R.

*k. A. plana fergussonis* subsp. nov.

Differs from all other forms of *plana* in the hindwing being devoid of a black spot at the apex of the cell, though there are postmedian spots marked in three out of four specimens.

♂. Resembles the preceding race very much, but the submedian fold of the forewing is only faintly shaded with brown scales (*type*), or is wholly white; the basal black spots are not merged together; hindwing above and below with two indistinct postmedian spots, one beyond vein 6, the other beyond vein 2. On the underside there is a very small black median spot between veins 7 and 8 in type-specimen; in the other *male* this spot is not marked; in both individuals there is, below, also a spot near anal angle. Black spots of thorax scarcely larger than in *plana albifera*, but the median streak of the mesothorax heavy.

♀. Similar to ♂. In one specimen the hindwing has no spots in the white area, while in the other one there are four spots as in the type-specimen. Abdomen with rather small dorsal black dots.

*Hab.* Fergusson I., D'Entrecasteaux Is. (A. S. Meek, found in September, October, and December 1894), 2 ♂, 2 ♀. W. R.

32. *Asota albiformis*.

The white patch near the apex of the cell of the forewing above is in *A. albiformis* merged together with the white area of the wing, and is much smaller than in all those examples of *A. plana* in which it is also joined to the area. The white area is not or slightly notched twice at anterior edge; there is no distinct notch at the lower outer angle of the area, while there is a deep sinus in *plana*. The hindwing is always devoid of black spots within the white area; it is particularly worthy of note that there is no spot at the end of the cell. The black spots of the abdomen are smaller than in the forms of *plana* inhabiting the same countries where *albiformis* occurs. The harpe of the *male* is simple as in *A. heliconia*, long and slender, not divided as in *plana*; the sexual organs of the ♀ have not been examined by us for want of sufficient material. Antennae as in *plana*.

*A. albiformis* inhabits Borneo, the Philippine Islands, Sangir, and Ternate; its range comprises most probably all the Moluccan islands.

We have two subspecies of *albiformis* before us, which are as follows:—

*a. A. albiformis albiformis*.

*Hypsa albiformis* Swinhoe, Cat. Lep. Het. Mus. Oxf. I. p. 20. n. 400 (1892) (Borneo, *type*; Philippines).

Our two *females* from Borneo and a *male* from Balabac have the abdomen much more white than it is in the Philippine *males*, and the white spot at the apex of the cell of the forewing larger. Philippine *females* are unknown to us. The anterior edge of the white area is in all our specimens but one slightly notched twice.

*Hab.* North Borneo: Kina Balu, 1 ♀; Rusukan Besan, February 1892, dry season (A. Everett), 1 ♀. Balabac (in coll. Dr. Standinger); Calapan, Mindoro sept. (in coll. Stand.); Mindoro (A. Everett, November 1894), 1 ♂; Negros, lowlands, February 1896 (Whitehead), 1 ♂.

K. J.

*b. A. albiformis ternatensis* subsp. nov.

♂. The lower outer angle of the white area of the forewing is not acute as in *albiformis albiformis*, but rounded off; the black colour extends at the costal margin to the base, so that there is scarcely a trace of the costal black dots; of the three black spots at the base of the cell the two basal ones are merged together, while the outer one is arrowhead-shaped. The black border of the hindwing is broader than in *albiformis albiformis*, measuring 4 mm. at vein 6 and  $2\frac{2}{3}$  mm. at vein 2, and extends beyond the extremity of vein 1a. On the underside the cellule between veins 7 and 8 of the hindwing is black, except a white streak along vein 7. Black colour on palpi and thorax more extended, the prothoracic lobes being black with a yellow border; segments 3 to 6 of the abdomen are ringed with black above in the type-specimen, while in the second male the abdomen is marked as in *albiformis albiformis*.

*Hab.* Ternate (W. Doherty), 2 ♂.

A female from the island of Sangir in Dr. Standinger's collection represents perhaps a third subspecies of *albiformis*. The white area of the forewing is shaped as in *albiformis albiformis* ♀, the outer notch of the anterior edge of that area more distinct. The border of the outer margin of the forewing is decidedly broader, especially between vein 2 and anal angle. On the underside the cellule between veins 7 and 8 of the hindwing is for the greater part black. The dorsal and ventral black spots of the abdomen are much larger than in *albiformis albiformis*.

W. R.

33. *Asota clara*.

*Hypsa clara* Butler, *Tr. Ent. Soc. Lond.* p. 318. n. 14 (1875) (Java); Snell., *Tijdschr. v. Ent.* XXXI p. 145. n. 37 (1888) (Mount Gede, 4000 ft.); Kirby, *Cat. Lep. Het.* 1. p. 389. n. 25 (1892) (Java); Swinh., *Cat. Lep. Het. Mus. Oxf.* 1. p. 399 (1892) (Java).

♂. Antennae with lateral impressions and tufts of fine hairs as in *A. heliconia*; harpe nearly as in *heliconia*, simple, spoon-shaped, symmetrical at apex. The white area resembles that of *A. albiformis* to a certain extent. There is in one specimen (*A*) from Palabuan a fuscous elongate patch in the basal half of the wing in front of vein 1b, and a small fuscous streak before this patch at the median vein; the black basal dots number from costal to hinder margin: 4, 1, 2, 1. In another specimen (*B*), from Bali, the white area is very much reduced in size; it is limited behind by the submedian fold, and does not extend, at the median nervure, beyond the middle of the cell; in a third individual (*C*), Mt. Gede, the area has so increased in size as to occupy the whole wing except the apical fourth.

The hindwing has in specimen *B* no distinct black spots to the forewing above; in individual *C* there are two spots near anal angle, the posterior one of which is indistinct; while in the third male (*A*) both these spots are well marked, and there is, besides, an indistinct, rather large, fuscous postmedian spot between veins 4 and 6.

On the underside the forewing is in all three *males* nearly the same in colour; the hindwing has the anterior margin fuscous close to the apex, and is marked with a costal, a postmedian (behind vein 2), and a subanal spot in specimens *B* and *C*, while in individual *A* there is an additional postmedian spot on the disc.

♀. One specimen from Mt. Gede (in Dr. Standinger's collection) resembles *male A* very much on the upperside, except that there is no discal postmedian fuscous spot on the hindwing; beneath, the hindwing has a dot in the centre of the cell, another at the apex of the cell, besides a costal mark (separated into two by vein 8) and two spots near anal angle. A second *female* from Mt. Gede is similar, but has the fuscous colour of the forewing much overshadowed with white: on the hindwing above there is one distinct spot only, behind vein 2; on underside the spot in the centre of the cell of the forewing has nearly disappeared, the hindwing has a spot at costal margin and two in anal region. In the other *females* from Mt. Gede the fuscous colour of the forewing is more or less completely replaced by white; the black spots of forewing and hindwing below are also liable to disappear, one *female* being quite white beneath, except a few fuscous scales at the costal and outer margins of the forewing; in one of these pale individuals there is an indication of a brown outer border to the underside of the hindwing.

*Hab.* Java: Mt. Gede, W. Java, 4000 feet (H. Fruhstorfer, 1896), 5 ♀; Palabuan, S. Java (*id.*, 1892), 1 ♂; Bali (1 ♂ in coll. Dr. Standinger).

Whether the Java and Bali specimens differ subspecifically we do not know, because we have seen only one individual from the latter locality. K. J.

#### 34. *Asota suffusa* (Pl. IV. fig. 3).

*Hypsa albifera* var. *suffusa* Snellen, *Tijdschr. v. Ent.* XXXIV. p. 252. sub n. 51 (1891) (Flores); Röber, *l.c.* XXXIV. p. 326 (1891) (Maumerie).

We have a specimen of *Asota* which agrees very well with Snellen's description of what he calls *albifera* var. *suffusa*, except in some minor points; it is a *female*, like the type-specimen, and is certainly not a variety of *albifera*. *A. albifera* of Snellen is Walker's *plana*, and *albifera* var. *suffusa* means that *suffusa* is a geographical form, or a subspecies, of *albifera* = *plana*; the specimens of *plana* from Flores (and the other lesser Sunda Islands) are, however, not subspecifically different from *plana* from Java, and hence *suffusa* must either be an individual aberration or a distinct species. The former it cannot very well be, as it differs considerably, besides in colour, in the shape of the wings from *plana*.

*A. suffusa* seems to me to stand best between *A. clara* and *A. isthmia*.

*Hab.* Flores; Maumerie; Alor (W. Doherty, October 1891), 1 ♀. K. J.

#### 35. *Asota isthmia*.

*Hypsa isthmia* Walker, *List Lep. Hct. B. M.* VII. p. 1674 (1856) (Manila); Swinh., *Cat. Lep. Hct.*

*Mus. Orf.* I. p. 89. n. 396. t. 3. f. 2 (1892) (Manila).

*Neochera* (?) *isthmia*, Butler, *Tr. Ent. Soc. Lond.* p. 329. n. 7 (1875).

*Neochera isthmia*, Kirby, *Cat. Lep. Hct. I.* p. 390. n. 9 (1892) (Manila).

The antennae of the *male* have lateral impressions and tufts of fine hairs.

In the only specimen (♂) from the island of Negros the white patch of the forewing situated below the apex of the cell is more extended than in the *males* from Mindoro; the white band on the underside outside the cell is also wider, while the black border to the hindwing is considerably narrower. Luzon individuals are

unknown to us. The *female* (in Dr. Standinger's collection) has the white colour on the underside of the forewing somewhat more extended than the *male*.

*Hab.* Luzon (Manila) ; Mindoro, 2 ♂ ; Negros, at low altitude (J. Whitehead, February 1896), 1 ♂. K. J.

### 36. *Asota tortuosa*.

*Neochera tortuosa* Moore, *P. Z. S.* p. 570. t. 33. f. 2 (1872) (India) ; Snell., *Tijdschr. v. Ent.* XXXI. p. 121 (1888).

*Hypsa* (?) *tortuosa*, Butler, *Tr. Ent. Soc. Lond.* p. 319. n. 17 (1875) (India).

*Hypsa tortuosa*, Kirby, *Cat. Lep. Het. I.* p. 389. n. 21 (1892) ; Swinh., *Cat. Lep. Het. Mus. Oxf. I.* p. 90. n. 401 (1892) (India ; type-specimen) ; Hamps., *Moths of India I.* p. 501. n. 1141 (1892) (Sikkim).

*Antichera tortuosa*, Snellen, *l.c.* XXXVIII. p. 180 (1896) (*Syn. cecel.*).

The abdomen bears seven series of black spots ; the prothoracic lobes have two black spots each. *Male* and *female* resemble each other in colour very closely ; there is no very obvious variability in this species. The white antemedian costal patch is sometimes prolonged across the cell to the median nervure ; in our Chinese *male* this patch stands close to the basal yellow area, while in all the other specimens it stands well separated from that area ; most specimens have, above, a white mark in the apical half of the cell ; the discal band is in our two Chinese individuals a little more dilated at vein 5 and the submedian fold than in most Indian examples. The second joint of the palpi is shorter, the third longer, than in *A. isthmia*. The clasper of the ♂ is broader than in *A. heliconia*, Nov. Zool. III. t. iv. f. 12, less curved ; the harpe resembles that of *heliconia* ; the apical widened part is deeply hollowed out.

*Hab.* China: Omei Shan, 1 ♂, 1 ♀ ; Sikkim (Pilcher, July 1889), 1 ♂, 1 ♀ ; Khasia Hills (April 1896), 2 ♂ ; Jaintia Hills, 1 ♂, 1 ♀. K. J.

### 37. *Asota contorta*.

*Hypsa contorta* Aurivillius, *Ent. Tidskr.* p. 171. f. 4 (1894) (Java).

*Antichera tortuosa*, Snellen, *Tijdschr. v. Ent.* XXXVIII. p. 180 (1896) ("*tortuosa* = *contorta*" *ex errore*).

The antennae of the ♂ have been described in Nov. Zool. III. p. 205 (1896). The clasper is narrower than in *A. heliconia* ; the harpe is more pointed at the apex, the latter turned upwards. *A. contorta* resembles the preceding species in the great length of the third joint of the palpi and in the pattern of the hindwing and abdomen ; in nearly every other respect it is widely different from *A. tortuosa*. The hindmargin of the forewing is very long for a species of *Asota*, and the outer margin short ; in this respect as well as in the form of the *male* antennae *A. contorta* and *A. kinabaluensis* stand isolated amongst the species of *Asota*.

*Hab.* Java : Sukabumi, 2000 feet (H. Fruhstorfer, 1893), 1 ♂. K. J.

### 38. *Asota kinabaluensis*.

*Asota kinabaluensis* Rothschild, Nov. Zool. III. p. 602. n. 10. t. 15. f. 42 (1896) (Kina Balu).

This species agrees structurally with *A. contorta*, but differs remarkably in pattern, as a comparison of the figures will show.

*Hab.* Kina Balu, N. Borneo (♂, ♀, in Dr. Standinger's collection). K. J.

(To be continued).

DESCRIPTIONS OF FIVE NEW SPECIES OF *LYCAENIDAE*,  
CAPTURED BY MR. DOHERTY, IN THE  
TRING MUSEUM.

By H. GROSE SMITH, B.A., F.E.S., F.Z.S., ETC.

1. *Arhopala strophe* sp. nov.

FEMALE.—*Upperside*: both wings silvery cerulean blue. Anterior wings with the costal margin and the apical third dark brown, the dark area extending rather broadly along the outer to the inner margin. Posterior wings with the costal margin broadly pale greyish brown, and the outer and inner margins rather broadly dark brown: the veins crossing the disc dark brown. One broad tail; cilia white from the upper median nervule to the anal angle, crossed with brown at the ends of the veins.

*Underside*: both wings brownish white, with bars and spots bright purplish brown. Anterior wings with the base, a spot in the cell near the base, two broad bars from the costal margin, where they coalesce, to the median nervure, one of which crosses the cell, and the other is at the end of the cell and extends beyond it; another narrower rather sinuate and oblique bar, halfway towards the apex, from the costal margin nearly to the lowest median nervule, a narrow paler submarginal line of the same length, and a broad marginal band. Posterior wings with a band of spots extending from the costa near the base to the end of the cell: beyond this two broad bars cross the wings from the costa to the upper median nervule, where they merge in a dark space which covers the middle of the disc and extends broadly below the median nervule to the base; a broad band on the outer margin, bordered inwardly by a narrow paler line; a dark spot above the anal angle, above which is a dark band confluent with the dark central space and extending to the inner margin; a sinuate pale submarginal line towards the anal angle. Antennae black above, rufous beneath; head, thorax, and abdomen grey, the last being tawny beneath.

Expanse of wings:  $1\frac{5}{8}$  inches.

*Hab.* Kapaur, Dutch S.W. New Guinea.

On the upperside it somewhat resembles the *female* of *A. curisus* Druce and of *A. euphrosyne* Grose Smith, but on the underside it differs entirely from any known species.

2. *Arhopala clarissa* sp. nov.

MALE.—*Upperside*: both wings silvery lacteous white, very faintly tinged with blue. Anterior wings with an apical dark brown band, which extends broadly over the subcostal nervules nearly halfway to the base, and along the outer margin gradually narrowing to the outer angle; in that part of the band which extends along the costa is, in certain lights, a brilliant morpho-blue oblong patch, and the inner edge of the band along the outer margin is narrowly bordered by a similar colour. Posterior wings with the costal margin towards the apex pale greyish brown, a submarginal narrow black bar from the anal angle nearly to the lowest submedian nervule, a shorter bar between the next two veins, and an indication of other black



lines between the veins to the apex; outer margin greyish black; a slender black tail, tipped with white.

*Underside*: has a general resemblance to *A. anthore* Hew. and *A. helius* Cram.; but on the anterior wings the space below the median nervure to the inner margin is white, crossed, between it and the submedian nervure, by three greyish brown bars. On the posterior wings the white markings are differently arranged, and the metallic blue lunules towards the anal angle are paler silvery blue, bordered internally by a space irrorated with grey and white scales. Cilia of both wings white. The antennae have unfortunately been destroyed.

Expanse of wings:  $1\frac{7}{8}$  inches.

*Hab.* S. Celebes, August, September, 1891.

### 3. *Hypochrysops antiphon* sp. nov.

*MALE*.—*Upperside*: both wings brownish black, with the cells and inner discal areas brilliant metallic blue, tinged with purple in certain lights. The blue area on the anterior wings extends over the cell and the inner two-thirds of the discal area; on the posterior wings it is bounded anteriorly by the subcostal nervure and the second subcostal nervule, the costal, outer, and inner margins being broadly brownish black.

*Underside*: anterior wings with the costal, apical, and outer-marginal areas broadly bright chestnut-brown, shading inwardly into black; the black area extends over the cell, a longitudinal space below the cell, and a space at the end of the cell at the junctions of the submedian nervules; before the apex is an oblique irregular white band, and the rest of the wings is white; along the subcostal nervure and in the middle of the cell are elongate streaks of silvery pale metallic blue, the streak in the cell being interrupted at two-thirds from the base; beyond the cell are two transverse silvery metallic blue lines, with similar scattered spots above them; a submarginal row of five similar spots and an indication of a sixth near the outer angle. Posterior wings white, with a basal band of chestnut-brown extending partially along the costa; the outer third is chestnut-brown, deeply indented by the white area between the second subcostal and the upper median nervules: in the brown area is a submarginal silvery blue line divided by the brown veins. Antennae black ringed with white, with brown clubs. Cilia white, with black spots at the ends of the veins.

Expanse of wings:  $1\frac{3}{4}$  inches.

*Hab.* Kapaur.

On the upperside it somewhat resembles *H. alyattes* Godm. & Salv., but the metallic blue area is less extended and the wings are more elongate; the white areas of the underside are indistinctly visible through the wings.

### 4. *Waigeum coruscans* sp. nov.

*MALE*.—*Upperside*: both wings dark brown, crossed about the middle by a common broad oblique brownish white band from the upper median nervule of the anterior to the inner margin of the posterior wings. On the anterior wings the cell and spaces beyond and below it are more or less densely irrorated by shining blue scales, but less extensively than in *W. ribbei* Röh. Posterior wings with a sub-basal band and a patch on the disc below the cell of similar scales.

*Underside*: both wings brownish black, crossed by a brownish white band, as

on the upperside, the white band being more restricted than in *W. ribbei*, and its outer edge on the posterior wings more sinuate : the subcostal blue band and outer-marginal row of blue spots as in that species, with an additional broad streak of blue scales extending along the middle of the cell. Posterior wings with the basal black band bordered with blue, as in *W. ribbei*, but broader and more sinuate outwardly : the outer half of the wings is brownish black, crossed by two longitudinal broad metallic bands, which converge but do not form a junction at either end ; the inner blue band is bordered outwardly by a narrow row of brownish white scales, and the submarginal band is divided into spots by the black veins. Cilia on both wings brownish white. Antennae black. Head, thorax, and abdomen brown, the last being white beneath.

Expanse of wings :  $1\frac{1}{2}$  inches.

*Hab.* Kapaur.

Allied to *W. ribbei*, but browner, rather smaller, and the wings rather narrower.

##### 5. *Thysonotis albula* sp. nov.

MALE.—*Upperside* : both wings brownish black, crossed by a common very broad white band. On the anterior wings the white area does not quite reach the costal margin, where it is narrowest ; thence, widening rapidly to a little beyond the end of the cell, it extends transversely to the inner margin ; the base is rather broadly brownish black. On the posterior wings the white area extends over the inner three-fourths, except at the base, which is narrowly brownish black. In the dark area of the outer fourth towards the anal angle are three submarginal metallic blue lunules, crowning black spots : a short black tail.

*Underside* : as above, but on the anterior wings is a marginal row of pale brown lunules, followed, internally, by a darker obscure band. In the dark area of the posterior wings is a submarginal row of conical black spots, which are crowned with metallic blue lunules : a row of white lines on the margin, at the base of the spots, between the veins ; there is an indistinct sinuate pale line above the lunules.

Expanse of wings : 1 inch.

*Hab.* Kapaur.

Nearest to *T. mindarus* Feld., but the wings are comparatively rounder ; it is also smaller than that species.

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## ON SOME *MELIPHAGIDAE* AND OTHER BIRDS FROM NEW GUINEA.

By ERNST HARTERT.

AMONG some other birds Mr. Rothschild has lately received four interesting species of *Meliphagidae*, collected at elevations of 5000—6000 feet between Mounts Musgrave and Scratchley. One, the largest, is *Melirrhophetes belfordi* de Vis, which we have also received from several other places in the Owen-Stauley range of mountains. The second in size is almost quite black, or brownish black, the feathers above less, those below more distinctly edged with greyish olive-brown. Under tail-coverts smoky brown, with pale greyish rufous edges. Tips of lateral rectrices pale greyish brown, their inner webs fringed with pale greyish rufous brown. The feathers of the chin have the tips of their shafts bare and some faint brown spots. In the skin of the lower eyelid is a small caruncular fold, and behind and below the hindpart of the eye is a bare patch. These birds are evidently de Vis'.

“*Acanthochoera fusca*” (*Ibis*, 1897, p. 383).

In his description, however, it should read “*under*” tail-coverts instead of “*upper*” tail-coverts. I fail to see why this bird is placed in the genus *Acanthochoera*, as Mr. de Vis spells what is generally called *Acanthochoera*. If *M. belfordi* is united with *Melirrhophetes* I see no reason to separate this bird from that genus, and I shall call it *Melirrhophetes fuscus* (de Vis). However I do not wish to discuss the genera of the *Meliphagidae* here, which are not easy to limit.

The third species before me is

*Ptilotis salvadorii* Hartert,

described Nov. Zool. III, p. 531 (1896). It seems that Mr. de Vis named this bird again *P. lacrimans*, as his description on p. 382 of the last *Ibis* suits it fairly well, if we assume that in line 3 from below the word “*over*” should be “*below*.” There can be no doubt that this must be so, for such pen slips (?) are to be found in several cases in the same article, and the NOVITATES ZOOLOGICAE have not received the necessary attention, as shown by the Editors' note on p. 392, and by the description (on p. 371) of

*Neopsittacus viridiceps*

as a new species, which is clearly my *Neops. pullicauda*, described and discussed in several places in our journal.

The fourth of the *Meliphagidae* before me is unknown to me. It does not seem to be described yet—at least I cannot find any diagnosis which suits it in the least, and I do not think that I have overlooked any recent descriptions. I cannot say exactly to which group of Honey-eaters this curious bird belongs, though I am sure it must be referred to the genus *Ptilotis* in the wide sense as treated in the *Cat. B.*

Vol. IX. To decide about the exact position of this bird would require a study of the structure of all the known species, which I cannot undertake at present.

Behind the eyes and above the ear-coverts the feathers are so thin that there is an indication of a bare spot, but otherwise there is no naked skin anywhere, and there are no wattles, nor any elongated or modified feathers anywhere. The tail is slightly graduated, the outer rectrices considerably shorter, but the inner pairs almost equal to each other. This species, which I believe to be undescribed, may be called

*Ptilotis praecipua* sp. nov.

♂. Top of the head and nape black, with olive-grey edges to the feathers. Sides of the head similar, but with the colours not so well defined and somewhat merging into the colour of the chin and throat, where the feathers are ashy grey with darker bases. Short feathers round the eyes of the same colour as those on the throat. Hind-neck like crown, but somewhat merging into the colour of the back, where the feathers are brownish black, with broad rusty rufous border to the sides. Feathers of rump and upper tail-coverts deep brown, with faint olive-brown edges. Primaries blackish, with buff edges to the inner webs; the outer six (about) with buff edges to the outer webs, more distinct towards the bases; the inner ones without paler edges, except some very narrow ones near the tips. Secondaries like inner primaries, but a little more distinctly bordered. Wing-coverts deep brown, with buff edges. Tail dark sepia-brown, with faint olive-brown edges and tips. Feathers of breast and abdomen brownish black, with light greyish buff or pale yellowish grey broad fringes. Feathers on sides of breast, flanks, vent, and under tail-coverts dark brown, with broad rusty rufous borders, under tail-coverts paler.

Wing 89—90 mm.; tail about 80; tarsus 27—28; exposed culmen 20—22.

♀. Like *male*, but colours on back and under parts not so clearly defined. Considerably smaller, as in most Honey-eaters. (The difference in size, for example, is very great in the sexes of *Melirrhophetes belfordi* de Vis.)

Wing 79; tail about 74; tarsus 25; exposed culmen 17.6 mm.

Shot 5000—6000 feet high between Mounts Musgrave and Scratchley.

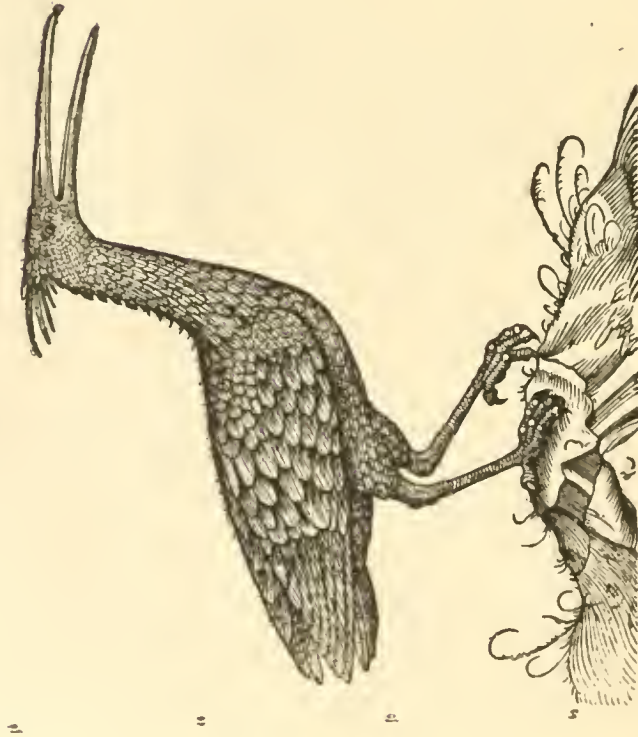
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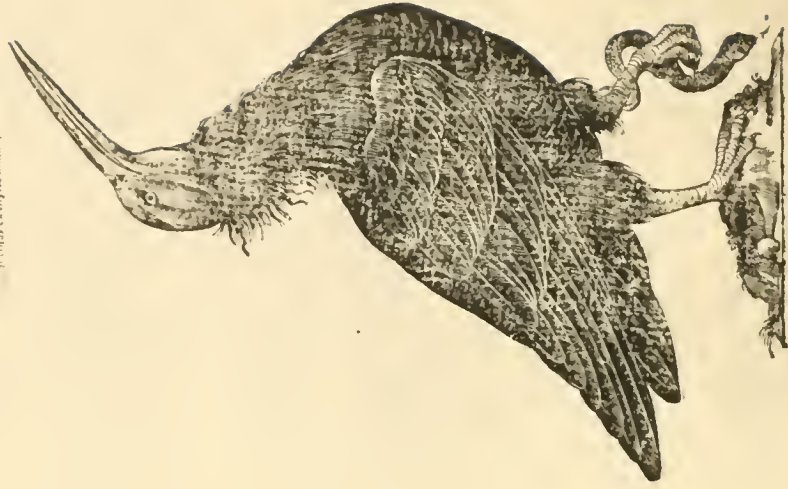


Is variæ ditionis æst corvorum maximo tum multitudine vi incredibile videtur, qui tamen à nostris formam huius rursus. Hæc copia & multitudine adolant aliquando, ut penitus mare obtegant, sicq; con-  
regula & stipant frontem, ut mare vniat (tum ac si holoerico rethem esset, aufpam epparet.

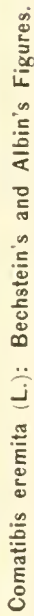
DE CORVO SYLVATICO.



Avis, cuiuslibet effigies habetur, à nostris nominatur vulgo Walbrapp / id est corvus sylvaticus quod  
est cygnus montanus & defertis degere solent ubi in rupibus aut turribus defertis nidificat quæritant  
est. ut vocatur, & alibi (in Bavaria & Suis) dñi Glaufrapp / à petris ferupibus, & pyllis (nam pyle id est  
est) vocatur de montes Geimsoi Glaufrapp (in appellatione) in quibus nidos iteunt. Lothar-  
tingi







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*Comatibis eremita* (L.).



# NOVITATES ZOOLOGICAE.

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## COMATIBIS EREMITA (LINN.), A EUROPEAN BIRD.

By THE HON. W. ROTHSCILD, E. HARTERT, AND O. KLEINSCHMIDT.

(Plates VIII., IX., X.)

MR. JUNGHANS, of Cassel, first called Kleinschmidt's attention to the peculiar figure of the "Waldrabe" on Pl. XVII. in Vol. II. of Bechstein's *Gemeinnützige Naturgeschichte Deutschlands*. While discussing together this figure, the authors of the present article came across Gesner's description of the "Waldrapp," and following up the literature came to the conclusion that Gesner's bird did not belong to the *Corvidae*, as generally supposed, but was the same as the *Ibis comata* of recent authors, well known to every ornithologist from the splendid plate in Dresser's *Birds of Europe*. The following review of the literature on Gesner's "Waldrapp" and our plates will show that this bird formerly inhabited parts of Europe. Though the reasons of its disappearance are not known to us, they may be similar to those which have caused the Glossy Ibis (*Ibis fulcinellus*) to become, from a frequent visitor to England, a rare straggler in our days. (Cf. Dresser, *B. Europe*, Vol. VI. pp. 336, 337.)

### *Comatibis eremita* (L.).

*Upupa eremita* Linnaeus, *Syst. Nat.* Ed. X. p. 118. no. 3 (1758) (Helvetia). (" *U. viridis, capite flavo, cervice juba. Corvus sylvaticus* Gesn. av. 351; Aldr. orn. I. 19. c. 57. *Eremita montanus sylvaticus* Alb. av. p. 16 t. 16. *Habitat in Helvetia.*")

It is evident that Linnaeus did not himself see his *Upupa eremita*, but that he based it on Gesner's, Aldrovandus', and Albin's works.

Gesner in 1555, as well as in his *Vogelbuch* (1583), and again in the second Latin edition, gives the figure which is reproduced in our Pl. VIII., and descriptions which follow here in English translation:—

"OF THE WOOD-RAVEN.

"*Corvus sylvaticus.*

"The bird of which the figure is here given is generally called by our people a Wood-Raven ('Waldrapp'), because it lives in the uninhabited woods, where it nests in high cliffs, or old ruined towers and castles, which places also caused it to be called Stone-Raven ('Steinrapp'), or elsewhere in Bavaria and Styria 'Klansrapp,' from the rocks and narrow caves and holes in which it builds its nest. In Lorraine and on the Lago Maggiore it is called a Sea-Raven ('Meerrapp'): in other places Wood-Raven, as in Italy, where a man is lowered down on a rope to take it out of its nest, as it is considered a great delicacy ('ein schlack'). In our country it is

found also in the high cliffs near Pfaffers, where some hunters went down for it on ropes.\*

"From its voice it is also called a Ringer ('Scheller'). Some authors take it to be the *Phalacrocorax*, for in size and colour it resembles the raven. It acquires also a bald head in its age ('er gewinnt auch einen Glatz in seinem Alter'), as I have seen. Turnerus takes Aristoteles' Water-Raven, Plinius' *Phalacrocorax*,† and our Wood-Raven for the same bird, but it is wrong, because their descriptions are unlike, the Wood-Raven not having broad feet and not being a water-bird, but seeking its food in green meadows and swampy places. Our Wood-Raven is of the size of a hen, quite black if you look at it from a distance, but if you look at it close by, especially in the sun, you will consider it mixed with green. Its feet are also somewhat like a hen's, but longer and the toes split. The tail is not long. It has a crest on its head pointing backwards, though I do not know whether this is seen in all individuals and at all times or not. The bill is reddish, long, and suited to poke with it into the ground, and into the fissures and holes of walls, trees, and rocks, to extract the worms and beetles which hide themselves in such places. Their legs are long and of a dark red. They live on grasshoppers, crickets, small fishes, and frogs. They generally nest on the high old walls of the ruined castles, of which so many are found in Switzerland. When I dissected their stomachs I found, among other vermin, also many creatures which are injurious to the roots of agricultural plants, especially the millet. They also eat the grubs which produce the cock-chafers. They fly very high, and lay two or three eggs. They fly away first of all birds, really in June, or as others told me about St. Jacob's Day. They fly in swarms and cry 'Ka, ka,' and most of all when their young are taken, which is generally done about five days after Whitsuntide. They return to us in early spring, when the storks arrive. If the young are taken from the nest some days before they fly, they may be easily reared and tamed, so that they fly out to the fields and quickly return. The young ones are also praised as an article of food, and considered a great delicacy, for they have a lovely flesh and soft bones. But those who rob their young leave one in every nest, in order that they may like to return in the following year."

Aldrovandus, *Ornithologiae Liber XIX.* cap. LVII. (p. 270), reproduces Gesner's figure of the "Waldrapp," and almost all his letterpress, only with some quite unimportant and unnecessary additional remarks. But on the foregoing pages (268 and 269) Aldrovandus has the figure of a *Phalacrocorax* sent to him from Illyria ("Ulyssis Aldrovandi *Phalacrocorax ex Illyrio missus*") and Bellonius' *Phalacrocorax*. These two are evidently meant to be the same thing: the latter doubtful, and at any rate a very poor likeness, but possibly of a younger bird; the former a very good representation of the "red-cheeked Ibis," and reproduced in our Pl. VIII. This figure, as we have seen, is not quoted in Linnaeus' tenth edition, but in 1766 (Ed. XII.) he refers to it, quoting "Aldr. orn. 3. p. 270, 267." The latter (cap. LVI.) contains the description of the *Phalacrocorax* from Illyria. Aldrovandus first refers to several birds mentioned by former writers, beginning with Plinius' *Corvus aquaticus*, which he considers to be the same as the *Phalacrocorax*, and discusses several vernacular names of different countries. He then describes the bird from the figure sent to him from Illyria as being of the size of a capon, with

\* Only in the Latin edition the rocks near Passau and Kehlheim are said to be its home.

† It is evident that the crested Shag is meant as having been sometimes confounded with our bird.

a long pointed red beak. "The head bare and covered with a skin somewhat like the substance and colour of flesh. From the neck depends a mane, as it is observed in capons. On the feet are some golden feathers." Bellouins, he says, shows a similar figure, but without a mane, and with palmiped feet, which he does not doubt is an inaccuracy of the artist. [The authors of this article cannot refer the *Phalacrocorax* of Belon (p. 162) to our bird. The letterpress evidently treats of the Cormorant, and the figure (poorly reproduced by Aldrovandus) is doubtful.] There follow then some notes on habits, but they are all taken from other old writers, and it is most doubtful whether any refer to the bird in question. This is the usual thing with Aldrovandus, who was merely a compiler, while Gesner (like Belon) was, to a certain extent, also an observer. For us, therefore, the value of Aldrovandus' work lies merely in the figure of the Illyrian bird.

Linnaeus' third quotation in the tenth edition is from Albin. This author (*Suppl. Nat. Hist. Birds*, Vol. III. p. 16, and Pl. XVI., 1740) describes the bird as "the Wood-Crow from Switzerland." He says verbatim :—

"This Bird is about the bigness of a common Hen : its Bill is red, long and fit to thrust into narrow Chinks and Holes of the Earth, Trees, Walls and Rocks, to fetch out Grubs and Insects lurking there. It also feeds on Grasshoppers, Crickets, the Grubs of the Cockchafer, little Fish and Frogs. Its Head is of a dusky yellow, with Shades of Red ; it hath a Crest on the hinder part of the Head hanging down : the Body, Wings and Tail are of a dark green, with a Shade of Purple : the Legs and Feet of the Colour of the Bill : they build for the most part in high Walls of demolished or ruinous Towers, which are common in Switzerland : they fly very high ; they lay two or three Eggs ; the young fly about the beginning of June,\* and if taken before they can fly are easily fed and made tame, so as to fly out into the Fields and return of their own accord. The young ones are commended for good Meat, and counted a Dainty : their Flesh is sweet and their Bones tender. Those that take them out of the Nests are wont to leave one in each, that they may the more willingly return the following Year. They are called in Switzerland *Waldrapp* and *Steinrapp*, that is Wood-Crows, because they delight to live in woody, mountainous and desert Places ; where they build in Rocks and old forsaken Towers.

"This Bird I had out of the Collection of Sir Thomas Lowther."

It is evident that Albin's article is, for the most part, only a free translation and digest of Gesner's, but the description of the head seems to be his own, and his plate, reproduced in our Pl. IX., is a very good likeness of the bird, in fact one of the best in Albin's work, but badly coloured. It is most interesting to hear that he had the bird out of the collection of Sir Thomas Lowther. This would be the only European specimen of the bird recorded as having been in any collection, but it is to be feared that it is long lost.

These being all the references of Linnaeus' tenth edition, there can be no doubt that his *Upupa eremita* is not an *Upupa*, and this he must have felt himself, for in his twelfth edition, 1766, p. 159, he calls it *Corvus eremita* † and adds to the synonyms Briss. av. 2. p. 6, and Will. orn. 306. Let us now consider these.

\* Albin apparently wrongly translated or tried to improve upon Gesner, for Gesner says "sy thegend zum ersten auss allen vöglen hinweg," or in the Latin edition "Primæ omnium, quod sciam, auolunt." Both these can only mean that they leave the country about that time, which, however, seems to be a very early date.

† Linnaeus' diagnosis in the twelfth edition is : "C. virescens, capite flavescente, occipite subcristato rostro pedibusque rubris. Habitat in Helveticæ montibus et destructis arcibus."

Brisson (*Ornith.* II. p. 6, 1760) calls the bird "*Le Coracias lupé*," "*Coracia cristata*." He gives an excellent synonymy up to his time, adding to the references already mentioned above: "Jonst., *Acid.* p. 95"; "Willugh. *Orn.* p. 306"; "Schwenck., *Acid. Sil.* p. 245"; "Rzac., *Auct. Hist. Nat. Pol.* p. 375"; "Klein, *Acid.* p. 111, No. 16"; and "Barr., *Ornith.* Class IV. Gen. IX. sp. 2." None of these authors adds anything new, nor does Brisson himself give anything but a digest of Gesner.

Jonstonus, *Hist. Nat. de Avibus*, 1657, p. 95, only gives an extract of Gesner's article, and in the edition of 1756 (*Theatrum Universale de Avibus*, I. p. 136) the same is reprinted verbatim. The plate (47) is also the same in the two editions, and on it we find reproduced both Gesner's "*Waldrapp*" and Aldrovandus' "*Phalacrocorax ex Illyrio missus*."

Willughby, *Ornith.* p. 306 (1676), again repeats Gesner, and adds that he suspects "this bird to be no other than the *Coracias* or *Pyrrhocorax*. But if it be rightly described its bigness and the crest on its head forbid it." The same is said on p. 396 of the English edition (1678). Klein, *Hist. Av. Prodrömus*, p. 111, only quotes from Albin. Schwenckfeld, *Theriotropeum Silesiacum*, pp. 245, 246 (1603), evidently mixes the notes on several birds, but does not refer to our bird at all, for he says: "*Corvus alpinus*, *Pyrrhocorax*, *Corvus sylvaticus nocturnus*, *Alprappe*, *Waldrappe*, *Nachtrabe*, *Steinrabe*. Totus niger est, Cornice minor. In montibus altiss. vivit, noctu clamore molestus: Diurno tempore raro conspicitur." Rzaczyński in his *Hist. Nat. Cur. Regni Polon.* (1721) only refers to Schwenckfeld's bird, and is therefore wrongly referred to in this synonymy.

Barrère (*Ornith.* Class IV. Gen. IX. sp. 2) calls this bird "*Arquata sylvatica nigra*," and shows at least some judgment in removing it from the crows.

Latham, *Gen. Synopsis of Birds*, I. p. 403 (1801), quotes from Gesner and others, and adds: "Neither the young nor the very old birds are said to have the crest, whence they have been called *Bald Crows*. Buffon wonders why M. Barrère should call this a species of Curlew: but could he have seen either Albin's figure, or such another, the head would have led him to think so, for it seems quite naked of feathers, similar to the baldest species of Ibis."

Bechstein, *Gemein. Naturg. Deutschl.* II. p. 470 (1791), again only translated from Gesner, but he adds (Pl. XVII.) a figure, which is probably made up from several of the former figures, or given to him by a person who actually saw the bird.

In the second "vermehrte und verbesserte" edition (1805), pp. 12, 41, however, he only reprints his former paragraph (ex Gesnero) as a footnote, and repeats the coloured picture (faithfully reproduced in our Pl. IX.), but under the *Corvus graculus* L. he says (translated):—

"We do not yet know its history very well, but there is no doubt that Gesner gave it under his '*Corvus eremita*.' For this is no other bird, as all the Swiss ornithologists are now convinced. Gesner was swindled with this specimen, which was artfully made up, to make it more acceptable."

There can be no doubt that Bechstein was wrong, for there are many points which forbid the supposition that Gesner described the *Corvus graculus* under the name of his "*Waldrapp*," especially since he described and knew the chough as well.

Bechstein's verdict, nevertheless, seems to have settled all about the *Corvus*

*eremita* for a long time, for we find it subsequently only quoted as a synonym of *Pyrhocorax graculus* (L.)—for example, also in Dresser's *Birds of Europe*, IV. p. 437.

The first naturalists who rediscovered the bird were Ehrenberg and Hemprich, who shot two specimens near Gornfuda, on the Arabian coast. They were mounted in the Berlin Museum, with the name *Ibis comata* Ehrenberg on the stand, but this name was not published, nor did a diagnosis appear until 1845, when Rüppell gave a good figure and description of it in *Syst. Vögel. N.O. Afrika's*. Rüppell's figure, drawn by Wolf, was copied as bad as possible in Reichenbach's *Grallatores* as *Comatibis comata* about 1850. A plate, of course much inferior to Wolf's, was published in 1850 by Levaillant jun. as *Ibis calvus*, and Loche (1867) describes it under the name of *Comatibis comata*, saying that he met with it near Boghar, where it was resident. It nested in high, almost inaccessible rocks, laying two or three eggs, which are bluish white with mostly faint rufous marks. Its food consists of insects and suchlike things. In the same country Canon Tristram found it in 1856, on the rocky ridges beyond Bou Ghizoun, on the road to El Aghoniat. He says of it: "Unlike the rest of its family, it resorts to the most arid and desolate mountain ranges, where it consorts with the raven and falcon. Its food consists of lizards and serpents. It breeds in inaccessible holes of the precipices, which I was unable to reach, though I saw the birds going in and out. . . ."

The bird was also collected and noticed in N.E. Africa by Henglin, Blanford, and others, and Henglin described for the first time the young, which have the whole head and neck covered with short dirty whitish feathers, speckled rusty and brown.

Mr. C. G. Danford afterwards had a splendid opportunity for observing this bird in a new locality, *i.e.* at Birejik on the Euphrates, and he gave Mr. Dresser excellent notes, which we find published in the *Birds of Europe*. Afterwards Canon Tristram again collected the bird in Birejik, and published most valuable and interesting notes about it in the *Ibis*, 1882. These observations agree wonderfully with old Gesner's notes from Switzerland. They inform us that these birds breed in company on high cliffs and on the walls of the old Saracenic castle of Birejik, where they are never disturbed because considered sacred by the Mohammedans. Their food consists of beetles, orthoptera, and reptiles. Tristram also describes the young as follows: "Instead of the bony protuberance at the back of the skull and the bare red skin, the base of the skull presented no peculiar development, and the whole head was covered to the base of the bill with thick short feathers, mottled black and white."

From all that we have said so far, we can only come to the following conclusions:—

(1) That the birds described as *Corvus sylvaticus*, *Phalacrocorax* from Illyria, etc., by the older writers are the same as the *Ibis comata* of modern authors.

(2) That this bird formerly inhabited parts of Europe, but that it had evidently disappeared from our continent before the end of the last century.

The more important synonymy and literature of the species (catalogues and other books in which the name only was mentioned not being quoted) will thus be as follows:—



**Comatibis eremita (L.).**

1555. *Corvus sylvaticus*, Gesner, *Hist. An. m.* III. (de Avibus), p. 351.  
 1582. *Waldrapp*, Gesner, *Vogelbuch*, p. 199.  
 1617. *Corvus sylvaticus*, Gesner, *Hist. An. m.* (ed. nov.) III. (de Av.), p. 309.  
 1603. *Corv. sylv.*, Aldrovandus, *Ornithol.* III. p. 270.  
 1603. *Phalarocorax ex Illyrio*, Aldrov., *Ornithol.* III. p. 267.  
 1617. *Corv. sylv.*, Jonston, *Hist. Nat. Av.* p. 95.  
 1650. *Corv. sylv.*, Jonston, *Theatr. Univers. Av.* p. 136.  
 1676. *Corv. sylv.*, Ray & Willughby, *Ornithologiae Libr. tres*, p. 306.  
 1678. *Gesner's Wood-Crow*, Ray, Willughby's *Ornith.* p. 396.  
 1740. *Wood-Crow from Switzerland*, Albin, *Suppl. Nat. Hist. B.* Pl. 16, p. 16.  
 1745. *Arquata sylvat. nigra*, Barrère, *Ornith. Spec. novum*, Class IV. Gen. IX. Sp. 2.  
 1750. *Upupa montana*, Klein, *Hist. Av. Prodr.* p. 111.  
 1758. *U. eremita*, Linnaeus, *Syst. Nat.* Ed. X. p. 118.  
 1760. *Le Coracias huppé*, Brisson, *Ornith.* II. p. 6.  
 1766. *Corvus eremita*, Linnaeus, *Syst. Nat.* Ed. XII. p. 159.  
 1775. *Le Coracias huppé*, Montbeillard (not Buffon!), *Hist. Nat. Ois.* III. p. 9.  
 1790. *C. eremita*, Latham, *Index Orn.* I. p. 166.  
 1791. *Alpenrabe*, Bechstein, *Gen. Naturg. Deutschl.* II. p. 470, Pl. XVII.  
 1801. *Hermite Crow*, Latham, *Suppl. Gen. Syn.* II. p. 115.  
 1805. (Footnote to *C. graculus*), Bechstein, 2nd ed. p. 1241 (Pl.).  
 1832. *Geronticus spec. nov. ex Aegypto*, Wagler, *Isis*, 1832, p. 1232.  
 1845. *Ibis comata*, Ruppell, *Syst. Uebers. Vög. N.O. Afr.* p. 119, Pl. 45.  
 1849. *Comatibis comata*, Reichenbach, *Av. Syst. Nat.* p. xiv.  
 1850. *Ibis calvus* (see Bodd!), Levaillant jun., *Expl. Scient. de l'Algérie*, Pl. 12.  
 1850. *Comatibis* (gen. nov.) *comata*, Reichenbach, *Av. Gallinae*, Tab. CXXXIII. fig. 2383.  
 1855. *Geronticus comatus*, Brehm, *Reiseskizzen*, III. p. 141 (? vide Hengl.).  
 1860. *Geronticus comatus*, Tristram, *Ibis*, p. 78.  
 1863. *Comatibis com.*, A. v. Homeyer, *J. f. O.* p. 269.  
 1863. *Ibis com.*, Sehlegel, *Mus. Pays Bas*, 4, p. 9.  
 1867. *Comatibis com.*, Loche, *Expl. Scient. Algérie*, Ois. p. 153.  
 1870. *Gier. com.*, Blanford, *Geol. & Zool. Abyssinia*, p. 436.  
 1873. *Ibis com.*, Henglin, *Orn. N. O. Afr.* II. p. 1144.  
 1877. *Comatibis com.*, Elliot, *P. Z. S.* p. 493.  
 1880. *Ibis com.*, Dresser, *B. Europe*, VI. p. 329, Pl. 408.  
 1882. *Comatibis com.*, Tristram, *Ibis*, p. 414.

**DISTRIBUTION.**

Formerly parts of Europe: Southern Algiers (Bon Gvizoun on the road to El Aghouat, Boghar, Province of Bône); probably throughout the Sahara to Abyssinia, where Blanford found it near Senaflé and Antalo, Henglin on the plateaus of Wogara and Hamedo (the Tring Museum possesses a skin brought home by Schimper from his journey to Abyssinia); Red Sea coast of Arabia, Birejik on the Euphrates.

Our Pl. X. is made from the skin in the Tring Museum, and with the help of a coloured sketch taken from life by Mr. Danford and kindly lent us by Mr. Dresser.

**POSTSCRIPTUM.**

While searching the literature of *Comatibis eremita*, the authors became interested in the *Ibis* generally. They found that there is no reason to confound the *Ibis olivacea* of Du Bus (*Bull. Av. Bruc.* 1837, p. 105, and *Esquisses Ornithol.* Pl. 3) with the bird found by Ussher in Denkera and figured *P. Z. S.* 1877, Pl. 51. The total colouring is different, as well as the crest. It is probable that Du Bus





bird is nothing more than an old *Hagedashia hagedash*, or a closely allied species not yet known to us except by the type. The bird figured *P. Z. S.* 1877, Pl. 51, thus remains without a name, and we name it

***Lamprbis rara* nom. nov.**

We believe that *Comatibis* and *Hagedashia* are very useful and well-established genera, but a closer study will be necessary to decide about *Lamprbis* and other genera.

NEUMANN'S HARTEBEEST.

By THE HON. WALTER ROTHSCHILD.

(Plate XIV.)

UNDER the name of *Bubalis neumanni* I described in the *Annals and Magazine of Natural History*, Ser. 6, Vol. XX., October 1897, p. 376, a new form of Hartbeest, discovered by Mr. A. H. Neumann on the east shore of and to the north-east of Lake Rudolph.

The horns of ***Bubalis neumanni*** differ widely from those of *B. major* (Blyth), of West Africa, and *B. buselaphus* (Pall.), of Northern Africa and Arabia, in being slenderer, and in their tips being inverted instead of pointing outwards or straight behind. The nearest ally seems to be *B. tora* (Gray), of Upper Nubia, Abyssinia, and Kordofan, which, however, has more slender horns, with more distinct rings, reaching almost round, a broader forehead, and a generally paler coloration. The horns also diverge much more in *B. tora*, as shown at a glance by the distances between the tips of the horns, as recorded in R. Ward's *Horn Measurements*.

The horns of *B. neumanni* measure as follows:—Circumference at base, ♂ 273 mm., ♀ 183; total length along the curves, ♂ 420, ♀ 345; tip to tip, ♂ 206, ♀ 249.

The rings of the horns are not very prominent and do not reach all round.

Breadth of skull at forehead, ♂ 100 mm., ♀ 80; length of skull from base of horn to upper lip, along the side in a straight line, ♂ 430, ♀ 403.

Colour of hair fulvous fawn, much richer on the back, where there are also some darker spots, which may be stains or natural; below very much paler. Chin blackish, tip of tail black. The *male* is brighter and darker in colour than the *female*. There are also on the back some patches with longer, thicker, almost whitish buff hair, perhaps remains of the winter fur.

# NEW GENERA AND SPECIES OF MOTHS FROM THE OLD-WORLD REGIONS IN THE TRING MUSEUM.

By W. WARREN, M.A., F.E.S.

## FAMILY DREPANULIDAE.

### *Neoreta* gen. nov.

This name is proposed for the species comprised in Section II<sub>A</sub> of *Oreta* (Hmps., *F. B. I. I.* p. 350), viz. *griseotincta* Hmps., *hyalodisca* Hmps. (*F. B. I. IV.* p. 479), and *olga* Swinh., *Ann. and Mag.* (6). XIV. p. 434, with this last as type.

Antennae, both in ♂ and ♀, strongly bipectinate: palpi very short. In the latter characteristic it agrees with *Oreta* Wlk.: but that genus has the antennae serrated, the serrations sometimes free, sometimes coalescent. *Cobanilla* Moore, which has the same pectinated antennae as *Neoreta*, differs both from it and *Oreta* in having the palpi more largely developed and upturned in front of face.

1. *Neoreta olga* Swinh., *A. and M.* 1894, II. p. 434, ♂: *Tr. E. S.* 1895, Pl. I. fig. 14.

The ♀ of this species is somewhat different in coloration and markings from the ♂.

Wings pale mouse-colour, with darker striae: the inner edge of outer line faintly brown-tinged; the costal portion of outer line with a single black blotch between veins 6 and 7; no darker suffusion between the angle and the cell; both wings with a faint whitish cell-spot, and a slightly brownish patch towards hindmargin between veins 2 and 4.

Underside like upper, grey, not yellow, with very slight rufous tinge in places.

The specimen here described is from the Khasia Hills, dated December 1896.

The antennae are strongly bipectinate.

## FAMILY THYRIDIDAE.

### 2. *Banisia angustifascia* sp. nov.

*Forewings*: pale greyish brown, with slightly darker strigulose markings: the fasciae of the same colour, narrow and vertical, with faintly darker outer edges: first at one-fourth, just bent on the subcostal vein: second before the middle, its outer edge nearly straight, widened along the extreme costa: third from costa just beyond middle, forked below the subcostal, the outer arm outcurved: fourth curved and without dark edging, from costa before apex to middle of hindmargin; basal area rather darker: the pale intervals between the fasciae traversed by interrupted strigulose lines; fringe dark olive-brown, with the extreme tips pale throughout.

*Hindwings*: slightly ochraceous-tinged, with subbasal, forked median, and marginal curved fasciae, all somewhat darker; fringe as in forewings.



Underside with the strigulae, which are more numerous, and the edges of the fasciae plainer, on a lighter ground ; the fasciae all dark along the costa.

Thorax and abdomen like wings ; head and palpi darker, deeper brown.

Expanse of wings : 46 mm.

One ♀ from Amboina, August 1892 (W. Doherty).

Nearest to *B. praenusta* Warr. from Batchian and *pernitescens* sp. nov. from Celebes.

### 3. *Banisia interalbicans* sp. nov.

*Forewings* : pale grey, passing into dove-colour, and becoming rufous towards the margin ; the grey costal and basal portions traversed by minutely waved dark grey strigulae, which are outwardly oblique below costa and inwardly oblique in the lower half ; these strigulae tend to form a sinuous line, edging a slightly darker basal area, at one-third, and beyond, two narrow vertical fasciae, of which the outer one is darker, and followed by a single line ; a pale chestnut patch on costa before apex, finely edged outwardly with black and followed by a snow-white spot, with a few smaller ones and black scales beyond ; outer fawn-coloured area with scattered black atoms : fringe fawn-colour.

*Hindwings* : with a deep chocolate bar at base, followed by a white fascia, which gradually deepens into a broad central chocolate fascia, concisely edged externally, followed again by a white fascia, which deepens into fawn-colour along the margin and in the fringes : the pale outer area contains some fine dark dots arranged in lines ; two more conspicuous beyond cell, and a brown black-edged spot at anal angle.

Underside whitish, suffused with pale fawn-colour ; basal area and subapical blotch pale chestnut ; apex whitish : median fascia marked by a black-brown blotch below the middle ; hindwings with the base and median fascia pale chestnut. Face and palpi fawn-colour : fillet paler ; vertex and collar rich brown ; thorax and abdomen pale pearly grey ; the abdomen with a black-brown basal and median ring.

Expanse of wings : 27 mm.

One ♀ from Penungah, N. Borneo, December 1893 (Cator).

Allied to *B. tritrophus* Swinh., but decidedly smaller, and with other markings.

### 4. *Banisia pernitescens* sp. nov.

*Forewings* : dark greyish brown, with a slight rufous tinge, very glossy, with minute reticulations which are most visible towards the hindmargin ; basal area clouded with darker : an inwardly oblique dark line near base, and a similar one from costa beyond one-third, curved outwards at inner margin : an irregular and obscure central fascia, narrow at costa, its outer edge curved outwards and broken up into two or three lines which end in anal angle, its inner arm irregularly angled and constricted on submedian fold ; three or four ramifying lines occupy the apical area ; fringe glossy, grey-brown.

*Hindwings* : paler, slightly fulvous-tinged, crossed by numerous irregular dark ramifying streaks.

Underside glossy, paler, with the transverse streaks and minute reticulations slightly clearer. Head and thorax dark brownish : abdomen paler.

Expanse of wings : 40 mm.

One ♀ from Tawaya, north of Palos Bay, Celebes, August and September 1896 (W. Doherty).

Allied to *B. alternata* Moore and *dissimulans* Warr., but darker, and distinguished by its glossiness.

##### 5. *Banisia ramifera* sp. nov.

*Forewings*: glossy, reddish grey-brown: the costa and base fuscous: the fasciae indicated by their darker margins only: the first vertical near base, constricted on submedian vein: the second antemedian, constricted in cell and on submedian fold: the third postmedian, narrow at costa, and forking below middle: the fourth to below middle of hindmargin, its edges nearly parallel and straight: the fasciae and the intervals between them traversed by faint interrupted and shortened striae: fringe concolorous.

*Hindwings*: similar, slightly more ferruginous, the fasciae all more or less vertical from costa to outer margin.

Underside much paler, with the same markings and slight cell-spots. Head, thorax, and abdomen concolorous.

Expanse of wings: 32 mm.

One ♂ from Moroka, British New Guinea, 3500 feet, October 1895 (Anthony).

Forewings with costa slightly sinuous: apex prominent: hindmargin straight to vein 4, then curved into inner margin: hindwings developed on inner margin: the inner margin itself very short: the hindmargin obliquely truncate to vein 1.

##### 6. *Hypolamprus leopardata* sp. nov.

*Forewings*: dull ochreous, with indistinct darker fasciae and strigulae, the whole wing being also suffused with greyish: a broad diffuse greyish ochreous subcostal streak, and traces of subbasal and antemedian fasciae: a broadish fascia from inner margin beyond middle towards apex, spotted and edged with dark grey, and another narrow close before margin, this last preceded and followed by paler spaces with dark strigae: a pale oval spot before apex, with a black dot at its outer end: fringe concolorous.

*Hindwings*: without the grey suffusion, so that the pale ground-colour is more conspicuous, forming two crenulate fasciae, one on each side of the central dark fascia, which extends from middle of inner margin to apex, the base and marginal area being dark, like the middle fascia.

Underside paler, more straw-colour, with the fasciae in both wings filled up with tawny and edged with blackish, divided by the paler veins: subcostal region and cell of forewings coppery red, with the edges of the fasciae marked by velvety black scales: the apical spot distinct. Head, thorax, and abdomen glossy ochreous.

Expanse of wings: 26 mm.

One ♀ from Cedar Bay, North Queensland (A. S. Meek).

Both wings strongly bulged in middle of hindmargin, shaped as in *angulalis* Moore and *subrosalis* Leech.

##### 7. *Hypolamprus subnictitans* sp. nov.

*Forewings*: dull rufous ochreous, crossed by dark strigulations: six dark costal patches indicate the origin of as many fasciae which cross the wing, and are

more visible towards inner margin, the inner margin itself darker and connecting the bands ; in the third band, which is bent, are two dark patches, one beyond the cell, the other on the submedian fold ; the pale spaces on costa between the fasciae are each marked by a black single strigula, which also crosses the wing ; beyond the cell the ground-colour is paler, and the pale spaces form irregular annuli or tessellations ; a whitish apical spot, with black centre : fringe rufous, mottled with darker.

*Hindwings* : paler, with more numerous areolae ; three in the middle—one before the cell-spot, and two contiguous beyond it—being paler and semihyaline.

Underside similar, the ground-colour paler, the markings all plainer : a subcostal dull fulvous streak, with black speckles and a few lustrous scales.

Thorax and abdomen rufous ochreous : head dark red.

Expanse of wings : 19 mm.

One ♂ from Penang (Curtis), 1896.

### 8. *Hypolamprus unicolor* sp. nov.

*Forewings* : pinkish fawn-colour, with a few obscure dark striae, the costa a little paler ; no markings except an indistinct postmedian fascia, of which the edges only are black above inner margin, at two-thirds ; a black apical dot : and a very faint line from costa before apex to middle of hindmargin, marked by a dark dot between each vein : fringe slightly darker than ground-colour.

*Hindwings* : similar, with indications of a pale median fascia on inner margin and beyond cell, these spaces being semihyaline.

Underside paler, greyer ; the fasciae of forewings pale chestnut ; the subcostal region ferruginous, with black spots. Thorax and abdomen concolorous with wings : face and palpi darker.

Expanse of wings : 36 mm.

One ♂ from Oinainisa, Timor, November and December 1891 (Doherty).

Like a very large *subroscaulis* Leech, but distinguished by the pale fascia of the hindwings.

### 9. *Letchena diversicolor* sp. nov.

♂. *Forewings* : dull brick-red, crossed by olive-fuscons strigae, some of which arrange themselves in regular transverse rows ; three or four curved near base, a broader one in middle interrupted by the oval hyaline spot, and two beyond the middle ; fringe and basal line dark fuscons grey, with a darker middle line.

*Hindwings* : without the hyaline spot.

Underside duller, often more brownish or ochraceous in forewings, with the transverse rows of striae more conspicuous ; some pearl-grey scales on forewings near base : an irregular dark triangular cloud on hindmargin. Head and shoulders fuscons ; thorax and abdomen red.

♀ with ground-colour bright brick-red.

Expanse of wings : 32 mm.

Seven ♂♂, two ♀♀, from Kiriwini, Trobriand Islands, May 1895 (A. S. Meek).

Near to *L. plagifera* Butler from Tonga Island. The hyaline spot is a long oval, between veins 2 and 3 ; in one of the ♂♂ it is reduced to a small spot, and in another it is quite absent.

10. *Letchena plagiata* sp. nov.

*Forewings* : dull olive-yellow, with dull purplish grey reticulations and bands : the costa broadly purplish grey : a central purplish fascia, bifurcate below the median, containing two hyaline spots separated by a horizontal yellow dash ; the upper of the two spots sometimes finely divided into two ; a funnel-shaped mark from costa at three-fourths, and a curved line from hindmargin in middle ; fringe purplish, with a fine basal line.

*Hindwings* : the same, with the apex broadly purple ; the hyaline spots separated only by vein 2, and the outer of the upper two often yellow.

Underside the same, but the streak at hindmargin purple-black. Head and shoulders pinkish grey ; thorax and abdomen yellow.

Expanse of wings : 40—45 mm.

Five ♀♀ from Kiriwini, Trobriand Islands, April and May 1895 (A. S. Meek). Nearest to *L. semitesellalis* Wlk. from Australia.

11. *Pharambara micacealis occlusa* subsp. nov.

Differs from the type-form of Walker's *micacealis* in having no pale semi-transparent spot at the end of cell, but instead a diffuse blackish cell-spot ; both wings dull red-brown, slightly paler towards base. Underside with the characteristic lustrous blue spots.

One ♂ from Bali, March and April 1896 (W. Doherty).

12. *Siculodes bastialis* Wlk.

There are two forms of this insect. The usual one has the ground-colour ochreous whitish, the reticulations pinkish ochreous, the hindmargin and fringe tinged with ferruginous ; the costa broadly darker, marked with lustrous grey, black-edged, white-centred spots, the intervals ferruginous ; a central line is bifurcate at inner margin, and in cell partially forms an ocelloid spot ; a black line runs from costa before apex to hindmargin at vein 4, and a sinuous ferruginous line runs from it to anal angle ; beyond the first are two black apical dots, and beyond the second two ferruginous ones. Hindwings with ferruginous reticulations, which often form a central and submarginal ill-defined band. Underside whiter, the markings and reticulations much more defined, bright ferruginous.

In the other form the ground-colour is pure white ; the reticulations grey, like the costa and fringe, with no ferruginous tints, all the markings indistinct and semi-obsolete ; the underside like that of the redder form.

In the Tring Museum there are ♂♂ of both forms from Geraldton, N. Queensland, in no way differing from the same forms—also occurring together—in India, Ceylon, etc.

13. *Striglina derasata* sp. nov.

*Forewings* : ochreous fawn-colour, with obscure blackish strigae and reticulations ; the costal region darker, especially towards base ; a blackish discal spot, another beneath it above the submedian, and two smaller ones superimposed opposite the cell towards hindmargin ; fringe long and full, with a faintly paler basal line, and the outer third mixed with fuscous scales ; a pair of minute dark dots at the base at the end of each vein.

*Hindwings* : rather paler, the veins slightly darker than the ground-colour, which is also the case, though less conspicuously, in the forewings.

Underside similar, but paler, the markings being less developed. Face, palpi, and shoulders like base of wings, darker than the thorax and abdomen, which are concolorous with ground-colour of wings.

Expanse of wings : 36 mm.

One ♀ from Lawas, N. Borneo (A. Everett).

Very closely allied to *S. duplicifimbria* Warr. from India, but the hindmargin of forewings is evenly curved throughout, not indented below apex, which is not produced in the least. The dark mottlings and spots are far less developed than in *duplicifimbria*; the fringe has no dark middle line, as in that species, but the outer third darker.

Two ♂♂ from Fergusson Island, dated December 1894, and one ♂ from Kiriwini, Trobriand Islands, collected in March 1895 by A. S. Meek, are also referable here. The smallest of these expands only 34 mm., the largest 45 mm. In all these the fringe is wholly unicolorous, but the extreme tips are here and there marked with dark scales. In colour and markings they agree perfectly with the Lawas ♀. But along with these three ♂♂ there is a ♀, from Fergusson Island, which must be distinguished as

**ab. vulpina nov.**

In this both wings are suffused throughout with deep rufous, to the total exclusion of the dark spots and most of the strigae; the underside and all the parts of the body are equally rufous. It is as large as the largest ♂ of the type-form, 45 mm.

**Symphleps gen. nov.**

Distinguished from all other genera of the family by the fact that veins 8, 9, 10 of the forewings are all three stalked together.

Type : *Symphleps atomosalis* sp. nov.

**14. *Symphleps atomosalis* sp. nov.**

*Forewings* : reddish ochreous, thickly covered with deeper reddish regularly disposed reticulations; costa with ten to twelve minute snow-white spots; cell-spot silvery white; fringe concolorous, with minute black dots at base at end of veins.

*Hindwings* : similar; the cell-spot fainter, divided in two.

Underside the same. Head, thorax, and abdomen all reddish.

Expanse of wings : 26 mm.

One ♂ from Great Kei Island, April 1896 (Captain C. Webster).

There is a specimen from Java in the British Museum Collection marked in Walker's handwriting "*Pyralis atomosalis*," but I can find no trace of its publication.

*Siculodes ochracea* Pagenst., JB. Nass. Ver. XXXIX. p. 166 (more fully described in the *Iris*, 1892. p. 111) must be closely allied, if not identical.



FAMILY *URANIIDAE*.15. *Stesichora obsolescens* sp. nov.

*Forewings*: pure white, with three or four black costal spots near base, one at apex, and sometimes one just below it on the hindmargin.

*Hindwings*: with a single black spot in the tail.

Underside wholly white.

Palpi and forelegs fuscous externally; face very narrow, wholly brown, or tinged with white below; vertex, thorax, and abdomen all white.

Expanse of wings: 50–52 mm.

Three ♂♂, one ♀. Two ♂♂ from Woodlark Island, 1895; the other ♂ and the ♀ from Yanarba, Egum Islands, February 1895 (Meek).

Intermediate between *S. nicea* Warr. from Kei Toaal, which has the hindwings wholly white, and *S. titania* Kirsch from New Guinea, which has three marginal spots.

FAMILY *EPIPLEMIDAE*.16. *Dirades acutilinea* sp. nov.

*Forewings*: dull pale purplish grey, with darker grey shades in places; first line very indistinct, from costa just before middle, forming an acute angle between veins 4 and 5 beyond the middle and here edged with black, then oblique inwards to inner margin before middle: outer line from costa at two-thirds, curved below costa, and vertical to vein 3, then oblique and slightly sinuous inwards to middle of inner margin: the line itself is formed of ochreous grey scales, edged finely outwards with dark grey, and more strongly and diffusely internally with purplish grey; submarginal line ochreous grey, from apex to anal angle, irregularly waved, edged externally with purplish and with darker spots on veins; in the intervening space is a horizontal purplish black blotch below costa, and on inner margin before anal angle a ferruginous cloud, preceded by a purplish ochreous-edged rounded blotch, the inner edge of which is oblique; fringe purplish grey, with a paler basal line.

*Hindwings*: with the basal two-thirds chestnut mixed with grey, and striated with whitish along inner margin: inner line angled in cell and marked by darker brown blotches: outer line hardly bent on vein 4, ochreous grey, with thick chocolate inner edge and fine outer grey line: outer third of wing purplish grey, browner towards apex and anal angle: a fine dark submarginal line of shallow lunules edged inwardly with pale.

Underside of both wings grey, with sparse blackish speckles. Palpi blackish: face and back of crown grey-brown; vertex white: thorax and abdomen grey.

Expanse of wings: 24 mm.

One ♀ from Penang (Curtis).

Hindmargin of forewings entire, of hindwings toothed at veins 4 and 7. Closely allied to *D. seminigra* Warr. from Queensland.

17. *Dirades columbaris* sp. nov.

*Forewings*: dove-coloured grey, without dark irroration; the lines brown; first line angled in the middle of the wing, exactly as in *D. leucorephalata* Wlk.; the second line similar, but, instead of being evenly rounded beyond the cell, bluntly

bent on vein 6, then vertical, and sharply and rectangularly bent inwards on vein 4, edged outwardly by a distinct fine white line; the dark inner brown edging of the two lines more or less meeting on inner margin and forming a dark patch: a line of shallow brown lunules along hindmargin and close to it; in *leucorephalata* they are black dots, a little before it; fringe grey.

*Hindwings*: with inner line twice angled, in the cell and on the submedian fold; outer bluntly bent on vein 4, and edged, as in forewings, with whitish: an indistinct row of grey-edged brownish lunules, from upper tooth nearly to anal angle: the brown inner edging of the two lines thickened on inner margin.

Underside uniformly dove-grey, with slight freckling. Head, thorax, and abdomen all concolorous: the palpi and top of face browner; the vertex white.

Expanse of wings: 28 mm.

One ♀ from Penang, 1896 (Curtis).

Hindwings with two distinct teeth at veins 4 and 7.

### 18. *Dirades lactea* sp. nov.

*Forewings*: milk-white, slightly dusted with ochreous grey scales, and with coarse black scales near base of both wings: lines ochreous grey: first from one-third of costa to one-third of inner margin, forming a blunt angle in cell at the middle of the wing; second line before two-thirds of costa, shortly oblique outwards, approximated to first line in middle: space between filled in with pale fuscous in middle and on inner margin, forming there a flattened semicircle: four small black spots close to hindmargin above middle, and at the middle a grey cloud: fringe white beyond a thick dark basal line.

*Hindwings*: with two ochreous lines, both bent in cell, and a small black cell-spot; basal area spotted with black along inner margin; a fuscous dash and black spot at base of lower tooth.

Underside white, with numerous neat fuscous striations. Head, antennae, thorax, and abdomen all white; palpi brown.

Expanse of wings: 16 mm.

One ♂ from S.W. Africa.

### 19. *Epiplema instabilata* ab. *fuscata* nov.

In this form of *instabilata* Wlk. the whole of the upperside of both wings, except the inner margin of forewings and costal margin of hindwings, is overspread with rufous grey, more or less mixed with ochreous, the only black markings being the edge of the lunular submarginal streak.

Two ♀♀ from the Khasias.

## FAMILY GEOMETRIDAE.

### SUBFAMILY OENOCHROMINAE.

#### *Uliolepis* gen. nov.

*Forewings*: with costa curved throughout; apex blunt: hindmargin curved.

*Hindwings*: with hindmargin curved, both angles rounded.

Antennae of ♀ with oblique spinose pectinations; palpi decumbent, weak, with long lax hairs, projecting far in front of face; tongue absent: frenulum long;

abdomen, thorax, forehead, and pectus all hairy ; the underside of wings also with long hairs as well as scales.

*Neuration* : forewings, cell nearly two-thirds of wing : discocellular twice angulated, the upper and lower thirds vertical, the middle third oblique ; first median nervule at four-fifths, second close before end of cell ; lower radial from the lower angulation of discocellular, upper from upper angle of cell ; 7, 8, 9, 10 stalked : 11 free. Hindwings with costal approximated to subcostal for more than half the cell ; the two subcostal nervules from upper angle of cell ; medians as in forewings : radial distinct, from lower angle of the discocellular. Scaling thin and lax.

Type : *Uliolepis pilosa* sp. nov.

## 20. *Uliolepis pilosa* sp. nov.

*Forewings* : ochreous grey, dusted with blackish : the lines blackish, double, excurved above middle, incurved below it : the first close to base ; the second, antemedian, at one-third : the postmedian at two-thirds, indistinctly crenulated : a similarly curved median shade, touching a large diffuse grey cell-spot : fringe ochreous grey, chequered with blackish, and with black scales along base.

*Hindwings* : paler, without markings, except an indistinct curved submarginal shade : fringe concolorous.

Underside much paler, with no markings. Head, thorax, and abdomen concolorous with wings.

Expanse of wings : 34 mm.

One ♀ from Sefir-Kuh, Afghanistan.

The stout abdomen and thin scaling of this insect remind one of *Biston hirtaria*, but the presence of the radial in the hindwings necessitates its inclusion among the *Oenochrominae*.

## SUBFAMILY ORTHOSTIXINAE.

### *Aspilonaxa* gen. nov.

*Forewings* : with costa very faintly curved, depressed just before apex : apex slightly produced ; hindmargin oblique, very faintly curved.

*Hindwings* : with hindmargin well rounded.

Antennae of ♀ slender, filiform, minutely lamellate and serrulate, quite half as long as wing ; palpi slender, upturned in front of face ; tongue and frenulum present : legs long and slender ; hindtibiae with a pair of minute terminal spurs.

*Neuration* : cell half as long as wing ; discocellular oblique : first median just beyond one-half : second at seven-eighths : lower radial from centre of discocellular, upper from upper angle ; 7, 8 stalked ; 9, 10 coincident, anastomosing with 11 and 12, 9 anastomosing with 8.

*Hindwings* : with costal sinuous and approximated to subcostal ; first subcostal nervule before end of cell ; radial from centre of discocellular ; medians as in forewings.

Type : *Aspilonaxa lineata* sp. nov.

Differs from *Naxa* in the long slender antennae and legs ; in the cell being only half as long as wings, instead of two-thirds ; in the costal vein of forewings leaving 11 some distance beyond the junction of 9 and 10, whereas in *Naxa* and *Psilonaxa* it rises before the junction and 9 and 10 really anastomose with 11 only.

21. *Aspilonaxa lineata* sp. nov.

*Forewings* : very pale luteous grey, the costa narrowly blackish near base ; a round dull black discal spot showing through from the underside ; a very faint grey line at one-third, parallel to hindmargin and curved below costa ; a grey-brown oblique outer line, faintly waved, from two-thirds of inner margin towards apex, before which it is retracted to costa and becomes obsolescent ; space immediately beyond it whitish ; a row of black marginal dots between veins ; fringe concolorous.

*Hindwings* : with the grey line antemedian, and a dark discal spot showing through as on forewings.

Underside white ; both wings with large round blackish cell-spot and apical blotch ; marginal dots as above ; the outer line faintly showing through on both wings ; costa of forewings greyish-tinged. Face, palpi, and abdomen whitish ; thorax purer white ; legs white, dotted with black ; the foretibiae blackish.

Expanse of wings : 42 mm.

One ♀ from Omei Shan, W. Chiua, 1892.

22. *Eumelea unilineata* sp. nov.

*Forewings* : yellow, with rather sparse dull rosy striae ; basal half of costa with the striae dense ; an oblique faintly marked rosy line from inner margin just beyond middle towards apex, becoming obsolescent above middle ; fringe rosy, with slightly darker red spots at base at ends of veins.

*Hindwings* : with the striae and central line, which is complete, stronger.

Underside similar. Face, palpi, and abdomen yellow, dusted with rosy ; front of thorax rosy ; patagia yellow.

Expanse of wings : 52 mm.

One ♀ from Lawas, N. Borneo (A. Everett).

Akin to *E. obliquifascia* Warr. from Amboina and *E. unipuncta* Warr. from Fergusson Island ; distinguished from both by the entire absence of any discal ocellus or inner line.

23. *Noreia papuensis* sp. nov.

Like *N. albifimbria* Warr. from Celebes, but differing in the following points : the apex of forewings is not produced at all—in *albifimbria* it is minutely sub-falcate : the fringe of both wings is concolorous with the wings, and the costal edge of forewings is distinctly pale ochreous. In the ♀ the ground-colour is decidedly paler, fawn-grey, minutely speckled with darker ; the oblique line on both wings is broadly and diffusely margined with black-brown, the marginal area beyond it being conspicuously paler.

Expanse of wings : 45 mm.

A pair from Kapaur, Dutch S.W. New Guinea, December 1896 (W. Doherty).

24. *Ozola sinuata* sp. nov.

*Forewings* : whitish, with greyish fuscous atoms ; the lines fuscous, diffuse, and double ; first incurved towards inner margin, straight and vertical above ; second sinuous, widely outcurved round cell, incurved below, both arms dark greyish

fuscous, with a fine ferruginous line between them ; a dark fuscous patch on hind-margin below apex and above anal angle ; submarginal line fuscous, parallel to hindmargin, touching the apex of the two marginal patches ; cell-spot small, blackish : central area paler than basal and marginal, which are both more or less suffused with greyish ; fringe fuscous, with the tips paler, and altogether pale just below the middle.

*Hindwings* : with blackish cell-spot, double sinuous postmedian line, the inner arm more ferruginous and less strongly curved : marginal area suffused with grey. In both wings the veins are finely darker, and the marginal dark dots are very inconspicuous.

Underside more distinctly marked ; space between postmedian and submarginal lines of forewings on costa chestnut. Thorax and abdomen like wings ; face and palpi darker.

Expanse of wings : 26 mm.

One ♀ from Sumba, February 1896 (W. Doherty).

Resembles *biangulifera* Moore.

#### SUBFAMILY PSEUDOTERPNIINAE.

##### 25. *Terpna subradiata* sp. nov.

*Forewings* : whitish, dusted with purplish and fuscous scales, most thickly in the basal and marginal areas, which are also suffused with pale olive ; first line from one-fifth of costa to one-third of inner margin, excurved above and below the median vein ; cell-spot large, oblique, 8-shaped, filled up with pale olive and edged with purplish scales : outer line olive, from costa at two-thirds to inner margin shortly before anal angle, oblique outwards to vein 6, then vertical and dentate to vein 2, thence incurved ; submarginal line obscure, between two olive fasciae, which are interrupted above vein 6 and between veins 3 and 4 ; fringe worn.

*Hindwings* : like forewings : the centre of cell-spot paler.

Underside white, yellow-tinged towards base : forewings with oblong cell-spot and broad submarginal band purple, with the veins across it yellowish ; a smaller purplish spot in cell, and a purple dash below it on submedian fold : hindwings with small cell-spot and fascia as in forewings. Face ochreous whitish, the lower half and the palpi yellowish ; thorax and abdomen ochreous whitish, speckled with darker : basal segments of the abdomen with rusty scales.

Expanse of wings : 54 mm.

One ♀ from Penang. 1896 (Curtis).

Nearest to *T. ocellata* Warr. from the Khasias.

#### SUBFAMILY GEOMETRINAE.

##### 26. *Agathia succedanea* sp. nov.

*Forewings* : pea-green : the costa pinkish ochreous, finely dusted with dark atoms ; the base with a dark brown patch reaching from costa to inner margin : middle fascia from two-fifths of costa to beyond middle of inner margin, entire, fawn-coloured with dark edges, bent outwards on median and inwards below : postmedian band sinuous, its inner edge dark : marginal area dark brown, swollen in middle, where it is joined by the postmedian band, and there containing a



single small semihyaline round spot; the subapical green area irregularly crenulate; fringe pinkish brown, marked in places with darker.

*Hindwings*: with outer area dark brown-black, its inner edge lined with yellowish and with slight projections above veins 4 and 2, the outer tooth filled up with dark chocolate-brown and preceded by a pinkish white dash; inner margin narrowly dark, more broadly in the anal two-thirds; fringe pinkish beyond the green patch, darker above and below.

Underside pale green, nearly entirely suffused with pale rufous; the outer markings red-brown, the middle fascia pale reddish. Face and palpi dark brown above, paler beneath. Thorax green, with the tips of the patagia fuscous; basal segment and apical half of abdomen dark brown; the intermediate segments green.

Expanse of wings: 50 mm.

One ♂ from Kina Balu, N. Borneo.

Near *A. rubrilineata* Warr., also from Borneo.

## 27. *Chlorostrota discata* sp. nov.

*Forewings*: sea-green, faintly white-flecked; costa ochreous, with fuscous speckles; the lines white; first at one-fourth, angled outwards above and below median; second at two-thirds, oblique to vein 6, denticulate and waved, bent at vein 2, and swelling into a rectangular whitish blotch, the outer half marked with rufous and green scales; an indistinct pale submarginal line, and a row of whitish triangular patches immediately before a row of green marginal lunules; fringe green, with pale base; cell-spot lunulate, white.

*Hindwings*: with a large pale blotch at apex, containing externally a brown black patch; the rest as in forewings.

Underside white; costa of forewings broadly fuscous-speckled, with dark specks at origin of the lines, and the cell-spot fuscous; hindwings with a black apical blotch. Face, vertex, thorax, and abdomen ochreous; palpi dark fuscous; patagia and shoulders green.

Expanse of wings: 45 mm.

One ♀ from Kina Balu, N. Borneo.

Akin to *C. teatilis* Butler (*Thalera*).

## 28. *Diplodesma olivata* sp. nov.

*Forewings*: uniform olive-green; the lines olive-brown; first at one-third, angled outwards in cell, where it passes over the discal mark; second at two-thirds, obtusely bent on vein 6, then slightly waved to inner margin at two-thirds; fringe yellow.

*Hindwings*: with second line only.

Underside paler, without markings. Face pale-brown; fillet white; thorax and abdomen olive-green.

Expanse of wings: 19 mm.

One ♂ from Sandakan, January 1893.

## 29. *Euchloris* (?) *viridifrons* sp. nov.

*Forewings*: pale apple-green, with the costa whitish; first line at one-third, whitish (sometimes very faint), forming two outward curves; exterior line straight

and oblique from costa before apex to inner margin at two-thirds ; cell-spot round, whitish ; fringe pale greenish white.

*Hindwings* : paler green, without any markings ; cell-spot white ; veins of both wings pale.

Underside pale green. Head, face, thorax, and abdomen pale green.

Expanse of wings : 28—30 mm.

Three ♂♂ from west of Dinan, Amu Daria.

Very much like *E. dispartita* Wlk. (= *efformata* Warr.), but distinguished by the green, not reddish, face, and the absence of any markings on the hindwings.

Veins 3, 4 of neither wing stalked : hindtibiae with four spurs.

### 30. *Helicopage* (?) *velata* sp. nov.

*Forewings* : delicate pale green, with the markings dull olive ; costa slightly paler, with a few olive-fuscons strigae ; first line thick, at one-third, very sinuous, and interrupted in lower half of cell ; an olive spot at base on the median vein, another near base of cell, and the discal spot olive ; postmedian and submarginal lines zigzag, approximated, running mainly parallel to hindmargin, thickened and diffuse below costa, semi-obsolete and obscure below middle ; an olive spot before apex : fringe pale green, chequered with olive beyond the veins.

*Hindwings* : with the two outer lines only : these very faint at costa, below the radial lost in a large dull dark olive-green patch, which fills up the anal quarter of the wing, except just along hindmargin ; fringe as in forewings.

Underside whitish green : the costa of forewings ochreous, with large fuscons spots ; the commencement of the lines marked with fuscons blotches ; hindwing with a fuscons submarginal fascia from anal angle to radial, somewhat diffused basewards. Forelegs and palpi externally fuscons ; face, vertex, thorax, and abdomen pure green.

Expanse of wings : 34 mm.

One ♂ from Woodlark Island, 1895 (Meek).

Differs from typical *Helicopage* in having the retinaculum of ordinary structure ; and vein 11 does not anastomose with 12.

### 31. *Microloxia* (?) *pallida* sp. nov.

*Forewings* : very pale whitish green, without any markings ; fringe white.

*Hindwings* : white ; the fringe the same.

Underside like upper. Head and thorax pale green ; abdomen wanting, probably white.

Expanse of wings : 26 mm.

One ♀ from the Canaries.

The antennae of this ♀ are subserrate : the wings elongate and narrow ; palpi thick, roughly scaled, the third joint as long as the second, slightly depressed and blunt. Its real position must remain doubtful for the present.

### 32. *Prasinocyma albipunctata* sp. nov.

*Forewings* : apple-green, densely traversed throughout by numerous irregularly undulating paler streaks : costa brown from base to middle, then finely white, with a narrow brown streak beneath apex ; a distinct brown discal spot, with darker

centre, at the lower end of the cell ; fringe in its basal half green, then pearly grey to the apex, preceded by a series of very minute white dots at the end of each vein ; subterminal line indicated by a series of rather larger white spots on the veins.

*Hindwings* : like forewings, but without the subterminal row of dots.

Thorax, abdomen, vertex, and face all green, the last with a minute white dot on either side at top and bottom ; antennae ochreous white. Underside pale glaucous green, silky.

Expanse of wings : 20 mm.

One ♂ from Sumba, February 1896 (W. Doherty).

### 33. *Rhomborista undiferata*.

*Comibuena undiferata* Wlk., XXXV. p. 1612.

Walker, in describing this Celebes species, speaks of the hindmargin of forewings as angulated. In three specimens from S. Celebes, collected by W. Doherty in 1891, all at the same time of year, August and September, a ♂ and ♀ show hardly a trace of a bend in the hindmargin, but the third example, a ♂, has a very strongly developed angle ; in this instance the marginal line answers Walker's description exactly, and the blotch at anal angle is much longer and shallower, with white centre, than in the other two : of these, the ♂ has the marginal line very much reduced, and the blotch at anal angle rounded and black-brown, while the ♀ has the marginal line wider than in either of the ♂♂, and, like the blotch at anal angle, which is very large, pale brick-red. The insect would seem therefore to be a variable one. In all the examples the costal edge of forewings is pure white, with a broader yellowish line beneath it, and this yellow line, not the white costal streak, is speckled with red ; the outer cross line, slightly paler and denticulate, is very obscure, and only visible in one of the ♂♂. The species is quite distinct from the Indian *decezata* Wlk.

### 34. *Thalassodes viridicaput* sp. nov.

Distinguished from *quadriaria* Guen. by its much smaller size, and the hardly angulated hindmargin of hindwings ; face and palpi pale pink ; vertex green : costa of forewings and fringes pale yellow.

Expanse of wings : 26 mm.

One ♂ from S. Celebes.

### 35. *Uliocnemis delicatior* sp. nov.

*Forewings* : delicate pale green, with the costa rather broadly whitish ; the two transverse lines slender, white, irregular ; the first before one-third, curved and waved ; the second beyond two-thirds, slightly angulated outwards below the costa and again above anal angle, where it is followed by a pale brick-red blotch with two brown dots at its outer edge ; an indistinct waved white submarginal line : cell-spot small, dark ; fringe whitish green ; a faint whitish suffusion between veins 4 and 5 from outer line to hindmargin.

*Hindwings* : with a large brown-red curved blotch at apex and a pale pinkish one at anal angle, the two united by a narrow pale marginal band, slightly marked with brown above and with a pinkish line down its centre ; some brown dashes along hindmargin ; cell-spot brown.

Underside whitish green, with the cell-spots brown, and the apical blotch of hindwings showing through. Head, thorax, and abdomen pale green, mixed with whitish.

Expanse of wings : ♀, 34 mm.

One ♀ from Japan.

A ♂ in the British Museum Collection is smaller—26 mm. *U. amoenaria* Oberth. from Askold Island is closely allied, but the blotches consist of *two* reddish spots.

#### SUBFAMILY STERRHINAE.

##### 36. *Brachycola mediusta*.

*Perixera mediusta* Warr., Nov. Zool. III. p. 114, ♂.

This species was wrongly referred to *Perixera* ; a second ♂, lately received, has all the legs perfect. To the original description there may be added the remark that the costa of hindwings, along the widened dark central bar, is bright red.

##### 37. *Chrysocraspeda marginata* sp. nov.

*Forewings* : yellow, with orange-red dusting ; the base, costa, and hindmargin purplish grey ; first line near base, angled below costa, then oblique inward, obscured by the basal grey shade which it limits, the inner margin at base remaining yellow ; median shade grey, curved and dentate ; cell-spot minute, black ; outer line dark brown, from costa at two-thirds to inner margin at two-thirds, strongly outcurved so as nearly to touch hindmargin between veins 2 and 4 ; apical grey area with paler patches in middle ; a row of blackish marginal dots between the veins, and minute ones at their ends ; fringe pale.

*Hindwings* : with the outer brown line parallel to hindmargin at three-fifths, leaving outer two-fifths grey, with paler patches along the centre ; base of wing grey ; cell-spot white, placed in the grey median shade.

Underside straw-yellow, with all the markings pale grey, rosy-tinged. Face yellow ; palpi externally deep red ; vertex, shaft of antennae, and thorax reddish grey ; abdomen yellowish.

Expanse of wings : 26 mm.

One ♂ from the Khasia Hills, December 1896.

##### 38. *Craspedia densicornis* sp. nov.

*Forewings* : pale ochreous, with a faint flesh-coloured tinge, the costa faintly darker at base ; the five lines waved, very obscure, being only slightly deeper tinted than the ground-colour, all parallel to hindmargin ; a marginal row of minute black dots ; fringe concolorous ; cell-spot large, round, blackish.

*Hindwings* : the same.

Underside greyer, especially the forewings. Palpi and face brown ; vertex white ; thorax and abdomen concolorous with wings.

Expanse of wings : 24 mm.

Four ♂♂ from Sumba, February 1896 (W. Doherty).

The species is easily distinguished by the antennae : these are very long, quite three-fourths of the length of the wing, with long fine fascicles of cilia.

39. *Craspedia dohertyi* sp. nov.

*Forewings*: whitish, with very fine and sparse dark irroration: the lines ochreous, diffuse; first at one-fourth, curved; second in middle, subdentate, passing outside the distinct black cell-spot, and strongly incurved below the cell; outer line at two-thirds, wavy and denticulate, with a stronger projection beyond cell; submarginal line forming three outward curves and approximated to hindmargin below middle: a fine marginal line, leaving the extreme margin white, with concise black dashes between the veins; fringe whitish ochreous.

*Hindwings*: with the first line absent; the submarginal and marginal lines both slightly waved.

Underside glossy, pale ochreous, with the lines faintly showing through; no cell-spots. Face, palpi, and collar dark brown; vertex, thorax, and abdomen white, the abdomen indistinctly ringed with ochreous.

Expanse of wings: 24 mm.

Two ♀♀ from S. Celebes, August and September 1891 (W. Doherty).

Allied to *C. fibulata* Guen.

40. *Mnesithetis inobtrusa* sp. nov.

*Forewings*: dull olive fawn-colour; the lines faintly purple, very obscure; the antemedian and postmedian barely visible; outer line plainer, denticulated; submarginal shade obscure; fringe concolorous, with a row of purplish dashes at base, separated by ochreous spots: cell-spot large, blackish.

*Hindwings*: like forewings, but the cell-spot dull whitish, of raised scales.

Underside dull greyish ochreous, rufous-tinged; the cell-spots and outer lines of both wings dark grey. Palpi and face deep brown; vertex and antennae whitish; collar ferruginous; thorax and patagia pale lilac-grey; abdomen like wings.

Expanse of wings: 24 mm.

One ♂ from S. Celebes, August and September 1891 (W. Doherty).

41. *Mnesithetis ochrea* sp. nov.

*Forewings*: ochreous, darkened with olive-tinged scales; the lines obscure, dull olive, vertical; first at one-third, straight; second at two-thirds and third at five-sixths, both crenulate: space between first and second slightly darker; cell-spot obscure; fringe concolorous.

*Hindwings*: with only a curved outer line distinct, with traces beyond it of a submarginal line: cell-spot linear, of pale ochreous raised scales.

Underside whitish, flushed in the forewings with pink; costa of both wings yellowish. Face and palpi brown; thorax and abdomen like wings.

Expanse of wings: 25 mm.

One ♂ from Woodlark Island, 1895 (Meek).

42. *Organopoda subbrunnea* sp. nov.

*Forewings*: dull brownish ochreous, with a rufous tinge, without any dark dusting; the cell-spot rather large, brownish; indistinct darker antemedian, postmedian, and outer lines; the costa yellowish, becoming fulvous at base; fringe concolorous, with a row of reddish dashes at base between the veins, interrupted by yellowish spots at their ends.



*Hindwings*: the same, with the cell-spot elongated, double, the edge dark brown, with white scales inside, especially in the upper half.

Underside of forewings rather deep rosy; of hindwings paler, more ochreous; the lines faintly marked. Face and palpi deep red-brown; vertex whitish; thorax and abdomen like wings, the abdomen deeper coloured, tinged with red.

Expanse of wings: 28 mm.

One ♂ from S. Celebes, August and September 1891 (W. Doherty).

Akin to *O. olivescens* Warr. from Queensland.

#### 43. *Perixera confiniscripta rubripuncta* subsp. nov.

Differs from *confiniscripta* Warr. from the Tenimber Islands in having both discal spots large and brick-red in colour.

One ♂ from S. Celebes, August and September 1891 (W. Doherty).

In Nov. Zool. IV. p. 48, I described a pair of insects from Tenimber as *Brachycola* (?) *minorata*. This name must sink, as the species is identical with *Perixera confiniscripta*, Nov. Zool. III. p. 374.

#### 44. *Perixera* (?) *pleniluna* sp. nov.

*Forewings*: wholly dull red, without dusting or series of spots, except those along hindmargin; the lines obscurely traceable as slightly darker denticulated curved shades; cell-spot red, linear, near base, the cell being only one-third of the length of wing.

*Hindwings*: the same, but the cell-spot large, roundish, silvery white, with a fine black somewhat irregular edge.

Underside of both wings deep rosy; the cell-spot of hindwings pale. Head, thorax, and palpi all red; abdomen wanting.

Expanse of wings: 35 mm.

One ♀ from Penang, 1896 (Curtis).

Hindmargin of both wings not crenulate; hindwings with very faint elbow at vein 4 and prominent anal angle.

#### 45. *Perixera subsimilis* sp. nov.

Closely allied to *P. roseofusa* Warr. from Borneo, but smaller—30 mm. instead of 36 mm.—less rosy, and with the cell-spot of hindwings wholly red, not as in that species triangular, with a white centre. The area between the inner and median line is slightly deeper tinged than the rest of wing.

Expanse of wings: 30 mm.

One ♂ from S. Celebes, August and September 1891 (W. Doherty).

#### 46. *Rhodostrophia farinosa* sp. nov.

*Forewings*: ochreous grey, thickly dusted with darker: the costa at base finely black; the lines dark grey, indistinct: first at one-fourth, curved: outer line at two-thirds, obscurely waved, slightly outcurved above and incurved below the middle, darkest on costa and inner margin: submarginal line of dark grey lunules, those below costa, opposite cell, and on submedian fold being nearer base of wing than the rest; a row of fine blackish marginal dashes; fringe coneolorous: cell-spot large, dark.

*Hindwings*: the same, but without first line.

Underside of forewings dull grey, of hindwings whitish: the outer line and

cell-spots marked. Face and palpi dark brown; vertex and base of antennae snow-white; thorax and abdomen concolorous with wings.

Expanse of wings: 35 mm.

One ♂ from Kukn-Nor, Thibet; one ♀ from Ta-t sien-lu.

### **Triorisma** gen. nov.

Like *Rhodostrophia*, but with the ♂ antennae subserrate and ciliated; in the forewings the last four subcostals are stalked, and the second anastomoses with the first and then with the stalk of the others, so forming a double areole, as in *Rhodostrophia*. The second median in both wings rises before the end of cell.

Type: *Triorisma gemiflexus* Hmps.

The definition of this genus was accidentally omitted in Nov. Zool. IV. p. 226.

## SUBFAMILY TRICHOPTERYGINAE.

### 47. **Remodes cirrhigera** sp. nov.

♀. *Forewings*: yellow-green, the lines rather deeper green: basal line marked with purplish black on costa, subcostal, median, and submedian veins; central fascia with its inner edge formed of one, its outer of three thick lines, all marked with blackish above the subcostal, the outer three from vein 6 to the submedian, the inner one only between median and submedian; central area green, with the cell-spot darker green; two submarginal lines, marked with purplish black wedge-shaped spots, except between veins 6 and 7; a narrow purplish grey marginal fascia, marked with darker spots on the veins; fringe with basal half iron-grey, outer half pale grey, the darker basal half interrupted by pale spots beyond the ends of veins. In the two ♀♀ the blackish markings of the central fascia coalesce laterally so as to form a dark blotch.

*Hindwings*: dark grey.

Underside dark cinereous. Head, palpi, thorax, and base of abdomen yellow-green; apical segments of abdomen tinged with grey; antennae externally with each segment edged in front and at sides with black, leaving the centre yellowish.

In the ♂ the hindlegs are greatly reduced, the tibia and tarsus together scarcely equalling the length of the femur; the end of the femur has two tufts of grey hairs, the outer short, the inner concealing the tibia, which is much swollen; the basal segment of abdomen bears a pair of small lateral tufts of hair, as do the subapical segments; the anal segment itself gives off from its base a pair of long curved tufts which are curled round its extremity.

Expanse of wings: ♂, 32 mm.; ♀, 28 mm.

One ♂, two ♀♀, from Woodlark Island, 1895 (A. S. Meek).

The iron-grey fringe and marginal band distinguish the species from all others.

## SUBFAMILY TEPHROCLYSTINAE.

### **Simotricha** gen. nov.

A development of *Chloroclystis*. In the ♂ the area about anal angle of forewings above is clothed with rough hairs, all the markings there being interrupted. The upperside of hindwings is similarly without markings, but clothed with short appressed scales.

Type: *Simotricha lucinda* Butler (*Eupithecia*).

48. *Simotricha conversa* sp. nov.

Like *S. lucinda* Butler, but the hindwings of the ♂ above have the space from near costa to submedian fold for two-thirds of the length of the wing clothed with smooth appressed blackish scales; the underside of the forewings bearing a corresponding bed of deep brown scales, extending from middle of cell to submedian vein, limited outwardly by the outer edge of the central fascia.

Expanse of wings: 16 mm.

One ♂ from the Khasias, July 1896.

## SUBFAMILY DEILINIINAE.

49. *Eugnesia intensa* sp. nov.

*Forewings*: yellow, blotched and striated with orange-red, but so overspread with smoky brown and tawny that only a subcostal patch from base to end of cell, the subcostal edge of second line, and the extreme hindmargin are left lighter; costa dark metallic grey-brown, with fine yellowish and dark striae: the three ordinary lines are visible, more clearly towards costa, by the denticulations being filled up with deeper black-brown; cell-spot small, black: fringe mottled yellow and brown-black, with a distinct black basal line.

*Hindwings*: wholly brown-black, except the edge of the second line, which below costa forms a single yellow lunular blotch; some obscure fulvous patches along the extreme hindmargin; fringe as in forewings.

Underside washed with dull fulvous: both wings with a broad smoky fuscous marginal fascia, preceded by a slightly paler yellowish shade. Face and vertex yellow; palpi tawny; collar and shoulders metallic grey-brown; thorax yellow; abdomen black-brown, with anal segment and small dorsal spots ochreous.

Expanse of wings: 42 mm.

One ♂ from S. Celebes, August and September 1891 (W. Doherty).

50. *Syntaracta limitata* sp. nov.

*Forewings*: straw-colour, speckled with ferruginous: costal area above subcostal vein dark grey-brown, with fuscous striae, the extreme edge paler; first line at one-third, oblique and interrupted, dull ferruginous; outer line at three-fourths, fuscous brown, oblique and slightly angled on the median, its outer edge subdentate on the veins; submarginal line rusty brown, interrupted, with a brown blotch beyond it at vein 6; the area between veins 3 and 4 brown throughout: marginal line thick, dark brown; fringe straw-colour, chequered with brown at the ends of the veins; cell-spot black-brown.

*Hindwings*: similar, with a brown-black mark close to base.

Underside duller; the markings thicker and greyer. Face and palpi ferruginous; thorax and abdomen like wings.

Expanse of wings: 34 mm.

One ♂ from Omei Shan, W. China, 1892.

## SUBFAMILY ABRAXINAE.

51. *Abraxas semiturpis* sp. nov.

*Forewings*: white, but the ground-colour is almost entirely obscured by a suffusion of brown-grey, caused by the usual spots and blotches becoming blurred

and running into each other ; an oblique white patch from the apex and an irregular blotch beyond the cell-spot, which is deep brown-black ; a broad curved or sinuous fascia can be detected beyond it, along the centre of which a dull yellow interrupted line is visible ; basal patch marked with blackish and yellow scales : fringe brownish grey.

*Hindwings* : white, with a small black cell-spot ; a curved postmedian row of brown-grey spots, increasing in size towards the inner margin, and separated by a yellow spot from another brown-grey blotch at anal angle ; a row of shallow brown lunules along margin between veins ; fringe mottled brown and white.

Underside the same, but duller, greyer. Face and palpi black ; thorax and abdomen yellow, spotted with black.

Expanse of wings : 46 mm.

One ♂ from Omei Shan, W. China, 1892.

#### SUBFAMILY BRACCHINAE.

##### 52. *Stenocharta picaria* sp. nov.

*Forewings* : deep black ; beyond the cell an oblique white blotch, the lower half between veins 2 and 4 broader than the upper ; fringe black.

*Hindwings* : white ; the base, costa, and inner margin narrowly, the hindmargin broadly black.

Underside the same. Head, thorax, and abdomen black ; face, collar, and forelegs white.

Expanse of wings : 36—39 mm.

Two ♂♂ from Kapaur, New Guinea, December 1896 (W. Doherty).

##### 53. *Hylemera nummulifera* sp. nov.

*Forewings* : hyaline white in the middle, the basal area and outer half black ; edge of basal area vertical ; edge of marginal area curved outwards from before middle of costa, and inwards from submedian fold to inner margin at two-thirds ; top of the white area above the subcostal vein orange, above which the costal margin itself is narrowly black ; in the outer black area are two round spots, the upper larger and yellowish, the lower smaller and orange ; fringe black ; base of wing yellow along submedian vein.

*Hindwings* : white, with broad black hindmargin, containing a single round orange spot close to margin between veins 3 and 4.

Underside the same. Head and thorax blackish ; abdomen grey ; collar crimson.

Expanse of wings : 40 mm.

One ♂ from Bopoto, Upper Congo, 1896.

##### 54. *Hylemera renifera* sp. nov.

*Forewings* : white, semitransparent ; costal margin to subcostal vein black ; a square deep black spot before the discocellular, touching the costal streak, and prolonged as a smoky shade between veins 2 and 3 to join the dark hindmargin, which is broad at apex and anal angle, narrow between ; the white space between central fascia and margin broadly kidney-shaped.

*Hindwings* : white, with hindmargin broadly black at apex and anal angle, narrow between, where there is a deep semicircular excision: fringes black.

Underside the same. Head, thorax, and abdomen blackish.

Expanse of wings: 32 mm.

One ♂ from Sierra Leone, 1896.

#### SUBFAMILY ASCOTINAE.

##### 55. *Darisa differens* sp. nov.

*Forewings* : greyish white, thickly sprinkled with ochreous and fuscous striae; a double curved fuscous basal line; black cell-spot, with dark costal spot above it, indicating the median line; outer line denticulate, nearly parallel to hindmargin, slightly projecting at vein 6, followed by an ochreous fuscous shade, which contains a dark blotch between veins 3 and 4; submarginal line pale, obscure, preceded by dark lunules at costa, beyond cell, and above inner margin; a row of distinct black marginal spots; fringe greyish fuscous.

*Hindwings* : with straight antemedian line; the rest as in forewings.

Underside dirty whitish, freckled with grey; the cell-spots, and two outer lines indistinctly, fuscous; a dark fuscous apical blotch on forewings. Palpi fuscous; face, thorax, and abdomen greyish white, with dark speckles.

Expanse of wings : 58 mm.

One ♂ from Omei Shan, W. China, 1892.

##### 56. *Lassaba subdecorata* sp. nov.

*Forewings* : whitish, covered with close fuscous striae, which are densest along costa and hindmargin; basal area suffused with fuscous, edged by the first line at one-fourth, which is curved and sinuous; outer line sharply denticulated, from costa at three-fourths to inner margin beyond middle, incurved from vein 5 to submedian fold, then excurved; submarginal line pale, obscure, preceded by a dark fuscous dentate shade, interrupted below middle; a marginal row of dark spots between the veins; fringe fuscous; cell-spot black.

*Hindwings* : similar, but the cell-spot large and prominent; no basal patch or first line; second line central, sinuous and dentate, followed by an ochreous shade, which also appears on forewings on inner margin.

Underside white; forewings with costa yellowish, with broad fuscous strigae; the large cell-spot, punctiform outer line, and interrupted marginal fascia fuscous; this fascia forms an apical blotch, containing the apex itself whitish, and a blotch on veins 2 and 3. Hindwings with cell-spot, a costal spot above it, the outer and submarginal lines, both interrupted in middle, fuscous. Palpi and lower half of face brown: upper half with vertex, thorax, and abdomen whitish, speckled with fuscous: abdomen beneath and legs pale fuscous.

Expanse of wings : 58 mm.

One ♂ from Omei Shan, West China, 1892.

Allied to *L. obliterated* Moore from India.

#### SUBFAMILY SELIDOSEMINAE.

##### 57. *Petelia furva* sp. nov.

*Forewings* : fuscous brown; the costa paler, with fuscous striae; four obscure brown transverse shades, basal, antemedian, postmedian, and submarginal; the three



first narrow, the last broader, its outer edge irregularly dentate, marked by dark spots on veins followed by white scales; three subapical white marks beyond; cell-spot blackish, indistinct; fringe concolorous, with a white patch at apex; basal line dark, with whitish dots at the vein-ends.

*Hindwings*: with antemedian and postmedian brown bands; the cell-spot linear, white; fringe wholly brown.

Underside dull bluish grey, with fuscous striations, and a dark grey-brown submarginal fascia; costa of forewings ochreous-tinged; a white spot at apex of fringe. Face and palpi dark brown; thorax and abdomen like wings; vertex white.

Expanse of wings: 34 mm.

One ♂ from Tawaya, north of Palos Bay, Celebes, August and September 1896 (Doherty).

Related to *revillaria* Guen. from Borneo.

#### SUBFAMILY SEMIOTHISINAE.

##### 58. *Semiothisa emersaria*.

*Macaria emersaria* Wlk., XXI. p. 925, ♀ (Silhet; Moulemein).

*Macaria translineata* Wlk., XXXV. p. 1658, ♂ (Celebes).

The species described by Walker from Celebes does not seem to be *specifically* separable from *emersaria*, the Indian species, though the different island forms may afford slight points of dissimilarity from each other. In a ♀ from Sumba, which answers almost exactly to his description of *translineata* from Celebes, the black discal blotch of forewings is strongly developed, and the costal triangle and centre of postmedian band of hindwings are both chestnut, while the postmedian fascia beneath is chestnut also. In a ♀ from Nias the lower half of the black discal mark is obsolete, the postmedian fascia and the basal half of wings olive-grey, the fascia being broader and below dull brown. Again, in a ♂ from near Manila the fascia is much restricted and ochreous grey, while the basal two-thirds as far as the outer line is pale grey with scarcely any darker speckles or suffusion, the fascia below being narrow and dull brown; the discal black blotch is double, as in the Sumba specimen, but, like the fascia, much narrower. In structure and outline of wing all the forms are absolutely identical.

##### 59. *Semiothisa parallacta* Warr., Nov. Zool. IV. p. 112, ♂.

The ♀ of this species differs from the ♂ in having none of the black markings, except the blackish dots along the costa; the lines are therefore much more obscure and almost lost in the dense dusting; the pale apical streak in the forewings is likewise unrepresented; the space between the outer and submarginal lines is slightly darkened so as to form a fascia.

The ♀ comes from Wassini, British East Africa, and is dated May 1889.

##### 60. *Tephрина antennata* sp. nov.

♂. *Forewings*: smoky ochreous, with numerous black transverse striae; the costa obliquely striated with yellow and fuscous, rough-scaled; the base rather darker; first line curved, at one-fourth, fuscous; second line at two-thirds, brown, evenly curved; cell-spot blackish; marginal area darker through the striae being denser; a

row of marginal black spots; fringe very broad, ochreous fuscous, with a fine whitish middle line and the apices white.

*Hindwings*: similar, their apex darker.

Underside bright fulvons, with fuscous striations; cell-spot, outer line, and a median shade fuscous. Head, thorax, and abdomen like wings. Antennae with the shaft alternately black and snow-white; the pectinations black, dusted with white.

♀. *Forewings*: ochreous, covered with dense sandy brown atoms and striae; costa striated with darker, and with three dark spots at one-third, one-half, and two-thirds, from which the three transverse lines rise; these are brown, curved and waved; a dark cell-spot and row of black marginal dots; fringe concolorous.

*Hindwings*: similar.

Underside pale. Head, thorax, and abdomen concolorous.

Expanse of wings: ♂, 22 mm.; ♀, 20 mm.

Two ♀ from Dar-es-Salaam, German E. Africa: 1 ♂ from Rustenburg, Transvaal, September and October 1894 (Ayres).

#### SUBFAMILY ENNOMINAE.

##### **Gonophaga** gen. nov.

♀. *Forewings*: with costa nearly straight; apex produced, acute; hindmargin strongly angled at vein 4, concave and suberemulate above, oblique below; anal angle obtuse; inner margin straight.

*Hindwings*: truncate at apex; hindmargin with prominent teeth at veins 4 and 7, deeply excised between, with a smaller tooth at vein 6; anal angle square.

Antennae in ♀ simple; palpi porrect, stout; tongue and frenulum present; legs long.

*Neuration*: as in *Anisographa* Warr., but in the forewings 10 and 11 are coincident throughout.

Type: *Gonophaga subpulchra* sp. nov.

##### 61. **Gonophaga subpulchra** sp. nov.

*Forewings*: fawn-colour, reddish-tinged towards hindmargin and speckled throughout with black scales: first line hardly marked except by a few black scales; second double, from middle of inner margin towards apex, retracted above vein 6 to costa and there obscure; the inner arm red-brown, slightly bent on submedian fold; the outer finer, marked by black dots on veins; faint traces of a submarginal line, with dark dots between the veins; cell-spot brown, with a pale centre: fringe red-brown.

*Hindwings*: with a thick red-brown antemedian line, followed by the cell-spot; a postmedian row of black dots on veins; a submarginal straight rufous line, externally edged with paler.

Underside: basal area ochreous, tinged with brownish and densely speckled with black; a black streak from cell-spot to inner margin; marginal half red-brown; the submarginal line marked by whitish spots; apex of forewings with a large white blotch: a row of black marginal spots at base of fringe. Head, thorax, and abdomen above concolorous with wings; abdomen beneath and legs pale ochreous, speckled with dark.

Expanse of wings: 48 mm.

One ♀ from Mackay, Queensland.

62. *Miantochora inaequilinea* Warr., Nov. Zool. II. p. 145.

This species comes from S. Africa, not from S. America.

63. *Omiza sublimbaria* sp. nov.

*Forewings* : dull purple ; a pale green band from apex of forewings, widening to inner margin, containing on its outer edge a thick olive-green oblique line ; inner line brown, from costa beyond one-third, at first broad and oblique outwards, then curved inwards to below the median, and again outwards, becoming olive-green where it enters the green fascia and reaching inner margin close to outer line ; cell-spot oval, purplish grey, tinged with brown ; fringe dull purple.

*Hindwings* : with base and hindmargin purple, the green fascia wider, the costal area dull pink.

Underside of forewings fiery red ; the costa dull orange ; hindmargin dark grey, narrowing to a point at apex ; inner margin pale grey ; hindwings dull orange. Palpi orange ; face dark brown ; vertex, antennae, thorax, and abdomen above purple-grey ; underside of abdomen and legs bright reddish orange.

Expanse of wings : 32 mm.

One ♀ from Lawas, N. Borneo (A. Everett).

*Triprrora* gen. nov.

*Forewings* : with costa shouldered at base, strongly convex at apex, and faintly incurved between ; apex depressed, blunt ; hindmargin obliquely curved, faintly indented below apex ; inner margin convex at base, concave beyond, and slightly lobed and fringed at anal angle.

*Hindwings* : with costa strongly shouldered at base, excised in middle ; hindmargin truncate from apex to vein 7, which is shortly dentate, and slightly bent at vein 4.

Antennae of ♂ bipectinate for three-fourths ; palpi porrect, the basal joint as well as each of the others shortly rostriform ; tongue and frenulum present : no fovea ; hindtibiae with four spurs.

*Neuration* : forewings, cell scarcely half as long as wing ; discocellular oblique ; first median at seven-eighths, second and third from lower end of cell ; lower radial from well above middle of discocellular, upper from top angle ; 7, 8, 9 stalked ; 10 and 11 stalked, 10 anastomosing and becoming coincident with 9. Hindwings with costal approximated to subcostal for half cell ; both subcostals and last two medians from end of cell.

Type : *Triprrora trizonata* Saalm. (*Hexeris*).

64. *Triprrora trizonata*.

*Hexeris trizonata* Saalm., *Madag.* p. 498, Pl. 14, fig. 278.

*Hyposidra linearis* Warr., Nov. Zool. IV. p. 257.

I find that the species described by me as *H. linearis* from Natal is, if not identical with, as I believe it to be, certainly closely allied to, *Hexeris trizonata* Saalm. from Madagascar. Saalmüller died before describing his genus, but the name could not have stood, having been already used by Grote in 1875 for *euhydria*, a species of *Thyrididae*. I have therefore renamed and described the genus as *Triprrora*.

65. *Xenographia manifesta* sp. nov.

*Forewings*: yellowish ochreous, sparsely black-speckled; first line at one-third, distinct, formed of three black lunules, one from subcostal to median, the second from median to submedian, and the third, abbreviated, to inner margin, the last two oblique inwards, followed by a fulvous shade; cell-spot round, black; outer line finer, brown-black, edged internally with fulvous, externally by a whitish line, running nearly parallel to hindmargin from costa before apex to inner margin at two-thirds; submarginal line marked by dark blotches, a black-brown one on vein 6, a smaller one below vein 4, and an indistinct one at anal angle being visible; a black-brown subapical dash along hindmargin to vein 6; fringe straw-colour, black towards apex.

*Hindwings*: with the line postmedian; cell-spot black.

Underside the same, with colour and markings all dull. Head, thorax, and abdomen concolorous with wings; palpi darker; collar and shoulders, like base of costa, brown.

Expanse of wings: 34 mm.

One ♂ from the Khasias, October 1896.

66. *Zomia innotata* sp. nov.

*Forewings*: olive-green; the costa spotted with dark, and in the ♂ with blackish strigae from base to middle: first line or band deeper olive, outwardly diffuse, its inner edge in the ♀ before one-third of costa, in the ♂ at two-fifths and therefore more oblique; outer shade dark olive, diffuse inwardly, its outer edge angled at veins 6 and 3, from five-sixths of costa to five-sixths of inner margin, edged below with dark purplish black; marginal area shot with purplish grey, with some scattered black strigulae, and traces of a submarginal black line which forms a strong curve from vein 5 to 2, touching hindmargin; fringe purplish grey; cell-spot green.

*Hindwings*: orange, with the inner margin a mixture of ochreous, green, and purple scales, with the origin of a dark outer line above anal angle.

Underside of both wings dull orange, the fringes the same; marginal area of forewings tinged with dull red, extending into the fringe. Palpi, antennae, and abdomen above purplish black; head and thorax fawn-colour, intermixed with rufous and olive; the face deeper fawn; first segment of abdomen ochreous yellow.

Expanse of wings: ♂, 28 mm.; ♀, 32 mm.

A pair from Penang, 1896 (Curtis).

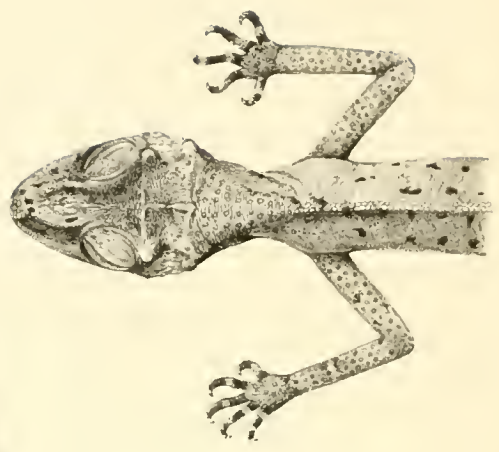
Nearest to *serpentinaria* Wlk., but smaller.

ERRATUM.—The description of *Psilocerea apiciata* as new at p. 259 was inserted by mistake, the species having been already described at p. 98, where, however, the genus *Psilocerea* was placed in the wrong subfamily, as it belongs to the *Ennominae*, not to the *Ascotinae*.

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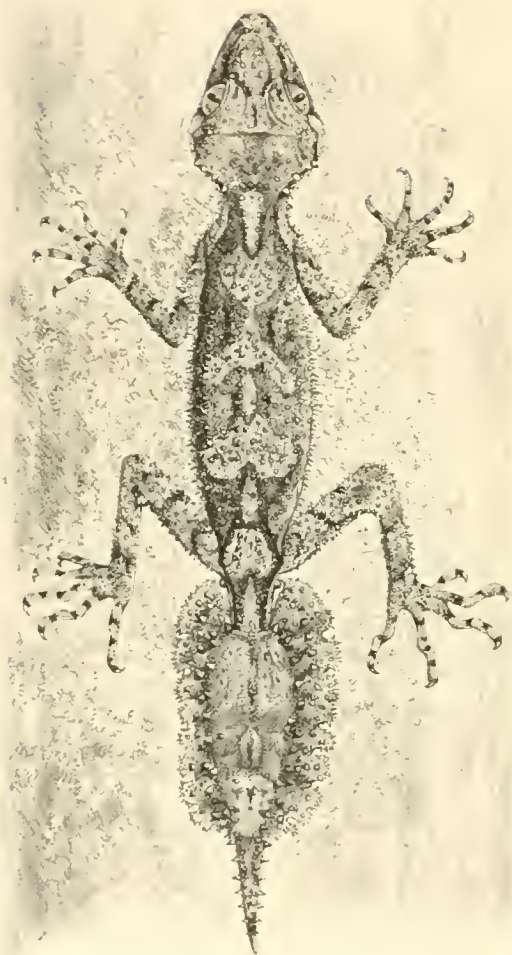






CARPHOLACTYLUS LAEVIS





PHYLORHINA LICHENOSA

A Tail of *Ph. platyrus*, B Tail of *Ph. lichenosa* (reared)

# DESCRIPTIONS OF NEW SPECIES OF LIZARDS AND OF A TREE-FROG FROM NORTH-EASTERN QUEENSLAND.

By DR. A. GUNTHER, F.R.S.

(Plates XI., XII.)

MR. W. S. DAY, who has collected in Australia and New Guinea for the Tring Museum for some years past, has sent to me a few reptiles which he obtained in the Bartle Frere Mountains. Although specimens from the same district seem to have previously reached the Sydney and Brisbane Museums, and have been ably described in Australian Journals, I found in the consignment sent by Mr. Day some interesting forms which I am unable to identify from the descriptions published.

## *Carphodactylus* gen. nov. Geckon.

Digits rather slender, without any dilated portion, not fringed, with a row of transverse lamellae below. Claws projecting, rooted between five small scutes, a pair on each side, and a median unpaired one above. The two or three distal joints are angularly bent. Body covered with flat, very minute granules : larger tubercles along the median line of the back, forming a sort of crest. Tail compressed, tapering.

### 1. *Carphodactylus laevis* sp. nov.

(Plate XI.)

Habit slender. Head broad, very distinct from neck, depressed, concave between the eyes and in the loreal region. Crown of the head bony and finely rugose, without tubercles. Eyes large, directed obliquely forwards, about midway between ear-opening and nostril : upper eye-lid thin, with sharp projecting margin. Nostril small, in the hinder edge of a rather large nasal : nasals separated by a patch of small flat scutes. Ear-opening vertical, oval, about one-fourth the size of the eye. Rostral large, undivided : upper labials seventeen, lower fourteen : median lower labial large, pentagonal, without post-mentals. Body nearly smooth, the granulations being very minute and flat. Neck with larger tubercles, forming a triangular patch, the apex of which passes into a median dorsal stripe of tubercles, which simulates a crest, and does not extend on the tail. A patch of small scutes in the pubic region. No preanal pores. Legs slender, granular, with minute tubercles.

Tail not quite as long as the body, strongly muscular and compressed in its proximal portion, the distal being very thin and tapering : there is no distinct boundary between the two portions. The whole tail is uniformly covered with small flat granulations.

Light chestnut-brown, with scattered black spots, about the size of the ear-opening, on the back and sides. Lower parts whitish, with small indistinct

round white spots on the lower part of the sides. Tail nearly black, with five broad whitish rings. Toes irregularly annulated with whitish.

Total length . . . . .	200 millimetres.
Distance of vent from snout . . . . .	103 „
Length of tail . . . . .	96 „
Distance of tympanum from snout . . . . .	25 „
Diameter of the eye . . . . .	7 „
Length of fore-limb . . . . .	51 „
„ third finger . . . . .	8 „
„ hind-limb . . . . .	60 „
„ third toe . . . . .	11 „

## 2. *Phyllurus lichenosus* sp. nov.

(Plate XII.)

Closely allied to *Phyllurus platurus*, with which it agrees in the general form of the head and body. The diameter of the eye is considerably less than its distance from the ear, and scarcely one-half of its distance from the end of the snout. Ear-opening a narrow vertical slit. Nostril behind the rostral and supranasal, and above the first labial. Rostral divided in the middle, very broad; median lower labial large, without post-mentals. Thirteen upper and ten lower labials, without counting some granules round the corner of the mouth. Upper parts covered with minute granules, with larger conical tubercles which form about ten longitudinal series; the series on the border between the side and abdomen contains the most slender and longest tubercles, all being soft and flexible. Lower parts with minute flat granules, those in the pubic and ante-pubic regions being enlarged. No spine above the eye.

Tail as long as the trunk, greatly depressed, leaf-like, ending in an abruptly attenuated and tapering portion; its margins are deeply scalloped. As to the upperside, the middle muscular part is finely granular, and the lateral membranaceous part provided with two series of strong conical tubercles; the edges of the lobes are beset with thin spines. The attenuated part of the tail is armed with four series of strong conical tubercles. Lower parts of the tail uniformly granular, like the abdomen.

Greyish, with symmetrical brown markings, confluent across the back, where they form four broad cross-bands, the first occupying the neck.

Total length . . . . .	130 millimetres.
Distance of snout from vent . . . . .	80 „
Diameter of eye . . . . .	6 „
Length of tail . . . . .	50 „
„ attenuated portion of tail . . . . .	19 „

The integuments of the tail of this species are still more highly specialised for protective purposes than in *Phyllurus platurus*, of which I have seen specimens with intact tail, apparently not reproduced. In fact the likeness to its surroundings of this gecko, when lying flat against a lichen-grown bark of a tree or a rock, must be perfect. In the collection of the Natural History Museum are three specimens from the *Challenger* collection obtained in Queensland, one adult and two young,



another specimen from Port Curtis, collected by Dr. Coppinger during the voyage of the *Alert*, and a fifth without locality recorded, which belong to the same species.

The question whether this species is identical with *Gymnodactylus cornutus* of Ogilby (*Records Austral. Mus.* II. p. 8) must be negatived at present, although this species is reported from the same district, the Bellenden-Ker. In the full description which Mr. Ogilby gives of it, the author mentions a strong spinate knob surmounted by a conical tubercle behind the eye: this is absent in our species. Beside other differential characters, I may refer to the form of the interorbital region of *G. cornutus*, which is described as a deep narrow fossa, owing to the much enlarged and elevated supraciliary region. Its tail is described as covered above by minute granular scales, intermixed, except on a *vertebral patch* of the leaf-like expansion, with *soft triangular* appendages. In our species the granulated part, which is devoid of tubercles, extends as a *broad band* along the whole length of the muscular portion of the expanded tail.

There remains the question whether the specimens referred to our species represent, after all, only a certain condition of growth of the tail of *Phyllurus platurus*. This species was originally described from New South Wales specimens, and may be readily distinguished by the absence of the series of slender tubercles which flanks the abdomen of *Ph. lichenosus*. In the majority of the southern specimens which I have seen, the tail is reproduced and of that appearance which has led to the description of the nominal form, *P. incermis*. However, in a few specimens the tail is apparently intact, showing quite a different arrangement of the tubercles, as shown in fig. A of Plate XII. The tubercles are scattered all over the surface, except in a *narrow* median line, and the margin of the leaf-like expansion is not lobulate. I have never seen a specimen of *P. platurus* like the one mentioned by Mr. Ogilby (*l.c.* p. 10), which had a non-tubercular vertebral *patch*. Also, the margin of the tail of *Ph. platurus* is remarkably thick and swollen.

One of the specimens in the Natural History Museum (the one without locality, as mentioned above, and registered 58.4.16.4) is especially interesting, as it has the tail reproduced. I have figured its tail on Plate XII. fig. B. It is quite different from a reproduced tail of *Ph. platurus*: it is elongate leaf-shaped, not terminating in a long cylindrical portion. Its margin is broad, very thin, and not scalloped; in this specimen no tubercles or spines whatever are developed.

### 3. *Egernia frerei* sp. nov.

No curved groove behind the nostril. Nasals slightly separated from each other; posterior frontals forming a suture together; vertical contracted in the middle, twice as long as broad, longer and rather larger than the median occipital; five supraoculars, of which the second is the largest; seven supraciliaries: a complete ring of infraoculars, shutting the labials out of the orbit. Three pairs of nuchals, of which the two posterior are very narrow. Ear-opening as large as the eye, with three lobules in front, of which the upper is the largest and obtusely rounded; the two others small.

Thirty-four longitudinal rows of scales round the body: the dorsal are the largest, obtusely bicarinate; the lateral are the same size as the ventral. As to the scales on the side of the neck, those behind the ear and in front of the shoulder are very small, and the intermediate visibly smaller than those on the side of the trunk. Six praeanales.

Tail depressed near its root, compressed farther behind. The compressed

portion is clothed above with a double series of larger scales, and below with a single median series.

The adpressed limbs overlap.

Brown, with faint blackish longitudinal bands along the dorsal series of scales ; sides blackish, with scattered bluish white spots, each confined to a single scale. Lower parts whitish, with undulated blackish transverse lines across the throat and chest.

Total length . . . . .	233 millimetres.
Distance between snout and tympanum . . .	19 "
" " " vent . . . . .	93 "
Length of tail . . . . .	140 "
" fore-limb . . . . .	26 "
" hind-limb . . . . .	35 "
" first hind-toe . . . . .	7 "
" second hind-toe (from base of first) . .	13 "

This species is certainly distinct from all which I know by autopsy, and cannot be referred to any of the other described species, differing by the number or structure of the scales, scutellation of the head, etc.

#### 4. *Hyla dayi* sp. nov.

Tongue subovate, slightly nicked behind. Vomerine teeth in two transverse series, behind the level of the choanae. Head much depressed ; snout rather longer than the diameter of the orbit ; canthus rostralis distinct, loreal region sloping outwards ; interorbital space broader than the upper eye-lid ; tympanum distinct, one-fourth the area of the eye. Fingers strongly webbed, the web extending to the penultimate phalanx of the third finger ; toes fully webbed. Discs of the fingers not quite as large as the tympanum ; a fold along the inner edge of the tarsus. The distance between vent and snout equals that between vent and heel. Skin smooth above, granular below ; a fold above the tympanum, none across the chest. Uniform brownish above (in spirit), whitish below.

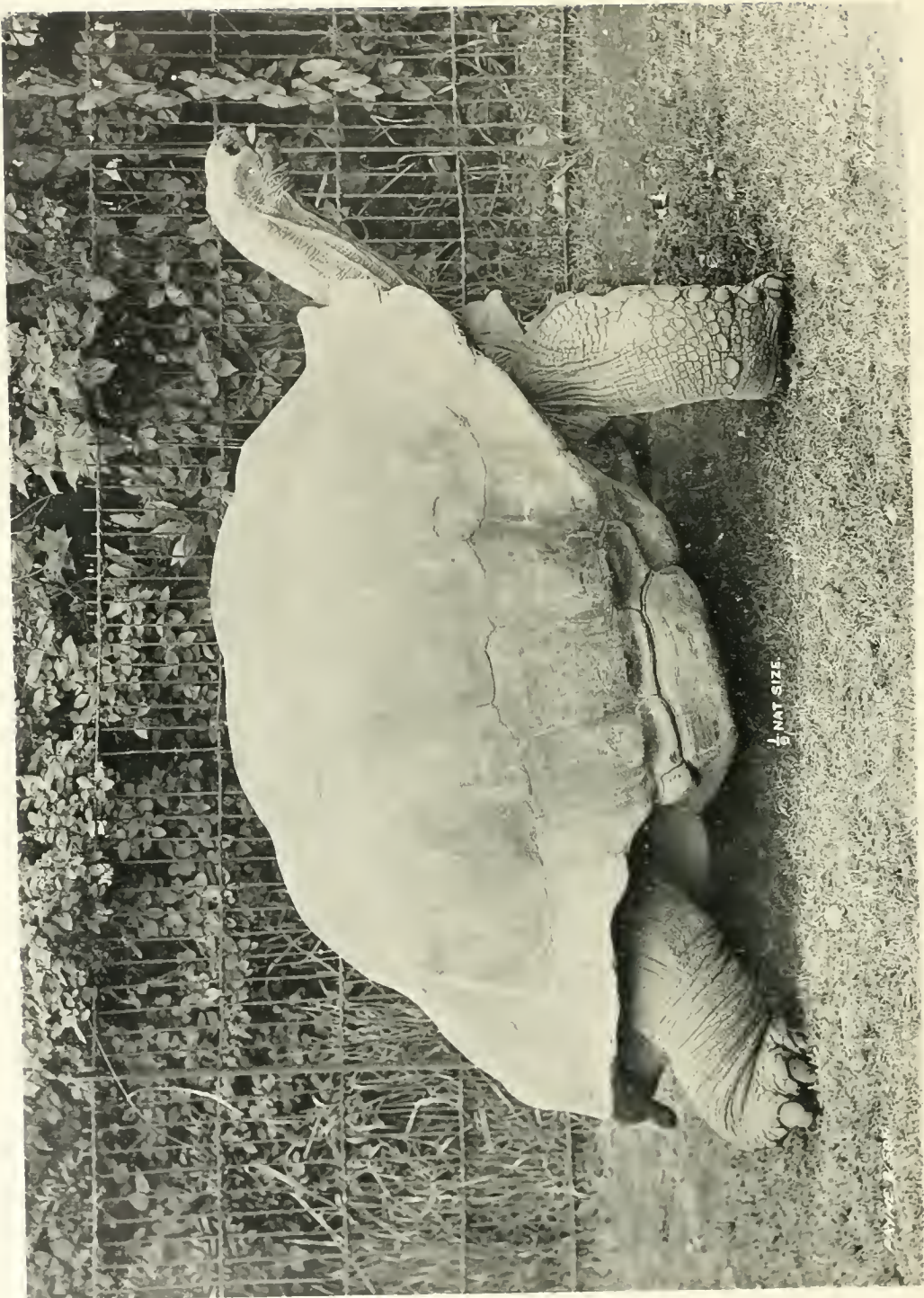
Distance of snout from vent . . . . .	52 millimetres.
Length of hind-limb . . . . .	92 "

#### EXPLANATION OF THE PLATES.

Plate XI. Upper and side views of *Carphodactylus laevis*. Side and lower views of third toe (enlarged).

Plate XII. *Phyllurus lichenosus*. Fig. A. Upper view of tail of *Ph. platurus*. Fig. B. Upper view of tail of *Ph. lichenosus* (reproduced).





TESTUDO DAUDINI Dum. & Bib



## FURTHER NOTES ON GIGANTIC LAND TORTOISES.

By THE HON. WALTER ROTHSCHILD.

(Plate XIII.)

SINCE my last record of the large tortoise living at Tring, which I have hitherto noticed under the head of *Testudo elephantina*, but whose oldest name is *Testudo gigantea* Schweigg., I have taken very careful measurements with the aid of two builder's "PLUMB-LINES," and I find I have formerly made several mistakes. I therefore give here correct weight and measurements, taken on August 7th, 1897.

Weight 3 cwt. 0 qtrs.  $22\frac{1}{4}$  lbs. = 358 $\frac{1}{4}$  lbs.

Length of carapace in straight line . . .	40 $\frac{1}{4}$ inches.
" " over curve . . .	52 $\frac{1}{4}$ "
Width of carapace straight . . .	26 $\frac{1}{4}$ "
" " over curve . . .	50 "
" tortoise over curve . . .	55 "
Plastron width . . .	30 "
" length . . .	34 "

I am pleased to say that, after a lot of trouble, I have succeeded in getting over from Mauritius the very large tortoise which was brought there from Egmont Island, one of the group of islands in the Chagos Archipelago called "*The Six Islands*," by its former owner Mons. Léopold Antelme.

This tortoise had been known to exist on Egmont Island some hundred and fifty years, and was of very large size if not fullgrown when first found there.

Its carapace is identical in characters with the carapace in the Paris Museum in the Jardin des Plantes, which was described by Messrs. Dumeril & Bibron under the name of *Testudo daudini*. Dr. Günther divided the tortoises of the type inhabiting the Aldabra group of islands into four species—*Testudo elephantina*, *T. ponderosa*, *T. hololissa*, and *T. daudini*. Now further investigations show that *T. ponderosa* is merely a casual aberration of *T. elephantina*, and *T. hololissa* is identical with *T. gigantea* Schweigg., except for the divided caudal plate, which I have proved is also a casual appearance only in the Aldabra tortoises. I therefore think the true classification of the Aldabra tortoises is as follows:—

Species 1.—*Testudo gigantea* Schweigg.

*Testudo gigantea elephantina*.

*Testudo gigantea* ab. *ponderosa* Günth.

Species 2.—*Testudo daudini*.

The distribution of these two species is much confused, but I think it is an ascertained fact that *Testudo daudini* Dum. & Bib. is, and was, confined to the southern and largest island, and therefore is the only Aldabra tortoise still existing in a wild state.

*Testudo gigantea* and *T. gigantea elephantina* were confined to the northern and central islands, where they have been completely exterminated, and only exist



alive on the Seychelle Islands, where a considerable number are kept by the planters in a state of semi-domestication.

The specimen of *Testudo daudini* now in the Zoological Gardens, and which has just come over from Mauritius, is undoubtedly the largest living land tortoise, and its dimensions are as follows :—

Length of carapace in straight line . . .	55 inches.
“ “ over curve . . .	67½ „
Width of carapace straight . . .	32 „
“ tortoise over curve . . .	68 „

The journey affected the health of this animal so much that its present weight of 560 lbs. is no criterion of its proper weight, although in 1895 it weighed only 240 kilogrammes.

Mr. Antelme, the former owner of this large tortoise, informs me that during six months of the year it buried itself in the ground and did not eat anything. This fact is most interesting, because it cannot be owing to the winter's cold.

A description of this tortoise, a *male*, has already been given by Th. Sanzier, in the *Comptes Rendus Hebdomadaires des Séances de l'Académie des Sciences*, 1895, part 2, p. 430.

The plate is the reproduction of a photograph taken in London.

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## NEW GENERA AND SPECIES OF *THYRIDIDAE*, *EPI- PLEMIDAE*, AND *GEOMETRIDAE*,

FROM SOUTH AND CENTRAL AMERICA AND THE WEST  
INDIES, IN THE TRING MUSEUM.

By W. WARREN, M.A., F.E.S.

FAMILY *THYRIDIDAE*.

### 1. *Iza quinquelineata* sp. nov.

*Forewings*: whitish ochreous, finely reticulated with brownish and crossed by brown bands.

*Hindwings*: with five chestnut lines parallel to hindmargin, the first three double and filled in with brown; first close to base, short, not touching either margin; second just beyond, curved and bent; third broad, in the middle, straight from inner margin to cell, then sharply bent to upper margin of cell and there ending, the bent end dark brown; postmedian and submarginal lines thick, and becoming cleft towards costa; the interspaces traversed by fine rippled lines.

Underside like upper. Thorax, vertex, palpi, and upper half of face brown; lower half of face white; abdomen whitish ochreous, tinged with pale brownish.

Expanse of wings: 36 mm.

One ♂ from Bogota, Colombia.

The forewings are so much rubbed that an exact description of the markings is impossible. The unusual appearance of the hindwings will easily distinguish the species.

### 2. *Iza subtransversalis* sp. nov.

*Forewings*: pale testaceous, with faint darker incomplete reticulation; fringe concolorous.

*Hindwings* : tinged with reddish ; from about one-third of inner margin a diffuse broad reddish streak runs, slightly upcurved, towards the apex, before which it becomes obsolete.

Underside deeper tinted ; the inner half of forewings and the hindwings tinged with rosy. Head, thorax, and abdomen concolorous with upperside of wings.

Expanse of wings : 24 mm.

One ♂ from the interior of Surinam, August 1892 (C. W. Ellacombe).

Probably akin to *Sivalodes anastomosalis* Pagenst., *Iris*, V. p. 76.

The costa of forewings is sinuous; apex produced and subfalcate; hindmargin obliquely curved; antennae long and slender; palpi obliquely porrect in front of face. The rosy streak of hindwings is reproduced on basal segment of abdomen, of which the anal segment with tuft is also rosy brown. The discocellular of forewings is oblique inwards, its upper part somewhat bowed outwards, as in the genus *Oxycephala* Warr. All the veins free.

### 3. *Iza triangulifera* sp. nov.

*Forewings* : with ground-colour greyish ochreous, with darker ochreous strigae; the markings dull red-brown; these brown markings are four in number; the basal patch, which is narrow, with the outer edge oblique; a curved sinuous-edged narrow fascia at one-third, its costal end chestnut-brown to the subcostal; an oblong broad fascia beyond middle, touching the costa with its upper angle at two-thirds, and there bright chestnut; the inner edge nearly straight, oblique to middle of inner margin; the outer edge oblique outwards to vein 6, then more or less parallel to the inner edge and irregularly crenulate; and lastly a narrow fascia from costa before apex, chestnut as far as vein 6, oblique outwards at first, its outer edge joining hindmargin at vein 6, its inner edge there bent and running oblique and crenulate to inner margin before anal angle; all these dark markings are faintly edged with pale, and, like the ground-colour, obscurely striated; the central pale space is obliquely funnel-shaped, and edged between the median vein and submedian fold by irregular pale hyaline spots; on the costa in the centre of the pale fascia is a small chestnut-brown triangle; the inner margin of the oblong dark fascia is deeper brown, forming a narrow fascia containing the black-brown cell-spot; fringe pale ferruginous, with the tips dark.

*Hindwings* : with antemedian, postmedian, and marginal red-brown fasciae, with irregularly crenulate edges, the central space palest.

Underside similar. Head, thorax, and abdomen pale ochreous, varied with red-brown; the abdomen with a lateral black-brown stripe towards apex; a dark brown tuft of hairs from base of hindtibiae.

Expanse of wings : 36 mm.

One ♂ from Petropolis, Prov. Rio de Janeiro.

The wings have the apex prominent and the hindmargins sinuous; the forewing faintly emarginate above anal angle, the hindwing below vein 7.

### *Rhodogonia* gen. nov.

*Forewings* : with costa straight, curved only just before apex; apex produced, subacute; hindmargin prominently elbowed at vein 4 and with a small tooth at vein 7, incurved between, and oblique below to anal angle; inner margin convex.

*Hindwings* : with apex rounded, and a prominent angle at vein 4. Antennae of

♀ simple: tongue present: palpi upcurved, rather long; the second joint squamous, the third short.

*Nervation*: as in *Siculodes*.

Type: *Rhodogonia miniata* sp. nov.

#### 4. *Rhodogonia miniata* sp. nov.

*Forewings*: yellowish ochreous, almost entirely suffused and reticulated with vermillion, and with a few fuscous speckles in places; a larger fuscous blotch beyond cell.

*Hindwings*: the same, with traces of a fuscous shade from the blotch to inner margin.

Underside similar, with traces on the forewings of a central fascia. Head, thorax, and abdomen concolorous with wings.

Expanse of wings: 46 mm.

One ♀ from British Guiana.

#### 5. *Meskea nigrata* sp. nov.

*Forewings*: dark smoky fuscous, slightly rufous-tinged, with hardly any distinct markings; a paler somewhat ochreous patch towards inner margin beyond middle, in which can be seen an oblique broad dark mark, followed by a narrow one; fringe concolorous.

*Hindwings*: dark fuscous, except the triangular anal area, which is pale ochreous with an ochraceous crenulated streak through it, the fringe along the patch being also ochreous, the upper half dark.

Underside blacker, the costa of forewings rufous-tinged; the anal pale space of hindwings more tinged with ochraceous. Head, thorax, and abdomen all dark; the anal segment of abdomen and the legs pale ochreous.

Expanse of wings: 32 mm.

One ♀ from the neighbourhood of the Jutali River, Amazons (M. Stuart).

Another ♀ from Popayan, Colombia (Lehmann), has the costal and inner margin of forewings strongly tinged with deep red, and the spot before anal angle large and pale yellow, and expands 40 mm.

Evidently closely related to *Zeuzerodes fumatilis* Pagenst., *Iris*, V. p. 81, but Pagenstecher makes no mention of any red markings. His proposed genus *Zeuzerodes* is almost certainly identical with *Meskea* Grote, which he does not quote at all.

### FAMILY EPIPLEMIDAE.

#### *Capnophylla* gen. nov.

Allied to *Guthyia*, with which it agrees in the nervation of the forewings; the base of the median vein is thickened and raised below, causing a depression above at the base of the submedian fold. The hindwings are broadly almond-shaped—the costa strongly arched from base to apex, which is blunt—and depend on each side of the body, the apex pointing downwards; the inner-marginal half is strongly folded underneath, and contains a deep pleat lined with long curled hair; the outer half of the hindwings above is clothed with short mealy scaling. The subcostal vein with its two branches occupies the middle of the wing, the costal itself being strongly

curved upwards, but approaching the first subcostal towards apex; the cell with the rest of the neurulation is entirely hidden by the folds.

Type : *Capnophylla albiceps* sp. nov.

#### 6. *Capnophylla albiceps* sp. nov.

*Forewings* : pale grey, thickly dusted with dark iron-grey towards costa and suffused on inner margin with brown-black and ferruginous; the lines ferruginous; the first curved, at one-third, ending in a velvety black streak on inner margin; second at two-thirds, excurved in the costal half of wing, incurved below, and approaching first line on the submedian fold; a submarginal black lunular line from apex, becoming linear and vanishing below middle; fringe iron-grey; a diffuse dark cell-spot.

*Hindwings* : fawn-colour, the basal half darker and strongly tinged with ferruginous at base and along inner margin, with a bent ferruginous line at middle crossing from costal to inner margin; costal fringe dark brown.

Underside of forewings cinereous, with numerous dark striae: costal area of hindwings similar, but paler; rest of wing mealy ochreous: head and thorax deep black-brown; vertex and antennae snow-white; abdomen cinereous brown.

Expanse of wings: 26 mm.

Two ♂♂ from Sao Paulo, S. Brazil.

#### *Coelura* gen. nov.

*Forewings* : with costa arched and very strongly convex before apex; apex produced; hindmargin oblique, hardly curved, bent below apex.

*Hindwings* : with apex rounded; hindmargin almost straight or slightly curved; anal angle with a single small semicircular excision.

Antennae flattened, miserrate, the teeth short; palpi slender, porrect; tongue slight; frenulum present; legs short; hindtibiae with four spurs.

*Neuration* : forewings, cell hardly half as long as wing; discocellular concave; median nervure bent inwards just before end; all three median nervules close together; the first from the bend, the second close beyond, or the first and second shortly stalked from the bend; vein 5 from upper angle of cell; 6 and 7 stalked from the same point; 8, 9, stalked; 10 and 11 free. Hindwings with vein 7 sometimes before, sometimes from, the end of cell; veins 3 and 4 from the lower end, or stalked; the subcostal vein straight, or curved from base.

Type : *Coelura transversata* sp. nov.

*Erosia omana* Druce also belongs here.

#### 7. *Coelura transversata* sp. nov.

*Forewings* : fawn-colour, dark grey along costa, which towards apex is varied with alternate whitish and rufous patches; the lines fine and paler; first at one-fourth, angled below costa, then obliquely curved, preceded by a diffuse dark grey cloud; second line at two-thirds, bluntly angled on vein 4, convex above, concave below, edged finely on both sides with darker; a diffuse dark grey median shade, and obscure submarginal clouds, with one or two dark dots below apex; fringe pale grey, with the basal half broadly red.

*Hindwings* : much paler, towards the costa straw-colour; the centre of the wing striated with grey-brown, and towards the hindmargin with blackish; an obscure

curved antemedian line and angulated postmedian, the latter indicated by black spots ; inner margin pale straw, with few markings ; the veins pale ; a fine black submarginal line ; fringe as in forewings.

Underside yellowish ochreous, tinged with fulvous, with sparse black striae. Head, thorax, and abdomen fawn-colour ; face dark brown.

Expanse of wings : 30 mm.

One ♂ from Nova Friburgo, Prov. Rio de Janeiro.

In forewings veins 2 and 3 short-stalked ; in hindwings the median straight ; veins 3, 4, and 6, 7, from angles of cell.

### **Decetiodes gen. nov.**

*Forewings* : with costa strongly curved throughout ; apex shortly and bluntly produced ; hindmargin slightly sinuous, inflexed below apex, nearly vertical ; anal angle well marked.

*Hindwings* : triangular, both angles well marked ; hindmargin nearly straight.

Antennae flattened, uniserrate ; palpi porrect, angular, shaped as in the Geometrid genus *Anisodes* ; tongue wanting ; frenulum present ; hindtibiae with four slender spurs ; all the legs slender.

*Neuration* : forewings, cell half the length of wing ; discocellular sinuous ; first median nervule at two-thirds, second at five-sixths, the median nervule bent inwards beyond ; vein 5 from below upper end of cell ; 6 and 7 from the end ; 8, 9, and 10 stalked ; 11 free ; both 11 and the stalk of the other three rising well before the middle of cell. Hindwings with radial from centre of discocellular ; the rest as in forewings.

Type : *Decetiodes fallax* sp. nov.

### **8. *Decetiodes fallax* sp. nov.**

*Forewings* : dull flesh-colour, freckled with darker and with black atoms ; the costa broadly paler ; one or two small dark clouds near base ; traces of a pale line from costa at one-fourth ; outer line pale, edged externally with reddish, oblique and straight from the apex to vein 2, where it curves to the inner margin at two-thirds and is followed there by two brown blotches ; fringe concolorous.

*Hindwings* : without lines.

Underside like the hindwings above. Head, thorax, and abdomen concolorous ; face dark brown.

Expanse of wings : 30 mm.

One ♂ from Cucuta, Venezuela.

The species mimics the genus *Decetia*.

### **9. *Epiplema albiocellata* sp. nov.**

*Forewings* : rufous and grey, with no distinct markings ; costa spotted with dark ; traces of a much outcurved exterior line at three-fourths ; the upper half of hindmargin preceded by a blackish shade ; a dark spot in cell ; fringe concolorous.

*Hindwings* : bluish grey, somewhat lustrous, mixed with fulvous in the costal third ; an interrupted, blackish, crenulate antemedian and postmedian line, the latter forming a strong angle above vein 4 ; discal mark large, white ; a curved black and ferruginous line from upper to lower tail, with a fine slender white dash above lower tail ; fringe ferruginous,



Underside of forewings mainly dark slaty cinereous; the costa with alternate yellowish and fuscous markings; cell-spot whitish. Hindwings pale bluish grey, mottled with darker, and tinged towards outer angle with yellowish; cell-spot large, whitish. Face and palpi dark brown; thorax and abdomen paler grey.

Expanse of wings: 20 mm.

One ♂ from Onoribo, March 1893 (C. W. Ellacombe).

Forewings with apex bluntly produced; hindmargin vertical and slightly concave to vein 3; there strongly elbowed and obliquely incurved to anal angle, which is squared; inner margin straight. Hindwings with a blunt tooth at end of vein 7 and below vein 4. Antennae of ♂ strongly serrate and pubescent beneath, minutely serrate above. In forewings vein 5 from upper end of cell; 6 and 7 stalked; 8, 9, and 10 stalked; 11 free; all from near middle of cell. Hindwings with 6 and 7 from upper end of cell; first and second medians far apart and both from long before end of cell.

#### 10. *Epiplema draco* sp. nov.

*Forewings*: lilac-grey, more or less suffused and dotted with reddish chestnut; the apical one-third alone remaining of the ground-colour; lines chestnut; inner line from costa at one-third, oblique outwards and strongly bent in cell, then oblique inwards to inner margin just before middle; outer line at two-thirds, oblique inwards to beyond cell, where it approximates to the angle of first line, then with a slight bend outwards to inner margin before anal angle; an indistinct grey and chestnut oblique submarginal shade; two wedge-shaped ferruginous marks before the excavation; fringe grey; the basal area is varied with grey and chestnut.

*Hindwings*: with a broad central fascia, bounded by crenulate lines, and the apical area, dark chestnut.

Underside dark tawny, speckled with black; forewings with an indistinct blackish submarginal fascia; hindwings with a distinct black marginal one. Face and palpi dark brown-black; thorax and abdomen grey.

Expanse of wings: 30 mm.

One ♂, one ♀, from above Mapiri, Bolivia, 2000 feet, 1895 (Stuart).

Forewings with apex bluntly rounded; hindmargin strongly toothed at vein 4, deeply excavated above and very oblique below; inner margin somewhat hollowed out before the anal angle, which is broadly produced.

Hindwings with costa hollowed out beyond middle, and very strongly excised at apex above vein 7, which ends in a prominent tooth; two less prominent teeth at ends of 6 and 4; hindmargin in the main straight.

Antennae of ♂ flattened, subserrate; the teeth close and curved.

#### 11. *Epiplema intervenata* sp. nov.

*Forewings*: testaceous, mottled with fuscous, the basal area and costa towards apex flushed with grey; the lines and veins paler; first line at one-third, strongly bent in midwing below the median vein, and edged outwardly with dark at costa and inner margin; second line at two-thirds, vertical to vein 4, then incurved and forming a bluntly rounded tooth, the included space darker than the rest of wing.

*Hindwings*: the same, with the discocellular itself paler.

Underside of forewings dull fulvous, with fuscous strigulae, and towards base suffused with fuscous; hindwings more ochreous, with dark strigulae. Face, palpi, and collar black-brown; frontlet white; thorax and abdomen like wings.

Expanse of wings : ♂, 20 mm.; ♀, 24 mm.

A pair from Bolivia, taken between R. Songo and R. Suapi, March to June 1896 (Garlepp).

Related to *E. ochodontaria* Snell., but without the dark lunule on hindmargin of forewings, and not blackish beneath; distinguished by the pale lines and veins.

## 12. *Falcinodes* (?) *rufula* sp. nov.

*Forewings* : reddish fawn-colour, slightly metallic in certain lights; the lines indistinct; first from one-fourth of costa, strongly curved outwards in cell, then oblique inwards; outer line from two-thirds of costa, oblique to middle of inner margin, and closely approximated there to first line, the included space, which is funnel-shaped, marked with dull leaden-grey striae; before the first line there appears to be a basal line of the same form, within which the basal area is similarly marked with leaden-grey striae; submarginal line indistinct, sinuous, marked by a black dot on each side of vein 4; the veins towards margin paler, with fine dark striae on them; fringe reddish brown.

*Hindwings* : with a slightly darker central and submarginal fascia.

Underside less red, darker, much striated with fuscous, the forewings except along costa suffused with fuscous. Face and palpi dull red-brown; antennae and thorax like wings; abdomen wanting.

Expanse of wings : 32 mm.

One ♀ from ten miles above Mapiri, Bolivia, 2000 feet, 1893 (Stuart).

The ♀ specimen above described agrees well with Guenée's diagnosis of the genus, which, however, he himself admits to be deficient; the legs and abdomen are wanting.

## 13. *Gathynia orbifera* sp. nov.

*Forewings* : dark purplish grey, slightly tinged with rufous, especially towards anal angle and in the cell; very faint traces of a darker curved median line; outer line at three-fourths, dark brown, rufous-edged, curved outwards to vein 6, then straight and nearly parallel to hindmargin to vein 4, incurved to vein 2 and vertical to inner margin; a similar brown line close to hindmargin; fringe concolorous.

*Hindwings* : dull rufous, with the base, a curved central line, and the fringe deeper rufous.

Underside of forewings dull dark grey, indistinctly mottled; of hindwings paler. Face, thorax, and abdomen dark grey; vertex snow-white.

Expanse of wings : 21 mm.

One ♀ from Iquitos, 1893 (Stuart).

The hindwings are nearly round; in the forewings the cell area is very broad, the median being much nearer than usual to the inner margin.

## *Hyperplema* gen. nov.

*Forewings* : elongate; costa nearly straight, rounded towards apex, which is blunt; hindmargin obliquely curved, entire.

*Hindwings* : narrow, with inner angle and hindmargin rounded; inner margin shortened by the excavation of anal angle.

Antennae of ♂ bipectinated; palpi long, porrect, the second joint roughly

scaled, the third smooth, decumbent, much as in *Anisodes*: tongue very minute: frenulum present: anal parts largely developed.

*Neuration*: forewings, cell more than half as long as wing; discocellular inangulated; first median nervule at five-sixths, second halfway between first and third; lower radial from below upper angle of cell; 6 and 7 stalked; 8, 9, and 10 stalked; 11 free. Hindwings with 6 and 7 short-stalked: radial from above centre of discocellular. The forewings have a semitransparent fovea at base.

Type: *Hyperplema rudis* sp. nov.

#### 14. *Hyperplema rudis* sp. nov.

*Forewings*: dull brownish grey, mottled with darker: costa slightly darker: the two lines darker, geminated; first at one-third, angled on subcostal and median veins, then oblique inwards: second at two-thirds, oblique outwards, sharply angled at vein 7, then sinuous and oblique inwards; traces of a submarginal line; cell-spot blackish, distinct.

*Hindwings*: with a double dark antemedian and postmedian crenulated line: cell-spot blackish; fringe concolorous.

Underside pale grey. Face, palpi, and vertex white; thorax and abdomen like wings; antennae shining white.

Expanse of wings: 24 mm.

One ♂ from Onoribo, August 1892 (C. W. Ellacombe).

An indistinctly marked species.

#### *Leuconotha* gen. nov.

*Forewings*: with costa arched throughout; apex rounded; hindmargin obliquely rounded.

*Hindwings*: with both angles and hindmargin rounded.

Antennae of ♂ bipectinate, of ♀ lamellate, thickly serrate. Palpi porrect, smooth, the second joint very long, third short, pointed, decumbent; legs long: hindtibiae with four approximate spurs; frenulum present; tongue invisible.

*Neuration*: forewings, cell half as long as wing; discocellular slightly inbent; first median at three-fourths, second shortly before end, third from the end of cell; lower radial from just below upper angle of cell; upper radial stalked with 7; 8, 9, and 10 stalked; 11 free. Hindwings, costal divergent from subcostal from base; the two subcostals short-stalked; radial from middle of discocellular; first median at about one-half, second well before end of cell.

Type: *Leuconotha venosa* sp. nov.

#### 15. *Leuconotha venosa* sp. nov.

Wings including the fringes pure white; all the veins fuscous; costa of forewings blackish near base. Underside grey-tinged, the forewings darkest. Head, thorax, and antennae all white.

Expanse of wings: ♂, 24 mm.: ♀, 28 mm.

A pair from Cúcuta, Venezuela.

#### *Nyctibadistes* gen. nov.

Allied to *Gathynia*, with which it agrees in the lower radial of forewings rising below the end of discocellular, and the upper radial and last subcostal together from

the end; but *in both sexes* veins 2 and 3 are stalked, and the base of the wing shows a large fovea. In the hindwings the hindmargin is elbowed at vein 7, becoming in the ♀ gibbous towards the anal angle, while in the ♂ it is excised and the anal angle forms a conspicuous lobe; vein 2 rising near the base of wing and in the ♂ running out into the lobe.

Type: *Nyctibadistes informis* sp. nov.

#### 16. *Nyctibadistes informis* sp. nov.

*Forewings*: fuscous, slightly rufous-tinged; an indistinct brown central line; exterior line dark brown, at four-fifths, slightly excurved in middle; a row of brown dots before the hindmargin.

*Hindwings*: similar, but with the line strongly angled below the median vein; an indistinct cell-spot in both wings.

Underside dull cinereous. Head, thorax, and abdomen fuscous, the last somewhat paler.

Expanse of wings: 14 mm.

A pair from Iquitos, 1893 (Stuart).

#### *Siculodopsis* gen. nov.

*Forewings*: elongate, twice as long as broad; costa faintly curved throughout; apex subacute; hindmargin obliquely curved.

*Hindwings*: with well-rounded hindmargin, the anal angle slightly lobed.

Antennae of ♂ pectinated; palpi short, porrect; tongue and frenulum present; legs thick; hindtibiae with four stout spurs; anal tuft of abdomen long.

*Neuration*: forewings, cell half as long as wing; discocellular concave; first median at four-fifths, second shortly before end of cell; vein 5 from upper angle of cell; 6 and 7 stalked from the same point; 8 and 9 stalked; 10 and 11 free. Hindwings with costal well separated from subcostal; the two subcostal nervules short-stalked; radial from a little above centre of discocellular; medians as in forewings.

Type: *Siculodopsis flaviceps* sp. nov.

#### 17. *Siculodopsis flaviceps* sp. nov.

*Forewings*: dingy ochreous grey, covered with fine black strigulations, and with a small black subapical spot between veins 6 and 7; fringe concolorous.

*Hindwings*: the same, with no black spot.

Underside with the striae smaller and obscure. Thorax and abdomen concolorous; face and collar dull yellow; palpi blackish.

Expanse of wings: 32 mm.

One ♂ from Sao Paulo, S. Brazil.

### FAMILY GEOMETRIDAE.

#### SUBFAMILY OENOCHROMINAE.

#### *Parachoreutes* gen. nov.

*Forewings*: with costa quite straight till just before apex; apex shortly produced; hindmargin obliquely curved, and minutely indented beneath apex.

*Hindwings*: triangular; hindmargin nearly straight.

Antennae of ♀ simple, minutely pubescent : palpi porrect, second joint long and hirsute, third joint decumbent, blunt and smooth ; tongue and frenulum present.

*Neuration* : forewings, cell half as long as wing ; discocellular vertical ; first median nervule at five-sixths, second close before third ; radials normal ; 7, 8, 9, 10, stalked ; 11 anastomosing with costal. Hindwings, costal divergent from base ; first subcostal just before end of cell ; radial from middle of discocellular ; medians as in forewings.

Type : *Parachoreutes subpurpurea* sp. nov.

Allied to *Leptoctenopsis* Warr., but differing in the shape of the palpi and in the neuration.

#### 18. *Parachoreutes subpurpurea* sp. nov.

*Forewings* : deep fawn-colour, the costa rather darker and marked with a diffuse, somewhat triangular, purplish blotch beyond the middle : an oblique purplish line from costa before apex to inner margin just beyond middle ; apical region slightly fulvous-tinged ; cell-spot small, inconspicuous ; fringe concolorous, with slight dark marks at base between the veins, more distinct just below apex.

*Hindwings* : with an autemedian straight purplish line.

Underside wholly rosy purple. Palpi, face, vertex, and collar purple ; thorax and abdomen like wings.

Expanse of wings : 28 mm.

One ♀ from Rio Demerara, British Guiana.

### SUBFAMILY MECOCERATINAE.

#### 19. *Almodes subrufa* sp. nov.

*Forewings* : pale olive, dusted with reddish and fuscous scales, and with reddish fuscous suffusion in places ; first line at one-fourth, bluntly angled in cell, and vertical from submedian fold to inner margin ; basal area below subcostal with dark suffusion : cell-spot of dark brown raised scales, followed by a median line similar to the first line ; exterior line with a blunt prominence on vein 6, and between veins 3 and 4, then incurved and with a smaller tooth on the submedian vein ; space between median and outer line suffused with dark as far as vein 4 ; submarginal line indistinctly marked, preceded by dark suffusion at costa, opposite cell, and above inner margin : a row of red-brown marginal spots between the veins : fringe red-brown, marked with olive at ends of veins.

*Hindwings* : without basal line ; the whole of the space between the median and outer lines suffused with dark ; a row of dull red marginal lunules between the veins ; the cell-spot edged with paler internally.

Underside of both wings dull brick-red, with the lines and cell-spots blackish : inner margin of forewings from base to outer line blackish. Palpi ochreous, dusted with fuscous ; face ochreous, with a narrow black bar ; vertex pure ochreous ; thorax and abdomen olive-ochreous, much mottled with dark scales.

Expanse of wings : 40 mm.

One ♂ from Pratville, Jamaica.

Easily distinguished by the red underside.

#### 20. *Phellinodes conifera* sp. nov.

♀. *Forewings* : white, almost wholly suffused with smoky grey, and with numerous dark grey freckles ; an irregular conical white costal blotch at two-



thirds; apex of wing beyond darker brown, towards the anal angle whiter; a small dark spot on the discocellular, underneath the white blotch, and another subcostal near base of cell, as in *Hedyle heliconiaria* Guen.

*Hindwings*: like forewings, with the apical region darkest: the central field palest, narrow and undefined: fringes grey in both wings.

Expanse of wings: 46 mm.

Larger and stouter than *H. heliconiaria*, which it mimics.

One ♀ from Paramaribo, November 1892 (C. W. Ellacombe). Another ♀ from Ega is in the British Museum Collection.

## 21. *Phellinodes nigrimacula* sp. nov.

*Forewings*: whitish grey, suffused and striated with fuscous and brown; the costa whiter between the dark strigulae; a dark blotch below costa at one-third: a large irregular blotch on the discocellular, edged with black, preceded by a black speck in the cell; hindmargin greyer, with less brown tinge; marginal line dark: fringe grey.

*Hindwings*: smoky grey, strongly mottled with blackish below the cell and median vein: the cell itself hyaline.

Underside of forewings smoky grey, suffused with brown and mottled with black above the median, the lower half unmottled. Hindwings thickly and strongly striated and mottled with blackish, and suffused with brown along costa. Head, thorax, and abdomen fuscous grey, the thorax downy.

Expanse of wings: 52 mm.

One ♂ from ten miles above Mapiri, Bolivia, 1895, 2000 feet (Stuart).

Hindmargin of forewings not excised below apex, merely bent at vein 6.

## SUBFAMILY ORTHOSTIXINAE.

## 22. *Zanclopteryx floccosa* sp. nov.

♀. *Forewings*: white, silky, semitransparent; the costal edge finely grey; marginal line grey; fringe white.

*Hindwings*: the same.

Underside white. Head, thorax, and abdomen discoloured, probably all white.

♂. With the basal third of costa fringed with woolly hair: the basal two-thirds of forewings with rough dingy scaling; hindwings with a similar space in the disc.

Expanse of wings: 22 mm.

One ♂, one ♀, from Berg-en-Daal, April 1892 (C. W. Ellacombe).

The wings of this species are broader and shorter than in the rest of the genus.

## 23. *Zanclopteryx subsimilis* sp. nov.

*Forewings*: shining white, the costal edge narrowly fuscous; fringe white, with a scarcely perceptibly darker basal line.

*Hindwings* and underside the same. Head, thorax, and abdomen white.

Expanse of wings: 20 mm.

One ♀ from Cucuta, Venezuela.

Differs from the ♀ of *Z. floccosa* in the narrower, more pointed forewings; in the hindwings veins 6 and 7 are on a long stalk, while in *floccosa* they rise close to the end of the cell.

24. *Zanclopteryx venata* sp. nov.

*Forewings* : pearly white, tinged with bluish grey : all the veins fuscous ; costa and marginal line grey : fringe white.

*Hindwings* : similar.

Underside the same. Head, thorax, and abdomen concolorous.

Expanse of wings : 24 mm.

One ♂ from Iquitos, 1893 (Stuart) : one ♀ from Paramaribo, November 1892 (C. W. Ellacombe).

SUBFAMILY CYLLOPODINAE.

25. *Atyriodes crenulata* sp. nov.

*Forewings* : lemon-yellow ; the ground-colour forming a semi-oval patch on inner margin, and an oblique irregular-oval patch beyond the middle : all the rest of the wing black ; fringe black, white at apex.

*Hindwings* : yellow, with a moderately broad black hindmargin, which starts square from before the apex and narrows off at anal angle, its inner edge crenulated.

Underside the same. Head, thorax, and abdomen above black ; a spot of yellow on each shoulder in front ; abdomen below yellow.

Expanse of wings : 36 mm.

One ♂ from Rio Ucayali, Peru, 1893 (Stuart).

In this example the yellow areas of the forewings are enlarged, so as almost to touch in the middle. In a second specimen, also a ♂, from Patao, Guiría (August 1891), both of the yellow patches are smaller and separated by a thick black bar, and the yellow is rather paler ; in all other respects they agree, especially in the form of the dark margin of hindwings.

26. *Cyllopoda angusta* sp. nov.

*Forewings* : deep velvety purplish black, with a large transverse oblong pale yellow blotch beyond the middle, not quite touching the costa.

*Hindwings* : with a small oval pale yellow spot at lower end of cell, a dot at the top end of the discocellular, and a deeper yellow short streak along inner margin near base ; fringe of both wings concolorous.

Underside the same. Head, thorax, and abdomen purplish black : lower half of face yellow ; underside of abdomen and legs whitish.

Expanse of wings : 36 mm.

One ♀, one ♂, from Reyes, Bolivia, July 1895 (Stuart).

27. *Cyllopoda hypocyanea* sp. nov.

*Forewings* : black, with a bluntly wedge-shaped yellow streak from base above inner margin, followed by an oblique yellow blotch, of which the inner edge is straight and the outer irregularly rounded ; fringe black.

*Hindwings* : yellow, with the costa broadly black ; the hindmargin also black, but gradually narrowing towards anal angle and ending in a point half-way up the

inner margin : the basal area clouded with blackish, showing through from below, and in one specimen marked above in the middle with a black blotch.

Underside the same, but the base of hindwings occupied by a dark blue-black patch; basal half of costa of hindwings yellow. Head, thorax, and abdomen black; shoulders, sides of abdomen, and legs marked with yellow.

Expanse of wings : 32 mm.

Two ♂ from Bogota, Colombia.

Near *vespertina* Wlk. The pectinations of the antennae are really formed by confluent fascicles of cilia.

#### 28. *Cylopopoda latimargo* sp. nov.

*Forewings* : black, with a small restricted semi-oval yellow patch on inner margin, and a large oval oblique one towards apex, nearly touching costa and broader below than above, its outer edge suberemulate.

*Hindwings* : yellow, with a very broad black marginal band, occupying more than one-third of the wing, narrowing towards the costal end; the base narrowly black.

Underside the same. Head, thorax, and abdomen black; shoulders with a large lateral yellow spot; abdomen with lateral yellow line, and yellow underneath.

Expanse of wings : 45 mm.

One ♀ from Rio Demerara, British Guiana.

#### 29. *Cylopopoda obtusimacula* sp. nov.

*Forewings* : black, with an oblong yellow blotch, pointed close to base, reaching to beyond the end of cell, broadening outwards and obtusely bent and rounded at its extremity; the costal edge of this blotch is nearer the costa at its extremity than in the middle, while its inner edge is further from the inner margin at its extremity than towards the base.

*Hindwings* : with the yellow blotch broader; the black edge on inner margin narrowed.

Underside the same. Head, thorax, and abdomen black; abdomen below whitish, laterally brown.

Expanse of wings : 30 mm.

A pair from Loja, sent by M. Dognin as *lemonia* Drnce. Distinguished from *gopala* Dogn. and *lemonia* Drnce by the differently shaped end of the yellow blotch of forewings. Dognin, in describing his *gopala*, says it can be distinguished from *lemonia* Drnce by its size and more lanceolate wings; but *lemonia* expands 39 mm. and *gopala* 34—39 mm.; the present species is smaller and less lanceolate; on the other hand, the single specimen from the river Numabala which Dognin would refer to what he wrongly identified as *lemonia* is the real *lemonia* Drnce.

#### 30. *Cylopopoda semidivisa* sp. nov.

*Forewings* : brown-black; space between median and submedian veins deep yellow for two-thirds of wing, the end of the patch rounded; followed by an oblique yellow fascia, not quite reaching costa, its inner edge indented, its outer straight, curving below to meet the inner edge bluntly above anal angle; fringe concolorous, tipped with white at the extreme apex of wing.

*Hindwings* : yellow, with brown-black border, extending along costa—where it

forms a slight tooth—and hindmargin, and narrowly half-way up inner margin, emitting a long blunt tooth to centre of wing between veins 2 and 3 : the extreme costal edge remains yellow.

Underside the same. Palpi yellow, with the tips black : face and shoulders yellow ; thorax and abdomen slaty cinereous.

Expanse of wings : 32 mm.

A pair from Entre Rios, Parana.

### 31. *Erilyces solilucis* Butler ab. *subintrusa* nov.

Ground-colour rather deeper yellow than in the type : the central oblique black band of forewings twice as broad, with a triangular projection in the middle of its outer side, all but interrupting the oblique yellow band that follows it. In the hindwings the black marginal band is swollen from veins 2 to 4.

One ♀ from between Manaus and R. Jutahi (M. Stuart).

### *Momonipta* gen. nov.

*Forewings* : with costa curved : apex blunt, rectangular : hindmargin curved, not very oblique.

*Hindwings* : with hindmargin and both angles rounded.

Antennae of ♂ subserrate, with paired fascicles of cilia : palpi porrect, second joint long, third shorter, upturned : tongue well developed : frenulum stout.

*Nervation* : forewings, cell hardly half the length of wing : discocellular straight, oblique : first median nervule at five-sixths, second and third stalked : both radials near together from centre of discocellular : 7, 8, 9, 10, stalked from upper angle of cell : 10 rising before 7 ; 11 free. Hindwings with cell more than half the length of wing ; discocellular oblique ; costal free, approximated for some distance to subcostal : the two subcostal nervules stalked : radial from slightly above middle of discocellular ; medians as in forewings.

Scaling thin ; wings semitransparent.

Type : *Momonipta albiplaga* sp. nov.

### 32. *Momonipta albiplaga* sp. nov.

*Forewings* : dull smoky black ; a long white blotch between median and submedian fold, its upper edge curved, and both ends pointed ; a narrow white streak below submedian ; a white curved blotch beyond cell, from subcostal to vein 3 ; fringe black.

*Hindwings* : white, with black bordered hindmargin, narrower in middle, and broad smoky grey inner margin.

Underside similar. Head, thorax, and abdomen smoky black ; underside of abdomen pale.

Expanse of wings : 34 mm.

One ♂ from R. Dagua, Colombia (W. Rosenberg).

### 33. *Oricia biplagiata* sp. nov.

*Forewings* : dull golden-brown, with all the veins and folds yellow : two oblong orange-yellow blotches, one beyond cell below costa reaching to lower radial and approaching hindmargin, the other below the median extending above vein 2 and nearly touching the submedian below.

*Hindwings*: deep orange, with a narrow black edge along costa and hindmargin to anal angle.

Underside similar, but in forewings the lower yellow spot extends to the base between the median and submedian veins. Face, vertex, patagia, and thorax streaked, yellow and black; the centre of thorax yellow; abdomen yellow, with black dorsal and lateral stripes.

Expanse of wings: 38 mm.

One ♀ from Reyes, Bolivia, August 1895 (Stuart).

### 34. *Stenoplastis trimacula* sp. nov.

*Forewings*: smoky brown-black, with the veins finely pale; a white hyaline patch at base, above and below the median, the lower part towards base marked by a black dash above, along median, and another below, along the submedian; an oblique white hyaline patch beyond cell, subdivided into three by the radials; a white tripartite blotch before apex; all the veins more broadly pale on the course of the submarginal line; fringe black.

*Hindwings*: white, with broad black border to hindmargin; the costal and inner margins more narrowly smoky.

Underside the same, but costa of hindwings white. Palpi black, with whitish basal joint; face white; eyes with white orbits; vertex and thorax blackish, the latter with white lines; abdomen dark grey; legs and abdomen beneath powdered with white.

Expanse of wings: 28 mm.

One ♂ from R. Dagua, Colombia (W. Rosenberg).

### *Tanaostyla* gen. nov.

*Forewings*: broad; the costa faintly curved; apex blunt; hindmargin obliquely curved.

*Hindwings*: narrow; inner angle and hindmargin rounded; anal angle obtuse.

Antennae of ♂ subserrate, with fascicles of cilia; basal joint enlarged; palpi upcurved before face; tongue and frenulum well developed.

*Nervation*: forewings, cell two-thirds of wing; discocellular vertical, short, the subcostal and median veins being both bent inwards towards end of cell; first median nervule at three-fifths, second shortly before third; radials normal; 7, 8, 9, 10, stalked from before end of cell, 10 and 9 rising before 7; 11 free. Hindwings with discocellular oblique, twice bent in middle; costal approximated to subcostal for nearly the whole length of cell; radial from the angulation in discocellular; both subcostals and last two medians on very long stalks.

Type: *Tanaostyla dilucida* sp. nov.

### 35. *Tanaostyla dilucida* sp. nov.

*Forewings*: semitransparent, hyaline white; the veins and folds marked with smoky fuscous; costa broadly smoky fuscous for two-thirds, then narrower; a thick smoky fuscous streak from costa along discocellular, narrowing off along vein 3 to hindmargin, which is also narrowly smoky fuscous, becoming much broader across the apex; inner margin narrowly fuscous; fringe smoky; the pale oval space beyond the cell is whiter than the basal two-thirds.



*Hindwings* : with the costa and hindmargin narrowly smoky fuscous ; inner margin more broadly smoky grey : all the veins dark.

Underside the same. Head, thorax, and abdomen fuscous.

Expanse of wings : 39 mm.

One ♂ from Popayan, Colombia (Lehmann).

36. *Tanaostyla unimacula* sp. nov.

*Forewings* : dull hyaline grey ; the veins coarsely blackish ; costa and inner margin smoky black, and the whole outer third of the wing likewise, except an oblique oval white blotch beyond the cell, extending from the costal vein to vein 4 ; fringe concolorous.

*Hindwings* : the same, with the costa and hindmargin smoky blackish.

Underside duller. Head, thorax, and abdomen smoky black ; face blackish, with white scales above and at the sides.

Expanse of wings : 34 mm.

One ♂ from Reyes, Bolivia, August 1895 (Stuart).

SUBFAMILY GEOMETRINAE.

37. *Aplodes flavifimbria* sp. nov.

*Forewings* : delicate pale green ; the costa finely yellowish, widening towards apex ; cell-spot minute, brown ; a very faint pale dentate line at four-fifths, parallel to hindmargin ; fringe yellowish, with interrupted red scales along the margin, forming a red spot at apex.

*Hindwings* : similar.

Underside pale whitish green. Head, thorax, and abdomen pale green.

Expanse of wings : 26 mm.

One ♂ from Bogota, Colombia.

Akin to *A. nortia* Druce, but twice the size. The pectinations of the antennae are very short and delicate.

38. *Aplodes rufilineata* sp. nov.

*Forewings* : bright green, with antemedian and postmedian fine white dentate lines, as in *glaucaria* Gnen. ; a minute dark cell-spot ; fringe green, with a red basal line.

*Hindwings* : the same.

Underside pale green. Face and palpi red above, white beneath ; vertex white ; thorax and abdomen green.

Expanse of wings : 14 mm.

One ♂ from Berg-en-Daal, Surinam, May 1892 (C. W. Ellacombe).

*Auophylla* gen. nov.

*Forewings* : with costa nearly straight, becoming convex towards apex ; apex produced, prominent ; hindmargin obliquely curved ; anal angle distinct.

*Hindwings* : with apex and hindmargin rounded ; anal angle square.

Antennae of both sexes bipectinate. Palpi very short ; tongue slight ; frenulum in ♀ invisible ; hindtibiae with two spurs.

*Neuration* : forewings, cell two-thirds of wing ; discocellular angled, the lower

arm long and oblique ; first median at two-thirds, second at seven-eighths ; lower radial from upper half of discocellular : 6, 10, 7, 8, 9, stalked from end of cell ; 11 free, but bowed towards the costal. Hindwings, costal closely approximated to subcostal to near one-half of cell ; the two subcostal nervules stalked ; medians as in forewings.

Type: *Auophylla includaria* H.S.

### 39. *Auophylla multiplagiata* sp. nov.

*Forewings* : pale green ; the costa pale rufous ochreous ; a semi-oval patch at base of inner margin, a reniform cell-mark, and the hindmargin, pale ochreous with reddish scales ; the ochreous marginal space is very narrow in the middle, broader and triangular towards apex and anal angle ; marginal line red, with reddish dots at end of veins ; fringe ochreous.

*Hindwings* : the same.

Underside wholly pale green, with the base of costa of forewings and the marginal line of both wings red. Face, palpi, pectus, and forelegs red ; vertex white ; thorax green ; abdomen ochreous, with red crests.

Expanse of wings : 26 mm.

One ♂ from Paraguay (Dr. Bohls).

Akin to *invasata* Wlk. and *venezuelata* Wlk.

### 40. *Comibaena subscripta* sp. nov.

*Forewings* : dull green, below the median vein sordid ochreous, dusted with grey ; the lines thick, dull black, obsolete towards costa ; first at one-third, concave basewards ; second at two-thirds, concave outwards and denticulate ; a black cell-dot ; a dark blotch on inner margin between first line and base.

*Hindwings* : pale straw-colour, dusted with coarse grey atoms along inner margin and at base ; a dark blotch near base ; a broad antemedian grey fascia, containing the large black cell-spot and with strongly defined black edges, the outer edge acutely dentate ; a black dentate and waved postmedian line, well defined on the pale ground-colour ; a green marginal fascia, edged inwardly by a rufous and black irregularly dentate line ; fringe of both wings pale straw-colour.

Underside pale yellowish green ; the forewings with two blackish blotches on inner margin at base of the lines ; the hindwings with a large black cell-spot. Palpi dark grey ; face green ; vertex white ; thorax ochreous, the collar deeper ; abdomen ochreous, tinged above with cinereous.

Expanse of wings : 39 mm.

One ♀ from Cuenta, Venezuela.

The antennae are shortly pectinated.

A very remarkable looking insect, of which I cannot discover any description. Moeschler's *Comibaena lepidaria* from Surinam, judging from the figure, is allied to it.

### *Dryadopsis* gen. nov.

*Forewings* : with costa curved ; apex rectangular ; hindmargin curved.

*Hindwings* : with the hindmargin bluntly toothed at middle ; the anal angle square.

Antennae of ♂ acutely subserrate ; frenulum present ; legs long ; hindtibiae with four spurs.

*Neuration*: forewings, cell half as long as wing; discocellular vertical; first median at three-fourths, second and third from lower end of cell; lower radial from somewhat above the centre of discocellular, upper from the upper angle; veins 7, 8, 9, 10, stalked; 11 free. Hindwings with 3, 4, and 6, 7, from the angles of cell.

Type: *Dryadopsis morbilliata* Feld. (*Nemoria*).

The type of *Nemoria morbilliata* Feld. is without antennae. I have lately had an opportunity of examining a ♂ in good condition (except for the absence of palpi) which it seems impossible to refer satisfactorily to any existing genus.

#### 41. *Gelasma albidata* sp. nov.

*Forewings*: nearly white, freckled with olive-green; the two lines olive, at one-third and two-thirds, oblique and parallel to hindmargin; costa and marginal line olive; fringe white.

*Hindwings*: similar, with a linear olive cell-mark.

Underside wholly white. Face and palpi brown; head, thorax, and abdomen white; the thorax olive-tinged.

Expanse of wings: 24 mm.

One ♀ from Costa Rica (Underwood).

#### 42. *Gelasma munda* sp. nov.

*Forewings*: pale green, with very faint traces of waved inner and outer lines; cell-spot large, red-brown; marginal line red-brown, interrupted at the ends of the veins; fringe concolorous.

*Hindwings*: the same.

Underside paler, without any markings. Face and palpi brown; thorax and abdomen pale green, the abdomen with the middle segments marked with reddish grey; vertex white.

Expanse of wings: 24 mm.

One ♂ from La Plata.

The apex of forewings is produced and the hindmargin oblique and scarcely curved; the angle of the hindwing distinct. The species bears a superficial resemblance to *rubrolimbaria* Guen.

#### 43. *Iodis languescens* sp. nov.

*Forewings*: pale greyish green, thinly scaled; antemedian and postmedian whitish denticulated lines, the former darker-edged outwardly, the latter inwardly; cell-spot darker green; hindmargin slightly darker, with pale dots at the vein-ends; fringe very pale green.

*Hindwings*: similar.

Underside whitish. Head, thorax, and abdomen pale green; palpi and forelegs slightly tinged with red-brown.

Expanse of wings: 16 mm.

Three ♀ from Paramaribo, December 1892 (C. W. Ellacombe).

The hindwings are bluntly toothed in middle of hindmargin, the margin above sinuate.

#### 44. *Miantonota integra* sp. nov.

*Forewings*: pale apple-green; the costa and lines whitish; the former diffuse, the latter concise and slender; first at one-fifth, bluntly angled on the median vein;

outer line at three-fourths, parallel to hindmargin and faintly bent on the lower radial; cell-spot and marginal line red, the latter interrupted by pale dots at the ends of the veins; fringe pale yellow.

*Hindwings* : similar, with the outer line bluntly bent at middle.

Underside whitish green. Palpi and face pale green or ochreous below, reddish above; vertex and antennae white; thorax and abdomen green, the latter tinged with ochreous or whitish, and with three red-brown blotches in the middle.

Expanse of wings : 32 mm.

Both sexes from Petropolis, Nova Friburgo, etc.

#### 45. *Microloxia bistriata* sp. nov.

*Forewings* : pale apple-green; costa, fringe, and two oblique lines white.

*Hindwings* : the same; vertex and antennae white; face reddish brown.

Expanse of wings : 24 mm.

Two ♂♂ from São Paulo, S. Brazil.

#### *Neagathia* gen. nov.

*Forewings* : with costa arched at base, then straight, convex before apex; apex produced, acute; hindmargin obsoletely toothed at vein 4, straight above, obliquely curved below; anal angle distinct.

*Hindwings* : with hindmargin decidedly toothed at veins 4 and 6, excised between, straight from 4 to anal angle, which is square.

Antennae pectinated; palpi porrect, the second joint long, roughly scaled, the third quite short; tongue present; frenulum invisible.

*Neuration* : forewings, cell about half of wing; discocellular concave, slightly bent above middle; first median at three-fourths, second close before third; lower radial from the bend in discocellular, upper from end of cell; veins 10, 7, 8, 9, stalked; 11 free. Hindwings, costa bent over subcostal from base, approximating but not anastomosing with it; 6, 7, short-stalked; medians as in forewings.

Wings semihyaline.

Type : *Neagathia corruptata* Feld. (*Nemoria*?)

#### *Oospila* gen. nov.

*Forewings* : with costa straight, convex before apex; apex blunt; hindmargin obliquely curved.

*Hindwings* : with well-rounded hindmargin; anal angle square.

Antennae pectinated in both sexes; palpi in ♂ short, squamous; in ♀ much longer, smooth, the last joint as long as second; tongue and frenulum present; hind-tibiae of ♂ with the terminal spurs.

*Neuration* : forewings, cell not more than half as long as wing; discocellular angled; first median at two-thirds; second and third stalked; upper radial stalked with 7, 8, 9, 10; 11 free. Hindwings with 3, 4, and 6, 7, stalked; the radial oblique and sometimes strongly angled.

Hindwings with an oval raised spot of scales at top of discocellular.

Type : *Oospila triluviana* Guen.

46. *Oospila hyalina* sp. nov.

*Forewings*: hyaline green, with faint wavy streaks of darker green; costa narrowly ochreous, dotted with fuscous; an oval brown-black spot with pale centre on the lower arm of the discocellular; a brown-black marginal blotch from vein 7 to 4, and another at anal angle, both with whitish scales intermixed, and the latter with a slight whitish centre; marginal line dark brown; fringe whitish, mottled with brown beyond the veins.

*Hindwings*: with a shallow brown-black apical blotch, a square one opposite the cell, and a larger one at anal angle; cell-spot as in forewings; a shining white raised spot at the upper end of the discocellular; fringe and marginal line as in forewings.

Underside paler, with the markings reproduced. Face brown above, paler below; palpi reddish brown; tarsi, especially the foretarsi, reddish; vertex white; shaft of antennae white, becoming reddish towards the tip; thorax green; abdomen pinkish white, with scattered brown scales; the three basal segments with raised bosses of metallic brown scales.

Expanse of wings: 48 mm.

One ♀ from Bogota, Colombia.

Hindmargin of forewings indented below apex, bulged below middle; of hindwings excised beyond the cell.

47. *Oospila marginata* sp. nov.

*Forewings*: pale semihyaline green; cell-spot pale, with a red-brown ring; a red-brown marginal line, forking at vein 2, and so cutting off a small pale triangular space at anal angle.

*Hindwings*: similar, but the marginal line simply thickened at apex; the top end of discocellular with a raised whitish spot.

Underside pale green, without markings. Thorax and abdomen concolorous; abdomen with three large and two smaller raised red-brown crests, with metallic lustre; head wanting.

Expanse of wings: 39 mm.

One ♀ from British Guiana.

48. *Oospila violacea* sp. nov.

*Forewings*: dull sea-green, the costa ochreous; cell-spot large, black, blurred; some black scales on costa a little beyond; a black marginal line, swollen between the veins, and preceded by a white dark-edged lunule between each, followed by a hoary shade, all more or less obliterated by a dull purplish suffusion, which starts from the apex and swells out into a large blotch beyond the cell and another at the anal angle, obsolete between veins 3 and 4, where the lunule remains white; fringe purple, with white spots at base between the veins.

*Hindwings*: with the whole outer half suffused with dull purplish; a white oval cell-spot at top of discocellular.

Underside dull yellowish green; cell-spot of forewings and black marginal dashes shown, with some diffuse dark shading in places along margin. Face and palpi dark red; vertex and shaft of antennae white; thorax green; abdomen reddish, with deeper red crests.

Expanse of wings: 38 mm.

One ♂ from Rio Demerara.



**Pachycopsis** gen. nov.

♀. *Forewings*: with costa shouldered at base, then straight, and hardly convex before apex, which is bluntly rounded; hindmargin curved.

*Hindwings*: narrow, the inner margin long, and anal angle squared: apex strongly rounded; hindmargin rounded, with a perceptible indentation beyond the cell.

Palpi slender, porrect, twice the length of head; antennae thickened, with close deep and stout serrations, gradually decreasing to apex; hindtibiae with two spurs, the outer quite short, the inner very long.

*Neuration*: forewings, cell half as long as wing; the discocellular concave above, vertical below; first median at four-fifths, second before end, third from end of cell; lower radial from the top of the vertical lower arm of discocellular; 6, 7, 8, 9, 10, stalked; 11 from cell, anastomosing and becoming coincident with the costal. Hindwings with the two subcostals from upper end of cell.

Type: *Pachycopsis tridentata* sp. nov.

**49. Pachycopsis tridentata** sp. nov.

*Forewings*: very pale green, with three white denticulate lines; the first near base; the second just beyond middle, jutting out and forming a rectangular projection towards hindmargin between veins 3 and 4; third line submarginal; fringe concolorous, preceded by a row of large pale spots between the veins.

*Hindwings*: the same.

Underside whitish green. Head, thorax, and abdomen pale green; vertex white; antennae ferruginous.

Expanse of wings: 14 mm.

One ♀ from Paramaribo, November 1892 (C. W. Ellacombe).

A very delicate species; the specimen is probably somewhat faded, but is certainly much paler green than either of the two small species *Synchlora frondaria* and *Aplodes glaucaria* of Guenée.

**Paromphacodes** gen. nov.

*Forewings*: elongate, widening outwards; costa faintly curved; apex subacute; hindmargin oblique, hardly curved.

*Hindwings*: with apex strongly rounded, hindmargin nearly straight; anal angle square.

Antennae of ♂ shortly bipectinate, the pectinations stiff and ciliated; of ♀ subserrate; palpi porrect; tongue and frenulum present.

*Neuration*: forewings, cell nearly half the length of wings; discocellular oblique below; first median at two-thirds, second shortly before, third from the end of cell; lower radial from above middle of discocellular, upper from upper angle of cell or stalked with 7; 7, 8, 9, 10, stalked; 11 anastomosing with 12, and 10 with 11 or 12. Hindwings with the costal straight, gradually diverging from subcostal; the two subcostals short-stalked; radial from above centre of discocellular; medians as in forewings.

Type: *Paromphacodes rubrimargo* sp. nov.

In the African genus *Omphacodes* the costal of hindwings anastomoses strongly with the subcostal for three-fourths of cell.

50. *Paromphacodes rubrimargo* sp. nov.

*Forewings*: bright green; the costa bright pink, with the extreme edge white; fringe with basal half bright pink, the outer half white; inner margin fringed with pink to base.

*Hindwings*: white; fringe as in forewings from anal angle to middle, thence wholly white; inner margin fringed half-way with pink.

Underside pale green, with the fringes and costa pink. Palpi and forelegs bright pink; face denuded of scales; vertex snow-white, with a bright pink bar in front at top of face and the collar pink; thorax green; abdomen silky white.

Expanse of wings: 26 mm.

One ♀ from Sao Paulo.

In this species, of which I have only seen a ♀, vein 6 rises from upper angle of cell, and 10 anastomoses with 11. In *rubristellata*, of which only the ♂ is at present known, vein 6 is stalked with 7, and 10 anastomoses with 11 and 12. Whether the same difference in the neurulation of the sexes holds in each species must be decided by further observation.

51. *Paromphacodes rubristellata* sp. nov.

*Forewings*: green; the costal edge pale ochreous, more thickly underlined with pale brown; the lines marked by rosy vein-dots; the first at one-third, only marked by two contiguous spots just beyond the origin of vein 2 and a smaller one beneath them on the submedian vein; second line from costa at two-thirds, strongly curved inwards, so that the spot on vein 2 is approximated to the joint spot of the first line; cell-spot lunulate, rosy; marginal line concise, bright rosy, interrupted by pale dots at the vein-ends; fringe glossy white.

*Hindwings*: wholly white, with just a faint greenish tinge along the margins, and the marginal line green; fringe white.

Underside of both wings green, deepest in the forewings where the rosy cell-spot and line-spots show through; costa broadly rosy, especially at base; marginal line rosy; in the hindwings green. Forelegs and palpi rosy; abdomen ochreous white; face and thorax damaged, probably green.

Expanse of wings: 27 mm.

One ♂ from Bogota (Child).

52. *Phrudocentra pupillata* sp. nov.

*Forewings*: deep green; cell-spot small, black; a pale line at two-thirds, parallel to hindmargin, edged internally with deeper green; fringe green.

*Hindwings*: the same; the cell-spot larger.

Underside paler green; forewings with black cell-spot. Head, thorax, and abdomen all green, the last marked with red scales above.

Expanse of wings: 28 mm.

Several examples from Rio Demerara, British Guiana.

*Progonodes* gen. nov.

*Forewings*: triangular; costa nearly straight; apex prominent; hindmargin oblique, little curved.

*Hindwings*: kite-shaped; hindmargin faintly crenulate, with a blunt angle in middle.

Abdomen with red crests, as in *Racheospila*; antennae of ♂ short, pectinated nearly to end; palpi very short, not reaching front of face; tongue slight; frenulum present, but weak. Hindlegs fully developed; the tibiae with terminal spurs only.

*Neuration*: forewings, cell half of wing; discocellular concave; first median at two-thirds, second and third together from end of cell; lower radial from above centre of discocellular, upper from upper angle of cell; 7, 8, 9, 10, stalked; 11 anastomosing with 12. Hindwings with 3, 4, and 6, 7, stalked.

Scaling fine and thin.

Type: *Progonodes stagonata* Feld. (*Racheospila*).

### 53. *Racheospila concentrata* sp. nov.

*Forewings*: apple-green, the costa white; lines denoted by red-brown spots on veins; first from one-fourth of costa to one-third of inner margin; outer at three-fourths, parallel to hindmargin, but the lowest spot, on the submedian vein, just beyond middle of wing; a roundish red-brown patch, edged with yellowish, above anal angle, extending from vein 3 to the submedian fold: marginal line red-brown, swollen into triangular marks between the veins, the lowest the largest, touching the anal blotch; cell-spot red-brown; fringe white, tinged with red at base.

*Hindwings*: without first line; cell-spot larger; blotch above anal angle oval, distinctly yellow-edged, between veins 1 and 2.

Underside pale green; the cell-spots and marginal triangles red-brown; costa of forewings broadly pale. Palpi very long, white below, red above; the extreme tip white; face, thorax, and abdomen green; vertex and antennae white; collar bright red.

Expanse of wings: 24 mm.

One ♀ from Jamaica.

Like *R. stellataria* Moeschl. from Jamaica also, from which it only differs by the possession of the anal blotch.

### 54. *Racheospila dentilinea* sp. nov.

*Forewings*: apple-green, the costal edge finely white; a fine strongly dentate white line at two-thirds, edged internally with olive scales; an inner line near base of olive scales; cell-spot smoky brown, with the centre black; a red-brown marginal line, interrupted at the veins; fringe whitish, with brownish dashes at the vein-ends.

*Hindwings*: the same.

Underside pale mealy green; the marginal line red-brown. Head, thorax, and abdomen green, the last with a white spot in a brown ring on the first and third segments; fillet narrowly white.

Expanse of wings: 32 mm.

One ♀ from Rio Demerara, British Guiana.

### 55. *Racheospila* (?) *jaspidata* sp. nov.

*Forewings*: hyaline green, semitransparent; the base bright vinous red, this colour extending also along inner margin below submedian vein and along costa above the subcostal; a minute red cell-spot; hindmarginal band bright vinous, its inner edge waved and forming a deep sinus, nearly as far as the margin, between veins 2 and 4; fringe pale green, chequered with red at end of veins.

*Hindwings*: the same, the inner margin red.

Underside similar, the red only showing through. Head, thorax, and abdomen red.

Expanse of wings: 28 mm.

One example from Rio Demerara, British Guiana.

The forewings are elbowed in the middle, the hindwings excised beyond the cell. Though the wings are in good condition, the body is much damaged by mould. I cannot detect any signs of a frenulum; and though the antennae are pectinated, I believe the example to be a ♀; but I leave it in *Racheospila* for the present.

#### 56. *Racheospila rosipara* sp. nov.

*Forewings*: pale green; the costa pale flesh-colour; cell-spot minute, black; a large horseshoe-shaped pale flesh-coloured blotch on the hindmargin from veins 7 to 4, edged with dark chocolate, and traversed vertically by a wavy line of reddish scales, which also extend laterally along the veins; marginal line chocolate, interrupted; fringe flesh-coloured.

*Hindwings*: similar, but the blotch extending from vein 8 to below 4; a semicircular dark chocolate blotch on inner margin near base.

Underside pale silvery green, with a brown lunate mark in each wing, representing the apex of the horseshoe-shaped marks. Palpi pale green below, ferruginous above; face ferruginous, with green in middle; vertex green, with ferruginous scales; antennae ferruginous; thorax green; abdomen dark chocolate, with the dorsal tufts metallic.

Expanse of wings: 28 mm.

One ♂ from Palma Sola, Venezuela.

### SUBFAMILY STERRHIINAE.

#### 57. *Anisodes superflua* sp. nov.

*Forewings*: yellowish ochreous, finely irrorated with reddish and black scales; first line obscure, at one-fourth, forming a curve outwards above and below the median vein; second line at two-thirds, denticulate, diffuse, incurved below the middle; outer line close beyond the second, fine and similarly denticulate; submarginal line very obscure, but marked by a blackish cloud beneath costa and by a purplish black blotch beyond cell; marginal spots purplish; fringe concolorous; cell-spot close to second line, formed of white shining scales, edged with purplish.

*Hindwings*: with all the lines marked; space between second and third, from vein 7 to 3, clouded with purple scales, darkest on the discocellular and there enclosing a fine white crescent-shaped cell-spot; submarginal blotch beyond double, and redder.

Underside bright straw-colour, suffused with rosy, and with all the lines marked in the same colour; the cell-spots both large, and rosy. Palpi ochreous, externally rosy; face dull grey-brown; vertex and thorax like wings; abdomen ochreous, mottled thickly with reddish scales, and with a row of pale dorsal patches.

Expanse of wings: 32 mm.

One ♀ from Palma Sola, Venezuela.

**Brachyprota** gen. nov.

♂. *Forewings* : elongate, the costa faintly curved : apex produced : hindmargin very obliquely curved, and passing into the inner margin without forming a distinct anal angle.

*Hindwings* : abnormal ; the costa only two-thirds as long as inner margin, which is as long as the costa of forewings ; the hindmargin obliquely curved outwards and meeting the inner margin in a blunt point, veins 1 and 2 running into the inner margin, vein 3 into the point.

Antennae with pairs of curved cilia ; palpi upcurved in front of face : hind-legs aborted.

*Neuration* : forewings, as in *Ptychopoda*. Hindwings, with the costal running abruptly, as a short spur, into the costal margin close to base ; discocellular oblique outward parallel to hindmargin ; first subcostal and second median shortly before angles of cell.

Type : *Brachyprota abnormipennis* sp. nov.

**58. Brachyprota abnormipennis** sp. nov.

*Forewings* : pale ochreous, tinged with darker ; without markings, except a rather large brownish cell-spot ; fringe concolorous.

*Hindwings* : the same.

Underside similar. Face and palpi brownish : thorax and abdomen ochreous.

Expanse of wings : 16 mm.

One ♂ from the interior of Surinam, August 1892 (C. W. Ellacombe).

The underside of the hindwings is covered with erect hairlike scales, exactly as in the worn specimen of *Ptychopoda percrinita* described further on.

**59. Craspedia abornata** ab. **fuscescens** nov.

Differs from Guenée's type-form in having the ground-colour white, not yellowish ; the lines and markings more strongly developed, fuscous olive ; the underside of forewings suffused with dull rosy or rosy grey.

Expanse of wings : 26 mm. ; that of *abornata* is 24 mm.

Two ♂♂ from Bolivia, between R. Songo and R. Suapi, March to June 1896 (Garlepp).

**60. Craspedia abornata** ab. **candida** nov.

Also differs from the type-form in the ground-colour being pearly white, while the lines and markings are very pale green. Underside of both wings glossy white, the costa alone of forewings rosy.

Expanse of wings : 29 mm.

One ♂ from Costa Rica (Underwood).

**61. Craspedia albidulata** sp. nov.

*Forewings* : whitish, powdered with grey along the costa and hindmargin, with a distinct black cell-spot, and three curved pale ochreous very obscure fasciae, parallel to hindmargin, antemedian, postmedian, and submarginal ; fringe whitish with a marginal row of black triangles, which are nearly contiguous.



*Hindwings*: with the cell-spot large and black, traversed by an ochreous median line; the submarginal fascia broad and indistinctly double.

Underside densely powdered with brownish grey, with the cell-spots and marginal spots distinct; the fasciae obscurely marked with grey lines. Face and palpi brown-black; collar brown; vertex and thorax white; abdomen wanting, probably white.

Expanse of wings: 20 mm.

One ♀ from Sao Paulo.

Apex of forewing distinct, but not produced; hindmargin of both wings curved.

#### 62. *Craspedia ambagifera* sp. nov.

*Forewings*: whitish ochreous, suffused in parts with darker ochreous, and dusted with grey; the costa grey; first line grey, at one-fourth, bent outwards in cell and below median vein; second line at two-thirds, grey, angled on veins 4 and 6, oblique to the submedian fold, then vertical; outer line at three-fourths, dark brown, parallel throughout to second line; a brown patch from outer line to hindmargin, its upper edge oblique and in a line with the upper oblique portion of outer line: a grey cloud on costa touching outer line, another on hindmargin adjacent to the brown patch, and two more above anal angle; marginal line entire, dark brown; fringe ochreous, marked with brown; cell-spot oval, white, with a brown ring; space between second and third lines paler than rest of wing.

*Hindwings*: the same, without first line.

Underside paler. Face and palpi brown; collar blackish; thorax and abdomen ochreous, the latter grey-brown on back.

Expanse of wings: ♂, 26 mm.; ♀, 28 mm.

A pair from Cnenta, Venezuela.

In the ♂ the outer half of central area on both wings is filled up with grey, forming a distinct fascia. The hindmargin of forewings is distinctly bent at vein 3.

#### 63. *Craspedia atomaria* sp. nov.

*Forewings*: bone-colour, thickly dusted with sandy and fuscous scales; the lines ochreous; first curved, at one-fourth; central shade oblique; outer line, often fuscous, formed of lunules; two submarginal lines; a row of black marginal dots; fringe concolorous, with minute dark dots at base opposite the veins.

*Hindwings*: the same, with the central shade darker, and antemedian; both wings with distinct blackish cell-spot.

Underside paler, with all the dots distinct; outer line very distinct, dark fuscous, denticulated, followed by a grey shade. Head, thorax, and abdomen ochreous, the last dusted with dark scales.

Expanse of wings: 19 mm.

Several from Newcastle, Jamaica.

Allied to *C. subquadrata* Guen., but with shorter broader wings, and not so pale.

#### 64. *Craspedia deiliniata* sp. nov.

*Forewings*: glossy white, hardly dusted with grey; the costa grey; the lines very faint; first curved, at one-third; second and third parallel to hindmargin,

faintly waved : a faint cell-line : a marginal row of grey dashes between the veins ; fringe white.

*Hindwings* : the same, without first line.

Underside white : the costal half of forewings suffused with ochreous grey, as far as the outer line, which, like the veins beneath, is ochreous. Face and palpi brown above, whitish below ; vertex, thorax, and abdomen white : collar ochreous.

Expanse of wings : 28 mm.

One ♂ from Bolivia, between R. Songo and R. Snapi, March to June 1896 (Garlepp).

#### 65. *Craspedia infota* sp. nov.

*Forewings* : sombre grey, very densely irrorated with blackish atoms ; the lines very indistinct as slightly darker grey shades, the median running outside the small black cell-spot ; the antemedian and postmedian being just marked with dark vein-dots, the latter acutely angled beyond the cell ; a row of blackish marginal dots ; fringe grey.

*Hindwings* : with an antemedian, postmedian, and two submarginal waved grey lines.

Underside uniform dull grey, without dusting : the cell-spots, postmedian line, and marginal dots alone marked. Face, palpi, and collar brown-black ; vertex and shoulders whitish ; thorax and abdomen speckled grey.

Expanse of wings : 21—24 mm.

Two ♂♂ from Bolivia, between R. Songo and R. Snapi, March to June 1896 (Garlepp).

This must be near *Acidalia gerana* Dognin from Zamora.

#### 66. *Craspedia radiata* sp. nov.

*Forewings* : pure white, with very faint grey irroration ; the lines pale grey, faint : first curved, at one-third : second straight and parallel to hindmargin from two-thirds of inner margin, retracted towards costa : marginal line very finely grey : fringe pure white ; all the veins grey.

*Hindwings* : similar, the outer line curved parallel to hindmargin ; no first line.

Underside white : the forewings with faint greyish suffusion, and the costa greyish. Face and palpi brown above, whitish below ; vertex and shoulders pale yellowish ; thorax and abdomen white ; antennae black.

Expanse of wings : 26 mm.

One ♂ from Bolivia, between R. Songo and R. Snapi, March to June 1896 (Garlepp).

#### 67. *Craspedia sticticata* sp. nov.

*Forewings* : greyish ochreous, with slight darker irroration ; first line dark grey, at one-third, curved outwards, and marked by slight dark dots on the veins ; median shade oblique, sinuous, somewhat denticulate and diffuse, from costa at three-fourths to middle of inner margin, incurved below middle ; outer line submarginal, regularly dentate and parallel to hindmargin, each tooth marked with dark grey, and edged with paler ; a concise row of black marginal triangles ; fringe concolorous ; cell-spot black.

*Hindwings* : without first line.

Underside, especially of forewings, rosy-tinged. Face and palpi black-brown ; vertex, thorax, and abdomen concolorous with wings.

Expanse of wings : 26 mm.

One ♂ from Paraguay.

#### 68. *Dichromatopodia argentipuncta* sp. nov.

*Forewings* : greyish fawn-colour, densely irrorated with dark atoms; first line at one-fourth and the median shade wavy, marked only by a denser collection of dark atoms; outer line at five-sixths, fine, threadlike, very wavy, incurved beyond cell, and excurved above and below; marginal dots small, black, preceded by faintly paler horizontal streaks of the ground-colour running to a very obscure submarginal line; fringe concolorous, its basal half darker; cell-spot small, black, externally marked with two or three silvery white scales.

*Hindwings* : the same, with the cell-spot simply black.

Underside opalescent white, with a pinkish tinge; the costa of both wings rosy; cell-spots large and dark. Head, thorax, and abdomen concolorous.

Expanse of wings : 24 mm.

One ♂ from Palma Sola, Venezuela.

The tufts of the hindtibiae are wholly whitish.

#### 69. *Dichromatopodia olivaceonotata* sp. nov.

♀. *Forewings* : deep brick-red, the costa from base to near apex broadly olive-ochreous; the lines of the same colour; first at one-fourth, straight; second at three-fourths, slightly waved, outwardly oblique to vein 4, then parallel to hindmargin, running in along vein 2, then vertical to inner margin at three-fourths; a submarginal festoon of the same colour, close before the margin, sending streaks inwards between the veins; cell-spot large, ocelloid, deep red, edged with dull olive-ochreous; extreme hindmargin and fringe deep red, with fine olive-ochreous lines from the ends of the veins.

*Hindwings* : the same, without first line, and the cell-spot smaller.

Underside dull rosy, without markings. Face, palpi, vertex, and collar red; thorax, shoulders, and patagia olive-ochreous; the tips of the patagia and abdomen deep red.

The ♂ appears to have an olive-ochreous ground-colour, thickly dusted with brick-red, but this may be only the result of being worn. The scales of the hindtibiae are shining blackish.

Expanse of wings : ♂, 24 mm.; ♀, 26 mm.

Two ♀♀ from Palma Sola, Venezuela, quite perfect : 1 ♂ from Manaos (M. Stuart), much wasted.

#### 70. *Dysephyra commaculata* sp. nov.

*Forewings* : straw-colour, finely irrorated with reddish brown, and with much red-brown suffusion; costal area red-brown throughout; the base, a broad irregular antemedian fascia, a small blotch at anal angle, and a large apical blotch embracing a pale apical patch, all red-brown; the antemedian blotch is bounded inwardly by the inner line, which is excurved above the median vein and vertical below it, the paler basal area being crossed by a subbasal red line parallel to the inner line; second and third lines strongly dentate and near together, the second joining the

antemedian patch below the median vein, the third touching the two marginal patches; cell-spot deep red, included in the antemedian patch; marginal spots large, red; fringe straw-colour and red.

*Hindwings*: red, with an irregular lunulate-edged straw-coloured patch at anal angle and smaller patches towards apex: the two dentate lines more or less obscured; two black spots on the discocellular, and some coarse black scales throughout the wing.

Underside paler, straw-colour washed with red; the two lines and cell-spot of forewings reddish. Face, thorax, and anal segments of abdomen straw-colour; rest of abdomen and shoulders reddish.

Expanse of wings: 32—34 mm.

One ♂, two ♀♀, from Rio Demerara.

## 71. *Dysephyra lunifera* sp. nov.

*Forewings*: deep yellow, with orange-red irroration, the whole more or less suffused with olive-fuscous; costa broadly smoky fuscous; first line at one-fourth, bent on the median vein; second a little beyond middle, strongly excurved round cell and incurved below middle, distinctly dentate, fuscous; outer line at two-thirds, very strongly dentate, parallel throughout to the middle line; submarginal line formed of contiguous black blotches, running obliquely from costa to a blackish patch at middle of hindmargia; a fuscous cloud at anal angle; marginal spots dark brown; fringe reddish brown; cell-spot large, diffuse, smoky fuscous, touching the costal streak above, and below the median conjoined to a smoky suffusion reaching the inner margin between first and second lines.

*Hindwings*: with all three lines represented: the space between first and third wholly suffused with greyish fuscous, the marginal area likewise, but not so deeply; cell-spot double, black.

Underside dull reddish ochreous, with the markings all dull. Head red-brown; thorax and abdomen yellowish, speckled with reddish orange.

Expanse of wings: 28 mm.

Two ♀♀: one, the type, from R. Dagua, Colombia (W. Rosenberg), the other from Castro, Parana. This latter is much faded, but appears to belong here. A third smaller ♀ (24 mm.) from Cúcuta, Venezuela, is possibly distinct; it differs in having the second line of forewings not denticulate, and only the upper of the two black discal spots of hindwings.

## 72. *Eois alternifascia* sp. nov.

*Forewings*: rich yellow; the costa purplish brown from base to middle fascia; three oblique rosy fasciae, their edges finely deeper red and sinuous, the first near base narrowest, the submarginal widest; this last is traversed either by a deeper red line or a fine yellow one, and its outer edge is generally crenulate; fringe yellow.

*Hindwings*: the same.

Underside redder; the forewings sometimes almost wholly rosy. Face and vertex rosy; thorax glossy ochreous yellow; abdomen yellow, sprinkled with rosy scales.

Expanse of wings: 17 mm.

Seven examples, all ♀♀, from São Paulo (5), and Castro, Parana (2).

73. *Eois (?) cambogiata* sp. nov.

*Forewings*: bright yellow; the costa rosy at base; a purple basal patch not extending above the median vein and there tinged with rosy; a broad post-median purplish fascia, fading off towards costa, and edged externally by a dull fulvous fascia, both angled on vein 6, the latter throwing off a spur to hindmargin below the median; a subapical curved dull purplish fascia; fringe yellow.

*Hindwings*: with base dark purple, rosy-edged; a central dull purple fascia, most distinct on costa, and edged with fulvous; a submarginal purple-fulvous shade, most distinct towards anal angle.

Underside pale yellowish ochreous, indistinctly suffused, especially in the forewings, with dull rosy. Face, antennae, and vertex dull red; thorax purple; abdomen yellowish, with rosy and purple suffusion.

Expanse of wings: 19 mm.

One ♀ from British Guiana.

The only example is not in very good condition.

74. *Eois cruorata* sp. nov.

*Forewings*: yellowish ochreous, with a slight olivaceous tinge; the costa and three lines or fasciae dull purple; first line close to base, oblique and more or less filling up the basal area with purplish; the second curved, median; the third close to hindmargin, with a projection inward opposite cell and on submedian fold; marginal area and fringe yellowish, tinged with reddish.

*Hindwings*: the same.

Underside much paler; the forewings, except along inner margin, tinged with dull rosy; hindwings wholly whitish; fringe of both wings yellowish. Face rosy; thorax and abdomen ochreous olive, sprinkled with reddish.

Expanse of wings: 16 mm.

Three ♂♂ from Encuta, Venezuela.

75. *Eois quadrirubrata* sp. nov.

*Forewings*: pale yellow, the costa from base to middle deep red; four slender rosy slightly waved lines at one-fourth, one-half, three-fourths, and seven-eighths; cell-spot rosy; fringe pale yellow.

*Hindwings*: similar.

Underside the same, but the costal half of forewings is rosy. Palpi yellow, black externally; face yellow below, black above; vertex, thorax, and abdomen pale yellow; collar ferruginous.

Expanse of wings: 16 mm.

One ♂ from Petropolis.

Closely allied to *E. tenellata* Moeschler from Jamaica, but rather larger, with the red lines more slender.

76. *Eois rhodariata* sp. nov.

*Forewings*: shining, olive-ochreous, with seven oblique rosy lines, the second and third often coalescing; the last two close together and bright, forming a marginal fascia; costa paler ochreous; fringe ochreous.

*Hindwings*: olive-ochreous, with the inner and hindmargins rosy.



Underside greyer, with traces of cell-spots and two curved outer lines. Face dark brown-black ; vertex dull rosy ; thorax shining ochreous ; abdomen rosy.

Expanse of wings : 18—20 mm.

Several from Castro, Parana ; also from Sao Paulo.

77. *Eois rubrisuffusa* sp. nov.

*Forewings* : golden yellow, dusted throughout with coarse rosy scales ; costa rosy to one-third ; four rosy lines, slightly waved and parallel to hindmargin, not vertical as in *E. quadricubrata* ; first curved, at one-fourth ; second just beyond middle ; third at three-fourths ; submarginal hardly visible ; fringe yellow.

*Hindwings* : similar, the submarginal line distinct.

Underside redder. Face and palpi deep brown ; collar rosy ; vertex, thorax, and abdomen yellow, dusted with rosy.

Expanse of wings : 18 mm.

Two ♂♂ from Sao Paulo and Castro, Parana.

78. *Euephyra albidiscata* sp. nov.

*Forewings* : dull brick-red ; first line at one-fourth, nearly straight, deeper red, edged on the inside with whitish ; outer line near the hindmargin, curved and slightly waved above, edged outwardly with whitish ; a row of dark red spots along the margin between the veins ; fringe reddish ; cell-mark linear, white.

*Hindwings* : the same, but darker ; the outer line more bent in the middle ; the cell-spot silvery white.

Underside dull rosy, with outer and central lines deeper. Face above and palpi red ; vertex and lower part of face white ; thorax and abdomen reddish grey.

Expanse of wings : 27 mm.

One ♀ from Costa Rica (Underwood).

79. *Haemalea bimacula* sp. nov.

*Forewings* : bright brick-red or coppery brown ; lines brown-black, with a purplish tinge ; costa bronzy purplish ; the lines at one-fourth, one-half, and three-fourths respectively ; the first sinuous, outcurved to median, then incurved ; second more waved, incurved in cell and on submedian fold, outcurved below the middle ; third line irregularly waved and dentate ; submarginal line crenulate, touching a purplish brown blotch at middle of hindmargin and another at anal angle, the latter with a paler centre ; marginal line purplish, partly interrupted ; fringe concolorous with wings, but blotched with purplish in middle and at anal angle ; cell-spot annular, white, with a brown edge.

*Hindwings* : without first line ; a blotch at apex as well as anal angle, that at the middle of hindmargin small and almost obsolete ; cell-spot small, dark.

Underside of forewings coppery ochreous, the inner margin whitish ; cell-spot and two outer lines purplish ; hindwings paler, only the margin coppery. Head and palpi dark red-brown ; thorax and abdomen like wings.

Expanse of wings : 26 mm.

One ♂ and three ♀♀ : a pair from Rio Demerara ; the other two ♀♀ from Iquitos (Stuart) and Paramaribo, December 1892 (C. W. Ellacombe).

80. *Haemalea delicata* sp. nov.

*Forewings*: pale silky yellow, sometimes whitish: the costa broadly brick-red, dusted with dark scales; the three lines slender, wavy, interrupted, parallel to hindmargin, and all slightly curved below costa, at one-third, three-fifths, and two-thirds respectively; submarginal line red, marked only by a subcostal blotch, and another in the middle of hindmargin; fringe yellow.

*Hindwings*: like forewings, without the red costa.

Underside dull yellow; costal area of forewings and submarginal line dull purplish. Face, thorax, and abdomen yellow, the last red above; vertex and collar red.

Expanse of wings: 18—19 mm.

Several examples of both sexes from Newcastle, Jamaica.

81. *Heterephyra rubida* sp. nov.

*Forewings*: bright brick-red; the lines greenish fuscous, towards the costa becoming dark red; first at one-fourth, nearly straight, marked with the dark scales only below the median vein; second at three-fourths, irregularly crenulate, inwardly oblique from vein 4 to vein 2, more strongly marked with dark on inner margin; submarginal line irregularly waved, interrupted; marginal dots triangular, red; fringe concolorous; cell-spot deep red.

*Hindwings*: the same, without first line.

Underside paler, with the two outer lines shown. Head and thorax concolorous; bottom of face and the abdomen paler.

Expanse of wings: 32 mm.

One ♂ from Cúcuta, Venezuela.

82. *Lipomelia divaricata* sp. nov.

*Forewings*: fulvous flesh-colour, thickly and coarsely sprinkled with purplish scales; the lines purple; first at one-fourth, angled on subcostal, then vertical; second in middle, bent in below costa, then curved round cell and oblique to inner margin near first line; outer at three-fourths, irregularly oblique to hindmargin below vein 4, again touching hindmargin twice to form two small open triangles, and losing itself in a purple blotch before anal angle which contains some fine lustrous scales, and the inner edge of which is an oblique purple line touching middle line; marginal line purple, interrupted at the veins; fringe yellow, with purple mottlings; cell-spot oval, consisting of raised silvery scales.

*Hindwings*: the same, without first line; the purple blotch at anal angle smaller, and not connected with middle line.

Underside of forewings deep fulvous flesh-colour; the two outer lines dark; hindwings with the basal four-fifths yellowish, and only the margin red; fringes yellow, mottled with deep purple. Thorax and abdomen concolorous; face and palpi red-brown.

Expanse of wings: 17 mm.

One ♂ from Cúcuta, Venezuela; resembles *L. curripleta* Warr. from Sao Paulo, but the hindmargin is straight, not crenulate.

83. *Lipomelia subtineta* sp. nov.

Closely allied to *L. nisa* Druce (*Aerotomya*), but slightly larger; the central fascia, not yellow-green, but dull olive-grey; the two outer lines more acutely

dentate: the marginal area grey-brown: the silvery discal mark longer and more prominent. In the hindwings the central fascia is broader, its outer edge running acutely outwards to vein 7, forming a sharp tooth both on 7 and 6; in *nisa* Druee this line runs straight to vein 6 without forming any tooth on 7; the outer line more strongly red-brown towards costa, and the hindmargin preceded above by red-brown dashes; cell-spot smaller.

Underside straw-colour, with basal half of costa of forewings reddish; a submarginal straight fascia, narrow at costa, broadening to anal angle, the upper half reddish, the lower blackish: hindwings with a blackish blotch at outer angle.

Expanse of wings: 40 mm.

One ♂ from Bolivia, between R. Songo and R. Suapi, March to June 1896 (Garlepp).

### **Neochorista** gen. nov.

*Forewings*: with costa slightly curved, and towards apex strongly convex; apex broadly rounded; hindmargin rounded.

*Hindwings*: with the hindmargin and both angles rounded.

Palpi stout, shortly perfect; antennae of ♂ thick, subserrate, ciliated; tongue present; hindtibiae short and much thickened, with apparently a single stout apical spur; tarsi quite short.

*Neuration*: forewings, cell a little more than half the length of wing; discocellular rather oblique; first median at three-fourths, second close before the end of cell, third from the end; radials normal; 7, 8, 9, stalked; 10 and 11 stalked; 10 anastomosing with 7, 8, 9, to form the single narrow areole. Hindwings with the subcostals long-stalked.

Scaling fine; wings semitransparent; abdomen of ♂ elongate.

Type: *Neochorista transpecta* Hüb. (*Paida*).

This species, together with *aurata* Druee, have been referred to *Eudule*, but the costal of hindwings does not anastomose, except at a point, with the subcostal, and both belong to the *Sterrhinae*.

### **Odontoptila** gen. nov.

*Forewings*: elongate; costa straight for three-fourths, then gradually curved; apex produced, bluntly subfalcate; hindmargin bluntly elbowed in middle, excised above and below; anal angle distinct.

*Hindwings*: narrow, elongate; apex rectangular; inner margin very short; hindmargin strongly dentate below vein 4, excised opposite the cell.

Abdomen of ♂ long; antennae with long fine cilia; palpi slender, upturned; tongue present; hindlegs aborted: the tibiae with tufts of hair; the tarsi almost obsolete.

*Neuration*: forewings, cell half as long as wing; first median at four-fifths, second close before end of cell; radials normal; 7, 8, 9, stalked; 10 anastomosing shortly with 11 and again with 8, 9, forming a double areole. Hindwings with the subcostals on a long stalk; first median from one-half.

Type: *Odontoptila brunnea* sp. nov.

#### 84. *Odontoptila brunnea* sp. nov.

*Forewings*: reddish brown, tinged with grey towards base; first line oblique, dark brown and slender, retracted to costa; an oblique diffuse median shade,

touching a dark cell-spot; outer line dark brown, oblique, from inner margin at two-thirds towards apex, before which it is retracted to the costa and interrupted, followed by a deep brown fascia, which runs as a narrow streak into apex and is edged by the paler submarginal line; fringe brown, with a dark brown basal line.

*Hindwings*: with cell-spot, a diffuse median, and punctulate postmedian line, brown.

Underside paler brown, rather shining, with the diffuse median shade and dotted outer line marked. Head and thorax black-brown; abdomen red-brown; vertex white.

Expanse of wings: 19 mm.

Two ♂♂ from Sao Paulo.

### 85. *Odontoptila cubitata* sp. nov.

*Forewings*: dull whitish, semihyaline, with a few scattered dark scales; costa fuscous; first line at one-fourth, fuscous, curved on the median, then oblique inwards; second at two-thirds, oblique outwards and sharply angled on vein 6, then sinuous inwards to two-thirds of inner margin; the cell-spot large, ochreous fuscous, followed by some fuscous scaling in the angle of the second line; outer line at four-fifths, brown, flexuous, bluntly angled at vein 6; marginal area ochreous fuscous, traversed by a distinct submarginal line of white lunules; marginal line brown; fringe white, with brown tips.

*Hindwings*: with faint antemedian line, small black cell-dot, and double waved submarginal line, filled up with fuscous only from costa to vein 6; fringe whitish, with dark dots at the teeth.

Underside the same, but duller and more suffused with fuscous. Face dark; thorax and abdomen whitish, the latter marked with fuscous above.

Expanse of wings: 21 mm.

One ♂ from Cucuta, Venezuela.

### 86. *Odontoptila margarita* sp. nov.

*Forewings*: pearly white, semihyaline; the costa ochreous and grey; first line very obscure, dark fuscous, at one-fourth, running obliquely outwards and interrupted, marked by blackish dots on the veins; median line marked only by a black spot on costa and inner margin; outer line at three-fourths, strongly sinuous, marked with black in the middle and above inner margin, the sinus outwards above vein 6 and between veins 2 and 4 faintly marked with grey; followed by a grey shade, which is darkest in the corresponding portions, and edged outwardly with white, its lower edge lunulate; marginal area grey; marginal line brown, interrupted by the white veins and by an oblique pale apical streak; fringe white, with blackish dots at the ends of veins, except veins 5 and 6.

*Hindwings*: similar, without any trace of first line.

Underside with base of costa of forewings and a sinuous submarginal fascia black; the marginal area on forewings also blackish. Face black; thorax and abdomen white.

Expanse of wings: 19 mm.

Two ♂♂ from Cucuta, Venezuela.

87. *Pleuroprucha ochrea* sp. nov.

*Forewings*: pale ochreous, dusted sparsely with dull reddish atoms; the costa narrowly yellowish; the lines very faint, indicated by darker scales; the antemedian at one-third, median slightly beyond middle; outer line at five-sixths, more distinct and denticulated; submarginal indistinct; a marginal row of reddish spots; fringe concolorous; cell-spot linear, thick, but indistinct.

*Hindwings*: more dusted with darker; the lines all indistinct, but marked on inner margin by darker spots; cell-spot dull brown.

Underside whitish ochreous; forewing darker-tinged towards costa. Face and palpi brown; thorax and abdomen pale ochreous.

Expanse of wings: 18 mm.

One ♂ from Cnenta, Venezuela.

The palest species of the genus.

88. *Pleuroprucha roseipuncta* sp. nov.

*Forewings*: ochreous, finely dusted with rosy; inner, outer, and marginal lines marked by rosy dots on the veins; a diffuse dull rosy central shade; fringe ochreous.

*Hindwings*: similar.

Underside ochreous, tinged with rosy; the forewings almost wholly rosy. Head, thorax, and abdomen pinkish ochreous; the face deep rosy; vertex white.

Expanse of wings: 14 mm.

Several from Paramaribo, February and July 1892 (C. W. Ellacombe).

Smaller and paler than *rudimentaria* Gnen.

*Polygraphodes* gen. nov.

*Forewings*: with costa curved; apex subacute; hindmargin obliquely curved.

*Hindwings*: narrow, elongate; hindmargin dentate, the anal angle truncate; an excision beyond the cell.

Palpi porrect, slender; antennae of ♂ pectinated, the pectinations ciliated; hindtibiae swollen, the tarsi short; the other legs long.

*Neuration*: forewings, cell half as long as wing; discocellular oblique; first median at five-sixths, second and third from end of cell; radials normal; the areole single, 11 shortly anastomosing with the stem of 7, 8, 9, 10. Hindwings with the two subcostals long-stalked; second median from before end of cell.

Type: *Polygraphodes boarmiata* sp. nov.

89. *Polygraphodes boarmiata* sp. nov.

*Forewings*: grey, speckled with darker; the lines dark grey, starting from costal blotches; first at one-fourth, outcurved above the median, inangulated below; median line obscure, curved round the black cell-spot, and becoming obsolete below; exterior line slightly wavy, marked by blackish spots on the veins, followed by a darker grey fascia which is edged by a pale submarginal line; a marginal line of shallow black lunules; fringe grey.

*Hindwings*: similar, without first line, but with a dark spot at base.



Underside glossy cinereous, the hindwings paler. Face and palpi dark ; thorax grey ; abdomen wanting.

Expanse of wings : 28 mm.

One ♂ from Petropolis, Prov. Rio de Janeiro.

90. *Ptychopoda* (?) *amplimargo* sp. nov.

*Forewings* : dull fulvous, dusted with darker ; the markings indistinct ; traces of an antemedian and postmedian brown line, with a distinct brown cell-spot ; the postmedian nearer the hindmargin than usual.

*Hindwings* : the same, with a brown submarginal shade.

Underside the same. Thorax and abdomen concolorous ; head damaged.

Expanse of wings : 16 mm.

One ♂ from Petropolis.

The only example is much wasted, but the peculiar shape of the wings will distinguish it. The hindmargin of forewings is very oblique and runs into the inner margin without any anal angle, the inner margin itself being much bulged out in its outer half. The hindwings are broad, well rounded, and the inner margin greatly developed, being folded or thickened ; the cell of the hindwings is very broad ; veins 6 and 7 on a long stalk ; vein 3 before lower angle of cell.

91. *Ptychopoda* (?) *jamaicensis* sp. nov.

*Forewings* : whitish grey, dusted with dark grey ; a blackish spot at base ; the lines blackish, waved, starting from dark costal spots at one-fourth, one-half, and three-fourths respectively, the median line on costa being somewhat beyond the middle ; submarginal shade formed of dark grey blotches, interrupted opposite cell and on submedian fold ; cell-spot small, black ; a row of black marginal spots between veins ; fringe pale, with a minute dark dot at base beyond each vein.

*Hindwings* : similar.

Underside dingy grey, the fringes paler. Face and palpi blackish ; vertex, thorax, and abdomen pale grey.

Expanse of wings : 26—28 mm.

Common from Jamaica.

Some specimens are much darker grey, with the lines strongly expressed. In the forewings vein 10 anastomoses with 11, and again with 7, 8, 9, forming a double areole ; veins 6, 7, of hindwings are stalked. The antennae of ♂ densely ciliated. The species superficially much resembles *Craspedia fibulata* Guen. from India.

92. *Ptychopoda limitata* sp. nov.

*Forewings* : yellow, dusted with ferruginous scales ; the lines purplish ; first at one-third, fine, obtusely bent on the median vein ; basal area suffused with purplish grey scales ; outer line at three-fourths, minutely waved, curved towards margin from costa to submedian fold, then vertical ; marginal area beyond it tiled, like the basal, with purplish grey, except the apical fourth, where the scales are ferruginous ; in the pale central field a faint ferruginous sinuous line is visible towards the outer line and beyond the minute dark cell-spot ; marginal line dark purplish, the fringe paler.

*Hindwings* : yellow, with ferruginous lines and scales.

Underside the same, but duller : the costa of forewings purple. Face and vertex purplish ; thorax and abdomen yellow, varied with ferruginous.

Expanse of wings : 12 mm.

One ♂ from Valencia, Venezuela.

### 93. *Ptychopoda percrinita* sp. nov.

*Forewings* : pale ochreous, slightly yellow-tinged towards the costa, and sometimes very finely dusted with grey atoms, with five darker ochreous denticulate lines, antemedian, median, touching the small dark cell-spot, postmedian, and two submarginal ; fringe concolorous, with a row of black dots along base.

*Hindwings* : without cell-spot, and only four lines.

Underside with the lines more distinct ; forewings with the disc tinged with grey. The costa broadly reddish yellow. Face and palpi brown-red ; vertex white ; thorax and abdomen ochreous.

Expanse of wings : 16 mm.

Two ♂ from Castro, Parana, and Sao Paulo.

In the example from Castro, which has the slight grey dusting, the lines are more distinct and the marginal dots larger ; in the other, the lines, not being grey-tinged, are less obvious, and the marginal dots quite small.

The hindwings are oval, with both angles and the hindmargin rounded off ; on the underside the costa of the hindwings is armed with two fringed tufts of hair, one at base, the other in the middle, and there are curled wisps of hair along the discocellular and the inner-marginal area : the first two pairs of legs are very long, the middle tibiae with a tuft of long hairs from the apex and two very unequal spurs, the inner one being as long as the first joint of the tarsi ; the hindlegs are quite aborted, and hidden beneath a dense tuft of pale hairs ; the antennae shortly pubescent.

### 94. *Ptychopoda rosea* sp. nov.

*Forewings* : pale pearl-grey, dusted and suffused with rosy purple ; costa and lines purple : first at one-fourth, second in middle, both vertical, the second slightly incurved at inner margin : third from costa at three-fourths to two-thirds of inner margin, starting from a black costal spot, oblique outwards and angled on vein 6, thence oblique inwards, marked with dark dots on veins : marginal area suffused with rosy purple, with the submarginal line pale : cell-spot rosy ; fringe reddish grey, chequered dark and light.

*Hindwings* : with a zigzag dark central line, edged with whitish on each side ; marginal area rosy ; fringe dark grey, mixed with whitish.

Underside dull rosy grey, with the markings indistinct. Head, thorax, and base of abdomen pearly grey ; rest of abdomen tinged with reddish.

Expanse of wings : 19 mm.

One ♂ from Paramaribo, August 1892 (C. W. Ellacombe).

### 95. *Ptychopoda subpilosa* sp. nov.

*Forewings* : pale ochreous, tinged with darker along the costa, and with slight dark spots at one-fourth, one-half, and three-fourths, indicating the origin of the three lines, of which only the postmedian, somewhat denticulate, is plain ; fringe ochreous, with slight dark dashes at base ; cell-spot small, dark.

*Hindwings* : ochreous, with indistinct cross lines.

Underside with the markings of forewings somewhat more visible. Face and palpi reddish; thorax and abdomen ochreous.

Expanse of wings : 16 mm.

One ♂ from Cucuta, Venezuela.

In shape of forewings, which are pointed, this species resembles *Pt. subvestita*. The hindwings are irregularly oblong, the hindmargin bluntly prominent below the median; they are without the tufts and folds of hair which occur in *Pt. subvestita* and *pererinita*, but instead the whole under surface is covered with fine erect down-like hair, as in those of *Brachyprota abnormipennis*, from which the species differs in the less exaggerated prolongation of the hindwings, and in their costal vein being complete.

#### 96. *Ptychopoda subvestita* sp. nov.

*Forewings* : ochreous, dusted with darker, especially along the costa ; the lines indistinct ; postmedian line running nearly straight across the wing to inner margin before anal angle, indistinctly denticulate; a small dark cell-spot, and traces of a pale submarginal line between two darker shades ; marginal dots elongated, brownish; fringe ochreous.

*Hindwings* : with only traces of curved lines ; cell-spot absent ; marginal dots as in forewings.

Underside tinged with deeper ochreous, the lines much plainer; the postmedian line denticulate; the submarginal shades distinct. Head and face brown-red; thorax and abdomen ochreous.

Expanse of wings : 16 mm.

One ♂ from Petropolis; one ♀, one ♀, from Santos.

This insect is related to *Pt. pererinita* from Sao Paulo, having the fringed tufts of hair on the costa of hindwings beneath, as well as the wisps of hair along the discocellular and the veins; but these are all exaggerated in the present species, the hindwings of which have on the upper surface also a folded lappet at base of costa reaching nearly to the middle of the wing, and the discocellular with raised scales ; the hindwings themselves are much elongated and narrowed at base ; the forewings have a small tuft of hair in the middle of hindmargin ; the tuft of hair covering the aborted hindlegs is black beneath, while in *Pt. pererinita* it is wholly ochreous ; the antennae, instead of being simply pubescent, are subserrate and clothed with long cilia.

In the hindwings veins 2 and 3 are stalked, the stalk being curved and thickened. Snellen remarks a similar peculiarity in his *chlorosata* from Ubaque, *Tijl. v. Ent.* XVII. p. 56; but though he had fourteen ♂♂ of his species, he makes no mention of the tuft of hair on forewings, or of the peculiar appendages of the hindwings, and so I presume the two species to be different.

The ♀ has narrower more pointed forewings than the ♂ ; but, on the contrary, the hindwings shorter, obovoid, the hindmargin protuberant towards anal angle.

#### 97. *Ptychopoda triangularis* sp. nov.

*Forewings* : dull grey, dusted and marked with darker grey; the lines all straight, very oblique, parallel to the oblique hindmargin; the antemedian generally obscurely double, the outer arm being retracted to the costa before the dark cell-

spot : postmedian always double, forming a dark grey fascia running to costa before apex, the outer arm obscurely marked with dark vein-dots ; submarginal line double, both arms fine and more or less lost in the dark marginal area ; fringe grey, with a paler median line, often marked with dark at the ends of the veins.

*Hindwings* : the same, without first line ; the inner arm of the outer line median and touching cell-spot, the outer arm indistinctly denticulate.

Underside densely mottled with grey, more or less obscuring the lines. Face dark grey-brown ; vertex whitish ; thorax and abdomen dull grey.

Expanse of wings : 20—22 mm.

Both sexes from Sao Paulo.

Easily recognised by the shape of the wings, which are both triangular : costa nearly straight, apex very acute : hindmargin straight and very oblique, as long as inner margin ; anal angle well marked.

### 98. *Ptychopoda (?) virginea* sp. nov.

*Forewings* : snow-white ; outer line represented by a sinuous grey-brown cloud, not reaching above the median ; submarginal line greyish brown, obsolete before vein 4 ; a minute black cell-dot, and series of black marginal dots ; fringe white.

*Hindwings* : with very large black cell-spot ; cloudy fuscous postmedian and submarginal lines, and some coarse black scales along inner margin.

Underside of forewings with an elongated grey suffusion between veins 2 and 4 ; hindwings with a grey cloud on costa at two-thirds. Head blackish ; thorax and abdomen white, the latter with some grey scales.

Expanse of wings : 14 mm.

One ♀ from Paramaribo, August 1892 (C. W. Ellacombe).

### SUBFAMILY ASTHENINAE.

### 99. *Amaurinia chrysocraspedata* sp. nov.

*Forewings* : reddish fawn-colour, more greyish fawn along the costal and inner margins ; space between veins 3 and 6 more reddish and mottled with yellow ; wing crossed by a number of wavy dark lines, of which the basal, median, and antemedian are most distinct, the median parallel to the basal, and the postmedian incurved below middle and approaching the median on inner margin ; cell-dot brown ; hindmargin narrowly yellow, the reddish ground-colour finely edged with purple and bent outwards to touch the margin between veins 3 and 4 ; fringe yellow, tinged with red at apex, middle, and anal angle.

*Hindwings* : more brick-red, sometimes with yellow mottlings ; antemedian and postmedian wavy dark lines ; fringe as in forewings.

Underside duller ; the wavy lines beyond the postmedian plainer. Face dark brown ; thorax and abdomen concolorous with wings ; vertex and shaft of antennae white.

Expanse of wings : 26 mm.

Two ♂♂ from Bolivia, between R. Songo and R. Snapi, March to June 1896 (Garlepp).

*Eois cassandra* of Drncee must be near this, but he makes the head all red ; besides, the venuration must be different.

100. *Amaurinia consocia* sp. nov.

Distinguished from Guenée's *hyperythraia* by the rufous olive tinge of the wings, with all the wavy lines obscurely darker, though indistinct; fringe deep yellow, spotted with purple at apex, middle, and anal angle.

Underside much redder, with all the lines more distinct.

One ♂ from Bolivia, between R. Songo and R. Suapi, March to June 1896 (Garlepp).

101. *Amaurinia xanthoperata* sp. nov.

*Forewings*: purplish grey, the lines darker purple; very much like *A. chrysocraspedata*, but the median line in the present species is incurved below the middle and parallel throughout to the postmedian, while in that the median line is parallel to the basal; hindmargin more broadly yellow; the purplish area edged by a deeper purplish line, bent out in the middle but not touching the hindmargin; costa just before apex yellow; fringe yellow, faintly red-tinged at apex, middle, and anal angle; cell-spot black, with distinct red edge.

*Hindwings*: with a broad straight purple antemedian shade instead of a narrow line; postmedian line minutely waved; margin and fringe as in forewings.

Underside duller purple, with the lines all very uniformly marked. Face and palpi dark purple-brown; thorax and abdomen concolorous with wings; vertex and shaft of antennae white.

Expanse of wings: 23 mm.

Two ♂♂ from Bolivia, between R. Songo and R. Suapi, March to June 1896 (Garlepp).

102. *Cambogia aurata* sp. nov.

*Forewings*: deep golden yellow, with fine waved dull reddish lines, of which the outer line at two-thirds and two submarginal lines are thickest and most distinct; the outer line is preceded and followed by a very fine line, and there are three near base before the blackish cell-spot; all the lines swollen and partially coalescent at costa; fringe yellow, with faint red dots at base.

*Hindwings*: similar.

Underside duller, with the marks showing through. Face, vertex, and front of thorax ferruginous; abdomen yellow, mixed with ferruginous; fillet and shaft of antennae white.

Expanse of wings: 16 mm.

Two ♂♂, one ♀, from Boschland, Surinam, May 1892 (C. W. Ellacombe).

103. *Cambogia ferruginata* sp. nov.

*Forewings*: dull rust-coloured, crossed throughout by numerous wavy darker rusty and grey lines, three beyond middle, forming the outer edge of central area, being conspicuous and projecting toothlike below the middle; costal area darker; cell-spot black.

*Hindwings*: the same, the cell-spot large.

Underside the same, but paler. Head, thorax, and abdomen ferruginous; vertex and antennae white.

Expanse of wings: 26 mm.

One ♂ from Newcastle, Jamaica.

Distinguished by its uniform rusty appearance.



104. *Cambogia lineolata* sp. nov.

*Forewings* : yellow, varied with orange-red ; the costa broadly orange-red, with dull yellow spaces at the extreme edge ; a short orange-red line close to base, another at one-third, nearly vertical ; outer line at two-thirds, bent on vein 4 ; an interrupted wavy submarginal line : the intervals are traversed by faintly expressed orange-red wavy lines or patches : cell-spot orange-red : fringe yellow, with orange-red line at base.

*Hindwings* : with a straight orange-red line at one-fourth, and another, median, followed by two wavy and interrupted lines : cell-spot linear : fringe as in forewings.

Underside the same, only paler. Face, palpi, and abdomen yellow : vertex white : thorax, collar, and base of abdomen orange : apices of patagia yellow.

Expanse of wings : 28 mm.

One ♂ from Popayan, Colombia (Lehmann).

Hindmargin of hindwings bluntly angled.

105. *Cambogia nigriplaga* sp. nov.

*Forewings* : ochreous, the ground-colour almost entirely hidden by grey and rufous scaling ; the costa paler ; first line at one-fifth, bent below costa, its middle vertical ; median line also oblique at first, then bent and straight to vein 4, then incurved : outer line similar, but minutely waved, edged opposite the cell and in submedian field with paler ; space between median and outer line rufous, filled up with greyish black from vein 2 to inner margin : submarginal line cloudy, interrupted ; marginal line fine ; fringe concolorous ; a pale ochreous apical patch, obliquely edged from apex ; cell-spot black.

*Hindwings* : rufous grey, with black cell-spot and three slightly waved dark lines, the inner margin with a dark blotch between first and second.

Underside paler, with dingy rufous suffusion. Head, thorax, and abdomen rufous ; vertex also rufous.

Expanse of wings : 20 mm.

One ♀ from Castro, Parana.

106. *Cambogia* (?) *semipicta* sp. nov.

*Forewings* : dull olive-ochreous, with scarcely defined traces of darker transverse lines, the outer line alone with its pale edging marked plainer ; inner margin at anal angle marked with dull chocolate ; cell-spot distinct, dark ; marginal line very fine, waved, reddish ; fringe concolorous.

*Hindwings* : with only basal area olive-ochreous : the rest of the wings dull chocolate, traversed beyond middle by the faintly paler outer line ; fringe olive-ochreous.

Underside wholly olive-ochreous, tinged with yellowish, and with partial reddish dusting. Face ferruginous ; head and thorax olive-ochreous ; fillet white ; abdomen missing.

Expanse of wings : 26 mm.

One ♀ from Petropolis.

This species belongs to the group with more decidedly pointed forewings and distinctly angulated hindwings.

107. *Cambogia tessellata* sp. nov.

*Forewings*: yellow, the basal half crossed by six undulating orange-red lines, which become purplish and coalescent along costa, leaving two unsuffused yellow patches, one in the cell and one in the submedian area, before the edge of a broadish purplish red fascia, which is incurved towards costa and below the middle runs parallel to the hindmargin: a narrower purplish red submarginal fascia, interrupted between veins 3 and 4 by a projection of the broader fascia to the hindmargin: a narrow red line from costa before apex to hindmargin at vein 4: fringe yellow, chequered with reddish beyond the veins: cell-spot distinct, black, placed in the upper of the two unsuffused yellow patches.

*Hindwings*: similar: the red lines at base fewer, the space before the purple fascia entirely yellow from costa to inner margin: the cell-spot red.

Underside duller, with the markings reproduced. Face, vertex, thorax, and abdomen ferruginous: fillet and antennae snow-white.

Expanse of wings: 19 mm.

Three ♀♀ from Newcastle, Jamaica.

Akin to *C. snellenaria* Moeschl.

108. *Oligopleura aulacata* Feld. ab. *diversicolor* nov.

Distinguished from the type-form by the grass-green tints of the forewings being all changed into olive-brown, the inner and outer fasciaform edges of the central area being separated by a broad median band of the pale olive-drab ground-colour. The aberration occurs along with the type-form, and is not sexual.

Two examples from Cucuta, Venezuela.

## SUBFAMILY TEPHROCLYSTHINAE.

109. *Chloroclystis brunneoviridis* sp. nov.

*Forewings*: deep green; first line close to base, black on costa, the basal area purplish; a broad central fascia, edged by crenulate irregular dark lines, and filled up with purple in cell and submedian fold, the inner band wholly dark purple-brown, the costal portion remaining green, with only the commencement of the lines marked as black spots: submarginal line formed of purple lunules, not reaching costa, and conjoined to central fascia beyond cell by a purple suffusion: fringe purplish green: the broad green fasciae preceding and following the central area are each traversed by a single dark line.

*Hindwings*: ochreous whitish, slightly green-tinged; fringe grey.

Underside cinereous greenish: both wings with obscure denticulated darker lines. Thorax and abdomen green: palpi, face, and vertex ochreous olive, probably faded from green.

Expanse of wings: 22 mm.

One ♂ from Sao Paulo.

The hindwings are narrow: the inner margin strongly folded over beneath: second and third medians from lower end of cell, the other veins hidden.

110. *Dochephora pilosa* sp. nov.

*Forewings*: olive-ochreous, tinged with rufous brown, the costa and apical area palest: the wings crossed by a succession of interrupted brown lines, curved parallel

to the hindmargin, the central area darkest, marked with dark olive-green patches of scales in the cell, close to base, and along the submedian foveal depression : fringe pale olive-ochreous.

*Hindwings* : shining white, tinged with rufous along inner margin to anal angle : basal line of fringe dark glossy grey : a scaleless depression at end of cell and another before apex.

Underside pale olive : the whole of the space below the median—including the elongated foveal depression—as far as inner margin, scaleless and glossy ; hindwings entirely covered with thick somewhat glistening olive hairs, altogether concealing the venation. Palpi and collar rufous ; face and vertex pale ochreous ; thorax and abdomen olive and grey, the patagia paler.

Expanse of wings : 24 mm.

One ♂ from Costa Rica (Underwood).

### 111. *Tephroclystia longicorpus* sp. nov.

*Forewings* : pale silky grey, with dark grey markings : basal patch dark grey, its outer edge obliquely curved, with a paler line down its centre : central fascia broad, its inner half filled up with dark grey, with a prominent projection outwards in cell containing the black cell-spot : its outer half consisting of three parallel dark grey lines, slightly angled at veins 6 and 4, and marked, especially the outermost, by black dashes on veins ; a pale fascia of ground-colour, traversed by a threadlike darker line, precedes and follows the central fascia ; submarginal line fine, waved, and pale, with dark grey shades on each side, the inner one lunulate ; fringe iron-grey, chequered with darker, and with a fine pale line at base.

*Hindwings* : dull grey, with traces of cross lines from the inner margin : a dark cell-spot.

Underside pale grey, with the markings equally plain on both wings. Palpi dark grey, with the tips pale : face whitish grey, with two black dots at top ; vertex, collar, and thorax pale grey ; abdomen cinereous.

Expanse of wings : 20 mm.

Three ♂♂ from Bolivia, between R. Songo and R. Suapi, March to June 1896 (Garlepp).

The body from head to anal segment as long as costa of forewings.

### 112. *Tephroclystia longifimbria* sp. nov.

*Forewings* : silky fuscous, with the markings indistinct ; a basal patch, a median fascia twice as broad on costa as at inner margin, and a wavy-edged submarginal fascia, all darker, the intervening spaces, as well as the centre of the median fascia which contains the dark cell-spot, being pale ; a pale ochreous spot above anal angle on the outside of the submarginal fascia ; fringe glossy fuscous.

*Hindwings* : wholly dark smoky fuscous, with traces of a deeper median and submarginal line and dark cell-spot ; fringe very long, tufted at anal angle, glistening.

Underside dingy ochreous grey, but glossy, the lines and cell-spots indistinctly darker : thorax and abdomen fuscous : head, collar, and anal segments of abdomen paler, more ochreous grey.

Expanse of wings : 16 mm.

One ♂ from Sao Paulo.

The shape of the wings is like that of *T. pygmaea* of Europe.

113. *Tephroclystia truncatipennis* sp. nov.

*Forewings*: grey, with darker suffusion, the veins in places marked with blackish; central fascia formed of two grey bands, marked with black dashes on the veins and containing a black cell-spot: a paler grey fascia on each side of it, traversed by a grey line; basal area edged by a grey band, with a grey line inside it: submarginal line fine, pale, wavy; preceded and followed by darker grey shades, the inner one forming a series of dark lunules: a row of small dark marginal spots, with dark dashes from them to the submarginal line; fringe chequered light and dark grey.

*Hindwings*: nearly the same, but the central band less distinct.

Underside glossy, cinereous fuscous, with the cell-spot and all the bands marked dark on costal half of wings. Head, thorax, and abdomen grey; abdomen with a black ring at base.

Expanse of wings: 20 mm.

Two ♀♀ from Castro, Parana, and Petropolis.

Distinguished by the truncation of the anal angle of hindwings, the inner margin being short.

## SUBFAMILY HYDRIOMENINAE.

*Amygdalopteryx* gen. nov.

*Forewings*: elongate, the costa slightly shouldered at base, convex before apex; apex rounded; hindmargin obliquely curved.

*Hindwings*: elongate, in the ♀ normal; the apex and hindmargin rounded; in the ♂ with the apex and upper part of margin rounded: inner margin very short, hindmargin from anal angle to middle cut off straight, the cell and lower half of wing clothed with thick furry hair above and below.

Palpi rather long, porrect, the terminal joint decumbent, smooth; antennae of ♂ subserrate, with pairs of short cilia, in ♀ simple, filiform; forehead with a short sharp projection; hindtibiae of ♂ with four spurs.

*Neuration*: forewings, cell half the length of wing; discocellular angulated, the upper half vertical; first median at five-sixths, second and third from end of cell; radials normal; 7, 8, 9, stalked from end of cell; 10 anastomosing with 11, and then with 7, 8, 9, forming a double areole; 11 from near end of areole; 7 from the end; 8, 9, 10, stalked from the end.

Type: *Amygdalopteryx dulciferata* Wlk. (*Larentia*).

114. *Camptogramma erebata* sp. nov.

*Forewings*: deep purplish grey, the lines oblique and waved, blackish: first from one-third of inner margin, wavy, acutely angled on the subcostal and retracted to costa; second from just before apex to three-fourths of inner margin, waved, and forming a more conspicuous sinus beyond cell, preceded by a broad purplish black shade; fringe concolorous, with small black dots at the ends of the veins between the crenulations; a black cell-spot.

*Hindwings*: similar, but without first line and cell-spot: the outer fascia paler.

Underside wholly deep purplish grey. Head, thorax, and base of abdomen dark grey; abdomen paler grey. Abdomen and hindwings of the ♂ paler.

Expanse of wings: 26—30 mm.

One ♂ and several ♀♀ from Sao Paulo; also from Castro, Parana.

115. *Epirrhoe* (?) *gelatina* sp. nov.

*Forewings*: glossy, whitish ochreous, the ground-colour almost hidden by fuscous suffusion; basal patch dark fuscous, edged by the nearly straight dark first line, from one-fifth of costa to one-sixth of inner margin, and traversed by a slightly waved blackish line; central fascia with its inner edge consisting of two and its outer of three waved and irregularly dentate dark lines, including a large black cell-spot; followed by several pale and dark alternating dentate lines; submarginal line pale, uniformly dentate, and preceded by a dark shade; the central fascia is suffused with a fuscous cloud which partially darkens the pale space between it and the basal patch; marginal area ochreous and grey, with dark dashes between veins; marginal line black; fringe very glossy, dark fuscous, with pale intervals beyond the vein-dots.

*Hindwings*: whitish ochreous, grey-tinged; a distinct cell-spot and curved postmedian grey line; a broadish grey marginal fascia.

Underside of forewings dull blurred cinereous; of hindwings whiter, with large cell-spot and traces of two curved grey fasciae. Face and thorax brown; abdomen wanting.

Expanse of wings: 26 mm.

One ♀ from above Mapiri, 2000 feet, 1895 (Stuart).

The true position of this species must await the examination of a ♂. Judging from the character of the fringes, it may be related to the Australian genus *Melitulias* Meyrick.

116. *Hammaptera aurea* sp. nov.

*Forewings*: olive-green, varied with fuscous; the lines fuscous; a dark waved fascia close to base, followed by a yellowish olive broader fascia containing traces of darker lines; central fascia dark fuscous, the inner edge followed by two, the outer preceded by three, waved darker lines; the inner edge slightly curved and minutely waved; the outer with two or three small teeth beneath costa and a blunt bidentate projection below median, followed by a white line; a submarginal deeper fuscous olive shade containing four waved dark lines, slightly toothed inwards on the veins; submarginal line formed of ochreous lunules, edged externally with black below costa, opposite cell, and above anal angle; marginal area olive-green; marginal line concise, black, interrupted by olive dots at ends of veins; fringe yellowish, chequered with dark grey beyond veins; cell-spot linear, black.

*Hindwings*: dull orange, with the inner area smoky grey for two-thirds; an obscure dark curved submarginal line from inner margin to vein 4; fringe orange, with black lines at base between veins 2 and 4 only.

Underside yellow; forewings with large black cell-spot and broad marginal black fascia, containing creamy white spots at apex and middle of margin; hindwings with only traces of a dark fascia and small cell-spot. Face and palpi dull yellow; thorax olive and yellowish; abdomen dull yellowish, with grey bands.

Expanse of wings: 45 mm.

One ♂ from Bogota.

The fold on inner margin is slight, and the contained tuft orange.

117. *Hammaptera pallidipars* sp. nov.

*Forewings*: with ground-colour ochreous whitish, strongly tinged with olive; the lines and markings blackish; basal area limited by a double blackish denticulated



line and traversed by two or three finer lines; central fascia with the inner edge waved and nearly vertical to inner margin at two-fifths; outer edge denticulated and irregular, with two more prominent teeth between veins 2 and 4, to inner margin at four-fifths; traversed by six blackish denticulated lines, three inner and three outer, sometimes leaving a paler space in middle containing the black cell-spot; the whole of the fascia filled up with smoky black, which in a less degree sometimes extends over the preceding pale fascia to the base; between the pale fascia that follows the central dark area and the pale waved submarginal line is an olive-fuscons fascia, always interrupted below middle and often obliterated by the olive-ochreous ground-colour, except at costa and above anal angle and beyond cell: the marginal space always with two wedge-shaped marks beyond cell; marginal line black, interrupted at the veins; fringe ochreous, chequered with fuscons.

*Hindwings*: dark smoky fuscons, the fringe paler, with dark line at base.

Underside black, with a broad whitish postmedian fascia, interrupted below the middle: a white apical patch and another at middle of hindmargin on the forewings; the cell-spots black. Head, thorax, and abdomen ochreous, the abdomen varied with fuscons.

Expanse of wings: 34—42 mm.

Four ♂♂, two from R. Dagua, Colombia (Lehmann), and two from Costa Rica (Underwood).

A variable species: in the Colombian insects the paler areas are more ochreous, in the Costa Rica specimens more olive; the central fascia is sometimes edged externally by a distinct white line; the hindwings often show a slightly paler space, corresponding to the white fascia of the underside.

#### 118. *Hamaptera subolivescens* sp. nov.

*Forewings*: olive-green; markings fuscons: a dark fascia near base, followed by a broad paler fascia of ground-colour, which, however, sometimes contains another similar dark fascia; central fascia of moderate width; its inner edge slightly curved inwards; its outer with a strong inangulation beyond cell and another on submedian fold, with a broad triangular projection between: containing four waved dark lines, sometimes meeting on the veins and forming annuli; the whole filled up with fuscons; a pale fascia follows, with a dark thread down the middle; then three waved dark lines, becoming coalescent below; submarginal line pale, lunulate, preceded and followed below costa, opposite cell, and above anal angle by blackish wedge-shaped markings: fringe olive-green or yellow, chequered with black, and with pairs of black spots at end of each vein; cell-spot black, linear.

*Hindwings*: dull smoky fuscons; fringe pale yellow, with black dots at base.

Underside with basal two-thirds, including the large black cell-spot, olive-fuscons, separated by a bent pale fascia from the smoky black marginal area, which contains a pale spot at apex and in middle; hindwings similar, but the marginal dark area obscure.

Head, thorax, and abdomen olive-green or yellowish; abdomen marked with grey rings.

Expanse of wings: 40—42 mm.

Two ♂♂, one ♀, from Paraguay and Costa Rica.

In the ♀ the margin of hindwings is narrowly yellowish, that colour running up also a short way along the veins.

119. *Pelurga straminea* sp. nov.

*Forewings* : pale straw-colour; the lines and markings grey-brown: first line near base, curved and waved; second line similar, before one-third; followed by two more lines, the space between them, except at costa, filled up with grey and forming the inner band of central fascia; outer line at three-fourths, sinuous, forming three blunt teeth on vein 6, between veins 3 and 4, and on the submedian fold; preceded by three waved lines, similarly, except on costa, filled in with grey; the two grey bands meet below the median and on inner margin; cell-spot blackish; a faint waved double brownish submarginal line; fringe pale straw-colour, with brown basal line.

*Hindwings* : wholly straw-colour, with brown cell-spot.

Underside pale yellow; forewings with outer line of central fascia<sup>e</sup> thick, brown, and with a slight apical streak; hindwings with obscure brown postmedian and submarginal shades. Head, thorax, and abdomen straw-colour; thorax mixed with grey.

Expanse of wings : 26 mm.

One ♂ from La Gama, Argentina, November 1893.

The face of this insect is armed above with a bifid chitinous projection without scales, and below with a lunulate one, much less prominent. The margins of the wings are plain and simply curved, not elbowed and crenulate as in *P. comitata*.

120. *Perizoma fasciolata* sp. nov.

*Forewings* : whitish or pale grey, with a slight ochreous tinge; first line waved, near base; the basal area filled up with dark fuscous; central fascia with its inner edge slightly, its outer much waved, forming two projections, one above, the other below the cell, and incurved below the middle; its inner edge followed by one, its outer preceded by two waved lines; space between the inner lines filled up with fuscous, forming a narrow fascia: the outer edge dark only from costa to middle; submarginal line preceded by dark patches at costa, beyond cell, and at anal angle; the pale spaces before and beyond the central fascia traversed, the first by two wavy lines, and the latter by one; fringe greyish fuscous, with a thick line at base, interrupted at the vein-ends.

*Hindwings* : dull greyish fuscous, with a curved postmedian line, followed by a similar pale fascia; fringe as in forewings: both wings with small cell-spots.

Underside dull grey, with the markings showing through. Head and thorax dark fuscous; abdomen paler.

Expanse of wings : 20 mm.

One ♂ from Paraguay; also in some numbers from Goya, Argentine States.

121. *Psaliodes confusa* sp. nov.

*Forewings* : white, the ground-colour more or less obliterated by olive-brown suffusion, which is again powdered with white scales; an obliquely curved wavy white fascia from one-third of costa to one-fourth of inner margin, its centre traversed by a brown line and dusted throughout with brown; a similar fascia at two-thirds, interrupted in the middle, white below the subcostal vein: a wavy white submarginal line; fringe white externally, chequered with oblique brown blotches.

*Hindwings* : grey-brown, with marks of two brown lines on inner margin only.

Underside of forewings bronzy grey, mottled with white; a broad diffuse

subcostal yellow streak; a bronzy brown triangular costal patch, containing a white mark; hindwings more mottled with white, with two brown lines and some yellowish scales. Head, thorax, and abdomen olive-brown, speckled with pale and dark brown.

Expanse of wings : 25 mm.

Two ♀♀ from Newcastle, Jamaica, September 1893.

### *Rhopalista* gen. nov.

*Forewings* : ample, broadening outwards from a somewhat narrow base; costa arched at base and before apex, straight between; hindmargin long, bent at vein 4, more oblique and slightly indented below.

*Hindwings* : narrow; the hindmargin and both angles rounded; inner margin folded over as a lappet on the upperside, the lappet concealing a mass of fluffy hair.

Antennae simple, filiform, annulated, ending in a point, but not thickened before it; palpi short; tongue strongly developed; hindtibiae with four spurs; abdomen stout and hairy, extending far beyond hindwings.

*Neuration* : forewings, cell not quite half as long as wing; discocellular vertical for four-fifths, then sharply oblique outwards; first median at four-fifths, second close before lower end of cell; radials normal; 7, 8, 9, stalked from well before end of cell; 10 and 11 from cell, 11 at one-half; 10 anastomosing with 11 and again with 8, 9, forming a long double areole; 11 rising from near its end, 7 from the end. 10, 9, 8, stalked. Hindwings with cell one-fourth only of wing, the discocellular concave; costal anastomosing with subcostal for three-fourths of cell, then strongly divergent; the subcostals short-stalked, divergent; radial from below the centre of the discocellular; the three medians all close together from lower end of cell.

Type : *Rhopalista ignifera* Th. Mg.

### 122. *Rhopalista fulvifusa* sp. nov.

*Forewings* : ruddy ochreous, the markings black; four or five curved lines partially coalescent, near base, the outermost interrupted and forming black dashes on the veins; inner band of central fascia marked by three wavy vertical lines, the two outer ones partly interrupted; the outer band also consisting of three lines, only visible near costa, the outermost, however, indicated by faint black dots on the veins; submarginal line formed of whitish interrupted lunules, followed by black wedge-shaped marks which reach the hindmargin, and preceded by three black lines, much interrupted and forming three dark blotches, one at costa, the second beyond cell, the third above the anal angle; this last preceded and followed by pale yellowish patches; the whole of the central fascia beyond inner band is obliterated by a ruddy suffusion extending to the hindmargin below vein 4; an interrupted black marginal line; fringe ruddy, with blackish patches beyond veins.

*Hindwings* : with fringe whitish ochreous, with fine fuscous atoms lying in the form of three curved fasciae.

Underside pale glossy straw-colour; the costa of both wings marked with the beginnings of black lines; both wings with the cell-spots large and distinct; forewings with a black apical patch and the apex itself straw-colour. Head, thorax, and abdomen ochreous; the apical half of patagia and the metathoracic tuft dark grey or blackish; the middle segments of the abdomen also tinged with dark.

Expanse of wings : 34 mm.

One ♂ from Costa Rica (Underwood).

The paler ochreous portion of the forewings along costa and apex is probably greenish when the insect is fresh.

The species agrees in neuration and in the fold of the hindwings with the type-species *ignifera* Th. Mg., but the hindmargin of the forewings is simply and evenly curved and the apex not produced; the hindwings are not smaller in comparison with the forewings, and the abdomen of the ♂ is short and slightly crested; the metathorax strongly tufted.

### 123. *Xanthorhoe picticolor* sp. nov.

*Forewings*: pale grey, tinged sometimes with green, at others with pinkish; the markings dull red or blackish; these are exactly as in *X. ferrugata* of Europe, but the pale bands on either side of the central fascia are either pale green or pinkish.

*Hindwings*: rufous fuscous or rufous grey, without markings except just on inner margin: the marginal line of black interrupted dashes.

Underside pale, with the apical area and costal end of outer line black; the apex itself white. Head, thorax, and abdomen a mixture of green and reddish; the segments of abdomen blackish; metathorax with two bosses of metallic black scales; palpi beneath hairy, with long dark and light scales.

Expanse of wings: 24—26 mm.

Two ♂♂, one ♀, from Jamaica.

## SUBFAMILY EUDULINAE.

### 124. *Eudule costata* sp. nov.

Very much like *E. cupraria* Wlk.—with which it is probably often confounded—but larger and paler, being more thinly scaled; the costal margin of forewings finely dark; the antennae paler; in *cupraria* they are black.

Expanse of wings: 26—32 mm.

One ♂, two ♀♀, from Sao Paulo; also from Rio de Janeiro

### *Eudulophasia* gen. nov.

Distinguished from *Eudule* Hüb. by the anomalous neuration of the hindwings. The upper margin of the cell is very short, about one-eighth of the wing; the discocellular after leaving the subcostal vein runs parallel or nearly so to the lower subcostal nervule for three-fourths of wing, and is then roundly bent to join the median; the two subcostals are short-stalked; the radial rises from the bend of the discocellular; the medians as in forewings, the first at about two-thirds, the second at five-sixths. In the forewings the areole is much longer than in *Eudule*; vein 6 rises half-way up the areole, 7 from just before its end, 8, 9, 10 only being stalked from the end.

Type: *Eudulophasia invaria* Wlk. (*Ameria*).

## SUBFAMILY HETERUSIINAE.

### 125. *Heterusia albata* sp. nov.

*Forewings*: white; base and costa for one-third black; apical third black, its inner edge irregular, running from just beyond middle of costa to inner margin before anal angle, almost rectangularly bent above vein 2; fringe black.

*Hindwings* : white, with a black apical mark ; fringe white.  
Underside similar, but duller. Head, thorax, and abdomen black.  
Expanse of wings : 22 mm.  
In some numbers from Bogota.  
Allied to *H. lucigerata* Wlk.

126. *Heterusia flavipectus* sp. nov.

*Forewings* : dull black, slightly frosted with dull white ; an oblong white blotch from middle of costa towards but not touching the hindmargin above anal angle ; fringe concolorous, chequered with white below apex.

*Hindwings* and fringes wholly black.

Underside of forewings along inner margin dull blackish ; along costa dull red, with white vermiculations ; beyond the blotch purple-red, with similar white marks near the blotch ; fringe with white mottlings below apex and wholly whitish near anal angle. Hindwings deep dull red, powdered and striated with white. Head, thorax, and abdomen dull blackish ; face, palpi, legs, and pectus deep dull yellow.

Expanse of wings : 28 mm.

One ♂ from Bogota

Akin to *H. mortipax* Butler.

127. *Heterusia flavocellata* sp. nov.

*Forewings* : black, with a diffusely edged flattened white basal patch, reaching to middle of inner margin, but not touching either it or the costa : a roundish yellow spot towards apex beyond cell ; fringe black.

*Hindwings* : white, with broad black hindmargin ; the costa and inner margin white.

Underside similar, but in the forewings the white basal area touches the inner margin and is prolonged and pointed towards anal angle. Palpi black ; face black, with the cheeks white ; vertex, antennae, and thorax blackish ; abdomen grey ; shoulders and front of pectus bright yellow.

Expanse of wings : 32 mm.

Two ♂♂ from Bolivia, between R. Songo and R. Snapi, March to June 1896 (Garlepp).

128. *Heterusia funebris* sp. nov.

*Forewings* : wholly black ; the space on inner margin, which in *H. conflictata* Guen. and the allied species is white, being merely faintly dusted with bluish white scales ; two whitish dentate costal spots ; fringe distinctly white and black.

*Hindwings* : the same ; the cell-spot distinct.

Underside of forewings white, with some black strigae along costa from base ; a velvety black fascia from below middle of costa to lower half of hindmargin ; apical region and costa deep red, with a distinct yellow spot from costa. Hindwings white, strigulated with reddish and blackish, most densely along hindmargin from apex, before which the streaks form a reddish blotch.

Expanse of wings : 26 mm.

Two ♂♂ from Bogota (Child).



129. *Heterusia particolor* sp. nov.

*Forewings* : velvety black, with four small pale cream-coloured costal spots, the first, second, and fourth giving rise to very obscure oblique grey lines ; a creamy white blotch on middle of inner margin reaching to the median ; fringe black, strongly chequered with white ; two pale dots on costa before apex.

*Hindwings* : black, with the white blotch of forewings extended to inner margin as a slightly wider band ; base and inner margin blackish ; cell-spot small.

Underside white ; costal half of wing from base to middle with numerous black strigae ; cell-spot large, black, followed by a broad black fascia containing at apex an orange-red blotch marked towards base with rows of whitish scales ; costa with a cream-white tooth in the black fascia and a large white space in middle above cell-spot, with two black lines at its centre. Hindwings white, with black spots along costa and inner margin, one large spot near middle of costa ; marginal fascia complete, black mottled with whitish and pearly scales, having on its inner edge a curved olive-brown blotch from the costa, and along the margin from veins 5 to 7 a narrow orange-red one. Head, thorax, and abdomen black, sprinkled with white, the last most thickly.

Expanse of wings : 26 mm.

One ♂ from Corvico, Bolivia (Garlepp).

Distinguished from all its allies by the bright orange-red apical area of the underside.

*Spiloctenia* gen. nov.

*Forewings* : with costa bluntly shouldered at base, then straight ; apex bluntly rounded ; hindmargin obliquely curved.

*Hindwings* : with hindmargin strongly rounded, and slightly indented before the anal angle, which is somewhat lobed.

Antennae of ♂ pectinated for two-thirds ; palpi well developed, with second joint long, obliquely inclined upwards ; third joint porrect, narrower and blunt at apex ; hindtibiae with four spurs ; tongue and frenulum present.

*Neuration* : forewings, cell not quite half as long as wing ; discocellular vertical for two-thirds from the subcostal, then strongly oblique, almost parallel to median, the oblique arm as long as the vertical ; first median at three-fourths, second close before third ; lower radial from centre of the vertical portion of discocellular ; veins 6, 7, 8, and 9 stalked ; 10 and 11 stalked ; 10 anastomosing with 8 and 9, forming a single areole. Hindwings with discocellular angled, the radial from below the centre ; the two subcostals stalked.

Type : *Spiloctenia ocellata* sp. nov.

Distinguished from *Trochiodes* Guen. by the pectinated antennae of ♂.

130. *Spiloctenia ocellata* sp. nov.

*Forewings* : black ; the median vein white for two-thirds of cell ; an oval white spot beyond discocellular and a larger one obliquely below it between veins 2 and 3 ; an oblique white subapical streak, formed of four spots, the two middle ones separated by vein 6, large and always distinct, the two end ones small, often obscure, and sometimes wanting ; fringe dark, faintly chequered with whitish.

*Hindwings* : black, with a large round central spot white, with a slight yellow tinge ; fringe chequered with white, that of the inner margin white.

Underside dull grey-brown along costal region, white along inner margin, deep purple-blue between ; costa and veins at base white ; the subapical streak broad and white, not cut up into spots and nearly touching costa and hindmargin. Hindwings grey-brown ; veins at base white ; a white spot at middle of costa, another at apex, and a third on hindmargin before the anal angle ; a twice-bent narrow white line at two-thirds, touching the outside of central spot. Head, thorax, and abdomen olive-grey ; abdomen ringed with white ; palpi black above, white below ; face with the sides white ; a white ring between head and thorax ; legs white, tinged with fuscous ; underside of abdomen and anal tuft, when expanded, white.

Expanse of wings : 32—35 mm.

Five ♂♂ from Reyes, August 1895 (Stuart).

In appearance resembling *Erateina whitelyi* Druce.

#### SUBFAMILY OURAPTERYGINAE.

##### 131. *Ratiaria citrina* sp. nov.

*Forewings* : pale canary-yellow, with six oblique brown stripes, the first four overlaid with silvery scales ; the first five parallel and oblique outwards, the sixth oblique inwards, parallel to hindmargin and joining the fifth at anal angle ; fringe yellow.

*Hindwings* : with four stripes, two straight and inconspicuous, along veins 1 and 2, the third and fourth broad, the third central, curved into anal angle, the fourth submarginal, bent before the tail, and running to anal angle, marked with silvery scales ; area from tail to anal angle flushed with pale orange ; tail with two black spots ; fringe yellow, with a dark basal line from vein 7 to base of tail.

Underside paler ; hindwings with only the fourth band and the tail-spots. Head, thorax, and abdomen concolorous with wings ; antennae brown.

Expanse of wings : 42 mm.

Several examples, all ♂♂, from Newcastle, Jamaica.

#### SUBFAMILY PALYADINAE.

##### *Aplogompha* gen. nov.

*Forewings* : with costa straight till close to apex ; hindmargin evenly curved.

*Hindwings* : with rounded hindmargin.

Palpi stout, porrect ; antennae of ♂ plumose ; hindtibiae with four spurs ; no fovea on either wing, or tuft of hair on forewings.

*Neuration* : forewings, cell hardly half as long as wing ; first median at two-thirds, second and third together from lower end of cell ; the two radials stalked from top end of cell ; all the five subcostals stalked. Hindwings with cell quite half as long as wing ; first subcostal and second median both considerably before the ends of cell.

Type : *Aplogompha lafayi* Dognin (*Fidonin*?).

##### 132. *Argyrotome ferruginea* sp. nov.

*Forewings* : greyish fawn-colour, with the disc paler ; the basal third bearing raised silvery scales ; the costal edge narrowly brown ; an oblique ferruginous elongated cell-mark, with the inner edge and centre marked with raised silvery

scales; two curved chestnut and ferruginous outer lines, from costa at two-thirds and three-fourths, both interrupted opposite the cell, the outer one with silvery scales along its centre; a dark brown triangular cloud on inner margin from centre to outer line, containing ferruginous scales intermixed; fringe fawn-colour.

*Hindwings*: more ferruginous; traces of a dark diffuse antemedian shade with metallic scales on it; a diffuse brown cell-mark; a curved diffuse ferruginous postmedian line; a well-marked chestnut submarginal line, edged externally with silvery scales; followed by a row of four metallic dashes; fringe fawn-colour, tinged with ferruginous, and with a pale lustrous line along base.

Underside whitish, tinged with rufous, with a broad submarginal orange-ferruginous shade, most prominent in forewings. Face and palpi ferruginous; lower part of face with silvery blue scales; vertex, thorax, and abdomen pale grey, the last tinged with rufous.

Expanse of wings: 39 mm.

Two ♀♀ from between R. Songo and R. Suapi, Bolivia, March to June 1896 (Garlepp).

Allied to *A. prospectata* Snell., an example of which was also received from the same locality.

### 133. *Argyrotome tenebrosa* sp. nov.

*Forewings*: dark iron-grey, the basal half thickly sprinkled with metallic scales, the costal area dull; ocelloid mark on discocellular with dull yellow irregularly rounded orbit and metallic embossed pupil; a curved broad dark tawny shade from below two-thirds of costa to anal angle, with a metallic line along its centre, and darker scales internally from veins 2 to 4; an obscure dark grey shade from inner margin at two-thirds, curved above to the ocelloid spot; fringe glossy, concolorous.

*Hindwings*: with basal half hairy and sprinkled with metallic scales; a slightly curved dark tawny submarginal line, edged externally with silvery scales, followed by a dull olive-ochreous marginal space, containing four oval or rounded embossed metallic spots; basal line of fringe lustrous.

Underside bluish grey, with dark grey submarginal shade. Face and palpi dark ferruginous; lower part of face silvery blue. Vertex, thorax, and abdomen dark grey.

Expanse of wings: 34 mm.

Two ♂♂ from between R. Songo and R. Suapi, Bolivia, March to June 1896 (Garlepp).

### *Molybdogompha* gen. nov.

*Forewings*: with costa slightly curved; apex produced, but blunt; hindmargin oblique and faintly curved.

*Hindwings*: with apex and hindmargin well rounded, anal angle square; a large puckerred fovea beneath at base in the ♂; the frenulum well developed, and the costa slightly shouldered at base.

Palpi short, suberect; tongue developed; antennae of ♂ well pectinated, of ♀ simple.

*Neuration*: forewings, cell half as long as wing; first median at three-fourths, second at seven-eighths, third from end of cell; the two radials close together from

upper end of cell : all five subcostals stalked. Hindwings with first subcostal and second median from before end of cell. Wings with marginal and submarginal lines of metallic spots.

Type : *Molybdogompha biseriata* sp. nov.

#### 134. *Molybdogompha biseriata* sp. nov.

*Forewings* : dull ochreous yellowish, with fine transverse darker striae : basal half of costa dotted with dark ; a rather large oval blackish cell-spot ; a submarginal row of metallic spots, followed by a bright line : marginal area deeper yellow, with the transverse striae denser ; fringe pale leaden-grey.

*Hindwings* : similar, but without any cell-spot.

Underside pale ochreous, in the forewings suffused with brownish. Head, thorax, and abdomen ochreous.

Expanse of wings : 22 mm.

One ♂ from Paraguay (Dr. Bohls).

#### 135. *Opisthoxia nitidisquama* sp. nov.

*Forewings* : pale mouse-grey ; the costa yellow, marked, especially near base, with brilliant metallic scales ; three diffuse transverse fasciae of metallic scales, the first broad near base, the second narrower, just beyond middle, and curved below costa, the third submarginal, consisting of coalescent spots, the two below apex disconnected and embossed ; outer half of wing dusted coarsely with black scales ; fringe concolorous.

*Hindwings* : with the basal area and the inner margin dusted with metallic scales ; a sinuous metallic fascia from below apex to anal angle, bordering beyond the cell a large ocelloid spot, the centre black, the iris yellow, broad and split up into two rings by a leaden middle ring ; the outer part of the iris hidden by a large embossed spot of metallic scales, which partly encroaches on the black pupil.

Underside pale grey, with the margins darker. Head, thorax, and abdomen mouse-grey, the thorax with metallic scales ; face and palpi fuscous, rufous-tinged.

Expanse of wings : 28 mm.

One ♂ from Rio Demerara.

#### *Trichogompha* gen. nov.

*Forewings* : with costa straight, convex before apex ; hindmargin curved.

*Hindwings* : with hindmargin curved : the costa strongly convex.

Palpi and antennae as in *Aplogompha*.

*Neuration* : forewings, cell half as long as wing ; discocellular inangulated ; first median at two-thirds, bent downwards at origin and running to near anal angle ; second well before angle of cell, third from angle ; the two radials stalked together from upper angle ; the five subcostals stalked ; submedian vein with two long tufts of hair, one from near base, the other from towards anal angle, convergent and overlapping in midwing. Hindwings with costal vein abruptly arched near base ; the first subcostal and second median from before ends of cell ; first median at two-thirds, straight ; costal area pale, with a radiating bed of flat hairs on the costal edge.

Type : *Trichogompha opulenta* Th. Mg. (*Fidonia*).

## SUBFAMILY DEILINIINAE.

136. *Bapta argentea* sp. nov.

*Forewings* : silvery white ; the costa more densely white, with the extreme edge ochreous : a marginal and narrower submarginal slightly grey band, formed by very fine dark scales, which also line the inner margin : a marginal line of minute dark scales ; fringe white ; cell-spot black, minute.

*Hindwings* : the same.

Underside all white. Face, palpi, forelegs, and antennae brown ; thorax and base of abdomen silvery white ; rest of abdomen ochreous.

Expanse of wings : 30 mm.

Two ♀♀ from Newcastle, Jamaica.

137. *Bapta hebetior* sp. nov.

*Forewings* : dull white, not glossy, finely dusted with dark grey atoms ; the lines diffuse and obscure, greyish fuscous, parallel to hindmargin : first at one-third, obsolete towards costa ; second at two-thirds, reaching costa, faintly crenulate ; cell-spot black, distinct ; fringe white, with black marginal spots at base between the veins.

*Hindwings* : with a single slightly postmedian line, not reaching costa, preceded by a black cell-spot ; costal half of wing white, without any dark freckles ; hindmargin without black dots.

Underside more thickly speckled, with cell-spots and marginal dots of forewings, but without lines ; inner-marginal area of forewings white. Face and palpi dark brown ; thorax and abdomen like wings.

Expanse of wings : 32 mm.

One ♂ from Castro, Parana.

Very much resembling *Bapta micantaria* Snell. from Bogota, but that species is said to have vein 11 stalked with 7, 8, 9, 10 : *hebetior* is a true *Bapta* ; 7, 8, 9, 10, stalked ; 11 anastomosing with 12, and 10 with 11.

138. *Bapta nubimargo* sp. nov.

*Forewings* : silvery white, sparsely dusted with black scales ; costa bright ochraceous, broadening towards apex ; forewings with a vertical grey shade just before middle ; an irregularly waved postmedian and less distinct submarginal line ; hindmargin with a dull sooty blotch from just below apex to below middle, in one example reaching anal angle ; fringe dark glossy grey, with fine black marginal line, white at apex and anal angle : cell-spot distinct, black.

*Hindwings* : without first line and marginal blotch.

Underside pure white : forewings tinged with yellowish towards costa, and with the marginal blotch smaller, but quite black. Face brown ; palpi and forelegs ferruginous ; vertex, thorax, and abdomen white.

Expanse of wings : 33 mm.

A pair from Bolivia, between R. Songo and R. Suapi, March to June 1896 (Garlepp).

139. *Deilinia sericea* sp. nov.

*Forewings* and *hindwings* pure satiny white, semitransparent.

Underside the same, the base of costa of forewings blackish ; thorax and



abdomen white ; vertex bright fulvous, the face paler fulvous ; forelegs and antennal pectinations fuscous ; the shaft of antennae white.

Expanse of wings : 39 mm.

One ♂ from Bogota.

In the forewings vein 11 rises from cell and anastomoses with the costal : 7, 8, 9, 10, are stalked ; 10 anastomoses with 11, again with 8, 9 ; fovea absent.

### **Eariodes** gen. nov.

*Forewings* : elongate ; costa strongly arched in basal half ; apex blunt, nearly rectangular ; hindmargin oblique, slightly curved.

*Hindwings* : rounded.

Antennae simple, lamellate ; palpi short, porrect ; hindtibiae of ♂ with four spurs.

*Neuration* : forewings, cell more than half as long as wing ; first median at two-thirds, second just before end of cell, third from end ; radial<sub>s</sub> normal : 7, 8, 9, stalked : 10 and 11 from cell : 11 anastomosing with costal. Hindwings with first subcostal and second median each before the end of cell ; radial absent.

Type : *Eariodes cariomacula* sp. nov.

### 140. **Eariodes variomacula** sp. nov.

*Forewings* : bright green : the costa narrowly pale ; lines indicated only by minute dark dots on veins, and these mostly absent ; the first curved at one-third, the second oblique and straight from apex to two-thirds of inner margin ; ♀ with a yellow red-edged blotch on the outer line embracing veins 3 and 4 ; in the ♂ the blotch is reduced in size, and red only, and often altogether absent ; fringe white.

*Hindwings* : very pale green.

Underside pale green, with costa of forewings yellowish. Palpi and antennae ochreous ; forelegs brown ; face whitish ; vertex and thorax green ; abdomen like hindwings, silky whitish green.

Expanse of wings : 22—26 mm.

Several from Sao Paulo ; also from Castro, Parana.

### SUBFAMILY BRACCOINAE.

### 141. **Melanchroia ateraea** subsp. **subnotata** nov.

Differs from the type *ateraea* Cram. in being smaller ; the veins hardly paler ; the white blotch on forewings smaller, that on hindwings only present on the underside ; fringe of hindwings whitish throughout.

Several examples of both sexes from Bahia.

### 142. **Nelo flora** sp. nov.

*Forewings* : velvety brown-black, with a long narrow orange-red fascia from below costa just beyond middle to near anal angle : fringe concolorous.

*Hindwings* : wholly brown-black.

Underside the same, but rather paler. Head, thorax, and abdomen all brown-black.

Expanse of wings : 32 mm.

One ♂ from Bolivia, taken between R. Songo and R. Suapi, March to June 1896 (Garlepp).

Distinguished from *Nelo dora* Th. Mg. by the longer narrow red fascia, more rounded apex of forewings, and wholly brown-black ground-colour of underside.

#### 143. *Nelo satellitia* sp. nov.

*Forewings*: orange-red, the costa and inner margin narrowly, the hindmargin broadly black; fringe black.

*Hindwings*: with the red ground-colour restricted to an oval space in the centre, and a small round spot in the black costal border just before the apex.

Underside of forewings like upper, but with a white spot on hindmargin at the middle, and a white streak in the costal border above the end of the red area. Hindwings black, with seven oval white spots, four towards base, the other three in the outer area. Head, thorax, and abdomen black.

Expanse of wings: 24 mm.

One ♂ from Costa Rica (Underwood).

### SUBFAMILY NEPHODIINAE.

#### 144. *Leucula nana* sp. nov.

*Forewings*: silky white; the veins grey; costa narrowly blackish; a grey submarginal line, curved parallel to hindmargin; fringe white.

*Hindwings*: the same, without any line.

Underside dull whitish. Head and face yellowish; thorax and abdomen white.

Expanse of wings: 26 mm.

One ♀ from Sao Paulo.

Differs from *L. ablinearia* Guen. in venuration. In the forewings the second median rises considerably before the end of cell; in the hindwings the first subcostal rises before the end of cell; whereas in *ablinearia* the second median rises close to the third, and the two subcostals of hindwing are short-stalked. Both wings are shorter and broader, the costa of forewings more arched.

Guenée says of *ablinearia* that vein 2' is curved downwards; this is, I think, an error: it is vein 2, the third median, that is so curved: in *nana* it is straight.

#### 145. *Nephodia albinigra* sp. nov.

*Forewings*: smoky black, with an oblique white fascia from beneath middle of costa towards anal angle, slightly constricted in cell; fringe black, with pale apices.

*Hindwings*: wholly black.

Underside dark smoky grey; the white fascia rather larger; costa above it pale grey, followed by a broad blackish fascia, its outer edge being straight from before apex to anal angle, the marginal area beyond paler grey; hindwings dull black, with a curved slightly postmedian blacker fascia. Head, thorax, and abdomen all smoky blackish; tongue bright yellow.

Expanse of wings: 36 mm.

Two ♂♂ from Bolivia, between R. Songo and R. Suapi, March to June 1896 (Garlepp).

**Parrhesia** gen. nov.

*Forewings* : elongate ; costa and inner margin both slightly convex ; apex and hindmargin rounded ; anal angle obtuse.

*Hindwings* : narrow, elongate ; both angles rounded off ; inner margin shortened, and thickened with a tuft of long hairs from near base.

Palpi very short ; antennae of ♂ pectinated ; hindtibiae of ♂ with four approximated spurs.

*Neuration* : forewings, cell two-thirds of wing ; the foveal bar in ♂ distinct ; first median nervule at one-half, second shortly before end, third from end ; lower radial very faint, from centre of discocellular ; upper radial from upper angle ; 11 anastomosing with costal ; 9 and 10 coincident, anastomosing with 11, 9 afterwards anastomosing with 7 and 8. Hindwings with costal closely approximated to subcostal for half the cell ; first subcostal nervule from before end ; medians as in forewings ; no radial.

Type : *Parrhesia nigricena* sp. nov.

To this genus belong also *cissa* Druce, *claelia* Druce, and *philyra* Druce.

146. **Parrhesia illineata** sp. nov.

*Forewings* : semihyaline white ; all the margins and veins black : cell-spot large, black ; of the two radials the lower is not marked with black at all, and the upper only slightly.

*Hindwings* : the same ; the discocellular hardly marked ; the tuft of hair from inner margin white.

Underside the same, the space between veins 3 and 4 of forewings filled in with black. Face, thorax, and abdomen above black : the last white below ; patagia whitish.

Expanse of wings : 32 mm.

One ♂ from Bogota.

In the forewings the median vein is arched at base ; the submedian is thickened and distorted, and emits a second bar underneath and parallel to the usual upper foveal bar, the wing-membrane between these two veins being swollen. There are no transverse lines as in the other species of the genus.

147. **Parrhesia nigrivena** sp. nov.

*Forewings* : silky white, subtransparent ; the veins black ; costa black from base to middle ; first line at one-third, oblique, marked by a grey cloud in middle of cell, a slighter one on submedian fold, and a very oblique mark below submedian vein towards base ; discocellular marked with cloudy black ; outer line curved parallel to hindmargin, from vein 7 to middle of inner margin ; fringe white.

*Hindwings* : similar, without basal line ; the discocellular not thickened.

Underside similar, less thickly clothed with white scales ; costal area blackish. Head, thorax, and abdomen white ; antennae blackish ; tuft of hindwings ochreous.

Expanse of wings : 38 mm.

One ♂ from Bogota, Colombia.

## SUBFAMILY ASCOTINAE.

148. *Bryoptera (?) ustifumosa* sp. nov.

*Forewings*: with ground-colour whitish, but almost entirely suffused with dark smoky fuscous, the only places left whitish being the apex, a blotch at middle of hindmargin and one within the angle of the outer line: first line blackish, curved, at one-third: outer line at two-thirds, irregularly and minutely dentate, angled outwards beyond cell, then oblique to middle of inner margin; submarginal line pale, finely waved; the first line is preceded and the second followed by a brown shade; from middle of costa to middle of inner margin, almost touching outer line, runs a thick slightly waved black shade: marginal spots black; fringe mottled white and blackish.

*Hindwings*: wholly smoky fuscous, with the black median shade less intense, and touching it on inner margin the beginning of an outer line.

Underside duller fuscous, without markings; the apical blotch and that on hindmargin whitish. Head, thorax, and abdomen all fuscous.

Expanse of wings: 30 mm.

One ♀ from Paraguay.

149. *Cleora fulvitincta* sp. nov.

*Forewings*: white, iridescent, with sparse blackish dusting; the lines fine, black; first at one-third, curved beneath costa, then obliquely sinuous to inner margin: basal area filled up with pale tawny; second line at two-thirds, excurved round cell, then obliquely waved to middle of inner margin, forming a strong curve from the submedian fold, followed by a broad tawny fascia, most distinct on inner margin; cell-spot oval, white with dark edges, touching a dark costal spot above it, from which rises an indistinct dark median line, touching outer line on inner margin; submarginal line pale, wavy, between two tawny greyish fasciae, which opposite cell and above vein 6 are marked with blackish: marginal spots black; fringe pale.

*Hindwings*: with basal two-thirds white; a black line at base and narrow blackish antemedian line; postmedian line blackish, angled on vein 6, beyond the oval white cell-mark, and followed by a tawny fascia; two submarginal greyish tawny lunular fasciae enclosing the submarginal line.

Underside iridescent, pinkish white: apex of forewing with a fuscous patch. Face and palpi greyish fuscous: thorax and abdomen greyish ochreous.

Expanse of wings: 32 mm.

One ♂ from La Plata.

150. *Cymatophora mutabilis* sp. nov.

♀. *Forewings*: olive-ochreous, dusted with fuscous and ferruginous atoms; the lines ferruginous, marked with blackish scales; the first double, near base, curved and waved; second, before middle, nearly vertical, waved, followed by the black cell-spot: outer line at two-thirds, vertical to the median, then oblique inwards, and again vertical to inner margin, forming a sinus on the submedian fold, and denticulate outwards on all the veins: followed by an obscure denticulate dark shade, which is tinged with ferruginous below the costa, and blackish on inner margin; submarginal line pale, preceded by an interrupted line of blackish

lunules, and followed by a ferruginous shade, which is marked with black beyond the cell ; marginal spots black ; fringe concolorous.

*Hindwings* : with ferruginous antemedian, double ferruginous postmedian, and black-spotted submarginal lines, the first two distinct only on inner margin ; cell-spot black.

Underside greyish ochreous, freckled with fuscous ; the cell-spots large, black ; a blackish submarginal fascia, which becomes very broad towards costa of forewing. Head, thorax, and abdomen concolorous with wings.

The above represents the usual ♀ form. The ♂♂ are often suffused with dull rufous brown, especially towards hindmargin, with the markings more or less obliterated, except the black spots on inner margin beyond outer line and the dark marks beyond the cell. In one form, which may be named ab. *fasciata*, the space between the two arms of the basal line and that between the outer and submarginal lines is filled up with dark black-brown, all the rest of the wing remaining rufous brown without markings ; in the hindwings only the outer fascia is thus dark, and not so broad as in forewings. The species appears common in Jamaica. The hindmargin is crenulate in both sexes ; in the ♀ the apex is shortly acute, and the hindmargin elbowed slightly at vein 4.

Expansion of wings : ♀, 40 mm. ; ♂, 40—44 mm.

Numerous examples from Jamaica.

#### 151. *Exelis quadripuncta* sp. nov.

*Forewings* : greyish fuscous, paler than the generally dark ♂♂ of *Exelis pyrolaria* Guen. from N. America, with which it agrees in size and in the disposition of the markings : the lines, however, are more distinct and continuous. The chief difference is furnished by the hindwings, which have the discal spot almost as large as in the forewings, which spot is hardly marked in *pyrolaria*.

Two ♂♂ from Castro, Parana.

#### 152. *Hymenomima extersaria* sp. nov.

*Forewings* : whitish grey, suffused with purplish grey and dusted with coarse black scales, and along the inner margin and submarginal line tinged with ochraceous ; costa blackish, with a few fine pale strigae : the lines black ; first from costa at one-fifth, strongly bent in cell, to inner margin near base ; second before middle, angled below costa, oblique and diffuse inwards to inner margin at one-third, passing outside the black cell-spot ; outer line at two-thirds, parallel to hindmargin, and forming a sinus on submedian fold : submarginal line pale, dentate, with dark markings on each side, those beyond tinged with ochraceous ; marginal spots black ; fringe grey ; marginal area from above vein 4 to below vein 3 forming a subquadrate whitish patch.

*Hindwings* : whiter, without the purplish grey suffusion : a black basal blotch ; a black antemedian line and black linear cell-spot ; postmedian line black, sinuate, and subdentate, followed by an ochraceous shade ; the whitish submarginal line preceded by a strongly dentate black line and followed by an ochraceous lunulate shade ; marginal black spots elongate : the submarginal line is more broadly white between veins 2 and 4, but there is no pale blotch.

Underside dirty ochreous grey ; the middle and outer lines marked on both



wings by a row of black dashes on the veins : costa and apex of forewings blackish. Face and palpi mottled fuscous and ochreous, the palpi externally blackish ; vertex and thorax fuscous, with a few paler scales in places ; abdomen ochreous, with some fuscous scales ; the basal segment black.

Expanse of wings : 32 mm.

One ♂ from Popayan, Colombia (Lehmann).

The lower radial rises shortly before the top of discocellular, but the fovea is scarcely more than ordinarily developed ; it will be advisable therefore to treat this abnormal development of the fovea in the ♂ as of secondary importance, the position of the lower radial, which is the same in both sexes, being of itself sufficient to characterise the genus.

### 153. *Hymenomima minuta* sp. nov.

*Forewings* : dull ochreous, dusted with fuscous, the markings dull greyish fuscous ; base of costa above the large fovea dark ; a broad diffuse antemedian fascia, forking towards costa ; a similar diffuse fascia beyond the middle, its outer edge dentate, and marked with dark dashes, followed by a pale indistinct submarginal line ; a darker blotch on hindmargin opposite the cell and above anal angle ; a marginal row of large dark lunules ; fringe dingy grey ; an indistinct dark cell-spot.

*Hindwings* : with dark cell-spot, and much dusted and blotched with grey, crossed by three indistinct darker fasciae.

Underside similar, the fasciae rather plainer. Head, thorax, and abdomen dull cinereous.

Expanse of wings : 16 mm.

One ♂ from Popayan, Colombia (Lehmann).

The size of the fovea and length of peenations of the antennae are out of all proportion to the size of the insect, which bears a remarkable resemblance at first sight to *Hyposcotis cinerea* Butler from India.

### 154. *Hymenomima semialba* sp. nov.

*Forewings* : creamy white, iridescent, slightly dusted with very fine dark scales ; the lines purplish fuscous : first at one-fourth, double, curved ; a short dark costal spot before it ; cell-spot large, oblong ; second line at two-thirds, finely waved, bent below costa, then straight to vein 4, bent inwards to vein 2, then again straight to inner margin ; marginal area beyond it deep purplish grey, dusted with shining scales : the veins rather paler ; a darker shade just beyond outer line ; submarginal line paler, waved, preceded and followed by a darker shade ; fringe purplish grey ; the costa, median and submedian veins marked with bright ferruginous along the paler basal half of wing ; a whitish spot at apex and anal angle.

*Hindwings* : similar, but without discal spot, and with a diffuse median line, most distinct on inner margin.

Underside darker. Face and palpi purplish grey ; vertex and thorax whitish : metathorax and tips of patagia purplish grey ; abdomen grey, varied with ferruginous.

Expanse of wings : 26 mm.

One ♂ from Pebas, R. Amazons.

155. *Iridopsis perstrigata* sp. nov.

*Forewings*: whitish grey, dusted with fuscous; the costa thickly marked with fuscous striae, and dark spots at the origin of the lines; first line from costa at one-third, curved to inner margin close to base, darker on the veins; second from the middle, very obscure, and approximated to first line on submedian fold; outer line at two-thirds, marked with black on the veins, outcurved round cell, then strongly incurved to middle of inner margin, close to middle line; cell-mark blackish, extending along the discocellular, connected with a black costal spot above it, and along vein 4 by a black dash with the outer line; submarginal line whitish, wavy, distinct; the outer line is followed by an olive-fuscous shade, which extends backwards along vein 4 to the discocellular, and forms a darker blotch beyond cell before the submarginal line; marginal line dark, crenulate; marginal spots black; fringe pale grey.

*Hindwings*: paler; a black line at base; a straight fuscous antemedian line, diffuse, and not reaching costa; denticulate postmedian, followed by a fuscous shade; submarginal line and fringe as in forewings.

Underside white, with a pale straw-coloured tinge: costa of forewings yellow, with dark striae; forewings with large black cell-spot and broad blackish marginal fascia, which narrows off towards anal angle and contains at apex a white blotch. Hindwings with small cell-spot and a short blackish cloud at apex, cutting off a pale apical blotch. Palpi fuscous; face grey above, whitish below, with a brown bar across middle; thorax grey; abdomen whitish, white at base with a black band; anal segment ochreous.

Expanse of wings: 45 mm.

One ♂ from Bolivia, between R. Songo and R. Snapi, March to June 1896 (Garlepp).

*Isandria* gen. nov.

Like *Stenaleidia* Warr., but the antennae of the ♀ are bipectinate as well as those of the ♂.

Type: *Isandria ineffectaria* Wlk. (*Tephrosia*).

*Physocleora* gen. nov.

*Forewings*: with fovea in the ♂ largely developed, as in *Hymenomima*; the hindmargin entire, obliquely curved.

*Hindwings*: with hindmargin rounded and strongly crenulate.

Antennae of ♂ very strongly pectinated: of ♀ simple, but with the joints angled. Tongue and frenulum present. Hindtibiae thickened, with four spurs.

*Neuration*: forewings with lower radial from centre of discocellular; 10 and 11 coincident.

Type: *Physocleora punctilla* Schaus.

156. *Physocleora pauper* sp. nov.

*Forewings*: greyish white, with darker grey speckles; costa marked with dark spots at origin of the lines; first at one-fourth, curved; second in middle, outcurved above round the distinct black cell-spot, incurved below middle; outer line at three-fourths, outcurved above, bent in strongly on the submedian fold; outer area pale

bluish grey, containing an obscure darker band of blotches immediately beyond the outer line, and a broad shade, with lunulate edge, before the submarginal, which is pale ; fringe grey, with large black marginal spots at base.

*Hindwings* : like forewings ; but the basal area thickly dusted with black scales.

Underside dull grey, with broad smoky black marginal fasciae to each wing ; cell-spots black. Palpi white, externally brown ; face brown, with a white bar above and below ; vertex white ; thorax and abdomen whitish, grey-speckled.

Expanse of wings : ♂, 26 ; ♀, 28—34 mm.

A ♂ from the interior of Surinam, September 1892 (C. W. Ellacombe) ; two ♀ ♀ from Rio Demerara, British Guiana.

#### 157. *Physocleora pusilla* sp. nov.

*Forewings* : whitish grey, slightly dusted with darker ; costa with fine blackish striae and black spots at the commencement of the lines ; these are all curved, dark grey, and slightly marked with blackish on the veins ; the median line almost touching the small black cell-spot, which it passes outside ; outer line obscurely double and angled on the submedian fold ; marginal space filled up with dark grey ; marginal spots blackish ; fringe grey.

*Hindwings* : with dark grey antemedian line, sinuous partially double post-medial line, and marginal area dark grey ; cell-spot black.

Underside dull whitish ; the costa of forewings marked with blackish ; marginal area dark grey, broader at costa ; basal half of wing tinged with grey ; hindwings with black cell-spot and apex only of wing dark grey. Palpi white, dusted externally with blackish ; face black, with a white bar below and at top ; vertex white ; thorax and abdomen white, with grey dusting.

Expanse of wings : 18 mm.

One ♂ from Cncuta, Venezuela.

The lower radial rises only slightly above the middle of the discocellular.

#### *Psilopora* gen. nov.

*Forewings* : with costa slightly sinuous, convex at base ; apex rectangular ; hindmargin elbowed at vein 4, very oblique below.

*Hindwings* : with apex truncate, anal angle square ; hindmargin irregular, nearly straight from anal angle to a large tooth in middle, above which it is strongly excavated and toothed.

Abdomen of ♂ elongated, extending beyond hindwings ; antennae in both sexes thick, simple, lamellate ; face smooth ; palpi porrect, short ; hindtibiae thickened, with four spurs. Forewings of ♂ without fovea.

*Nervation* : forewings, cell half as long as wing ; discocellular slightly concave ; first median at three-fourths, second at seven-eighths ; radials normal ; 7, 8, 9, stalked from just before upper angle ; 10 and 11 stalked. Hindwings with vein 7 from before end of cell ; medians as in forewings.

Type : *Psilopora thesea* Schaus.

#### *Stenalcidia* gen. nov.

*Forewings* : elongate ; costa faintly curved ; apex prominent ; hindmargin obliquely curved, subcrenulate.

*Hindwings* : with hindmargin deeply crenulate.

Antennae of ♂ pectinated, of ♀ with the joints angulated and ending in a fine bristle. Fovea of forewings generally largely developed.

*Neuration*: lower radial of forewings from slightly above, or from, the centre of discocellulars; veins 10 and 11 coincident.

Type: *Stenalcidia quisquiliaria* Guen.

#### 158. *Stenalcidia differens* sp. nov.

*Forewings*: whitish, tinged with grey, and dusted with olive-grey scales; the lines blackish, mixed with olive-fuscous scales; first line near base, distinctly double, bent below costa and oblique inwards; second line before middle, parallel to first and approximating to it on inner margin; both marked with black spots on the median and submedian veins; outer line at two-thirds, dentate, the teeth black on all the veins, followed by an olive dentate shade slightly interrupted above middle; submarginal line pale, very wavy, preceded and followed by olive-fuscous shades containing darker wedge-shaped marks between the veins; marginal spots large, black; fringe grey; cell-spot crossed by middle line.

*Hindwings*: with straight antemedian line; the rest as in forewings.

Underside dull whitish, tinged with luteous; the margins dull fuscous, preceded by a pale luteous fascia; cell-spots dark; costa of forewings olive-ochreous, with dark spots at the rise of the lines. Head, thorax, and abdomen like wings; the abdomen banded with dark grey.

Expanse of wings: 30 mm.

One ♂, three ♀♀, from Paraguay (Dr. Bohls); one ♂, smaller, from La Plata.

The ♀ has the lines all much finer black, scarcely dentate, and the ground-colour is much more varied with ochreous yellow; but the underside is the same as in the ♂. This difference in the distinctness of the lines and in ground-colour exists also in *S. cindica* Schaus from Sao Paulo; but in that species the ground-colour is purer white, and the underside has both the middle and outer lines expressed. Besides, in the present species the lower radial rises from the centre of discocellular; in *cindica* slightly but visibly above it.

#### 159. *Stenalcidia farinosa* sp. nov.

*Forewings*: greyish ochreous, dusted with darker, and tinged in places with olive and pale ferruginous, the whole wing having a mealy appearance; costa dotted with black strigae, and with larger spots at the origin of the lines; the first and second marked only by faintly darker scales on the veins; outer line minutely denticulate and followed by a broader dentate rufous shade; submarginal line paler, dentate, with olive-ochreous shading on both sides; a row of dark marginal dashes before hindmargin between the veins, as in *quisquiliaria* Guen.; fringe concolorous; cell-spot hardly marked.

*Hindwings*: with fine dark curved antemedian line and dark cell-spot; the rest as in forewings but more distinct.

Underside dull cinereous; the cell-spots plain on both wings; costa of forewings ochreous with black markings, as in *quisquiliaria*. Head, thorax, and abdomen like wings.

Expanse of wings: 32 mm.

One ♀ from Cucuta, Venezuela.

Differs from *quisquiliaria*, in the outer line being much less oblique.

160. *Stenalcidia fusca* sp. nov.

*Forewings* : greyish rufous, dusted with dark atoms, which almost wholly obscure the markings; these appear to be much the same as in *S. carea* Schaus; the only clear ones are a dark cell-spot and a pale waved submarginal line; marginal line black, interrupted.

*Hindwings* : the same.

Underside uniform grey-brown, slightly paler than the upperside. Head, thorax, and abdomen concolorous.

Expanse of wings : 32 mm.

One ♀ from Paraguay (Dr. Bohls).

161. *Stenalcidia pulverosa* sp. nov.

*Forewings* : whitish, dusted thickly with fine dark atoms, giving the wing a mealy appearance; the lines finely black; first curved, at about one-fourth; second at three-fourths, runs obliquely outwards to vein 5, is there bent nearly at right angles and runs straight to vein 2, then forms a strong sinus to vein 1, marked throughout by black dots on the veins; median line obscure, bent outwards round the black cell-spot and closely approximated to the outer line below; submarginal line pale, strongly dentate, with ochreous and fuscous shading on either side, the costal area on the inner side being broadly dark; a fine dark marginal line, bent in to the marginal spots between the veins; fringe greyish.

*Hindwings* : similar, without first line, the median shade straight, the outer line curved from inner margin to vein 6, then dentate.

Underside dirty whitish, speckled with grey; cell-spots distinct; forewings with dull blackish marginal fascia, broad at costa, narrowed to anal angle, including a whitish apical blotch and another in middle of hindmargin; hindwings with the fascia much narrower. Head, thorax, and abdomen whitish, peppered with grey; abdomen with a curved black band at base.

Expanse of wings : 39 mm.

One ♀ from Paraguay.

*Synecta* gen. nov.

*Forewings* : with costa straight till just before apex, which is bluntly rounded; hindmargin obliquely curved; fovea in ♂ exaggerated, as in *Hymenomima*.

*Hindwings* : with both angles and the hindmargin rounded.

Antennae of ♂ pectinated to near apex; palpi porrect, short; tongue and freun- lum present; hindtibiae slightly thickened, with four spurs.

*Neuration* : forewings, cell half as long as wing; discocellular vertical; first median at one-half or two-thirds, second at five-sixths; the two radials stalked from upper end of cell; 7, 8, 9, stalked; 10 and 11 coincident. Hindwings with first subcostal nervule from, or from just before, upper end of cell; second median from before lower end.

Type : *Synecta griseola* sp. nov.

Distinguished by the stalking of the two radials; it is an extreme development of *Hymenomima*, in which the lower radial rises from above the middle of discocellular.



162. *Synecta cuneifascia* sp. nov.

*Forewings* : dull slaty grey; the costa, veins, and cross lines blackish; first at one-fifth, second median, third at two-thirds; submarginal at five-sixths; the last three onturved above and incurved below middle, all parallel; the third marked by black dashes along the veins, the submarginal by wedge-shaped marks between them; large marginal black spots at ends of veins; cell-spot large, blackish, on the median line.

*Hindwings* : the same, without the first line; cell-spot between the antemedian and postmedian lines.

Underside darker; both wings with blackish marginal fasciae. Face, palpi, collar, vertex, and basal segment of abdomen deep yellow; thorax and rest of abdomen grey; antennae blackish.

Expanse of wings : 22 mm.

One ♂ from ten miles above Mapiri, 2000 feet, 1895 (Stuart).

163. *Synecta griseola* sp. nov.

*Forewings* : whitish, thickly powdered and striated with olive-grey; the lines indistinct; first at one-fourth, second median, both marked by grey costal blotches and diffnsely curved across wing; third marked by dots on veins below costa; submarginal white, regularly waved, with dark grey suffusion on both sides; fringe olive-grey.

*Hindwings* : with three faint curved olive-grey postmedian lines.

Underside dingy whitish grey: the forewings with a dark grey marginal fascia; the fringes chequered. Head, thorax, and abdomen pale grey: the face darker.

Expanse of wings : 32 mm.

One ♂ from ten miles above Mapiri, 2000 feet, 1895 (Stuart).

## SUBFAMILY FIDONIINAE.

164. *Aspilates candidata* sp. nov.

*Forewings* : shining white, dusted with pale fuscous; the lines fuscous, very oblique; first slender and indistinct, from inner margin before middle to costa at three-fourths; second distinct, diffused externally, from two-thirds of inner margin into apex; a faint curved submarginal line; a marginal row of black dots; fringe white; cell-spot minute.

*Hindwings* : with a curved submarginal line, marked by dots on veins; the marginal dots elongated.

Underside similar. Head, thorax, and abdomen all white.

Expanse of wings : 32 mm.

One ♂ from Castro, Parana.

The antennae are very shortly pectinated: in the forewings 7, 8, 9, and 10, 11, are stalked together.

165. *Aspilates plurilineata* sp. nov.

*Forewings* : greyish white, with dark grey dusting; costal area greyer; the lines all oblique and parallel; the first at one-third, curved beneath costa, indistinctly double; basal area within it grey; second line straight, fine, from beyond two-thirds of costa to before middle of inner margin, closely followed by an ochreous grey

shade: third line immediately beyond, blackish, marked by darker dots on veins, running to costa before apex, also accompanied on its outer side by a grey shade: submarginal line diffuse, thick, blackish, from apex to inner margin shortly before anal angle, slightly waved, followed by a less distinct more wavy fuscous line; central space and that before submarginal line paler than the rest of wing; cell-spot small, dark; fringe grey: marginal line fine, dark, incurved to each marginal spot between the veins.

*Hindwings*: paler towards base, with double central, postmedian, and submarginal lines, the inner arm in each case the darker; a small dark cell-spot between the arms of the central line.

Underside thickly speckled with grey, with the lines all indistinct. Head, thorax, and abdomen greyish white.

Expanse of wings : 34 mm.

One ♂ from Bolivia, between R. Songo and R. Snapi, March to June 1896 (Garlepp).

### **Cataspilates** gen. nov.

*Forewings*: elongate; costa slightly curved: apex prominent: hindmargin obliquely curved.

*Hindwings*: with inner angle rounded; hindmargin curved.

Palpi short, porrect: antennae of ♂ pectinated, the pectinations ciliated; tongue and frenulum present: hindtibiae with four spurs, the inner pair long.

*Neuration*: forewings, cell half as long as wing: discocellular vertical; first median at one-half, second at seven-eighths; radials normal; 7, 8, 9, stalked; 10 and 11 coincident. Hindwings with costal approximated to subcostal for three-fourths of cell; subcostals from upper end of cell, or 7 before end; medians as in forewings.

Type: *Cataspilates grisescens* sp. nov.

#### 166. **Cataspilates** (?) *arenosa* sp. nov.

*Forewings*: whitish ochreous, suffused and finely dusted with deeper ochreous and rufous scales, and with a slight pinkish tinge; the lines all obscure and parallel to hindmargin; first near base, second in middle, both fine; outer line at two-thirds, marked below middle by dark dashes on veins, and followed by a broad ochreous fascia; a similar fascia along hindmargin, separated by a pale submarginal space; fringe concolorous, with slight dark dots at base between the veins; cell-spot minute.

*Hindwings*: whitish, with rufous scales along inner margin.

Underside pinker; hindwings with cell-spot and two diffuse broad pinkish shades beyond middle. Head, thorax, and abdomen ochreous.

Expanse of wings : 34 mm.

Two ♀♀ from Sao Paulo.

Though agreeing in the neuration of the forewings, this insect is hardly congeneric with *C. grisescens*: the palpi are shortly rostriform; the forehead with a cone of scales; both wings broader, with plain hindmargins.

#### 167. **Cataspilates** *grisescens* sp. nov.

*Forewings*: greyish ochreous, peppered with dark scales; first line close to base, angled in midwing, the upper arm very obscure, the lower blackish, geminated;

outer line oblique, from middle of inner margin to costa at five-sixths, blackish, slightly denticulate, marked by black dashes on veins, closely followed by a dark grey or blackish shade; submarginal line double, denticulate, the inner arm more distinct, the outer marked by black dashes on veins; a row of black marginal dots; fringe grey; cell-spot black.

*Hindwings*: similar, but paler; the outer series of lines only distinct on inner margin; cell-spot black.

Underside of forewings dark grey, of hindwings paler with dark grey frecklings; both with cell-spot and outer line marked. Head, thorax, and abdomen concolorous with wings; abdomen marked with pairs of black dots.

Expanse of wings: 28 mm.

Two ♂♂ from Bogota.

The margin of hindwings is slightly crenulate.

#### 168. *Fidonia flavinigra* sp. nov.

*Forewings*: deep yellow, with the apical third bronzy brown-black; costa for two-fifths from base broadly brown-black, thence narrowly to the apical area: in the ♀ the basal streak towards its end is connected with a small dark spot below the subcostal vein; the inner edge of the dark apical area is more irregular and ends nearer the anal angle in the ♂ than in the ♀.

*Hindwings*: yellow, with a uniformly broad dark hindmargin.

Underside like upper. Face and palpi dull yellow, mixed with fuscous; vertex fuscous; thorax and abdomen yellow, the latter fuscous-tinged towards apex; legs yellow, the forelegs externally fuscous.

Expanse of wings: 28 mm.

A pair from Cucuta, Venezuela.

#### SUBFAMILY SELIDOSEMINAE.

#### *Oenoptila* Warr., Nov. Zool. II. p. 131.

*Forewings*: with costa nearly straight, curved before apex; apex slightly produced, blunt; hindmargin curved, slightly gibbous in middle.

*Hindwings*: with hindmargin rounded, the anal angle well marked; antennae of ♂ simple; palpi stout, the second joint squamous, the terminal joint minute, porrect; tongue present; hindtibiae not thickened, with four spurs.

*Neuration*: forewings, cell more than half as long as wing; discocellular concave; first median just beyond one-half, second well before end of cell, third from end: lower radial from middle, upper from the top of discocellular; 7, 8, 9, 10, stalked from before the end; 11 anastomosing with the costal; 10 with 11, and again with 8, 9. In the hindwings the first subcostal and second median both rise before the end of cell.

Type: *Oenoptila mixtata* Guen. (*Ocydia*).

The diagnosis of this genus was omitted in the original publication. The three species there referred to *mixtata* are distinct. Guenée's *transitaria*, with which Walker's *expulsaria* is identical, is considerably smaller than *mixtata* Guen., and will stand as *Oenoptila transitaria*. On the other hand *alexonaria* Wlk., which is a Jamaican species, has pectinated antennae, and must be removed to a separate genus, for which I propose the name *Oenothalia*. It differs from *Oenoptila* in the neuration also: vein 11 of forewings not anastomosing entirely with 12, but merely touching it at a point.

169. *Oenoptila nigrilineata* ab. *reversa* nov.

Like the type in coloration, but with the costa of forewings concolorous, and the two lines narrowly pale ochreous, the single line of the hindwings also ochreous; abdominal tuft of ♂ pale.

Expanse of wings : 33 mm.

One ♂ from Jamaica.

On the penultimate segment of abdomen is a pale line corresponding to the pale line of the hindwings, and the basal segment is dark. The type-form was described by me in Nov. Zool. II. p. 129, as an *Anagoge* (?).

170. *Oenoptila rubra* sp. nov.

♀. *Forewings* : deep red, with sparse blackish transverse striae; first line beyond one-third, denoted by blackish striae, and distinct only on inner margin just before middle; second line at two-thirds to inner margin at three-fourths, excurved below middle; a black cell-spot; fringe concolorous.

*Hindwings* : the same, without first line.

Underside paler red, speckled only along hindmargin. Head, thorax, and abdomen all red.

In the ♂ the ground-colour is brownish fulvous instead of red, the lines somewhat more distinct.

Expanse of wings : 34 mm.

One ♂, two ♀ ♀, from Jamaica.

171. *Oenothalia alexonaria* Wlk. ab. *olivata* nov.

In this form the usual deep red ground-colour of the type is wholly overlaid by an olive-brown tint; the inner and outer lines, which in the type-form are brown-black, become finely red, and are marked on the veins by bright yellow spots.

172. *Oenothalia subochrea* sp. nov.

*Forewings* : brick-red, densely covered with small dark striae; first line at one-fourth, curved, preceded by a pale space without striae; second beyond two-thirds, irregularly waved, outcurved in middle of wing and incurved on vein 2, followed by a similar paler space; cell-spot black; fringe concolorous.

*Hindwings* : with only the outer line.

Underside yellow, with a few dark striae; a reddish marginal fascia, clouded with dark; cell-spots large, black. Head, thorax, and abdomen concolorous; face and palpi deeper red.

Expanse of wings : 32 mm.

Several ♀ ♀ from Rio Demerara. Mr. Schaus has ♂ ♂ from Aroa, Venezuela; these have pectinated antennae.

In forewings vein 11 is stalked with 7, 8, 9, 10.

173. *Petelia interrupta* sp. nov.

*Forewings* : reddish fulvous, with coarse black speckling; the lines interrupted, formed of black spots partially connected by black scales; first at one-third, marked by spots on the subcostal, median, and submedian veins; second at two-thirds, curved outwards towards hindmargin, and forming a biangulated or bilobed

projection on veins 3 and 4, preceded by a similarly angulated brown shade, and sometimes followed by a dark blotch beyond the cell ; the cell-spot large, blackish ; fringe concolorous.

*Hindwings* : the same, without the inner line.

Underside much paler, almost unspotted except towards hindmargin of forewings. Head, thorax, and abdomen like wings, the abdomen with a dark basal ring.

Expanse of wings : 34 mm.

Two ♀ ♀ from Castro, Parana.

The venuration of forewings agrees exactly with that of the Indian species of *Petelia*, vein 11 being free. In *Thysanopyga* H.S. = *Pachydin* Guen., on the other hand, vein 11 anastomoses strongly with the costal.

### **Perissopteryx** gen. nov.

Closely allied to *Thysanopyga* H.S., of which it is a farther development. Abdomen of ♂ beneath with thick curled tufts of hair. Hindwings of ♂ with a large flap on inner margin, folded over on the underside, the false inner margin with a fringe of long hairs, and the edge of the flap also fringed ; the hindwings small in comparison with the forewings. Antennae pectinated.

*Venuration* : forewings, cell not half as long as wing ; first median just beyond half, second well before end of cell ; radials normal ; 7, 8, 9, 10, stalked ; 11 from cell, anastomosing with the costal. In the hindwings the internal vein runs down the flap, the wing being folded along the submedian fold.

Type : *Perissopteryx delusa* sp. nov.

#### 174. *Perissopteryx delusa* sp. nov.

*Forewings* : vinous brown, much darker along the costa, with fuscous speckles and striae ; the lines brown ; first near base, vertical ; second before middle, followed by the small black cell-spot, which is faintly ringed with whitish ; outer line slightly concave outwards ; a darker submarginal shade and apical cloud, with a curved white mark from apex to vein 6.

*Hindwings* : with straight oblique antemedian line, from about one-third of costa to middle of inner margin : cell-spot distinct, round, pure white. Fringes of both wings concolorous, with a pale basal line.

Underside reddish grey or fawn-colour ; marginal third of forewings clouded with red-brown ; flap of hindwings reddish. Head, thorax, and abdomen cinereous, the thorax tinged with reddish ; abdominal tufts and antennae dark fuscous.

Expanse of wings : 40 mm.

One ♂ from Costa Rica (Underwood).

#### 175. *Thysanopyga nigristicta* sp. nov.

*Forewings* : greyish fawn, with delicate darker strigulae ; the lines darker, rather coarse ; first at one-fourth, vertical ; second slightly before the middle, also vertical, touching the large round blackish cell-spot ; outer line at two-thirds, faintly curved, parallel to hindmargin ; marginal third darker fawn-colour, with a diffuse blackish cloud at apex ; marginal line fine, black ; fringe concolorous.

*Hindwings* : with a dark mark at base, a straight antemedian and very faint curved postmedian line ; cell-spot round, black, with a minute white centre.



Underside paler, slightly black-speckled, with a cloudy fuscous marginal band, which is very faint on hindwings; cell-spot on forewings only. Head, thorax, and abdomen concolorous.

Expanse of wings : 30 mm.

One ♀ from Costa Rica (Underwood).

Distinguished by the black apical patch of forewings, and the black cell-spots of both wings above.

176. *Thysanopyga pygaria* Guen. ab. *ochrilinea* nov.

*Forewings* : greyish mouse-colour, the costa and lines pinkish ochreous; the costal streak broad between the lines, narrow at base; first line near base, angled on subcostal vein; outer line curved exactly as in *pygaria*, edged internally with reddish brown, and with faint traces externally of a dentate shade; apical curved streak grey, indistinct; cell-spot black, with a fine edge of ochreous scales; in one example there are faint traces of an oblique brown median line, as in the type-form.

*Hindwings* : with a faint brown antemedian line, followed by the white cell-spot; a broad pinkish ochreous submarginal fascia, gradually shading off to the dark ground-colour along the margin.

Fringe and underside as in the type-form. Face, palpi, thorax, and abdomen concolorous with wings; vertex paler grey.

Expanse of wings : 34—36 mm.

Two ♂♂ from Newcastle, Jamaica, August 1893.

This may prove to be a distinct species.

SUBFAMILY SEMIOTHISINAE.

177. *Semiothisa collineata* sp. nov.

*Forewings* : ochreous, speckled with brown; the lines pale brownish; first at one-fifth, curved; second before middle, starting from a brown costal triangle, sinuous to middle of inner margin; third at two-thirds, strongly angled outwards on vein 6, then obliquely curved to inner margin not far from middle line; a brown spot on costa beyond it; hindmargin slightly brown-tinged, especially towards anal angle; fringe brownish ochreous.

*Hindwings* : without first line; a minute dark cell-dot; outer line denticulate; traces of a nearly straight grey submarginal line; the apex tinged with brown; fringe with a darker basal line.

Underside the same, but the submarginal line on both wings distinct. Head, thorax, and abdomen all concolorous.

Expanse of wings : 30 mm.

One ♂ from the Amazons, from the Felder Collection (Bates).

178. *Semiothisa crepuscularia* sp. nov.

*Forewings* : dull whitish, subhyaline, with olive-fuscous speckling; the costa pale, with fine striae; the lines diffuse, all formed of patches of olive and fuscous scales; first line at one-fifth, forming an outward curved blotch above and below the median vein; second line median, oblique, formed of a double blotch below costa, dentate and darker outwards on the veins, and similar blotches on median and

submedian, joined together by a darker blotch between them; outer line at two-thirds, fuscous, much broken, followed by an olive fascia, containing a row of blackish oval blotches, and interrupted beyond cell by a streak of the pale ground-colour from apex; the marginal area itself mixed dark fuscous and olive; fringe olive, with a paler line at base.

*Hindwings* : similar, but much less suffused with olive, and the lines therefore more distinct; the fringe whitish; cell-spots of both wings large and dark, and a dark spot at base.

Underside the same, but altogether duller. Head and abdomen olive-grey; thorax pale grey.

Expanse of wings: 26 mm.

One ♂ from Sao Paulo.

Forewings with apex produced and blunt; hindmargin not excised, but merely incurved just beneath, and then oblique and straight to anal angle, which is strongly marked. Hindwings moderately toothed in middle; antennae of ♂ shortly pubescent; fovea hardly visible.

#### 179. *Semiothisa debiliata* sp. nov.

*Forewings* : very pale straw-colour, dotted with ochraceous and grey atoms; costa with minute grey specks; the lines fine, pale ochraceous; first at one-fourth, angled in cell and on submedian fold; median line straight, from just before middle of costa to just before middle of inner margin, its costal end thickened; an oblique ochraceous discal streak touching the middle line; exterior line from three-fourths of costa to three-fourths of inner margin, angled on vein 6, then slightly flexuous; traces of a sinuous submarginal line almost touching outer line below middle, thence oblique to anal angle, followed by a dark spot below vein 4 and another less conspicuous below vein 3; fringe pale, with a marginal row of small brown dots at base.

*Hindwings* : with nearly straight antemedian and slightly curved and waved postmedian rusty lines; cell-spot black, conspicuous; submarginal line obscure, curved in the opposite direction to the exterior line, to which it approximates in the middle.

Underside the same. Thorax and abdomen concolorous with wings; head and shoulders tinged with ochraceous.

Expanse of wings: 26 mm.

One ♂ from Paramaribo (*type*), November 1892 (C. W. Ellacombe); another from Palma Sola, Venezuela.

Hindmargin of forewings entire, obliquely curved; of hindwings with a very slight elbow in the middle; fovea of forewings much enlarged; antennae subserrate, with fascicles of cilia.

#### 180. *Semiothisa fidelis* sp. nov.

*Forewings* : pale grey, with dense coarse ochreous fuscous striae, which all but conceal the ground-colour; the lines thick, olive-brown, parallel to each other and retracted towards costa; the second slightly waved, the outer forming lunules between the veins, and marked on them with dark spots, those on veins 3 and 4 distinct; cell-mark linear, brown, touching middle line; marginal area darker, especially the part next the outer line, which forms a brown shade; fringe grey, with some black marks at base.

*Hindwings* : the same, without first line.

Underside tinged with yellow, the markings fuscous; the dark shade beyond outer line broadened at inner margin and obsolescent towards costa. Head, thorax, and abdomen concolorous.

Expanse of wings : 26 mm.

Two ♂♂ from Costa Rica (Underwood).

Very much like *S. accumulata* Guen., but in that species the band beyond outer line is broader at costa than inner margin and chestnut-brown. Hindmargin of forewing sinuate, scarcely excised; of hindwings bluntly angled in middle.

#### 181. *Semiothisa impicta* sp. nov.

*Forewings* : dull testaceous, freckled with darker; the lines dull brown; first at one-fourth, bent on the median; second thicker, near middle, slightly flexuous, passing over the blackish cell-spot; outer line at two-thirds, bluntly bent on vein 6 and again on vein 4, slightly incurved between and oblique below; an indistinct dark submarginal line, faintly edged with paler, especially beneath costa, where it is angled; fringe concolorous.

*Hindwings* : with no distinct cell-spot, the two lines approximating on inner margin.

Underside still duller. Head, thorax, and abdomen concolorous.

Expanse of wings : 34 mm.

One ♀ from the Felder Collection, without locality-label, but collected by Lindig, therefore probably from Colombia.

Forewings with hindmargin sinuous, slightly incurved, not excised, below apex.

#### 182. *Semiothisa inexcisa* sp. nov.

*Forewings* : pale ochreous, thickly dusted with greyish fuscous; the lines grey; first at one-fifth, angled below costa; second before middle, oblique inwards, the dark linear discal mark touching it above; third at two-thirds, obscure, denticulate; submarginal quite straight to inner margin before anal angle; fringe dark grey, with an interrupted dark basal line.

*Hindwings* : the same, without first line; the discal spot black, round; the submarginal nearly straight, but obscured by the dark dusting.

Underside with the median and submarginal lines brown, distinct; the other lines obscure; a brown blotch at anal angle of hindwings. Head, thorax, and abdomen ochreous; face and palpi slightly darker.

Expanse of wings : 32 mm.

One ♀ from Maraval, Trinidad, July 1891.

In markings and colouring very much like *S. occultata* from Sao Paulo, but the shape of wings entirely different; the apex of forewings is bluntly subfalcate, and the hindmargin without any excavation; the hindwings with hindmargin much less produced, the tooth quite blunt.

#### 183. *Semiothisa nigropunctata* sp. nov.

*Forewings* : dull whitish ochreous, thickly sprinkled with grey and ochreous striae, as usual more dense towards costa, which is marked with darker spots; lines ochreous or greyish, thick, parallel to each other and to hindmargin below, all

retracted to costa above, the third bluntly angled, waved below, and marked with blackish dots on veins; submarginal line sinuous, obscure, marked by a black blotch between veins 3 and 4, and by two superimposed black blotches on either side of vein 7; marginal line fine, blackish, interrupted; fringe ochreous; cell-spot linear, touching middle line.

*Hindwings*: with black cell-dot, ochreous antemedian and postmedian lines, the latter marked by black dashes on veins, and a submarginal shade.

Underside paler, with the lines and markings fuscous; the submarginal line fine in both wings; costal area of forewings slightly yellow-tinged. Head, shoulders, and forelegs fuscous; thorax and abdomen pale, like wings; antennae mottled, ochreous and grey.

Expanse of wings: 26—28 mm.

Two ♂♂ from Cnenta, Venezuela.

In the smaller specimen the two subcostal black spots are obsolete, and the middle line approximated to the inner. Hindmargin of forewings entire, of hindwings with distinct blunt angulation.

#### 184. *Semiothisa nitidata* sp. nov.

*Forewings*: glossy, pale ochreous, with rust-coloured speckling; the lines rust-coloured, brown on costa, which is narrowly pale, and marked also with brown dots; first line at one-fifth, bent in cell, then oblique; second line oblique, straight, just before the middle, the brownish discal mark touching it above; third line slightly waved and lunulate, marked with two largish brown spots on veins 3 and 4; a submarginal line parallel to this last, the space beyond the third lilac-tinged; hindmargin with interrupted brown line; fringe ochreous, with yellowish basal line.

*Hindwings*: the same, without first line.

Underside paler, the lines brown; a diffuse externally dentate-edged brown submarginal fascia. Head, thorax, and abdomen like wings: the face and palpi darker.

Expanse of wings: 24 mm.

One ♂ from the Amazons, from the Felder Collection (Bates).

Forewings with hindmargin scarcely indented below apex; hindwings with hindmargin bluntly dentate; antennae of ♂ subdentate, with fascicles of cilia; foveae in forewings of ♂ very inconspicuous.

#### 185. *Semiothisa occultata* sp. nov.

*Forewings*: pale ochreous, irrorated with fuscous, sometimes, especially in the ♀, so densely as to hide the markings: the lines grey; first curved, at one-fifth; second in middle, sinuous, the linear grey cell-mark touching it above; the third at two-thirds, lunulate and dentate, marked with dots at the ends of the teeth; the fourth, or submarginal, grey, fine, and nearly straight to anal angle; all the lines brown-marked on costa; the excision finely marked with brown, like the basal line of fringes, which are pale.

*Hindwings*: like forewings, but the outer line somewhat bent.

Underside somewhat yellower, the lines and markings brown. Head and shoulders brownish; thorax pale greyish; abdomen ochreous, with two rows of blackish spots.

Expanse of wings: ♂, 32 mm.; ♀, 34 mm.

Several from Petropolis and Sao Paulo.

Near *rigidata* Guen., but without the black markings and brown costal blotch.

Guenée, noting this in his *rigidata*, remarks that possibly he had another species mixed up with it.

#### 186. *Semiothisa senescens* sp. nov.

*Forewings*: whitish ochreous, densely irrorated with olive-grey striae; the lines olive-fuscous; first curved close to base, very indistinct; second before middle, thick, nearly vertical, slightly waved and interrupted, touching the cell-spot; outer line before two-thirds, dentate and lunulate, with black specks on veins, separated by a slight pale space from a uniformly broad blackish fascia, which is overlaid towards costa by some olive scales; marginal space beyond olive, with blackish striae, which are interrupted towards apex, so that an oblique streak from apex and another from costa are formed, of the paler ground-colour, which slightly interrupts the black fascia between veins 5 and 6; some blackish scales along the base of the very slight excision; fringe dark olive, with paler base.

*Hindwings*: similar.

Underside of forewings ochreous white, with deep brown striae; beyond the outer fascia pure white; lines and fascia deep brown, distinct; costa and veins yellowish; hindwings pure white, with all the markings deep brown; the fascia distinctly edged on both sides. Head, thorax, and abdomen all olive-grey.

Expanse of wings: 32 mm.

One ♀ from Nova Friburgo, near Rio de Janeiro.

Superficially like *S. cometifera* Butler, but easily distinguished by the prevailing olive tinge.

#### 187. *Semiothisa subclathrata* sp. nov.

*Forewings*: very pale fawn-colour, deeper along the marginal area, more whitish speckled with fawn-colour throughout the basal two-thirds; the lines brown, starting from brown costal triangles, and all marked with brown spots on the veins; first at one-sixth, angled on subcostal, then vertical; second before middle, incurved slightly in cell and on submedian fold, followed by the dark brown cell-spot; third at two-thirds, bluntly angled on vein 6, then nearly straight, but lunular and bluntly dentate to inner margin at two-thirds; followed by a brown-black triangular costal blotch, the apex on costa, the base produced and nearly touching outer line at angle; fringe concolorous, with an interrupted dark line at base.

*Hindwings*: the same, without first line or costal blotches; fringe paler.

Underside white, with coarse fuscous speckles; costa and all veins ferruginous; the lines dark brown, shaped as above, but from the ferruginous costal blotch which represents the brown-black blotch of upperside a straight brown-black line runs to near anal angle; the marginal area beyond it wholly ferruginous, except the apical area beyond blotch, which is white; hindwings white, with the lines and speckles brown; veins and a fascia beyond an undulating brown submarginal line ferruginous. Head, thorax, and abdomen like wings; the face and palpi darker.

Expanse of wings: ♂, 28 mm.; ♀, 32 mm.

Both sexes from Santos and Sao Paulo.

The ♂ has the fovea enlarged; hindmargin of forewings slightly excavated below apex, more perceptibly so in the ♀ than in the ♂; tooth of the hindwing moderate.



188. *Semiothisa subvalida* sp. nov.

*Forewings*: very pale ochreous, with slightly darker ochreous suffusion and striae, without any rusty or grey atoms, as in *S. debiliata*; the lines ochraceous, not so fine as in that species; the first curved; the second slightly waved, with the discal ochraceous mark touching it, exactly as in *debiliata*; the third more obtusely angled on vein 6 and marked with slight dark dots on veins: no submarginal line, but the outer line followed by a faint fascia formed of ochraceous striae arranged in four or five rows; fringe pale; marginal dots minute, black.

*Hindwings*: with antemedian and postmedian lines, the latter with dark dots on veins; cell-spot rusty.

Underside paler, with very indistinct markings. Thorax and abdomen concolorous; face and collar tinged with darker.

Expanse of wings: 26 mm.

One ♂ from Paragnay.

Superficially extremely like *S. debiliata*: besides the difference in the markings, the shape of wing is different; both costa and hindmargin of forewings are straighter, the apex thereby appearing more produced; the elbow of hindwings is more pronounced, and the fovea on forewings very small and obscure.

189. *Semiothisa trigonata* sp. nov.

*Forewings*: testaceous ochreous, hardly dusted with darker; the lines brown: first at one-fifth, angled in cell, to inner margin at one-fourth; second before middle, waved, indistinct, absorbing the linear cell-spot; third at two-thirds, oblique *inwards* to vein 6, and thick, thence lunulate and parallel to first and second; beyond it a faint grey line shows through from beneath; some brownish clouds before apex; fringe brown, with brown basal line; the space between veins 6 and 7, from their origin as far as outer line, whitish hyaline, the costa above it paler, so that there appears a pale costal triangle between lines 2 and 3.

*Hindwings*: the same, without basal line; fringe concolorous.

Underside yellow, dusted with fulvous; discal spots and outer lines deep brown; the other lines less expressed; a white triangle at base of veins 6 and 7, and a white blotch before apex, dusted with brown and preceded by a pale brown patch; hindwings the same. Head and shoulders, palpi and forelegs, brown-grey; collar, thorax, and abdomen like wings.

Expanse of wings: 40 mm.

One ♀ from Petropolis.

190. *Tephrinopsis semipallida* sp. nov.

*Forewings*: whitish grey, thickly dusted with dark grey atoms; the costa dark grey; first line at one-third, sinuous, brownish grey; median shade diffuse, dark grey, from middle of inner margin to two-thirds of costa, before which it becomes obsolete; outer line from three-fourths of inner margin, dark brown, slightly curving towards apex, before which it is recurved finely to costa; followed by a broad brownish grey shade; submarginal line pale, nearly straight; marginal line fine, blackish; fringe grey; the area between median shade and outer line is paler than the rest of wing.

*Hindwings*: whitish, dusted with dark grey along inner and hindmargins; a

brownish grey line from inner margin at three-fourths, fading out before costa : fringe pale.

Underside grey, tinged with ochraceous and dusted with dark grey : a diffuse submarginal brownish fascia. Head, thorax, and abdomen grey.

Expanse of wings : 30 mm.

One ♂ from Nova Friburgo, near Rio de Janeiro.

#### 191. *Thamnonoma angulata* sp. nov.

*Forewings* : whitish grey, almost wholly suffused with brown, and with fine dark striae ; first line at one-fourth, black, oblique, bent below costa ; second at two-thirds, black, oblique, sinuous ; space included paler, with an obscure sinuous brown line down its middle ; outer line succeeded by a brown fascia, edged by the whitish submarginal line ; marginal area whiter ; an obscure oblique whitish streak from apex ; marginal line of black lunules : fringe brown.

*Hindwings* : paler and greyer ; the lines indistinct, except on inner margin.

Underside dull brownish, speckled with whitish, with the markings obscure ; face, palpi, and front of thorax dark brown : head, thorax, and abdomen grey, mixed with brown.

Expanse of wings : 27 mm.

Four ♂♂ from Newcastle, Jamaica, August 1893.

The forewings have the hindmargin slightly excised from apex to vein 4 ; the hindmargin suberenerate and toothed at vein 4.

#### 192. *Thamnonoma ochrifascia* sp. nov.

*Forewings* : dull brownish grey, dusted with fuscous ; costa spotted with dark ; the only visible markings are a paler ochreous submarginal fascia on both wings parallel to the hindmargin, preceded and followed by a darker grey fascia, each of which is itself preceded by a dark grey line ; fringe concolorous, with a fine dark basal line, and a row of minute black dots between the veins.

*Hindwings* : pale grey.

Underside duller, with traces of dark cell-spots.

Expanse of wings : 26 mm.

One ♂ from the Bermudas.

#### *Xenoecista* gen. nov.

A development of *Semiothisa* : the antennae of the ♂ with pectinations ; forewings not emarginate, elongate ; hindwings with a blunt tooth in middle ; hind tibiae of ♂ much swollen, with four spurs, the tarsi quite short ; fovea present, small.

Type : *Xenoecista subdiversa* sp. nov.

#### 193. *Xenoecista pallidata* sp. nov.

*Forewings* : bone-colour, with fine fuscous strigulation, the strigae thicker along costa ; lines dull fuscous, all oblique below, and parallel to hindmargin, bent below costa, much as in *X. subdiversa*, but the median line is not forked, and variable in position, being in some cases nearer the inner, in others nearer the outer line on inner margin ; outer line marked with black vein-dots ; a submarginal shade of

variable intensity, from beyond the angle of outer line to inner margin before anal angle ; a row of small dark marginal dots : fringe ochreous : cell-spot black.

*Hindwings*: with cell-spot, antemedian and postmedian lines, and distinct submarginal shade.

Underside with the markings thicker, brown ; forewings washed with yellow, except a square apical blotch and smaller blotches along hindmargin, which are white ; hindwings with the basal area, the space between last two lines, and the veins yellowish, the rest white. Thorax and abdomen concolorous with wings : head and collar rather deeper.

Expanse of wings : 26 mm.

Three ♂♂—one marked simply Amazons (*type*), one from between Manaos and R. Jutahi, and a third from La Plata. The last is rather larger and more darkly marked than the two from the Amazons. One ♀ from R. Dagna, Colombia (W. Rosenberg).

Distinguished from *X. subdiversa* Warr., to which it is evidently closely allied, by the smaller size and paler ground-colour. It is also like *S. aequiferaria* Wlk. from Florida, and might easily be mistaken for that species ; but the ♂ antennae are quite distinct, and the hindmargin of forewings shows no trace of excavation.

The single ♀ from Colombia has the markings more obscured by the denser dusting ; the black vein-dots on veins 3 and 4 are intensified and united into a black line, followed by a second blotch lying on the submarginal line, which is otherwise not represented above, though clearly marked on the under surface : in the hindwings the postmedian line is immediately followed by a dark shade, forming with the submarginal shade a double band. The species is evidently widespread, and a longer series will probably show further variations.

#### 194. *Xenocista subdiversa* sp. nov.

*Forewings*: whitish, the ground-colour almost hidden by dull greyish fuscous strigae and irroration ; the three lines parallel to the hindmargin and nearly equidistant, all bent below the costa, and the median obscurely forked, the small black cell-spot lying within the fork ; all three rather thick and diffuse, the exterior slightly waved and marked on each side with black scales at veins 3 and 4 ; submarginal line waved, indistinct, the space between it and the exterior line forming a darker fascia ; fringe grey, with a fine dark basal line.

*Hindwings*: with the median line thickened, preceding the black cell-spot, the submarginal fascia broader and more marked.

Underside with the markings dull red-brown : the forewings wholly suffused with dull yellowish : marginal area wholly red-brown, except a fuscous-dotted square white apical blotch ; hindwings suffused with yellowish only as far as first line, the rest white, with the markings red-brown. Head, thorax, and abdomen like wings.

Expanse of wings : 30 mm.

One ♂ from Bogota.

#### 195. *Xenocista triconjuncta* sp. nov.

*Forewings*: greyish ochreous, grizzled with dark grey and brown atoms : first line at one-fourth, thick, dark brown, angled below subcostal and partially double ; second in middle, similarly angled, then oblique and fine : outer line brown-black, at three-fourths, nearly straight, closely followed by two similar lines, the outer one somewhat dentate, all the three forming a diffuse brownish fascia : fringe grey.

*Hindwings* : with diffuse antemedian and less distinct triple postmedian line.  
Underside tinged with ochraceous, the fascia deeper on forewings. Head, thorax, and abdomen all greyish : the face slightly darker.

Expanse of wings : 32 mm.

One ♀ from Petropolis.

Forewings with hindmargin sinuous ; hindwings with the hindmargin rounded, the tooth at middle hardly prominent.

#### SUBFAMILY ENNOMINAE.

##### 196. *Acrosemia undilinea* sp. nov.

*Forewings* : pale yellow, thickly dusted and in the marginal area wholly suffused with bright ferruginous ; the lines dark brown ; first at one-third, angled below costa ; second from costa before apex, angled outwards on vein 7, then oblique and twice sinuate to inner margin at two-thirds ; submarginal line denticulate, starting from an angulated black costal streak which is almost connected with the angle of the outer line ; cell-spot black ; fringe deep ferruginous.

*Hindwings* : similar, the outer line only once bent ; the submarginal indistinct.

Underside much paler and duller, with the markings obscured. Palpi ferruginous ; face and vertex pale yellow : thorax and abdomen like wings.

Expanse of wings : 38 mm.

One ♀ from Costa Rica (Underwood).

Mr. Schaus is inclined to consider this the ♀ of *A. vulpecularia* H.S. ; but Guenée, who had both sexes, makes no mention of any difference in ground-colour, but says the ♀ is larger than the ♂.

##### 197. *Acrotomodes nigripuncta* sp. nov.

*Forewings* : bright brick-red, with scattered grey and black atoms ; the costa pinkish grey ; a double black spot on costa before apex, followed by a grey spot ; fringe concolorous.

*Hindwings* : wholly brick-red, with a few dark scales.

Underside paler, the freckles coarser, confined to forewings and costal area of hindwings. Head, thorax, and abdomen concolorous ; vertex white ; base of patagia and abdomen whitish.

Expanse of wings : 32 mm.

One ♀ from Cúcuta, Venezuela.

##### 198. *Anisogonia deustata* Feld. ab. *innotata* nov.

Nearest the type-form, having the cell-spot, the apex of forewings, and two small spots before middle of hindmargin black ; but without the characteristic large black marginal blotch.

One ♂ from Chili.

##### 199. *Anisogonia deustata* Feld. ab. *plana* nov.

Wings fawn-colour, lighter or darker, almost uniform, without darker dusting ; the lines distinct, dark brown, or brown edged with pale ochreous.

Underside yellower : the forewings generally with some white marks at apex.

Four ♂♂ from Chili (W. B. Calvert).

A common form of aberration, and chiefly, if not entirely, confined to the ♂♂.

200. *Anisoperas subfulvata* sp. nov.

*Forewings*: fawn-colour, tinged with olive, entirely suffused with olive in the central area between the lines; the whole wing marked with short dark striae; the lines brown; first at one-fourth, bluntly angled below costa, then oblique inwards; second at three-fourths, acutely angled outwards below vein 7, then incurved and slightly waved to inner margin at two-thirds, nearly touching the base of a brown straight median shade; a subapical paler costal blotch beyond second line; traces of a submarginal darker shade; cell-spot small, black; fringe concolorous.

*Hindwings*: with the olive tinge more generally diffused; a curved dark post-median line and dark submarginal cloud; cell-spot black.

Underside yellowish olive, thickly striated with brown; cell-spot and outer line distinct; margins of both wings darker and duller. Head, thorax, and abdomen olive-fuscons.

Expanse of wings: 39 mm.

One ♂ from Costa Rica (Underwood).

Both wings rather more strongly angulated than in *A. atropunctaria* Wlk.

201. *Azelina constrictifascia* sp. nov.

*Forewings*: pinkish grey, dotted with fuscous and clouded with brownish; the markings chestnut-brown; inner edge of central fascia inangled in the cell, then vertical; basal area flesh-colour, spotted with fuscous, with a curved brown line starting from a brown basal spot on costa; outer margin of central fascia from costa at five-sixths, running in basewards along the lower radial to the end of cell, forming a small angle at base of veins 3 and 4, a sinus inwards below it, an angular projection above and a rounded projection below the submedian vein; cell-spot deep black, surrounded with flesh-coloured scales; the outer end of the fascia below the costa contains two pinkish grey horizontal patches; both margins are finely edged with flesh-colour; apical patch chestnut, sharply marked by a line from costa, just beyond the edge of the fascia to the base of the middle tooth; anal area ochreous on inner margin, smoky brown along hindmargin, with two indistinct pale grey lunules between them, and a pale grey shade along apical area; a black submarginal dot below apex and below middle tooth.

*Hindwings*: pinkish brown, pale whitish grey along costa; a minutely waved brown pale-edged median line beyond the black cell-spot; the brown tinge is deepened before this line, and again towards hindmargin, where it becomes tinged with olive; two black submarginal spots between tail and anal angle.

Underside ochreous, tinged with brown and mottled with black; cell-spots velvety black, with pale scales round them; a submarginal pale curved line, beyond which the marginal area is chestnut, tinged in places with pinkish grey. Face, palpi, thorax, and abdomen dull brown; vertex, collar, and shoulders rufous ochreous; last two segments of abdomen pinkish ochreous.

Expanse of wings: 38 mm.

Two ♂♂ from San Augustin, Mapiri, 3500 feet, September 1895 (Arthur Maxwell Stuart).

Forewings with a tooth at veins 6 and 3, the anal angle rounded off; hindwings with apex prominently rounded, a curved tooth at vein 3 and a minute one at vein 2.

Near to *A. gumaza* Dogn., *Ann. S. E. Belg.* XXXVIII. 1894, p. 242, from El Monje, Loja.



202. *Azelina infantilis* sp. nov.

*Forewings*: ochreous, dusted with fuscous and rufous; the central area chestnut-brown; first line at nearly one-third, oblique outwards and strongly rounded in cell, oblique inwards from the median to one-third of inner margin; second line from costa at three-fourths, obliquely curved inwards to just beyond middle of inner margin, approximating there to the first line, with a short blunt projection on submedian fold; the included space chestnut-brown, deeper towards the edges, except along costa, where the paler ochreous ground-colour reappears; cell-mark angled, white, semihyaline; marginal area, from costa just beyond second line to anal angle, suffused with rufous and brown; fringe rufous brown.

*Hindwings*: ochreous, less speckled; a curved fuscous line at three-fourths; an irregular marginal cloud; the anal angle ochreous and rufous; two or three black submarginal dots; a large dull cell-spot.

Underside pale ochreous, much speckled with fuscous; the costa marked with geminated strigae; cell-spot of forewings white with black edge, of hindwings wholly black; a dark crenulated line at four-fifths on both wings; marginal area of forewings with a blackish blotch from below apex to vein 3; the inner margin white and glossy; hindwings with a brown blotch at anal angle and three black submarginal dots. Head, thorax, and abdomen pinkish ochreous, dusted with grey.

Expanse of wings: 30 mm.

One ♂ from Onoribo, March 1893 (C. W. Ellacombe).

Hindmargin of forewings obliquely curved, slightly indented only at vein 3; hindwings with a tooth at vein 3, beyond a slight excision.

203. *Azelina maculicosta* sp. nov.

*Forewings*: dark greyish fawn-colour, speckled with fuscous; first line obsolete on costal half, fine and dark brown below median, outcurved in the submedian interval and reaching inner margin at two-fifths; outer line from costa at three-fourths to three-fourths of inner margin, dark brown, incurved between cell and submedian fold; the median area darker and tinged with rufous on the veins, along the costa pale ochreous with fuscous striae; this pale patch edged inwardly by an oblique brown line, nearly touching the angulated white semihyaline discal mark; marginal area paler, with rufous clouds; fringe concolorous; a series of small black and white submarginal dots.

*Hindwings*: uniform greyish fawn-colour, with a darker cross line at two-thirds.

Underside more rufous-tinged; in forewings whitish along inner margin below the median; outer line blackish, marked by deeper dots on veins; cell-spot as above; hindwings with small black cell-spot and obscure dark outer line; submarginal dots whiter. Head, thorax, and abdomen greyish fawn-colour.

Expanse of wings: 38 mm.

One ♂ from Popayan, Colombia (Lehmann).

Near *A. minima* Butler, but the outer line more vertical and more sinuous.

204. *Certima unilineata* sp. nov.

*Forewings*: fawn-colour, speckled with fuscous; the outer and inner lines marked by the usual black spots on veins; those of the outer line rather nearer than usual to the hindmargin and situated on a faint greenish shade; a thick dull

red slightly arched oblique line from costa just before apex to inner margin beyond middle, followed by a faint reddish shade ; fringe concolorous ; cell-spot black.

*Hindwings* : the same, with the line central.

Underside ochreous grey, dusted with black, with the cell-spots and outer row of dots distinct ; the forewings towards the hindmargin suffused with reddish fuscous ; fringes and hindmargin pale grey. Head and thorax concolorous with wings ; abdomen paler.

Expanse of wings : 34 mm.

Two ♂♂ from Bolivia, R. Songo to R. Suapi, March to June 1896 (Garlepp).

## 205. *Cimicodes subapicata* sp. nov.

*Forewings* : dark ferruginous brown, thickly striated with black ; the costa olive-green, the extreme edge ochreous with black speckles ; the lines ferruginous, parallel, both slightly concave outwards ; the first pale-edged towards base, with a whitish dot on the median and submedian veins, and preceded by a small white dash on the costal streak ; second edged outwardly with paler, and outcurved beneath the costal streak to a small square white costal spot shortly before apex, marked with a whitish dot on veins 1, 6, and 7 ; submarginal line dark, straight to vein 5, along which it runs inwards, then straight and oblique to anal angle, followed below vein 5 by a dark eloud ; fringe wholly brown ; cell-spot black, with a dark grey ring.

*Hindwings* : brighter ferruginous, towards costa olive-tinged ; cell-spot black, preceded by the *sinuous* not straight line, which is marked by whitish dots on veins ; submarginal line irregularly sinuous, followed by a darker brown shade.

Underside much paler, ochreous fawn-colour, spotted with black ; the submarginal line only indicated ; the marginal area darker ; apex of forewings with a white blotch ; cell-spot distinctly black. Head ferruginous brown ; front half of thorax olive-green, like the costal streak ; rest of thorax and abdomen concolorous with wings ; legs orange, strongly marked with black.

Expanse of wings : 45 mm.

One ♂ from Bolivia, between R. Songo and R. Suapi, March to June 1896 (Garlepp).

Differs from *pallicostata* Guen., the type of the genus, in having the hindmargin of hindwings uniformly rounded, not elbowed ; the hindmargin of forewings more deeply incised below apex, and more conspicuously gibbous at middle.

## 206. *Cyclomia costipuncta* sp. nov.

*Forewings* : fawn-colour, smooth, deeper along the hindmargin ; costa with a few black strigae and a central black blotch ; fringe concolorous.

*Hindwings* : dull deep yellow, dusted with rufous ; a central straight line rufous ; a purplish marginal fascia ; fringe pale yellow.

Underside yellow, thickly dusted with ferruginous ; the forewings pale along inner margin and with a diffuse marginal fascia ; hindwings redder, with the marginal fascia less distinct. Palpi cinereous fulvous, the terminal joint dark brown ; face and vertex yellowish ; thorax and abdomen fawn-colour ; antennae reddish fawn, with the unpectinated apex snow-white.

Expanse of wings : 22 mm.

One ♂ from Cúcuta, Venezuela. Also from Bolivia (Garlepp).

207. *Cyclomia jaspidea* sp. nov.

*Forewings* : deep reddish brown, dusted with blackish; three curved black lines at one-fourth, one-half, and three-fourths respectively, the middle one traversing a large discal black spot.

*Hindwings* : brick-red, dusted with darker red and towards hindmargin with blackish, with faintly expressed dark curved central and postmedian lines; cell-spot black.

Underside ochraceous, thickly speckled with bright red; cell-spots distinct. Head, antennae, thorax, and abdomen red, the last tinged with fuscous above.

Expanse of wings : 20 mm.

Three ♂♂ from Jamaica.

In one of the above examples the black discal spot of the forewings is small and round, but ringed with a broad grey orbit, which is again diffusely edged with blackish.

208. *Dectochilus brunnea* sp. nov.

*Forewings* : testaceous, thickly speckled with fuscous atoms, the lines reddish brown; first from costa at one-third, sinuous, curved outwards on the median vein, to inner margin just beyond middle; second line from five-sixths of costa, oblique and slightly bent to inner margin, almost touching first line, preceded by a broad ferruginous shade; the first line is preceded and the second followed by a pale grey darker-edged line; cell-spot blackish; marginal area deepening in tint towards the hindmargin, with very faint vestiges of a paler waved and somewhat darker-edged submarginal line; fringe dark brown.

*Hindwings* : whitish ochreous, speckled with fuscous; fringe brown.

Underside of forewings reddish brown towards costa, becoming fulvous towards hindmargin; inner margin pale, unspeckled; costa grey, paler at apex, with blackish freckles; outer line marked at costa only; hindwings with costal half reddish brown, inner half whitish; a dark obscure submarginal line; cell-spots on both wings dark. Head and thorax like forewings; abdomen like hindwings, but greyer.

Expanse of wings : 40 mm.

Both sexes from Chili. Like *D. antucaria* Feld., but darker.

209. *Eusarca* (?) *parallelaria* sp. nov.

*Forewings* : pale ochreous, dusted and striated with darker ochreous and fuscous; the lines brownish, double; first from inner margin near base to the black cell-spot; outer line parallel to it from just beyond middle of inner margin to apex, the inner arm marked by black vein-dots, the two below costa larger; the outer arm also darker at costa; traces of an intermediate central line and of a submarginal shade of brown striae; fringe ochreous, brown towards apex.

*Hindwings* : with a double brownish postmedian line, not reaching costa, followed by a submarginal row of brown blotches; cell-spot black.

Underside paler; the forewings towards base much speckled with fuscous. Head, thorax, and abdomen all ochreous.

Expanse of wings : 34 mm.

One ♂ from Bogota; also in Mr. Schaus' Collection.

Both wings are elbowed at vein 4, the apex of forewing being acute.

Differs from true *Eusarca* in that the antennae of the ♂ are furnished with long fascicles of cilia instead of pectinations.

210. *Eusarca subfasciata* sp. nov.

*Forewings*: pale dull yellow; the lines faint, rust-colour; first at one-fourth, curved outwards above and below the median vein; exterior line oblique, starting from a large red-brown costal spot shortly before apex; cell-spot faintly darker; fringe concolorous.

*Hindwings*: with a single central brown line.

Underside bright lemon-yellow, with some rust-coloured flecks; forewings with a red-brown marginal fascia not quite reaching costa; hindwings with a subapical brown spot and the edges of a fascia denoted; forewings with red cell-spot. Head brown; thorax and abdomen yellow.

Expanse of wings: 32 mm.

Several from Costa Rica.

Along with the type-form occurs another, in which the lines are more strongly marked; both wings are thickly speckled with ferruginous, and the marginal area suffused with the same, the submarginal line being indicated by darker brown blotches. This form, which is not sexual, may be called ab. *macularia*.

*Eustenophasma* gen. nov.

*Forewings*: narrow, elongate; costa almost straight: apex depressed, blunt, subfalcate; hindmargin strongly toothed at vein 3, excavated above, oblique below; inner margin straight.

*Hindwings*: narrow; hindmargin irregularly curved, indented beyond cell.

Antennae of ♂ simple, faintly pubescent; palpi short, porrect; second joint hairy; third short, pointed; tongue and frenulum present; hindtibiae with four spurs.

*Neuration*: forewings, cell two-thirds of wing; discocellular vertical; first median nervule at four-fifths, second and third from lower end of cell; radials normal; veins 7, 8, 9, stalked; 10 and 11 stalked; 10 anastomosing with stalk of 7, 8, 9.

*Hindwings*: discocellular angled; costal approximated to subcostal for two-thirds of cell; subcostals from upper end of cell; second median just before lower end; first median at three-fourths.

Abdomen with anal segment tufted, and with small lateral tufts on each segment.

Type: *Eustenophasma galeopsis* sp. nov.

Probably related to *Mychonia* H.S.

211. *Eustenophasma galeopsis* sp. nov.

*Forewings*: whitish, dusted and suffused with greyish olive; the basal area, central fascia, hindmargin, and a large subapical costal patch of this latter colour, the ground-colour being restricted; first line at nearly one-third, dark olive-grey, oblique and straight inwards to inner margin at one-third, preceded by a pale line of ground-colour; second line from costa at two-thirds, oblique outwards towards the middle tooth, there forming a blunt angle, and sinuate inwards to inner margin at two-thirds; cell-spot blackish; beyond this fascia two or three obscure dark lines are visible, and a small spot above the projection; fringe olive-grey.

*Hindwings*: whitish, simply dusted with grey; cell-spot large, blurred; two dark grey spots on inner margin above anal angle, denoting the commencement of

a postmedian and submarginal line, of which only the former is faintly visible; fringe whitish, mixed with olive-grey.

Underside similar, but less distinctly marked. Head, thorax, and abdomen olive-grey.

Expanse of wings : 28—30 mm.

One ♂ from Sao Paulo; several specimens also in Mr. Schaus' Collection.

## 212. *Eutomopepla maculata* sp. nov.

*Forewings* : greyish flesh-colour, with sparse black dusting; costal edge broadly ochreous, with short brown striae; the origin of the two lines shown on costa by brown triangular marks; the lines themselves indistinct, marked partly by dark scales and pale ochreous spaces on either side, and both ending on inner margin as pale triangular blotches; first from before one-third of costa to one-fourth of inner margin, waved; second from before two-thirds of costa to middle of inner margin, sinuous, marked by an irregular patch of hoary scales beyond and below end of cell, and ending in a yellowish white patch, internally brown-edged; cell-spot large, marked by hoary scales and followed by a large irregular hyaline patch; apex of wing olive, with dense black and grey striae; submarginal line interrupted, marked by blackish scales, a small white hyaline dot on it above vein 6, and a patch of grey and black scales with a black wedge-shaped mark at anal angle; fringe red.

*Hindwings* : with a broad yellowish hyaline band near base, and three smaller spots across middle, one costal, one beyond cell-spot, the other larger towards inner margin; cell-spot a patch of hoary and black scales; inner margin whitish, with brown striae; an obscure denticulate postmedian line, and a straight lilac-grey black-scaled line from apex to anal angle; fringe reddish, with black lunules at base in the excisions.

Underside fulvous, mottled with fuscous speckles, paler towards costa of forewings and base of both wings; the hyaline patches more developed; the second line in forewings pale at costa, and followed in midwing by a blackish and olive cloud; submarginal denticulated line and apex lilac-grey; postmedian line of hindwing marked by a broad olive fascia. Head and palpi orange, mixed with pale ochreous; thorax and abdomen greyish pink; base of patagia pale grey.

Expanse of wings : 56 mm.

One ♀ from South America, without exact locality.

## 213. *Gynopteryx ennomaria* sp. nov.

*Forewings* : pale ochreous, with a few scattered brown scales; the lines olive-brown; first beyond one-third, oblique outwards from below costa to the discal dot, which is small and black, then oblique inwards and bluntly angled on the submedian fold, to the inner margin beyond one-third; the ground-colour is tinged with fulvous on each side of this line; second line dark brown, edged finely with paler and then broadly with fulvous, from inner margin just beyond middle to apex, with a short fork to costa before it; a faint waved grey submarginal line; fringe ochreous.

*Hindwings* : with the second line only; both wings have the marginal area beyond second line darker-tinted than the basal portion.

Underside glossy, with coarse brown speckles; the lines less distinct. Head, thorax, and abdomen all pale ochreous.

Expanse of wings : 35 mm.

One ♀ from Paragnay (Dr. Bohls).



214. *Gynopteryx immaculata* sp. nov.

*Forewings* : yellow, speckled and striated with pale brownish ; the lines pale brown ; first at one-fourth, bent in the cell, then vertical ; outer line gently curved from costa before apex to two-thirds of inner margin ; hindmargin from apex to elbow slightly tinged with pale brownish ; cell-spot dark brown.

*Hindwings* : with the line central ; fringes yellowish.

Underside yellow, the outer line dark brown, on the forewings retracted to costa ; hindwings with an additional curved outer line, nearly touching central line on costa and inner margin. Palpi, face, and antennae brown ; thorax and abdomen yellow ; shoulders and base of costa of forewings deeper finged.

Expanse of wings : 32 mm.

One ♂ from San Domingo.

215. *Gynopteryx subcarnea*.

*Lissostolodes subcarnea* Warr., Nov. Zool. II. p. 144.

The genus and species were described from a ♀. The ♂ is superficially very different from the ♀, being pale ochreous, with the costa and cross lines deep olive.

Expanse of wings : 40 mm.

The apex of forewings is not produced, and the hindmargin scarcely elbowed, while in the hindwings the anal tooth in middle of hindmargin is obsolete. The ♂ antennae are bipectinate, the pectinations short and precise, ciliated throughout, and with a fine curved bristle from each apex.

The description of the venuration of forewings requires amendment : veins 7, 8, 9, are stalked from just before end of cell ; 10 and 11 coincident, anastomosing with 12, 10 afterwards anastomosing shortly with 8 and 9, forming a long narrow areole.

The structure being precisely the same as that of *Gynopteryx* Gnen., the genus *Lissostolodes* must sink.

I have to thank Mr. Schaus for the opportunity of examining the ♂, of which sex he possesses a good series.

216. *Herbita* (?) *transversata* sp. nov.

*Forewings* : dull reddish brown, slightly black-speckled ; a black cell-spot ; a black oblique line from two-thirds of inner margin towards apex, before which it is retracted to the costa ; fringe concolorous.

*Hindwings* : with the dark line central ; cell-spot small.

Underside paler and duller, with the dark speckling more distinct. Face and palpi dark brown ; thorax and abdomen pinkish grey.

Expanse of wings : 52 mm.

One ♂ from Costa Rica (Underwood).

*Hesperomiza* gen. nov.

*Forewings* : with costa gradually curved ; apex bluntly rounded ; hindmargin slightly curved and oblique ; anal angle blunt ; inner margin faintly convex.

*Hindwings* : triangular ; both angles well developed, the apical more rounded than the anal ; hindmargin nearly straight.

Antennae of ♂ bipectinated nearly to apex, the pectinations short and fine ; forehead slightly produced below ; palpi stout, porrect, the joints obscured ; tongue present ; hindtibiae somewhat thickened, with four spurs.

*Neuration*: forewings, cell half as long as wing; discocellular slightly inangulated; first median at three-fourths, second close before the lower angle, third from the angle of cell; radials normal; 11 out of 12; 10 free from cell, anastomosing strongly with 11 and again at a point with stalk of 8, 9; 7, 8, 9, stalked from just before upper angle. Hindwings with the subcostals from upper angle; second median not so near the end of cell as in forewings.

Type: *Hesperomiza jaspidea* sp. nov.

#### 217. *Hesperomiza jaspidea* sp. nov.

*Forewings*: pink, with faintly darker strigulations, and a few scattered dark atoms; costa minutely dotted with dark fuscous; first line very obscure, denoted by whitish dots on veins; cell-spot minute, black; outer line from costa close to apex to inner margin at two-thirds, slightly darker, but marked sometimes by distinct white spots on veins, followed on inner margin by a blackish spot; marginal area more dusted with dark scales, and deepening in colour towards the fringe; a very faint denticulate line just before the margin, marked by pale vein-dots; fringe deep pink.

*Hindwings*: with costal half white; the rest like forewings.

Underside paler pink, thickly irrorated with black towards base, and at apex, which is greyer; the lines brown and thicker; that in the forewings not reaching the inner margin, which is broadly white; cell-spots black, distinct. Palpi black-brown; face and vertex red-brown; thorax pink; abdomen ochreous, tinged with pink.

Expanse of wings: 39 mm.

Two ♂♂ from Sao Paulo.

Somewhat resembling *Himera nestor* Druce.

#### *Leucomicra* gen. nov.

*Forewings*: with costa slightly curved; apex blunt, rectangular; hindmargin toothed at vein 4, vertical or faintly incurved above, oblique and slightly sinuous below.

*Hindwings*: kite-shaped, with a tooth in middle of hindmargin.

Antennae of ♂ ciliated; palpi porrect, thick, terminal joint hardly visible; tongue and frenulum present; hindtibiae with four spurs.

*Neuration*: forewings, cell half the length of wing, very broad; discocellular vertical, concave; first median at three-fourths, second close before end of cell; radials normal; veins 7, 8, 9, stalked; 10 and 11 coincident, anastomosing with 12, 10 afterwards anastomosing at a point with 8, 9. Hindwings with 7 just before angle of cell.

Type: *Leucomicra leucospilaria* Wlk. (*Erosia*).

#### 218. *Magida distincta* sp. nov.

*Forewings*: deep orange-fulvous, dusted and striated with purple; the lines dull purple; first at one-third, thick, oblique outwards to middle of cell, then vertical, and again oblique inwards to inner margin beyond one-third; outer line at three-fourths, thick, bent below costa and again below middle; submarginal line from apex to anal angle coalescing with outer line and forming a wide fascia; the marginal space, especially towards costa, densely striated; marginal line deep red; fringe concolorous.

*Hindwings* : with median and submarginal thick parallel lines.

Underside duller, the space between the two outer lines faintly lustrous. Head, thorax, and abdomen concolorous with wings.

Expanse of wings : 20 mm.

One ♂ from Iquitos, 1893 (Maxwell Stuart).

Akin to *M. aurantiaca* Butler from the Amazons.

#### 219. *Microgonia affinis* sp. nov.

*Forewings* : lilac-grey, covered with rufous fawn-coloured strigae, and with a slight olive tinge throughout : the rufous strigae thicker and partially confluent in the basal and marginal areas ; the lines purplish grey ; first from one-third of costa to one-third of inner margin, bluntly bent outwards in cell and on submedian fold, preceded by a fine lilac-grey line ; second line from four-fifths of costa, acutely angled on vein 7 close to hindmargin, then straight and oblique to middle of inner margin, followed by a fine lilac-grey line ; submarginal line indicated by grey dark-scaled dashes on veins ; cell-spot blackish, minute, just beyond first line ; fringe rufous, with pale grey line at base.

*Hindwings* : the same, with a single straight median line.

Underside olive-fuscous within the outer line, lilac-grey beyond, shading into olive-fuscous again towards hindmargin ; outer line in forewings corresponding to that on upperside ; in hindwings at three-fourths, curved and dentate ; followed by a waved subterminal line ; thorax and abdomen lilac-grey ; head and shoulders rufous-tinged.

Expanse of wings : 54 mm.

One ♂ from S. America.

Wings short and broad ; costa of forewings strongly arched ; apex blunt, hardly produced ; hindmargin slightly sinuous ; anal angle well marked.

#### 220. *Microgonia apidania* ab. *bicolor* nov.

*Forewings* : with the basal and marginal areas deep brown-black ; the area between the two transverse lines olive-ochreous, finely dusted with grey ; the median shade hardly darker beyond the cell-spot.

*Hindwings* : wholly brown-black, with the line and cell-spot deeper.

Underside like the type, but a little darker ; the apex, as usual in the forewings, white. Head, thorax, and abdomen fuscous ; the face and vertex paler.

One ♂ from Costa Rica (Underwood).

Agrees exactly in size, shape of wings, and markings with the type-form.

#### 221. *Microgonia chalybeata* sp. nov.

*Forewings* : pale glossy lilac-grey ; costa and marginal area darker, olive-tinged ; the costal edge ochreous ; first line obscure, dull olive, at one-third, bluntly bent outwards in cell and on submedian fold ; outer line from five-sixths of costa, very acutely angled outwards close to hindmargin, then oblique to inner margin just beyond middle, followed by a lustrous pearly grey line, marked with white vein-points ; a pale blotch on inner margin beyond it, of variable intensity, largest in the ♀ ; fringe olive ; cell-spot black ; the first line is slightly marked with whitish on costa and median vein.

*Hindwings* : with the line median ; glossy grey towards base, olive-fuscous in

marginal half; submarginal line indicated by fine white dashes on veins, which are also obscurely visible in forewings.

Underside greyish olive, deep olive in forewings as far as outer line, which is broadly whitish; the apex white; hindwings paler, the outer line strongly dentate, the teeth corresponding to the submarginal white points of the upperside. Thorax and abdomen grey; head and collar ochreous-tinged.

Expanse of wings: 52 mm.

One ♂ from Sao Paulo.

Shaped like *M. mexicanus* Guen.

## 222. *Microgonia lilacina* sp. nov.

*Forewings*: lilac-grey, sparsely irrorated with black scales, the markings fawn-colour; a diffuse shade at one-third, nearly vertical, curved outwards in cell and on submedian fold; a similar median shade, bent beyond cell; outer line double, containing white dashes on the veins, from two-thirds of costa, angled on vein 6, then oblique to inner margin at two-thirds, with a dentate shade from it at vein 5 to inner margin before anal angle; on the costa beyond the outer line is an oval rufous brown-edged blotch; cell-spot small, black, consisting of erect scales; fringe concolorous.

*Hindwings*: with the double line median; a dentate nearly complete submarginal shade, and the margin itself reddish.

Underside paler, with a broad marginal fawn-coloured fascia; apex of forewings glossy whitish; cell-spots black, distinct. Face and vertex dark grey, finely margined with a whitish line; palpi dark fawn; thorax and abdomen very pale fawn-colour.

Expanse of wings: 46 mm.

A pair from British Guiana.

Nearest *M. nedusia* Druce, but the wings broader; the apex of forewing more acute, but not so much produced; outer line further from hindmargin; both wings without any olive suffusion.

The antennae of the ♂ are clothed with fascicles of cilia.

## 223. *Microgonia olivacea* ab. *straminea* nov.

*Forewings*: straw-coloured, slightly dusted with rufous; basal area more or less filled in with brown, the first line thick; outer line deep red-brown; marginal area dull wood-brown, leaving an oblique row of triangular or lunate blotches of straw-colour, of which the lowest is the largest, followed by white dashes on the veins; the angle of the line also marked with ferruginous brown.

*Hindwings*: with basal half more clouded with brown striae; the central line red-brown, curved below costa; the apical area and some central patches less thickly suffused with brown; the black blotch narrowed.

Underside of forewings ochraceous, speckled with brown; the outer line followed by a thick red-brown shade, dentate externally; apical third of hindmargin pinkish grey or whitish; hindwings with a dentate grey band through the brown marginal area.

One ♀ from Jamaica, expanding 70 mm.

A very striking aberration of this variable species.

224. *Mimogonodes* (?) *squamata* sp. nov.

*Forewings* : pale wood-brown, densely dusted with coarse darker brown atoms ; the veins pale yellowish ; the two transverse lines vertical, slightly sinuous, dark brown, the first edged internally, the second externally with paler, at one-third and two-thirds respectively ; cell-spot indistinct ; fringe dark grey, neatly echequered with white opposite the veins.

*Hindwings* : the same, without first line.

Underside much paler, without markings, except traces of outer line on forewings. Head, thorax, and abdomen concolorous ; abdomen paler on sides and beneath.

Expanse of wings : 34 mm.

One ♀ from Reyes, Bolivia, July 1895 (Arthur Maxwell Stuart).

*Neodora* gen. nov.

♀. *Forewings* : with costa straight, slightly shouldered at base and convex before apex ; apex rectangular ; hindmargin strongly肘ed at vein 4, concave above, oblique below ; anal angle well marked.

*Hindwings* : with apex somewhat truncate ; hindmargin rounded, suberemulate ; anal angle square.

Palpi with the third joint as long as second, decumbent, blunt, and smoothly sealed ; antennae of ♀ simple ; forehead slightly tufted.

*Neuration* : as in *Subulodes*, but the discocellular more oblique ; veins 10 and 11 stalked ; 7, 8, 9, stalked.

Type : *Neodora costinotata* sp. nov.

225. *Neodora costinotata* sp. nov.

*Forewings* : white, with olive-fuscescous strigae ; the veins in places finely marked with black ; costa and base ochreous-tinged ; a black blotch at base of costa : a large velvety black cell-spot, connected obliquely with a black costal blotch before it, and followed by a similar one, beneath which veins 4, 5, and 6 are blotched with black ; two black subapical costal blotches, the first outcurved and bent below, the second giving rise to a blotched and interrupted dark submarginal line ; a fuscous shade, formed by the thickening of the striae at middle of hindmargin ; marginal line dark brown ; fringe white, with dark marks at the ends of the veins : inner margin and submedian vein with some irregular dark spots in the middle, representing the ends of the first and median lines, of which the two median costal blotches mark the beginning.

*Hindwings* : white, faintly speckled with darker, with a dark cell-dot and some fuscous marks at anal angle, denoting the beginning of two submarginal lines.

Underside whitish, the outer line marked by dark vein-spots in both wings, with a fuscous blotch at its middle in the forewings. Palpi and face whitish, tinged with fuscous ; thorax white and smoky grey ; abdomen white, tinged with grey.

Expanse of wings : 48 mm.

One ♀ from Bogota, Colombia.

A species standing quite by itself.



226. *Nepheloleuca acuta* sp. nov.

*Forewings*: deep yellow, with a few rather coarse and diffuse brownish mottlings, and towards hindmargin some fine striae; costa finely white, with fuscous dots; first line indistinct, curved, marked by a brownish patch on costa and inner margin; cell-spot minute, placed in a brownish patch on the discocellular; outer line dull red-brown, from costa at two-thirds, oblique outwards and bluntly angled on vein 6, then sinuous inwards to inner margin at three-fifths, marked by brown white-tipped dashes on veins and followed by a reddish flush; submarginal line ill-defined, touching the angle of outer line and enclosing a rufous white-marked triangular patch on costa, marked below by some rufous clouds, and running to anal angle; fringe yellow.

*Hindwings*: with the outer line strongly sinuate and dentate, the teeth marked with long white dashes, followed by a dull rufous band, which leaves only a yellow edge from apex to tail; the tail acute, with a red-brown blotch at base; fringe yellow, with a dark line at base from tail to anal angle.

Underside deep yellow, with brown mottlings and a submarginal red-brown diffusely edged fascia; cell-spot of forewings large, brown. Palpi greyish; face and vertex whitish; thorax and abdomen yellow.

Expanse of wings : 42 mm.

One ♀ from Cuba, from the Felder Collection.

Distinguished by the smaller size and very acute tail of hindwings from *N. politia* Cram.

227. *Paracomistis subtractata* sp. nov.

*Forewings*: ochreous, much speckled and suffused with fawn-colour; the costa brownish; first line curved, at one-third, second from costa at five-sixths, diffusely fuscous and oblique inwards to vein 5, rather strongly toothed outwards on vein 4, thence inwardly curved to two-thirds of inner margin, marked by black vein-dots; cell-spot black; fringe concolorous, with a row of small black spots at base at ends of veins.

*Hindwings*: with the cell-spot large, black, placed in a pale round space; outer line curved, with an indentation corresponding to that in forewings.

Underside paler, unspotted except towards hindmargin, with the cell-spots, the angled outer lines, and marginal spots dark. Face and palpi dark brown; vertex and basal joint of antennae whitish; thorax and abdomen like wings.

Expanse of wings : 24 mm.

One ♂ from the interior of Surinam, August 1892 (C. W. Ellacombe).

Near *P. lignicolor* Warr., but decidedly smaller and less marked.

228. *Paragonia maculata* sp. nov.

*Forewings*: fawn-colour, tinged and striated with olive; the lines indistinctly darker; first beyond one-third, slightly waved; the second at two-thirds, sinuous inwards in middle, and followed above inner margin by an obscure ochraceous patch edged with darker; fringe concolorous.

*Hindwings*: with two dark and more distinct but diffuse postmedian lines.

Underside paler, with the margins deeper tinted. Head, thorax, and abdomen like wings.

Expanse of wings : 60 mm.

Both sexes from Costa Rica (Underwood).

Some specimens are darker fawn-colour than others.

## 229. *Pergama albivena* sp. nov.

*Forewings* : with basal two-thirds chestnut-brown, the first line, formed of the three usual curves, very indistinct, and marked chiefly by the difference in colour, the basal one-third being slightly paler, especially towards costa, and showing traces of transverse striation; edge of the dark two-thirds oblique, nearly straight, and marked by a fine pale line; marginal one-third pinkish grey, clouded with brown-red along margin; some blackish dusting at anal angle; three blackish spots, very obscure, below apex; veins of the marginal one-third pale; fringe reddish brown.

*Hindwings* : dull reddish grey brown: basal two-thirds darker, edged by a curved whitish line; marginal one-third more pinkish, with dense grey or fuscous striae: the veins paler; fringe reddish; one black subapical spot.

Underside of forewings pinkish ochreous above the median as far as the oblique line, which is white, below the median satiny whitish; apical area chestnut, interrupted below middle by the satiny tint. Hindwings greyish pink, dusted with fuscous; inner margin paler: the transverse line whitish. Head, thorax, and abdomen all greyish pink; a slight whitish bar across top of face between the antennae.

Expanse of wings: 45 mm.

One ♂ from S. America, without further locality.

Forewings with one blunt tooth at end of vein 6, the margin above slightly, below shortly and more deeply concave, the lower portion bowed. Hindwings without any trace of teeth. Antennae subdentate beneath, with very short thick fascicles of cilia.

## 230. *Pergama lignata* sp. nov.

*Forewings* : ochraceous brown, tinged with olive, with fine blackish striae: the ♀ more ochraceous than the ♂; first line dark brown, at one-third, curved outwards, as usual, in the cell and again below median, to inner margin at two-fifths; outer line from costa at three-fourths to inner margin at two-thirds, with a deep sinus inwards between the cell and the submedian fold, where it is prominently rounded outwards, preceded by a less distinct line and a deep brown or olive-brown shade, which colour overspreads more or less the whole of the median area except the costal margin; cell-spot white, semihyaline; marginal area with oblique brown or olive-brownish clouds, most distinct in the ♀, which also has an elongated blotch of dark grey and ochreous scales, edged by a black line beyond the upper part of the outer line; one black submarginal spot below apex; fringe concolorous.

*Hindwings* : paler; a dark brown slightly irregular line at two-thirds, edged by a darker shade within and a paler line externally; an indistinct dark round cell-spot; a black submarginal spot below each of the three median nervules, and one between the subcostals.

Underside ochraceous, with black strigae; the inner area of forewings paler;

cell-spot of forewings outlined with black, of hindwings wholly black and round ; a curved black line at two-thirds on forewings and three-fourths on hindwings ; a brown cloud along hindmargin of forewings above vein 3. Head, thorax, and abdomen concolorous with wings.

Expanse of wings : ♂, 38 mm. ; ♀, 42 mm.

A pair from Palma Sola, Venezuela, and a ♀ from Fort St. George, Trinidad.

Hindmargin of forewings in ♀ with a prominent depressed tooth at apex and veins 6 and 3, with a slighter one at vein 4 ; of hindwings with slight teeth at all the veins, most prominent at 3, 6, and 7. In the ♂ all the teeth are reduced and blunt.

In certain cases the brighter ochraceous tint is altogether absent, and the wings take a darker more rufous brown colour ; but the size and markings remain precisely the same. This form may be conveniently named *ab. obscurior*.

A ♂ from Popayan, Colombia (Lehmann), and a ♀ from between Manaos and R. Jutahi, on the Amazons (Stuart), both belong to it. The antennae of the ♂ are subdentate, with quite short fascicles of cilia.

### 231. *Pergama plagodiata* sp. nov.

*Forewings* : pale straw-colour, traversed by numerous fine ochraceous strigae, which are more dense towards hindmargin ; basal patch deeper ochraceous, becoming rich brown on inner margin ; this patch is much smaller than in *P. polygonaria* H.S., diffusely edged externally and extending much farther along inner margin than on costa ; two pale brown cell-spots, and one or two indistinct dark dots before the upper tooth ; fringe concolorous.

*Hindwings* : straw-colour, with the outer third diffusely ochraceous, passing into pale brown towards anal angle ; fringe concolorous, brownish towards anal angle.

Underside yellow-tinged ; forewings with outer third slightly ochraceous and with a deeper streak from costa at three-fourths ; hindwings with outer third brownish ochraceous. Head and thorax brown and rufous ; abdomen paler, becoming ochreous on anal segments.

Expanse of wings : 40 mm.

One ♂ from Cucuta, Venezuela.

In shape of wings, etc., like *P. polygonaria* ; but the colouring and markings remind one strongly of the species of *Plagodis* Hüb.

### 232. *Pergama uniformis* sp. nov.

*Forewings* : grey, with an olive tinge, and finely dusted with dark atoms ; the central area darker, brownish olive : first line before one-third of costa, olive-brownish, running obliquely outwards and rounded in cell, then oblique inwards and curved below median to inner margin at quite one-third ; outer line from costa at three-fourths to inner margin at two-thirds, oblique, slightly bulging in cell and submedian interspace, preceded by a broad olive-brown shade, darker than the rest of the median area, which towards the costa is of the same grey tint as the basal and marginal areas ; cell-spot small, white, semihyaline, on the upper half of the discocellular ; some oblique olive streaks across the marginal area ; two or three submarginal black dots below apex ; fringe greyish olive.

*Hindwings*: grey, slightly ochreous-tinged, with a dark grey line at two-thirds, most marked, like the striae with which the wing is varied, towards inner margin; two black submarginal spots between veins 2 and 4.

Underside olive-grey, with black freckles; cell-spot of forewings edged outwardly with black, the black extending to the base of discocellular, of hindwings round and black; outer line at two-thirds, pale, on forewings edged inwardly with olive and straight, on hindwings traversing an olive shade and crenulate. Head, thorax, and abdomen olive-grey.

Expanse of wings: 39 mm.

Two ♂♂ from Sao Paulo and Castro, Parana.

A dull-looking insect. The forewings have the apex minutely produced, and a very slight prominence at veins 6 and 3; the hindwings with an equally slight projection at vein 3 only. The ♂ antennae with short oblique fascicles of cilia.

### 233. *Perusia elegans* sp. nov.

*Forewings*: pale golden yellow; the costal area ferruginous orange, broad at base; the costal edge grey, with brown specks; basal area faintly tinged with orange; the lines marked by dark ferruginous points on the veins: first from one-fifth of costa to near middle of inner margin; second from inner margin just beyond first line, straight to apex, the spot on vein 6 black and forming the apex of a ferruginous subapical costal triangle; fringe yellow; cell-spot indistinct.

*Hindwings*: white, with pale yellow fringe.

Underside of forewings pale yellow, with all the markings brown; the cell dusted with brown; hindwings with costal one-third yellowish, sprinkled with darker; cell-spot brown; a submarginal line marked only by three brown spots on the three upper veins. Face pale yellowish ochreous; vertex and thorax bright orange; abdomen like hindwings.

Expanse of wings: 28 mm.

One ♂ from Illimani, Bolivia (Garlepp).

### 234. *Perusia pulverosa* sp. nov.

*Forewings*: very pale straw-colour, thickly dusted with olive-grey atoms; the costa yellower, with finer atoms; the lines orange, marked by dark brown dots on the veins, and edged, the first internally, the second externally, by a pale line without atoms; the first curved and bent on the median, from one-fourth of costa to one-third of inner margin; the second from five-sixths of costa to just before anal angle, slightly bent at vein 6; cell-spot grey; fringe pale yellowish.

*Hindwings*: with the fringe whitish.

Underside with the costal half of forewings dusted with fuscous, the costal streak darker; the lines fuscous; cell-spot extending the whole length of the discocellular; an additional short submarginal line from costa; hindwings very pale yellowish, the costa dusted with fuscous; cell-spot and a submarginal curved row of vein-dots fuscous. Head, thorax, and abdomen all pale straw-colour.

Expanse of wings: 26 mm.

One ♂ from Illimani, Bolivia (Garlepp).

Distinguished from the more typical species of the genus by the different position of the outer line.

235. *Perusia sticta* sp. nov.

*Forewings*: very pale straw-colour, finely freckled with fuscous; the lines marked only by dark vein-dots, the outer row oblique and straight and close to hindmargin; fringe concolorous; no distinct cell-spot.

*Hindwings*: pure white.

Underside white; costa of forewings grey; both wings with cell-spots and outer row of dots. Head and thorax concolorous with forewings, abdomen with hindwings.

Expanse of wings: 26 mm.

One ♂ from Bogota, Colombia.

236. *Phyllodonta ustanalis* sp. nov.

*Forewings*: pale wood-brown, much dusted with blackish atoms; the lines dark brown, ill-defined; first at one-third, uniformly curved and vertical, marked by a costal streak, a spot on inner margin, and spots on the veins; median line oblique from costa and not reaching beyond cell, preceded by a small black cell-spot; outer line from close before apex, bluntly angled below costa, then oblique to inner margin just before anal angle, marked above by black dots on veins and in the lower half becoming pale grey and undulating, finely edged with darker; a small dark cloud at apex, and a collection of black scales on hindmargin before the tooth; fringe dark brown.

*Hindwings*: paler, whitish towards costa, ochraceous towards inner margin; traces of three dark brown curved lines on inner margin above anal angle; first short and curved upwards to end of cell; second sinuous, edged with pale grey and reaching nearly to costa; third close to margin; the space between the last two filled up, as far as the tooth, with black-brown, followed by deep brown on the margin; fringe from apex to tooth white, with black dots at ends of veins, then brown.

Underside pale ochreous, suffused with pale brown and coarsely speckled with fuscous; discal spots and two outer lines dark brown and strongly marked; inner margin of forewings whitish. Head, thorax, and abdomen like wings, dusted with black; the thorax rather deeper coloured; palpi darker; abdomen beneath and legs ochreous, spotted with black.

Expanse of wings: 39 mm.

One ♂ from Sao Paulo.

Allied to *P. snelleni* Druce from Colombia, but not so large; the hindwings without the band of pale spots; and besides, the hindmargin of both wings is *simply* incised below the tooth, while in *snelleni* the incision is deeply circular.

237. *Prochaerodes pilosa* sp. nov.

*Forewings*: rufous brown, with faintly darker striations; a deeper brown diffuse shade at one-third indicating the first line; cell-spot small, black; outer line dark brown, with a paler outer edge, oblique from inner margin to costa well before apex, slightly bent outwards above and marked by white dashes on veins 6, 7, and 8; a diffuse brown shade vertical to anal angle; fringe brown.

*Hindwings*: similar.

Underside dull brown, without any reddish tinge, deeper towards hindmargin;



cell-spots black ; the oblique line faint and pale. Face and palpi dark brown : thorax and abdomen concolorous with wings.

Expanse of wings : 58 mm.

One ♂ from Popayan, Colombia (Lehmann).

Distinguished by the very thick dense scaling, especially of the underside. The costa of forewings is all but straight throughout, depressed only just before apex, which is slightly produced : hindmargin bluntly elbowed at vein 4, vertical and slightly bulged above, oblique below. Tooth of hindwings short, the margin straight and oblique on each side ; antennae simple.

Distinguished from *P. transtincta* Wlk. from Jamaica by the quite simple antennae : in *transtincta* they are strongly ciliated.

### 238. *Sabulodes* (?) *bilineata* sp. nov.

*Forewings* : mouse-colour, with an ochreous tinge ; the costa slightly darker ; the two lines fuscous ; first at one-third, slightly curved : second straight, from two-thirds of inner margin, retracted to costa at five-sixths ; fringe concolorous : cell-spot indistinctly darker.

*Hindwings* : with the outer line only, straight, at two-thirds.

Underside paler, much freckled with fuscous, with traces of the outer line, distinct only towards costa of forewings. Head, thorax, and abdomen concolorous.

Expanse of wings : 39 mm.

One ♂ from Bogota, Colombia.

Forewings with apex minutely produced ; hindmargin visibly angled at vein 4. Hindwings indistinctly crenulate, with a slightly larger tooth at vein 4.

### 239. *Sicya inquinata* sp. nov.

*Forewings* : dull yellow, varied with olive dark-centred partially coalescent spots ; series of similar but larger spots constitute the lines ; the first near base, consisting of three spots more or less confluent ; the second from costa just before apex, below which it is somewhat bent, to inner margin at two-thirds, the spot on costa double ; marginal area below the middle paler, with a lilac-grey suffusion ; fringe yellow above, as far as the elbow, rufous below ; a black cell-spot, and a black spot near base below the median.

*Hindwings* : paler, varied with black only towards anal angle, where the ground-colour becomes somewhat deeper ; a dark curved central line from middle of inner margin to midwing ; cell-spot black ; fringe yellow.

Underside paler, the markings duller : a white spot on costa between the double apical spots. Head, thorax, and abdomen yellow, the abdomen tinged with grey above.

Expanse of wings : 32 mm.

One ♀ from Cucuta, Venezuela.

If Mr. Sehaus is right in considering an insect in his collection to be the same as this, it must be a very variable species, and possibly identical with *Sicya dognini* Th. Mg.

### 240. *Simopteryx subflavata* sp. nov.

*Forewings* : pale glaucous ochreous, mixed with olive-green ; the costa rufous olive ; the two lines fine, ferruginous, the first preceded and the second followed by

a line of pinkish white scales ; the first from costa at one-fourth, bluntly angled in cell, then oblique inwards, bent on submedian fold, thence vertical to inner margin ; second line from costa at three-fourths, acutely angled on vein 7, oblique inwards and approaching first line below vein 2, then curved outwards and slightly denticulate to two-thirds of inner margin ; both lines thickened at costa : an oblique brown streak from costa midway between them, above the black cell-spot : space included pinkish ochreous ; basal and marginal areas olive-green, which is intensified along the margin itself and preceded by a suffusion of pale ochreous ; a short oblique white streak from costa before apex ; fringe deep olive, with white dashes at base between the veins, except beyond cell.

*Hindwings* : with a single wavy postmedian line, ferruginous, edged with white ; cell-spot black ; fringe bright ferruginous.

Underside of forewings olive-grey along costal half, becoming gamboge-yellow along hindmargin and the submedian fold ; a triangular subapical costal spot and the cell-spot white ; an olive pale-edged curved line from the white triangle to inner margin, not corresponding to the line on upperside. Hindwings wholly gamboge-yellow, with a darker curved submarginal line, partially pale-edged : anal angle tinged with whitish, inner angle with rufous. Face and palpi olive-brown ; front of thorax rufous grey ; vertex hoary ; thorax and abdomen like wings.

Expanse of wings : 50 mm.

One ♂ from Bolivia, between R. Songo and R. Snapi, March to June 1896 (Garlepp).

#### 241. *Spilocraspeda* (?) *canisquama* sp. nov.

*Forewings* : dull liver-colour, darker along costa and hindmargin ; the lines also darker brown, thick ; the first from one-fourth of costa to one-third of inner margin, somewhat outcurved in cell, edged inwardly with grey scales ; second line from three-fourths of costa to two-thirds of inner margin, outwardly edged by a pale grey line, bent outwards from vein 2 to 5 ; submarginal line very indistinct, but with a patch of hoary scales between veins 3 and 4 ; cell-spot black, ringed with grey ; fringe concolorous.

*Hindwings* : similar, the hindmargin deeply crenulate ; a dull yellow spot on inner margin beyond the outer line.

Underside dull cinereous, with a broad marginal liver-coloured shade, the apex of forewings pale. Head, thorax, and abdomen like wings.

Expanse of wings : 28 mm.

One ♀ from Popayan, Colombia (Lehmann).

#### 242. *Spilocraspeda* *circumscripta* sp. nov.

*Forewings* : greyish brown, the central area rufous-tinged, speckled throughout with blackish scales ; the inner and outer lines pale ochreous, the inner followed and the outer preceded by small dark vein-dots ; the first from one-fourth of costa, angled in the cell, then sinuous, to beyond one-third of inner margin ; second from five-sixths of costa to two-thirds of inner margin, slightly bent outwards between veins 2 and 5 ; submarginal line dark, waved, marked by distinct black spots on veins, those on veins 2 and 3 coalescent and followed by a third spot ; cell-spot minute : fringe broad, with distinct black spots at base beyond veins.

*Hindwings*: paler, without first line, the second curved and obscure; the submarginal forming a fuscous cloud.

Underside paler, much speckled with coarse black atoms; the outer line on both wings marked by black spots; the marginal fringe-spots large. Head, thorax, and abdomen concolorous with hindwings.

Expanse of wings: 28 mm.

One ♂ from Bogota, Colombia.

Another ♂ from Bogota, though at first sight different in appearance, I shall refer to *S. circumscripta* as ab. **differens**.

The two lines are shaped exactly as in the type-form, but instead of being pale are brown, with distinct black dots at the veins; the outer line on both wings is considerably nearer the hindmargin, with the consequence that on the forewings the central area is much broader; the submarginal line is not indicated at all except by a dark cloud above anal angle, and the cell-spots, which in the type are excessively minute, are here distinct. In all other respects, alike in size and markings, the aberration agrees with the type.

#### 243. *Spilocraspeda innotata* sp. nov.

*Forewings*: pale sand-colour, thickly dusted with darker; first line at one-third, very indistinct; second at five-sixths, also indistinct, appearing as a grey shade, running parallel to hindmargin and slightly incurved below the middle; the line itself is marked by dark white-tipped vein-dots; fringe paler; cell-spot obscure.

*Hindwings*: without first line.

Underside paler, the outer line hardly marked. Head, thorax, and abdomen all concolorous.

Expanse of wings: 34 mm.

One ♀ from Cucuta, Venezuela.

Nearest to *S. curvilinea* Warr., which has an outward sinus in the middle of the outer line of each wing.

#### 244. *Spilocraspeda* (?) *nigripunctata* sp. nov.

*Forewings*: leather-colour, thickly and coarsely irrorated with black scales; the lines blackish, marked by black spots on veins, accompanied by blackish scales, and partially united: the first ill-defined, near base, bent in cell; second at five-sixths, marked by a sinuous series of rather large black vein-spots, running in the main parallel to hindmargin; submarginal line obscure, marked by a black spot near costa and two or three above anal angle; fringe concolorous, with black dots at the vein-ends; cell-dot small.

*Hindwings*: with the cell-spot larger; the outer line, as on forewings, more thickened with black scales at inner margin.

Underside pale ochreous; both wings with a broad blackish marginal fascia. Head, thorax, and abdomen like wings; the abdomen with a black blotch on first segment, and a few black scales on the back of each of the rest.

Expanse of wings: 28 mm.

One ♀ from ten miles above Mapiri, Bolivia, 2000 feet, 1895 (Stuart).

#### *Syrrhizodes* gen. nov.

*Forewings*: with costa faintly curved; apex blunt, rectangular; hindmargin curved, hardly oblique.

*Hindwings* : with well-rounded hindmargin.

Palpi porrect, terminal joint very minute, decumbent ; forehead with a short tuft of hair below ; antennae of ♂ shortly pectinated to three-fourths ; tongue and frenulum present ; no fovea.

*Neuration* : forewings, cell half as long as wing ; discocellular vertical ; first median at two-thirds, second at seven-eighths ; radials normal ; all five subcostals stalked from three-fourths, the first anastomosing at a point with the costal. Hindwings, costal approximated to subcostal for about half of cell ; vein  $\tau$  before end of cell ; medians as in forewings.

Type : *Syrrhizodes deludens* sp. nov.

#### 245. *Syrrhizodes deludens* sp. nov.

*Forewings* : deep brown-red, with rather thick black transverse striae : these are densest in the median third and towards anal angle ; costa marked with black striae : the two lines paler red, fine, and slightly curved, at one-third and two-thirds ; cell-spot black, large ; fringe concolorous.

*Hindwings* : with the black striae equally abundant throughout ; no first line ; the cell-spot black.

Underside of forewings deep rosy, with scattered black specks ; of hindwings ochreous, tinged with red and much striated ; the line dark, followed by a paler ochreous yellow fascia before the dark marginal area. Head and thorax deep red ; abdomen cinereous, mixed with red.

Expanse of wings : 24 mm.

One ♂ from the Amazons.

The species bears a remarkable resemblance to *Dichromatopodia sigillata* Wlk.

#### 246. *Tetracis edmondsi* Butler ab. *impunctata* nov.

Differs from the type-form in having the fringes entirely pale or yellowish ochreous ; in *edmondsi* they are marked with distinct black spots at the ends of all the veins in the hindwings and partially in the forewings.

Four ♂♂ from Chili (W. B. Calvert).

#### 247. *Tetracis rivulata* sp. nov.

*Forewings* : pale ochreous, in the marginal third thickly striated and flushed with deeper ochreous ; the basal portion sprinkled thinly with brown scales ; the lines faint, slender, pale brown : first at one-fourth, right-angled below costa, the two arms straight ; second finely edged outwardly with paler, and again with darker, and with some brown scales on either side near inner margin, from beyond middle of inner margin sinuous towards apex, before which it is bluntly recurved to costa, and followed there by a triangular ochraceous shade ; a small black cell-spot ; fringe concolorous.

*Hindwings* : the same, without first line ; second line curved and wavy.

Underside yellower, especially in the forewings, which are slightly dusted with darker towards costa ; cell-spots distinct, black ; outer line fulvous brown ; a faint

submarginal line from the costal triangle, which is edged with whitish. Head and thorax pale ochreous, the collar brownish (abdomen wanting).

Expanse of wings: 45 mm.

One ♀ from Costa Rica (Underwood).

#### 248. *Xylolocha linearis* sp. nov.

*Forewings*: fawn-colour, with a rufous tinge, densely covered with very minute brown speckles; the lines and veins brown: first line straight and vertical, from one-third of costa to one-third of inner margin; second line from inner margin at two-thirds oblique and straight towards apex, before which it is acutely retracted straight to costa beyond two-thirds; a straight submarginal line from just before anal angle to the angle of second line; an indistinct brown cell-spot; fringe brown: the second line is edged by a line of the pale ground-colour, unspotted.

*Hindwings*: with two brown lines, one central, straight, and pale-edged, the other submarginal, faintly curved; costal area paler.

Underside like upper, but entirely without lines or cell-spots, darker towards hindmargin. Head, thorax, and abdomen concolorous.

Expanse of wings: 52 mm.

Two ♂♂ from Bolivia, between R. Songo and R. Suapi, March to June 1896 (Garlepp).

## ON SOME NEW BUTTERFLIES AND MOTHS.

By THE HON. WALTER ROTHSCILD.

### NYMPHALIDAE.

#### 1. *Charaxes blanda* sp. nov.

♂. *Upperside*: black, with a strong greenish blue gloss, forewing more greenish towards base and inner margin.

Forewing shaped as in *guderiana* Dew., but outer margin strongly dentate. A small dot at apex of cell, a row of four slightly larger spots beyond cell between veins 2 to 7 (no spot between veins 4 and 5), a series of nine spots between costal and inner margins in the outer half of the disc, the first six spots small (diameter  $\frac{1}{2}$  to  $\frac{3}{8}$  mm.), the last three measuring  $1\frac{1}{3}$ ,  $2\frac{1}{2}$ ,  $3\frac{1}{2}$  mm. respectively; the first 9 mm. from the tip of the wing, the third 5 mm. from the outer margin; the others a little more discal and arranged in a nearly straight line. All the markings of the forewing pale blue, the five upper dots of the outer series with a white centre.

Hindwing with a large pale blue patch occupying the greater part of the outer portion of the disc; the patch is about 9 mm. wide behind, 8 mm. in the middle, while its two sections between veins 5 and 7 measure 6 and  $3\frac{1}{2}$  mm. respectively; before vein 7 there are two indistinct blue spots, one in front of the patch, the other more basal; behind the latter spot stand a few blue scales. In the black marginal area, which is of nearly equal width between anal angle and vein 5 (namely  $3\frac{1}{2}$  mm. between the veins), there is a series of six thin submarginal spots of a pale blue colour, besides two more rounded purplish blue dots at anal angle, and



five marginal lunules between anal angle and vein 6, the posterior one ochraceous, the others pale greenish blue, with a faint tint of yellow. Hindwing shaped as in *guderiana*, but shorter, and its strongly dentate outer margin more rounded.

*Underside*: broccoli-brown. Forewing with three bars in the cell, the second of which is interrupted; the space between outer bar and the bar upon the discocellular veinlet as far down as vein 2 almost silvery white: disc with the usual black bars: two inner ones between veins 1 and 3, the upper of the two straight, just behind the origin of vein 3: a series of six outer ones, the first two of them between veins 5 and 7, standing 4 mm. from the apex of the cell, the next  $1\frac{3}{4}$  mm. from the cell: outside this series of bars the ground-colour of the wing silvery white. Outer region of the wing with a broad silvery band, inwardly bordered by spots, which correspond to the outer series of spots of the upperside; the posterior spots are bluish and basally joined to black lunules: the two bluish spots in the submedian interspace are, moreover, joined outwardly to two rather large black spots. The whitish band extends to outer margin between vein 7 and costal margin, while between veins 7 and 1 it is separated from the outer margin by a broccoli-brown marginal border, which becomes narrower behind.

Hindwing has two well-marked silvery white bands, a subbasal one, bordered outwardly by four black bars, which are continuous and form a nearly straight line between costal margin and submedian fold, and inwardly by the praecostal vein and a black bar in the cell. The second white band runs across the disc to abdominal margin; it is basally bordered by an almost continuous series of black bars, the series being interrupted beyond vein 2. A black bar at the apex of the cell. Outer half of wing marked as in *etheocles* and allies with a series of post-discal black lunules, to which are joined outwardly olive and reddish brown markings, the latter almost black beyond vein 2. A submarginal series of blue dots, the anterior ones of which are obsolete, is followed by four maroon-red marginal lunules between veins 4 and 8, and by diffused yellowish olive buff marginal spots between vein 4 and anal angle.

Expanse: forewing, length 31 mm., breadth 22 mm.

*Hab.* Mikindani, German East Africa, between January and May 1897, 1 ♂ (Reimer).

Allied to *Ch. thysi* Capr. from the Congo, but easily distinguishable by the silvery bands of the underside.

## 2. *Charaxes pyrrhus keianus* subsp. nov.

♂ ♀. Differs from *Ch. pyrrhus jupiter* Bntl. from New Guinea, to which form of *pyrrhus* it is closely allied, in the spot near the apex of the cell of the forewing above being three or four times the size as in *jupiter* and touching the discal spots which are situated between veins 3 and 4, and in the median band of the hindwing above being much narrower. On the underside the black discal bar between veins 3 and 4 stands much closer to the cell than in *jupiter*, being continuous with the short bar beyond the apex of the cell between veins 4 and 5.

*Hab.* Kei Toal, January to March 1896 (Capt. H. C. Webster), 3 ♂, 3 ♀; Great Kei, April 1896 (Webster), 1 ♂. *Type*: ♀ from Kei Toal.

## 3. *Charaxes pyrrhus seitzi* subsp. nov.

♂ ♀. Differs from *Ch. pyrrhus galaxia* Butl. from Timor in the white basal area of the upperside of both wings being more restricted, in the two spots near the

apex of the cell and the two midway between cell and apex of wing being nearly or totally obliterated. On the underside the median white band of the hindwing is half as wide again as in *galaxia*.

*Hab.* Tenimber Islands : Selaru (W. Doherty, March 1897), 1 ♂; 1 ♂, 1 ♀, from Mr. Kuhlmann; Seira (W. Doherty, June and July 1892), 2 ♀♀. *Type* : ♀ from Selaru.

I associate the name of Dr. Seitz, Director of the Zoological Garden at Frankfurt a. M., with this very conspicuous insect, at the request of Mr. L. Kuhlmann, who sent me a pair of *seitzi*.

#### 4. *Anaea miranda* sp. nov.

♂. Wings shaped as in the ♂ of *A. aureola* Bates (*Biol. Centr. Amer., Rhop.* t. 37. f. 1. 2). Outer margin of forewing posteriorly convex; inner margin straight. Hindwing with a short tooth.

*Upperside* : forewing black, with a greenish gloss towards base. A broad oblique orange band just beyond apex of cell from costal margin to submedian fold,  $4\frac{1}{2}$  mm. wide anteriorly, 12 mm. between veins 2 and 3; its outer edge convex, inner edge down to base of vein 3 slightly concave, then convex.

Hindwing metallic black, greenish towards base; a metallic turquoise-blue patch extends from vein 5 towards anal angle, its outer edge convex, inner edge sinuate between veins 4 and 5 and obliquely running towards anal angle beyond vein 2, the portion of patch beyond this vein being triangular; the patch is  $4\frac{1}{2}$  mm. wide in front, 7 mm. at vein 3; black marginal area outside the blue patch 4 mm. wide at vein 4, 2 mm. at vein 2.

*Underside* : forewing, outer two-thirds pale pinkish buff, shading into mummy-brown towards outer margin, with some dark speckles and faint linear spots; basal third black, irrorated with pale vinaceous chestnut and grey, creamy buff at inner margin.

Hindwing, basal three-fourths like base of forewing; this dark area, the outer edge of which is almost parallel to the outer margin of the wing, includes a pale vinaceous chestnut band running in an even curve from abdominal margin, where it is 4 mm. wide, across apex of cell to vein 6, becoming much narrower in front. Costal margin near base with a pale spot. Marginal area of wing, which is of nearly even width, dark vinaceous buff, yellowish olive at the rather ill-defined edge of the dark basal area. A dark spot covered with grey scales at the base of the short tooth between veins 3 and 4.

Expanse : forewing, length 32 mm., breadth 26 mm.

*Hab.* Bogota, Colombia, 1 ♂.

The orange band of the forewing and the large blue patch of the hindwing are characters by which this conspicuous insect can readily be distinguished from the other species of *Anaea*.

#### COCYTHIDAE.

##### 5. *Cocytia durvillei aurantiaca* subsp. nov.

♂♀. Both wings more yellow than in *reitchi*. The basal patch is much larger than in any other form, and orange, not reddish orange; it extends to the costal and inner margins, not being separated from them by a black border; at the subcostal nervure and at the inner margin of the wing the patch measures 7 mm. in width;

in the ♀ it is somewhat larger than in the ♂. Upon the discocellular veinlet there is a minute orange dot. The black band of the inner margin is divided by a vitreous line. On the underside the orange patch of the forewing is wider than above, reaching at the subcostal vein to the apex of the cell; the patch of the hindwing measures 11 mm. at the costal margin.

Black border of wings somewhat narrower than in *veitshi* Bntl.

*Hab.* Tenimber Islands : Seira (W. Doherty, June and July 1892). 1 ♂ : Selarn (W. Doherty, March 1896), 3 ♂♂, 1 ♀. *Type* : ♀ from Selarn.

## GEOMETRIDAE.

### 6. *Milionia dulitana* sp. nov.

♀. Wings, upperside black. Forewing crossed by a curved orpiment-orange band, which extends from middle of costal to inner margin, reaching the latter close to hinder angle; the band is from 5 to 7 mm. wide in front, and 3 mm. wide behind. A patch before middle of inner margin is about 4 mm. long and 2 mm. wide, and is prolonged towards base of wing. Apical region of wing with a series of indistinct grey spots between veins 3 and 8. Fringe with some whitish scales.

Hindwing, fringe more distinctly white. The greater part of the wing occupied by a large orpiment-orange area which almost reaches base and extends basally beyond vein 8; at the veins the area is dentate. The black border of the wing is 9 mm. wide at vein 8, while it is 6 mm. wide at veins 4, 3, and 2, and 3 mm. at vein 1<sup>b</sup>.

Underside with a metallic bluish green gloss at the base; band of forewing and discal area of hindwing orange: forewing without subapical grey spots.

Head, prothorax, and underside of thorax metallic bluish green: abdomen and legs dirty olive-brown, with a metallic bluish green gloss.

Expanse: forewing, length 39 mm., breadth 17 mm.

" " hindwing, " 22 " " 18 "

*Hab.* Mount Dulit, Sarawak, 3 ♀♀ (Hose leg.).

### 7. *Milionia assimilis* sp. nov.

♀. Resembles both *M. glauca* from the Southern Moluccas and *cyanifera* from the Northern Moluccas. It has, like *cyanifera*, scarcely a trace of the metallic gloss on the upperside of the wings usually present in *glauca* and allies. The band of the forewing is orpiment-orange; it is more strongly curved than in either *glauca* or *cyanifera*: it is 6 mm. wide at the subcostal nervure and 4 mm. at the hinder margin, which it reaches close to the hinder angle. The black marginal area of the forewing is 5½ mm. broad at vein 4 and 3½ at vein 3.

Below, the base of the hindwing is streaked with metallic bluish green.

Expanse: forewing, length 27 mm., breadth 15 mm.

*Hab.* New Hanover, Bismarck Archipelago, 1 ♀ (Capt. H. C. Webster, February and March 1897).

### 8. *Milionia rona* sp. nov.

♀. Resembles *M. mediofasciata* Rothsch. The white band of the forewing reaches neither costal nor hinder margin, and is widest in the middle, where it measures 6 mm. The hindwing has, instead of the wide band of *mediofasciata*, a short and

narrow reddish orpiment-orange band, which extends from two-thirds of abdominal margin to a little beyond vein 4, being only  $2\frac{3}{4}$  mm. broad in the middle and tapering at both ends. Four last abdominal segments yellow, dorsally ringed with black.

Expanse : forewing, length 40 mm., breadth 20 mm.

„ hindwing, „ 28 „ „ 22 „

*Hab.* Ron Island, Geelvink Bay, Dutch New Guinea, 1 ♀ (W. Doherty, July 1897).

#### 9. *Milionia dubiosa* sp. nov.

♂. Differs from *M. mediofasciata* Rothsch., Nov. Zool. 1896. p. 328. n. 17, in the band of the hindwing being yellow instead of red, and in the abdomen (except the dorsal plate of the first segment and the apex) being also yellow instead of black.

*Hab.* Kapanr, Dutch S.W. New Guinea, 1 ♂ (W. Doherty, January 1897).

I at first considered this insect to be the *male* of *mediofasciata*, of which I possess *females* only. But as in all the other species of *Milionia* the sexes are more or less similar to each other, it is not very likely that the *male* of *mediofasciata* differs so much in colour from the *female* as the above-described ♂ does. Therefore I think it best to draw attention to this *male* by treating it as a distinct species.

The wings differ in shape from those of *elegans* Rothsch. and allies. The costal margin of the forewing is not bent in beyond the middle as in those species, and the outer margin of the hindwing is only faintly concave before anal angle.

#### 10. *Milionia websteri* sp. nov.

♂. Wings above black, with a strong blue gloss in side light. Forewing crossed just before the middle by a saffron-yellow band expanding between subcostal and submedian nervures, slightly curved, 3 mm. wide at the median nervure, with the edges almost entire; two spots standing half-way between band and apex of wing, the second spot the larger (diameter 3 mm.) and traversed by vein 5, saffron-yellow; a third spot, near hinder angle, before vein 1, linear, at right angles to veins 1 and 2, also saffron-yellow.

Hindwing with a discal red band including a black spot at the apex of the cell; the band reaches from near abdominal margin to vein 6, is widest in front (5 mm.), with the inner edge slightly indented, the outer edge entire, somewhat incurved anteriorly.

Underside black, bluish green at base. Markings as above, but those of the forewing paler yellow, and the band of the hindwing saffron-yellow, with a reddish outer edge.

Shape of wings as in *M. elegans* Rothsch., Nov. Zool. 1895. t. 7. f. 1.

Head, thorax, base of abdomen, and legs greenish blue. Abdomen black, segments 4, 5, and 6 with a transverse lateral yellow band.

♀. Wings above and below black, with scarcely a trace of metallic gloss. Median band of forewing longer than in ♂, and somewhat broader. Five subapical spots, which are merged together to form a deeply indented band expanding between veins 7 and 3, not reaching the latter. The spot in hinder angle of wing broader and longer than in ♂.

Band of hindwing twice the size as in ♂, nearly reaching vein 8, anteriorly tinged with yellow; its outer edge almost parallel to outer margin of wing; black



border of wing only 5 mm. wide at vein 7, and 3 mm. at vein 1<sup>b</sup>. Black discal spot larger than in ♂.

Underside as above, but band of hindwing saffron-yellow, tinged with red between veins 1<sup>b</sup> and 3.

Head and thorax above metallic greenish blue; rest of body black, with scarcely any metallic gloss. Base of abdominal segments 4 to 7 yellow laterally, ventral plates of segments 4 to 6 all yellow.

Size as in *elegans* Rothsch.

*Hab.* New Hanover, Bismarek Archipelago, 2 ♂♂, 1 ♀ (Capt. H. C. Webster, February and March 1897).

#### 11. *Milionia meforana* sp. nov.

♂. Wings above black, faintly bluish in side light. Forewings crossed by a broad median band reaching from costal to inner margin, the extreme edge of the margins remaining black, 6½ mm. wide in front, 7 mm. in middle, 4 mm. behind, outer edge more, inner edge less arched. A subapical patchlike band between veins 3 and 7, indented at the veins, almost 7 mm. wide between veins 5 and 6, not touching vein 3; a spot in hinder angle before vein 1, ovate. All these markings yellow, faintly edged with red.

Hindwing with a wide discal yellowish red area, which is more yellow basally at abdominal margin; this area extends from abdominal margin, which is black only at base and at outer angle, to vein 7, and is 11 mm. wide posteriorly and 6 mm. in front; its outer edge evenly and slightly convex. A small dot at apex of cell black.

Underside as above. Discal area of hindwing, however, saffron-yellow, slightly tinged with red outwardly, and deeply sinuate between vein 2 and abdominal margin.

Head and thorax above blue-black. Underside black, with an olive-green gloss. Abdomen yellow, first and seventh segments black.

Wings shaped as in ♂ of *M. elegans* Rothsch., *dohertyi* Rothsch., and *websteri* sp. nov.

♀. Like ♂ in colour; subapical band of forewing broader behind, a small additional spot behind vein 3. Discal black dot of hindwing larger than in ♂: discal area below more reddish outwardly, its outer edge not sinuate, merely faintly concave. Seventh abdominal segment blackish only at tip.

Size as in *elegans* Rothsch.

*Hab.* Suër, Mefor Island, Geelvink Bay, Dutch New Guinea, 1 ♂, 1 ♀ (W. Doherty, May and June 1897).

Both sexes closely resemble the ♀ of *websteri* sp. nov., but are easily distinguished by the yellow abdomen and the more extended markings of the wings.

#### 12. *Milionia cyanifera gilolensis* subsp. nov.

♂. Differs from *cyanifera cyanifera* in the band of the forewing being broader (8 mm. in middle), and standing closer to hinder angle. Tip of abdomen without yellow hairs.

*Hab.* Halmahera, 1 ♂ (W. Doherty, August 1893).

NOTE.—*Milionia flavotogata* Pagenst., *Ent. Nachr.* 1896. p. 58, and *Abh. Senk. Nat. Ges.* 1897. p. 457. n. 485. t. 19. f. 5, from Batjan, is *Bociraza recurvata* Walker, *Lep. Het.* XXI. p. 194 (1864), which was described from Batjan and Gilolo, and



is structurally very different from *Milionia*, the upper subcostals of the forewing, for instance, anastomosing with the costal vein, which is not the case in *Milionia*.

*Milionia auriflamma* Thierry Mieg, *Bull. Soc. Ent. France* p. 44 (1897), from Batjan, is nothing else but a specimen of *M. cyanifera* Walker with an unusually bright band.

M. Thierry Mieg, *l.c.*, correctly remarks, with regard to the author of *Milionia rawakensis*, that on p. 551 of *Voyage de Freycinet* we read that "M. Godart a bien voulu décrire le petit nombre d'espèces nouvelles de Lépidoptères que nous avons rapportées." From this remark in *Voy. de Freyc.* it should follow that we have to write *M. rawakensis* "Godart." But M. Thierry Mieg remarks further that he has a plate of that work "annotée de la main de Boisduval" on which the figure of *M. rawakensis* is designated as "*Callimorphe requin nobis*," and concludes that Boisduval has described the species in question. In my copy of the *Voyage* the name of Boisduval is not mentioned at all, either in the text or on the plate, and I really cannot see how the name of Boisduval can be brought in connection with *M. rawakensis*.

## ON THE BIRDS COLLECTED BY MR. EVERETT IN SOUTH FLORES.

PART I.

By ERNST HARTERT.

(Plate III.)

MR. ALFRED EVERETT, our indefatigable friend, has sent us valuable collections from Flores. He first touched this island in August 1896, arriving in Endeih from Makassar, but he found there a letter from the Resident of Timor, warning the "Postholder" (the highest authority in the place) that he should not allow him to go into the country in that vicinity. The Postholder said that there was no security outside the precincts of the village of Endeih, and that the natives even fired into the place from the steep hills rising immediately behind it. Under those circumstances Mr. Everett could only shoot a few common birds in the village, and left at once for Savu, where he collected the birds described pp. 263 to 273 of this volume of this journal.

In October 1896 Mr. Everett returned to Flores again. This time he made Nanga Ramau (Nanga Roma of the Admiralty chart) in South Flores his headquarters. He writes from there as follows:—

"The country in this part of Flores, which is better known as Mangarai, is very hilly even from the margin of the sea, and there are numerous mountains, all excessively steep and difficult collecting ground, and varying in height near the coast from 3000 to 5000 feet, whilst those farther inland named Puchu Reah and Puchu Leoh I estimated to be about 6000 feet. Below about 3000 feet the land has been cleared for the cultivation of maize and sweet potatoes, so that the vegetation consists for the most part of very dense thorny second-growth scrub with large tracts of coarsealang grass, and only the higher portions of the mountains are capped with the original old forest. My hunters succeeded in collecting up to an elevation of 5000 feet, but the utterly lawless condition of the farther interior

forbade my sending them to Puchu Leoh and the still higher mountains of Keo (9187 feet) or Rokka Peak (6562 feet), the first of which is an active volcano and the second apparently quite extinct. In addition to the attitude of the natives forming an obstacle to my making exhaustive collections from this part of Flores, my visit coincided with the last two months of the dry season, during which reptiles, amphibia, landshells, insects, etc., are extremely scarce, as the majority of them aestivate during the tremendous heat which scorches the land at this time—to such a degree that the earth is baked hard and fissured, great part of the trees shed their leaves, on many others the foliage hangs shrivelled or leathery, and the air in the sheltered gullies is as the breath of a veritable furnace. The whole of my party fell sick with dysentery and fever, owing to the bad water and our being unable to procure a sufficiency of food, coupled with the withering heat. Judging from the highland birds, the reptiles, amphibia, etc., of Flores from elevations between 3000 and 7000 feet should be of considerable interest. Of mammals I got hardly any—a pigmy shrew, several rats, and a wholly black *Paradocurus*.\* The porcupine is found, but I did not obtain a specimen. There are also in the island the common *Macacus*, deer, wild pig, and various bats—also perhaps a *Cuscus*.

“I think that I have sent you specimens of every species of bird that we met with, excepting sea-birds, waders, and herons, and the *Calornis* which was seen only once. No *Electus* was observed, nor any *Trichoglossus* or *Loriculus*. *Scythrops* also was absent in this locality, and, strange to say, such ubiquitous species as *Lalage timoriensis*, *Halecyon chloris*, *Haliastur leucogaster*, and *Milvus affinis*. *Merops ornatus* too did not occur, but it had very likely left on migration. The large Flores crow is said to be *C. macrorhynchus*. If so it has developed a local dialect since it immigrated, for in addition to the usual cawing notes, these birds utter a peculiar loud squalling whine, which I do not remember ever hearing them do elsewhere.

“The altitudes given on the labels are to be regarded as approximate, being taken with a single aneroid, but I have no reason to suppose that they are otherwise than sufficiently accurate for practical purposes. With regard to the sexing of the specimens, as on previous occasions the abbreviation ‘nat. coll.’ signifies that the native collector is solely responsible for its correctness, and where my initials follow the sex-symbol it means that I sexed such specimens with special care myself, and where the symbols appear alone the sex has been checked by my assistant or myself.”

The following list of the birds obtained in Flores will show how much Mr. Everett's zeal has increased our knowledge of the birds of Flores, and from it we must conclude that an exploration of the high mountains will unveil still more zoological mysteries.

We have an excellent knowledge of the avifauna of the lowlands of Flores from Wallace. Afterwards Herr and Frau Weber collected in Flores in 1888 and 1889, and they brought home sixty species, of which four were described as new by Dr. Büttikofer, while seventeen others were new to the Flores list (see Büttikofer in *Zool. Ergebnisse Reise in Nied. O. Indien von Weber*, Vol. III. pp. 271, 289, 1892). Two birds from Flores were also mentioned by Büttikofer in *Notes Leyden Mus.* 1891, pp. 212, 213, and some in Schlegel's *Mus. Pays-Bas* and *Vog. Nederl. Indië*.

We thus knew nearly a hundred and twenty species from Flores, which number is now considerably increased. In this volume (*antea*, p. 170) I have already

\* A black specimen of *Paradocurus hermaphroditus* (Pall.).





given preliminary descriptions of seven new species and a new subspecies from Flores, and Mr. Walter Rothschild described a new hill-wren (*Pnoepyga everetti*, *antea*, p. 168).

I have marked the species hitherto not recorded from Flores with an asterisk.

## PASSERES.

### 1. *Pratincola caprata* (L.).

Above 3000 feet, October.

### \*2. *Geocichla andromedae* (Temm.).

Four adult birds from about 3500 feet. New to the ornithology of Flores. *Females* are smaller and have the breast a little paler. The *males* have the wing 136 to 137 mm., the *female* only 125. Also the bill, feet, and tail are smaller in the *female*. Tarsus in the adult *male* 32 mm.; culmen from base 35; tail 90.

### \*3. *Geocichla dohertyi* Hartert.

Several adult specimens of both sexes from above 3000 and 3500 feet. They resemble in every way the typical birds from Lombok and Sambawa (Nov. Zool. III. p. 555).

### \*4. *Geocichla interpres* (Temm.).

A series from S. Flores, agreeing with specimens from Lombok and Sambawa. The red colour of the crown varies in depth, which may prove to be a sexual character, but this must remain doubtful, for all our specimens are sexed by natives, and therefore cannot be relied on implicitly.

### \*5. *Phylloscopus borealis* (Blas.).

*Phylloscopi* were common in November. All those sent are the same as those which we have received in numbers from most of the other Sunda Islands, but whether they all belong to the same species or subspecies I am unable to say, for there are considerable variations in size. The wings measure 64.8, 66, 71, 73 mm.

### 6. *Cisticola cisticola* (Temm.).

Three skins with rather dark heads agree with Wallace's *C. fuscicapilla* from Timor and Flores, but Dr. Sharpe was probably right in uniting this supposed species with *Cisticola cisticola* (Temm.) (cf. *Cat. B. Brit. Mus.* VII. pp. 259-264). This bird would thus be one of the most widely distributed *Passeres*, a fact of which mention is not generally made when such nearly "cosmopolitan" birds are mentioned, as this little bird is not known to most writers, except ornithologists.

### 7. *Cisticola exilis* (Vig. & Horsf.).

Several specimens from the low country.

### \*8. *Orthonocichla everetti* Hart.

*Antea*, p. 170, I characterised this bird as follows:—

♂ ad. Head and hindneck russet, an indistinct paler stripe over the eyes; sides



of the head brownish buff. Back, rump, upper tail-coverts, and tail brown. Quills deep blackish brown, their inner lining greyish buff; outer webs much like the back, but lighter and brighter, and with a slight greenish tinge. Under parts whitish; breast grey, lighter in the middle; flanks grey, with a brownish tinge; thighs brownish olive-grey. Under wing-coverts grey. Legs very pale olive-brown. Iris dark brown. Maxilla sepia-brown; mandible ochreous yellow. Total length about 90—95 mm.; wing 53—56; tail 18—19; tarsus 22—23; culmen from base 16.

♀ ad. Like the *male*, but slightly smaller. Wing 50—52 mm.

A series from close to the sea-level up to 3500 feet.

#### \*9. *Brachypteryx floris* Hart.

*Antea*, p. 170, this very interesting bird was described as follows:—

♂. Above dull indigo-blue; forehead and crown with a brown shade, which may be a sign of immaturity, as it is well pronounced in one, but not very perceptible in the other specimen. From the base of the bill to above the eyes a faint grey line, continued in a pure silky white concealed line above the eye, as we find it in other species of the genus. Lores and ear-coverts dark brownish ashy. Primaries and secondaries blackish brown, edged with the colour of the back, in the younger *male* with brown. Throat and middle of abdomen greyish white; under wing-coverts, chest and sides of abdomen, thighs and under tail-coverts ashy. Wing 70—73 mm.; tail 60—63; exposed culmen 13; tarsus 34.

♀ ad. Above of a warm brown; crown darker; back, rump, and upper tail-coverts strongly washed with rufous. Wings deep brown; outer webs edged with rufous brown. The same concealed white superciliary line as in the *male*. Lores ashy brown; ear-coverts brown, the shafts of the feathers light. Chin, throat, and middle of the abdomen white; chest and sides of abdomen pale ashy grey; lower flanks and thighs brown. Under wing-coverts and under tail-coverts light rufous. Total length about 145 mm.; wing 69—70; tail 58—60; tarsus 34.

Only two pairs were procured at about 3500 feet.

#### \*10. *Pnoepyga everetti* Rothschild.

*Antea*, p. 168, Mr. Rothschild described this pretty little new species as chiefly differing from *P. squamata* (Gould) (= *P. albicentris* Hodg.) in the remarkable fact that the sexes are not conspicuously different, while in the two Indian species the *male* is of a white ground-colour below, the *female* bright fulvous. The bill larger than even in *P. squamata*. The colour much like that of the *male* of *P. pusilla*; the secondaries and wing-coverts with even larger and more conspicuous fulvous spots; back and rump more conspicuously spotted with fulvous; the head darker; the feathers on the sides of the body with darker and more blackish edges. The nearest ally is evidently *P. rufa* of Sharpe from Java, in which too the sexes are said to be alike in colour, but that species is said to be much more rufous. The wing of *P. everetti* is 52—54 mm. long; tail 16; tarsus 20—21; culmen from base 15—16; exposed part of culmen 10.

Mr. Everett sent a series from Repok and other places of 3000 to 3500 feet in S. Flores.

### \*11. *Phyllergates everetti* sp. nov.

Before describing this interesting form of *Phyllergates* I must make some remarks on the other forms of the genus.

When Dr. Sharpe, in 1883, wrote the seventh volume of the *Catalogue of Birds*, he only knew of two species, viz. *Phyllergates coronatus* (Jerd. & Blyth) from India and *P. cucullatus* (Temm.) from Java and Sumatra. Since then Mr. Whitehead discovered a little tailor-bird on Mount Kina Balu in Borneo, which Sharpe \* called *P. cinereicollis*, diagnosing it as follows : “ *P. similis P. cucullato, sed collo postico et colli lateribus clare cinereis distinguendus.*” This same form was afterwards collected by Everett’s hunters on Kina Balu, while *P. cucullatus* was also found in the Malay Peninsula by the late Mr. Davison. Whether, however, the Kina Balu bird is different from the *P. cucullatus* of Java, Sumatra, and Malacca seems questionable. I am indeed afraid that quite old *males* of *P. cucullatus* do not differ at all from the so-called *P. cinereicollis*, but the matter should be more fully investigated. Mr. Whitehead also got a bird of this group in Luzon, called *P. cinereicollis* by Grant, *Ibis*, 1894, p. 510. Mr. Grant says there : “ This form appears to me barely separable from the Indian bird *P. coronatus*. It would be extremely difficult to determine a specimen without first knowing the locality whence it is obtained.” This remark, however, is wrong, the white inner web of the outer rectrices, which have no white in *P. cucullatus* and *cinereicollis*, alone being sufficient to distinguish the two. On the other hand, the Luzon bird has a small white mark on the inner web of the outer tail-feathers, and a narrow inner edge of the same colour, together with a slightly shorter bill, and might be separated subspecifically as

#### *Phyllergates cucullatus philippinus* subsp. nov.

Type from Benguet, North Luzon, in the Tring Museum, collected by Whitehead.

Among the birds sent by Mr. Everett from Flores are also two *Phyllergates* which differ again from all the others, and which I name

### *Phyllergates everetti* sp. nov.

They have the orange forehead and forepart of the crown, but from the nape to the tail they are olive-green, of a darker shade and more olive than in the other forms. The outer pair of rectrices has a brownish white edge along the inner web; the bill is longer than in any of the others. The bill from the base measures 18 to 18·5 mm. ; the wing, ♂ 49, ♀ 46 : the tail 44—49 : the tarsus 18·5 mm.

A *male* and a *female* from 3000 and 4000 feet in S. Flores.

While speaking of the present genus I wish also to correct some mistakes. In *Journ. f. Orn.* 1889, p. 385, I mentioned two specimens of *P. coronatus*, shot by me on the Gunong Ijan in Perak. I said then that they were an adult pair, and that the *female* was not young, as was evident from its behaviour also ; but I have now seen so many carefully dissected skins of *P. coronatus* that there is no longer any doubt that I was wrong, and that my supposed *female* was really a young bird. It would not be uninteresting to have a series from Perak, as the tail seems to differ slightly, but I cannot be sure about this, as the tail of my adult Perak *male* is not complete. Discussing the tails of these birds, I must further mention that they

\* *Ibis*, 1888, p. 479 ; Whitehead in *Expl. Kina Balu*, p. 223.

consist of ten, not twelve, rectrices, and that therefore the key of the genera in the *Catalogue of Birds*, Vol. VII. p. 175, requires a great alteration.

According to my views, the status of the species and subspecies of the genus *Phyllergates*—which, contrary to my former views, should not be confounded with *Orthotomus*—is now as follows :—

1. { Inner web of outer rectrix white : *P. coronatus* (Himalayas to Malay Peninsula, but birds from the latter country require further attention).  
 { Inner web of outer rectrix mostly olive : 2.
2. { Inner web of outer rectrix without any white: *P. cucullatus* (Java, Sumatra, Malay Peninsula, and Borneo. Birds from Borneo are said to have purer grey hindnecks, and may be called *P. cucullatus cinereicollis*. Those from the Malay Peninsula are also worth special attention).  
 { Inner web of outer rectrix with whitish edge : 3.
3. { Hindneck grey : beak shorter, above greener : *P. cucullatus philippinus* (Luzon).  
 { Hindneck olive : beak longer, above more olive : *P. everetti* (Flores).

#### 12. *Parus atriceps* Horsf.

Two *males* and a *female* from S. Flores. (*Parus cinereus* of Wallace's list, *P. Z. S.* 1863, p. 485.)

#### 13. *Dicaeum igniferum* Wall.

This species was discovered in Flores by Wallace. Everett found it fairly common in the low country near Nanga Raman, but in October and November they were all in moult. There is no difference in size between specimens from Flores and Sambawa. (Cf. *Nov. Zool.* III. p. 566, No. 7.)

#### \*14. *Dicaeum sanguinolentum* Temm.

One *male*, shot at 3500 feet in South Flores, does not seem to differ materially from *D. sanguinolentum* of Java, the only island whence the species has hitherto been known. The occurrence in Flores is the more remarkable as it has not been found in any of the islands between it and Java. The specimen from Flores has the red on the breast a shade lighter than most of the Java skins. The ear-coverts are distinctly greyish, while they are as purple as the back in the adult Java *males*, but as this is also a sign of nonage, it is probable that it is also so in the Flores bird. Otherwise there does not seem to be the slightest difference. Wing 50·3; tail 29; tarsus 12; culmen from base 11·5; exposed culmen 8·5 mm.

#### 15. *Acmonorhynchus auna* Büttik.

In *Zool. Ergebn. Reise Niederl. O. Ind.* p. 301, Dr. Büttikofer described this pretty bird from a single spirit-specimen. Mr. Everett has now sent us both sexes in numbers, from elevations of about 3000 to 3500 feet in the hills of South Flores. The *male* agrees very well with Büttikofer's description, but is perhaps more greenish above. Beak and feet are black. The wing measures 60 to 62·8 mm. The hitherto undescribed *female* differs from the *male* in wanting the brilliant yellow spot on the rump, in being smaller, and in having the mandible flesh-coloured, with only a dark brown tip. The wing of the *female* measures 65 to 67·5 mm. The young *male* resembles the *female*.

I agree with Messrs. Oates (*Fauna Brit. India, Birds*, Vol. II. p. 375) and Büttikofer (*l.c.* p. 302) that the genus *Prionochilus* as recognised in *Cat. B.* X. is more conveniently separated into the genera *Prionochilus* (ten primaries, first of the length of the tarsus, distribution: Malay Archipelago to Tenasserim and Philippines), *Pachyglossa* (ten primaries, first not longer than hind-toe, distribution: Ceylon), *Acmonorhynchus* (nine distinct primaries, beak as in *Prionochilus*, distribution: Ceylon, Tenasserim to Philippines and Celebes, Sanghir, Flores), *Piprisoma* (nine distinct primaries, under edge of mandible strongly curved upwards, distribution: India to Borneo and Timor). In Nov. Zool. II. p. 65, I already made remarks on the generic characters of *Prionochilus*, but I had not then noticed the two articles of Oates and Büttikofer, and did not go deeper into the question.

16. *Cinnyris solaris* (Temm.).

Not rare at Endeh and in the low country around Nanga Raman. The brilliant colour of throat and abdomen is gained by moult in the skins before me.

17. *Cinnyris pectoralis* (Horsf.).

Endeh and Nanga Raman, scarce.

18. *Anthreptes malaccensis chlorogaster* (Sharpe).

A *male* and a *female* from Endeh, none from Nanga Raman. (*Anthreptes lepida* of Wallace's list.)

\*19. *Ptilotis virescens* Wall.

One *female* from above 3000 feet seems smaller than the *females* from Lombok, the wing only measuring 59 mm. It would be necessary to compare a large series to find out whether this is an individual character or peculiar to Flores specimens.

20. *Philemon neglectus* Büttik.

Two *males* from Endeh only.

\*21. *Zosterops crassirostris* Hartert.

(Plate III.)

This interesting new bird has been described *antea*, p. 172, with the following words:—

♂ ad. Feathers of forehead yellowish white; those of crown blackish brown, with broad whitish margins, which become more brownish and less conspicuous towards the nape, where they have vanished altogether. Lores, feathers in front of the eye, a narrow superciliary line, and feathers under the eye black, the latter fading into dark brown towards the ear-coverts. Eyelids bare, with only a very narrow ring of tiny scaly feathers of a blackish colour round the eyes; behind the eyes a large naked spot. All the rest of the upper parts of a pale olive colour, with a greenish wash. Quills deep brown, with a very pale buff inner lining and light olive-brown outer edges. Tail-feathers brown, with olive outer margins. Entire under surface whitish buff; sides of breast and flanks with a brownish wash. Thighs brown. "Iris naples-yellow; bill lead-grey; legs flesh-colour; nails grey." Total length about 136 mm.; wing 71; tail 56; culmen from base 19; bill from end of feathering 14.3; tars. 20—21. ♀ like ♂.

Mr. Everett sent a fine series, collected in October and November in South Flores from the low country up to 3500 feet. Most of the specimens sexed "♀" by the native hunters are smaller, the wing only about 67 mm., and the markings on the forehead are less distinct. A *male* nestling is paler, with the forehead and crown uniform buff, without the black centres, which give the old bird a striking scaly appearance. The old birds have a bare spot behind the eye.

\*22. *Zosterops superciliaris* Hartert.

(Plate III.)

♀ ad. Crown greenish olive, with a dark brown wash. Utmost base of forehead just above the nostrils and lores pale sulphur-yellow; superciliary line from lores over eyes to end of head sulphur-yellow. The usual *Zosterops* white ring round the eyes conspicuous and broad; sides of head olive-grey, with a silvery gloss. Rest of upper surface olive-green, brighter green on back and rump. Quills dark brown; inner lining very pale yellow; outer edges light olive-green. Below sulphur-yellow; sides of breast, flanks, and thighs with an olive-green wash. Total length about 127 mm.; wing 67—69; tail 52—53; culmen from base of forehead 16; exposed part of culmen 12; tarsus 19.9. ♂ ad. like ♀. (*Antea*, p. 172.)

A series from 3000 to 3500 feet in the hills of South Flores. A young *female* just out of the nest resembles the old birds, but is duller and less distinctly marked, the yellow superciliary line not developed, the ear-coverts dull olive.

\*23. *Zosterops citrinella* Bp.

Two specimens, both marked "♂" by native collectors, have the wings only 36 mm., while those from Savu and most from other localities have the wings about 2 mm. longer. A large series of *Z. citrinella* from Flores might enable the "fearful splitter" to separate them subspecifically. The type is from Timor.

\*24. *Zosterops aureifrons* Wall.

A fine series from the low country. This species had been discovered in Flores by Wallace.

\*25. *Zosterops unica* sp. nov.

This new *Zosterops* is evidently nearest to *Z. intermedia* Wall., but differs considerably in its much smaller size and in the bright yellow colour of the lower rump and upper tail-coverts. The tail is pure black. The upperside is also slightly more yellow, and the sides of the body are a little more distinctly washed with olive. Although only one skin, the sex of which is not determined, from Nanga Ramanu is to hand, we need not hesitate in describing this bird as new, the bright yellow spot on the rump and its small size and black tail being striking characters to distinguish it. The beak is darker than in nearly all *Z. intermedia* before me, and I may say that we have a very large series of it. Total length of *Z. unica* about 98 mm.; wing 51 (against 56 to 57 as the *smaller* measurements of the wings of *Z. intermedia*); tail 35; exposed part of culmen 9; tarsus 15. The specimen in spirits mentioned by Büttikofer as coming from Manmeri probably belongs to *Z. unica*.



**\*26. *Lophozosterops* (an potius *Zosterops*?) *subcristata* Hartert.**

This species, or perhaps subspecies, differs from *L. dohertyi* Hartert from Sambawa by having the ear-coverts lighter and yellowish (not olive), in the crest being much shorter, the forehead paler brown, the guttate spots not so sharply defined and not so pure white. Although I promised (*antea*, p. 171) to say more about the generic affinities of this curious little bird, I am only able to repeat that in the development of the crest it stands a little between *Lophozosterops dohertyi* and ordinary *Zosterops* without a crest, thus diminishing the value of the genus *Lophozosterops*.

**\*27. *Anthus rufulus medius* (Wall.).**

Three specimens from the hills of the Mangarai district. See *antea*, p. 265.

**\*28. *Anthus gustavi* Swinh.**

Two skins from the Mangarai district.

**\*29. *Motacilla boarula melanope* (Pall.).**

From elevations of about 3000 feet in the Mangarai district.

**30. *Mirafra horsfieldi parva* (Swinh.).**

Two skins from Mangarai. They are like those mentioned before (p. 266) from Savu, but one is much darker above, while the other also has the edges of the feathers on the upper surface less distinct than the Savu birds, but this is probably due to age. See my remarks p. 266. I am not yet any more sure about these forms, and it will be necessary to get a series from Java as well as from Australia to decide finally about the affinities of these larks. *M. parva* Swinh. was originally described from Flores. The wings of our two skins measure (♀) 70.5, (sex?) 72 mm.

**31. *Munia quinticolor* (Vieill.).**

(Cf. Sharpe, *Cat. B. XIII* p. 339.) A small series from the low country of Flores up to about 3300 feet. The colour of the rump differs, the straw-yellow evidently being faded or worn off from the golden maroon of the freshly moulted bird. Sumba skins do not differ from those of Flores. Lombok specimens were separated by Sharpe, *Cat. B. XIII* p. 340, as *M. wallacei* on account of the glossy maroon, not yellow rump and upper tail-coverts. I find, however, with the large series now before me, that this difference is very slight and not constant, if at all true, but that the Lombok bird must be separated subspecifically, if not specifically, because the crown is much more rufous and not so dusky brown. The wing is also shorter in *M. quinticolor wallacei* (Sharpe). Cf. Nov. Zool. III. pp. 559, 583.

**32. *Munia molucca propinqua* (Sharpe).**

Common.

**33. *Munia punctulata nisoris* (Temm.).**

Also not rare.

34. *Sporaeginthus flavidiventris* (Wall.).

A series, all in moult and young.

35. *Artamus leucogaster* (Val.).

Two *males* from S. Flores.

36. *Eulabes veneratus* (Bp.).

Not rare about Mangarai. In what I suppose to be very old *males* the wattles on the occiput are very much prolonged, measuring from the end of the velvety spot on the right and left up to 20 and even 25 mm.

37. *Corvus macrorhynchus* Wagl.

————— *Male* and *female*. Wings 359 (♂) and 340 (♀); gloss rather purplish; bases of feathers rather white, but apparently not separable from *C. macrorhynchus*. See *antea*, p. 514.

38. *Corvus florensis* Büttik.

*C. florensis* Büttik., in Weber's *Zool. Ergebn. Reise O. Ind.* III. p. 304 (1894), and *Notes Leyden Mus.* XVIII. p. 187 (1896). One *female* of this rare little crow, of which only one specimen is hitherto on record, has been sent by Mr. Everett from Mangarai. Its wings are 228 mm.; the tail 169; tarsns 45; culmen from base 48 mm. The bases of the feathers are dark grey.

\*39. *Lanius superciliosus* Lath.

Four skins from Mangarai, shot in November.

\*40. *Pachycephala nudigula* Hartert (*antea*, p. 171).

(Plate III.)

In April I published a Latin diagnosis of this peculiar *Pachycephala*. It differs from all other species of the genus in the old *male* having a large bare spot of a red colour on the throat. This bare place is evidently inflated like a balloon, as it is very much wrinkled in the skins, while the other parts of the skins are smooth. The head and throat of the *male* are glossy black. Quills black, inner edges towards base greyish white, outer webs margined with olive-green, broader on the secondaries, greyish on the tips of the primaries. Back, rump, and upper wing-coverts dark olive-green, upper tail-coverts black. Breast and abdomen greenish yellow with an olive tinge, under tail-coverts and middle of belly purer yellow. Tail black, tips dirty olive. Under wing-coverts pale yellowish, greener towards the outer edge. Total length about 195 mm.; wing 101—108; tail 80—85; bill 16—18; tarsus 23·5—25·5. The adult *female* also has a bare spot on the throat, but smaller. The crown of the *female* is ashy grey; back, rump, and upper tail-coverts dark olive-green; wings deep blackish brown, inner edges pale isabelline, outer borders olive-green like the back. Tail dark greenish olive. Chin and throat greyish white, breast washed with green, sides of breast olive-green, remainder of under parts yellow. Wing 90 mm.; tail 73; tarsus 23; bill 14—15. The young *male* is like the old *female*, but the crown of the head perhaps of a lighter grey, in very young birds with a greenish wash, and the throat yellow. The throat is feathered, but much thinner where the old bird is bare. Some black colouring appearing in one

young *male* seems to indicate that the black crown is partially gained by a change of colour in the feathers.

This bird was found plentiful between 3000 and 4000 feet in the hills of Mangarai.

#### 41. *Pachycephala fulvotincta* Wall.

Not rare at Endeh and in Mangarai, from the low country to above 3000 feet. There is a great deal of variation in the colour of the secondaries and longer wing-coverts, these being olive in some, rufous in others. The rufous colour is probably a sign of nonage, but it is not only found in very young birds, which have blackish shaft-lines on the breast. The young *male* has the "irides raw sienna-brown; bill dark sepia-brown; legs light bluish plumbeous, claws light grey-brown."

#### 42. *Chibia bimaensis* (Bp.).

Half a dozen specimens from Mangarai. Tails to end of central rectrices only 110 to 115 mm. In (typical) specimens from Sambawa they seem a little longer on an average.

#### \*43. *Edoliosoma dohertyi* Hartert.

To my great surprise, a series of both sexes of this bird, which I had described from Sumba (Nov. Zool. III. p. 584), is now sent by Mr. Everett from the hills of Mangarai, where they were not unfrequently found between 3000 and 4000 feet. The *female*, of which Mr. Everett has also collected a number in Sumba, is grey above, the rump a little lighter, lores blackish, ear-coverts very dark grey with whitish spots. Wings black, inner edges towards base white, outer webs of largest upper wing-coverts and of secondaries with very wide whitish borders. Tail black, central pair dark ashy grey on basal half or more, outer rectrices with wide grey tips and a narrow almost white edge on the ntmost tip, the following one or two pairs with narrow whitish grey tips. Entire under surface white, greyish on chin, and all over barred across with greyish black, closest on the throat, widest on the under tail-coverts, and less deep black on the under wing-coverts. Wing 122—124 mm.; tail about 108 to 110 mm.; exposed culmen 19 mm.

The young *male* is coloured like the *female*, but has longer wings.

#### 44. (*Graucalus*!) *Artamides floris* Sharpe.

Sharpe, *Cat. B. Brit. Mus.* IV. p. 14 (♀ descr.); Büttikofer, Weber's *Zool. Ergebn. einer Reise in Niederl. O. Ind.* III. p. 299 (♂ descr.). Both sexes from the low country of Mangarai. ♂ ad. (A. Everett sexed): "Irides chocolate-brown; bill jet-black; legs and claws greyish black, with a bronzy gloss on the tarsal scutes." ♀. "Iris chocolate-brown; bill black, with a brown tinge towards the base; feet grey-black." An evidently younger *female* shows whitish edges to the grey feathers of the underside and on a few feathers of the back, and has broader white borders to the quills.

#### \*45. *Pericrocotus lansbergi* Büttik.

This is another surprise for the Flores ornis. It was hitherto only known from Sambawa. (Cf. Nov. Zool. III. p. 569, Pl. XI. figs. 1, 2.) Specimens from Flores do not differ from those from Sambawa.

\*46. *Microeca oscillans* Hartert (*antea*, p. 170).

♂ ad. Forehead, crown, and nape dark brown, with an olive tinge; back similar, but lighter; rump with a rufous wash; upper tail-coverts rufous. Wings deep brown, inner lining rufous buff, outer webs pale russet (between figs. 16 and 19 on Ridgway's Pl. III.). Tail chestnut-brown; shafts of rectrices lighter and more ferruginous. Throat grey; chest a little darker grey; sides of abdomen pale brown, middle of abdomen greyish white. Under tail-coverts and under wing-coverts light buff. Total length about 135 mm.; wing 76 in three skins marked "♂," 78 in one marked "♂," 81 in one marked "♂," and 75.5 in one marked "♀"; tail 58—61; exposed part of culmen 11; tarsus 18. The *female* does not differ from the *males*.

At elevations of from 3000 to 3500 feet in South Flores.

There is perhaps some uncertainty about the exact position of this bird. According to the key in the fourth volume of the *Catalogue of Birds*, it would fall in with *Alseonax*, for the wings are not as long as in typical *Microeca*. The form of the bill and its habitat, however, as well as the somewhat stronger feet, seem to remove it from *Alseonax*, and it is, I think, best united with *Microeca*, as in *M. hemixantha* Schl. we have already a *Microeca* in which the wings are comparatively shorter than in *Alseonax*.

The fifth primary is longest, the fourth about equal.

\*47. *Muscicapula westermanni* Sharpe.

From above 3000 feet.

\*48. *Muscicapula hyperythra* Blyth.

Not rare at about 3000 and 3500 feet.

\*49. *Erythromyias dumetoria* Wall.

This species, which was discovered in Lombok by Wallace, was met with not unfrequently in the lowlands of South Flores by Everett. It is true that the skins before me from Flores are less deep black above, with some dark black centres of the feathers of the crown, giving the head a striated appearance, and that the wing is generally about a millimetre longer. All these differences, however, are, I think, probably signs of immaturity, and one cannot separate the Flores bird without further evidence.

\*50. *Piezorhynchus trivirgatus* (Temm.).

This rare species is, as far as I know, only known from Timor. Everett shot it below 1000 feet in South Flores. He says of it: "♀. Iris dark brown; bill lead-blue, tipped with black; legs dark lead-grey." In the description *Cat. B. IV.* p. 419, first line from above, it should read "tipped with white" instead of "tipped with black."

\*51. *Cryptolopha montis floris* Hartert (*antea*, p. 171).

A number of skins of a *Cryptolopha* from the hills of South Flores are hardly distinguishable from *C. montis* from Mount Kina Balu in North Borneo; but the

dark brown stripes, starting from above the eyes and running backwards to the nape in *C. montis* from Borneo, are less conspicuous in the Flores birds, not being so broad and only starting from behind the eyes, so that, while they are conspicuous if looking straight into the face of *C. montis montis*, they are not visible from right in front in *C. montis floris*.

It is very interesting to find in Flores a form so closely allied to one known from the mountains of North Borneo, Sumatra, and Palawan, and it is a further proof of a certain similarity between the highland fauna of the great mountains of various islands of the Eastern Archipelago.

The young bird looks rather different from the old bird. It is of a less bright yellow below; the head is dull rufous, with two broad brownish black stripes over the sides of the crown.

**\*52. *Acanthopneuste presbytis* (Blyth) (?).**

*Muscicapa presbytis*, S. Müller, *Tydschr. v. Nat. Gesch. en Phys.* II. p. 331 (1835—descr. nulla!) ("Sumatra"!).

*Sylvia presbytis*, Blyth, *Ibis*, 1870, p. 169 (descr. princeps) ("Timor").

Cf. Seebohm, *Cat. B. V.* p. 53; Oates, *Fauna Brit. Ind. Birds*, I. pp. 419, 420.

There is a series of specimens of this form from elevations of 3000 and 3500 feet, which is, I believe, best placed in the genus *Acanthopneuste*, as in the shape of the bill they do not agree with typical *Cryptolopha*, from which they also differ in their stronger feet, while the wing is not long and strong enough for *Phylloscopus*. (See Oates, *l.c.* pp. 349, 411.) *Cryptolopha sarasinorum* Mey. & Wigl. from Celebes also belongs to this same group. It is, however, doubtful whether the Flores bird can be united with the one from Timor, as the former is much deeper yellow below; but nothing should be done without fresh material from Timor.

I have no doubt that these birds are resident in Flores and Timor, and not wanderers from the north, as Seebohm (*l.c.*) supposed, without any reason.

**\*53. *Gerygone sulfurea* Wall. (?).**

One *female* from Endeh. This specimen differs from *G. sulfurea* Wall., of which there is also only one skin in the British Museum, in being darker above and paler yellow below. The spots before the eyes are also less white, but it would be venturous to separate it from the Timor bird without further evidence.

**54. *Hypothymis azurea* (Bodd.).**

From Endeh and Mangarai.

**55. *Rhipidura diluta* Wall.**

A fine series from Endeh and Mangarai, up to above 3000 feet. *R. sumbawensis* Büttik. (Nov. Zool. III. p. 570) is very closely allied to *R. diluta*—in fact most of the differences in colour stated in the author's original description are probably due to comparison with one single very old specimen in Leyden from Flores—but the bill is larger.

**\*56. *Rhipidura semicollaris* Müll. & Schleg.**

There are several skins of this *Rhipidura* from South Flores. They do not differ from typical *R. semicollaris* from Timor in the British Museum, except that the *males* have the wings about 3 mm. longer.



It may here be mentioned that, when describing *R. celebensis sumbensis*, I omitted to compare it with *R. semicollaris*, of which I had no specimen. However, although it is closely allied with the latter, it seems to differ in having a wider black band across the lower throat and chest. This is the same character in which *R. celebensis* differs from *R. semicollaris*, the darker colour above, mentioned by Büttikofer, hardly being a distinctive character. I must await more material to discuss these forms again, but it seems evident to me that *R. semicollaris*, *celebensis*, and *sumbensis* are very closely allied and can only be treated as subspecies.

**57. *Terpsiphone floris* Büttik. (Nov. Zool. III. p. 585).**

A series from Mangarai. They agree perfectly with Büttikofer's original description, and it seems to me strange that it has not been separated from *T. affinis* before, as it differs very much from it.

The Sumba form (*T. sumbaënsis* A. B. Meyer) is very closely allied. It should only be separated subspecifically. A specific separation would lead to confusion, as only the very old *males* differ, perfectly old *males* of *T. floris* not being separable from less adult *males* of *T. floris sumbaënsis*.

**\*58. *Culicicapa ceylonensis sejuncta* subsp. nov.**

Differs from *C. ceylonensis ceylonensis* in having the yellow colour reaching up to the lower throat, so that only the chin and throat are ashy. This ashy colour is also much lighter, almost whitish. Most of the specimens are also a little more golden olive above. Wing also much shorter, *males* 5.7 to 5.9, *female* 5.5 mm., while in *C. c. ceylonensis* the *males* have the wings about 6.5, *females* about 6 to 6.1 mm. The specimens from Sumba, which I called *C. ceylonensis* (Nov. Zool. III. p. 584), belong also to this new subspecies, as two well-prepared skins from Everett's natives clearly show, while it was not easy to discuss the set of rather poor skins sent by Doherty.

**\*59. *Hirundo striolata* (Temm. & Schleg.).**

One *male*, shot at 3300 feet elevation in S. Flores, has very wide black stripes below, and very strong black striations on the rump. Its wing measures 122 mm. I think it belongs to *H. striolata* and not to *H. japonica*, which has been recorded from Flores.

**\*60. *Pitta maria* Hartert (Nov. Zool. III. p. 585).**

There is, besides a large series of the following species, *Pitta concinna* Gould, one skin of *P. maria* with a label in Everett's handwriting, bearing the following inscription: "Irides chocolate; bill jet-black; legs pale purplish brown. November 1896, ♂ nat. coll., S. Flores, low country." It is no doubt my *P. maria*, fully agreeing with the type-specimen and a series received since from Mr. Everett, only there is no white at all in the wing, a character also found in other specimens from Sumba, while others have a small white spot on the fifth or fourth and fifth primary. As Mr. Everett is very careful with the labelling of his specimens, as the label is tied in his original manner, and as there is no possibility of the label having become

changed in Europe, I must add *Pitta meria* to the Flores list, although I cannot help feeling some reluctance in doing so.

#### 61. *Pitta concinna* Gould.

A fine series from the low country of S. Flores. "Irides chocolate; bill jet-black; legs pinkish white."

### STRIGES.

#### 62. *Pisorhina albiventris* (Sharpe).

Common in the low country of S. Flores. ♂. "Irides deep orange; bill and cere dull yellow-green, blackish on sides of maxilla; feet dull dirty ochreous." ♀. "Irides golden yellow; bill and cere dull yellow-green, the edges of the mandibles and tip of the upper one dusky black; feet pale dull ochreous, with an olivaceous tinge."

#### 63. *Pisorhina sylvicola* (Wall.).

♂ ad. Above pale greyish brown, with longitudinal black markings in the middle of the feathers and deep brown vermiculations, scapulars with large very light whitish ochreous markings. Remiges deep brown, outer webs with ochreous spots, inner webs with whitish cross-bars towards the base, less developed on the primaries, much more so on the secondaries. Disc round eyes buff, with brown spots; bristles in front of eyes whitish, with black tips. Feathers under the chin buff, with deep brown "herring-bone" markings. Breast and sides of body light buffish brown, with longitudinal black central markings, some white spots near the shaft and some dark brown wavy cross-lines. Centre of abdomen and belly white. Under tail-coverts white, with some brown cross-bars near the tip. Thighs white, outside spotted across with dark brown. Tail deep brown, with pale fulvous cross-bars and vermiculations. Under wing-coverts whitish, with deep brown bars near the outer edge of the wing. "Iris dull orange; rim of eyelids and feet ochreous-yellow; claws greenish horn-colour; bill dark horn-grey; cere, culmen, and under surface of mandible light dull yellow." Total length about 270 mm.; wing 215 to 223; tail 108; tarsus 36; entire culmen 38; bill 28.

This fine large owl was found in the shore-jungle in S. Flores, and was pairing in November. It resembles *P. semitorques* from Japan, but is larger, and has no buff crescent on the upper back. It also resembles *P. whiteheadi*, but is much whiter below, and without the white crescent on the hindneck and without the white lines above the eyes.

Wallace only procured a young bird (sex doubtful) in down, with only a few feathers, which are exactly marked as those of our birds. It is true that the dimensions of the type are very much larger, but I do not hesitate to consider our birds to be the same species.

#### \*64. *Pisorhina alfredi* sp. nov.

♂ ♀ ad. Above rufous, darker or lighter, forehead speckled with white, feathers of hindneck and back with concealed whitish buff cross-markings at their bases, scapulars with some large white spots on the outer webs. Remiges blackish brown, outer webs and tips rufous; outer webs of primaries, except those of the

innermost ones, with some white spots on the outer edges; all remiges with buff cross-bars near the bases, these bars extending farther towards the tips in the more inner ones. Tail rufous brown, with faintly indicated dark cross-bars. Face, except the white speckled forehead, sides of head and ear-coverts, chin, rufous. Breast delicately mixed of rufous brown and white; abdomen more whitish; under tail-coverts white, with some faint brown vermiculations. Thighs and coverings of tarsi pale rusty rufous. Under wing-coverts pale buff, spotted with brown towards the edge of the wing. Bill and feet pale yellow (in skin). Total length about 210 mm.; wing, ♂ 150—159, ♀ 162; tail 81—82; entire culmen 23; bill 18; tarsus 23 mm. Toes and one-fifth of tarsus bare, the remainder of the tarsus thickly feathered.

Three specimens were procured by Mr. Alfred Everett, in whose honour the species is named *P. alfredi*, on Mount Repok and other hills at about 3500 feet in S. Flores. It is difficult to state the nearest ally of this interesting little owl, but it seems to remind one most of *P. sunia*, which, however, differs considerably in the colour of the bill, abdomen, and forehead, and has sharply defined black shaft-lines on the back, which are absent in *P. alfredi*. Also *P. lempiji* and *P. albiventris* resemble it, but in both these the tarsi are feathered down to the toes, the abdomen is of a different colour, the beak larger, the markings on the scapulars and back are quite different.

(To be continued.)

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## VARIOUS NOTES ON HUMMING-BIRDS.

By ERNST HARTERT.

### 1. *Phaethornis malaris* (Nordm.).

WHEN reviewing the genus *Phaethornis* in the *Ibis* for July (1897), I recognised considerably more species than Mr. Salvin in *Cat. B. Brit. Mus.* Vol. XVI., but now I have already to allow one more! My friend Count von Berlepsch has fully convinced me that I made a mistake in uniting *Phaethornis malaris* (Nordm.) and *P. superciliosus* (L.). They are two species differing not only considerably in size, but also in the coloration of the throat and in the colour of the under tail-coverts. It is quite clear from Brisson's figure and measurements that his "*Polytmus cayennensis longicaudus*," on which Linné founded his *Trochilus superciliosus*, is the *small* bird which Gould called afterwards *P. fraterculus*. They are certainly not the *females* of the large *P. malaris*, the differences between the sexes not being so great nor the coloration so different in the genus *Phaethornis*. It is true that my *P. s. moorei* and *P. s. guianensis* are very closely allied, but I think that the comparison of a series of both shows some slight differences, and therefore I prefer to separate them subspecifically.

Future investigations will have to be made to show whether *P. viridicaudata* is the *female* of *P. idaliæ*, as Salvin and others have supposed, but the proofs of that do not seem to be conclusive enough, and I prefer therefore to keep them separate for the present.

### 2. *Cyanolesbia kingi* (Less.).

There seems to be a conspiracy against the name *Ornismya kingi* of Lesson, although there is no doubt that it was given to a *Cyanolesbia*. The difficulty is to find out to which form the name should be applied. From the figure and description it is clear that it was meant for a form with a blue spot on the throat and a mostly blue tail. This excludes all forms except the form with blue tail from Bogota and *C. coelestis*. I have now—thanks to the kindness of Mr. Loddiges—examined the *Cyanolesbiae* in the Loddiges collection. They are partly "*C. gorgo*" (the blue-tailed common Bogota form), partly *C. coelestis*. The Bogota specimen is not so well stuffed as the others, therefore most likely the oldest, and thus it may be accepted as the "type." Furthermore, the first locality ever given for "*Ornismya kingi*" (Boissonneau, *Rev. Zool.* 1840, p. 7) was Bogota, as the original place "*Jamaica*" was, of course, an error. We are therefore, if we wish to preserve the oldest name, entitled to use the name *C. kingi* for the blue-tailed Bogota form (which was called *C. gorgo* on p. 48 of my synopsis of the genus in *Nov. Zool.* I. p. 48). Mons. Eug. Simon in his catalogue has also adopted the name *kingi* for this form.

3. (? ♀ *Helianthea traviesi* (Muls. & Verr.).

A Bogota skin recently received differs from the supposed *male* of *Helianthea traviesi* in the British Museum, which I consider to be an old bird, in the following characters: it is lighter and more green, not so blackish, everywhere; the chin is not black, but dark green; the upper tail-coverts shining golden green, and not purple-bronze. These differences are probably sexual, as similar sexual differences are found, for example, in *H. lutetiae*, viz. less black but more green colour, differently coloured chin, and differently coloured upper tail-coverts. The second skin in the British Museum is evidently young.

Eug. Simon in *Cat. Trochil.* p. 27 has called attention to the fact that the descriptions which have hitherto been published of *H. traviesi* do not agree in all details, and he thinks it not impossible that *H. traviesi* is a hybrid between *H. lutetiae* and *Bourcieria torquata*. Such a thing is, of course, not impossible, but not probable, and the discrepancies in the various descriptions and between various specimens may rather be sexual or due to age or different localities, for we have no proper knowledge of this bird, of which only a few skins found in Bogota collections are known.

I shall certainly not accept the genus *Eudisia* for this bird, for it agrees in all structural characters with *Helianthea*.

4. *Saucerottia inculta* (Elliot).

Of this also we have received two skins from Mr. Dunstall of London. It is strange that it should have been placed with *Erioenemis*, while it is undoubtedly a true *Saucerottia*. Mons. Simon (*Cat. Trochil.* p. 13) believes it to be a melanistic variety of *S. viridigaster* (Boure.), which is possible.

5. *Iache doubledayi* Boure.

Mr. Salvin, after having allowed specific rank to his *I. nitida*, has united it with *I. doubledayi* in the *Biologia Centr. Amer.* He did this on the ground of the comparison of specimens similar to his *I. nitida* with the supposed type of *I. doubledayi* in the American Museum of Natural History. The type, however, is still in the beautiful collection of humming-birds in the possession of Mr. George Loddiges, whose grandfather formed it, while the specimen in the American Museum, though given to Elliot by Bourcier, who described *I. doubledayi*, cannot be the type. I have now compared specimens of the so-called *I. nitida* with the type of *I. doubledayi* and found them perfectly identical. The identity of *I. doubledayi* and *I. nitida* is thus established beyond doubt.

I have to thank Mr. Loddiges for the permission to see and study several times the well-kept types in his grandfather's collection.

6. *Rhamphomicron microrhynchum* (Boiss.).

This beautiful little humming-bird has hitherto only been known from Colombia and Northern Ecuador, and has come to Europe in great numbers in the Bogota collections. It is not yet recorded from Venezuela, but recently Señor Salomon Briceño Gabaldón has sent us a *male* and a *female* from the Andes of Merida.



### 7. *Chrysolampis chlorolaema* Elliot.

In October Mr. Rothschild received a perfect *male* from Mr. Dunstall of London, together with other Bogota skins. It is of the typical Bogota make, and there can therefore be no doubt that it came from some part of Colombia, or close by. This is most remarkable, as Count Berlepsch received it direct from Bahia (see *Ibis*, January 1898, where an article on this bird will be found by Count Berlepsch). As the Count says, this bird stands somewhat between the genera *Lampornis* and *Chrysolampis*, but may as well be united with the latter (cf. also *Cat. B. Brit. Mus.* Vol. XVI. p. 96). The Tring specimen would be the fourth on record.

### 8. *Eriocnemis mosquera* (Del. & Bonre.).

Originally described from Pasto in South Colombia, close to Ecuador, and not uncommon in collections from the northern parts of Ecuador. In the collections of Mr. Rothschild at Tring, Mons. Simon at Paris, and Count von Berlepsch I have seen specimens from Bogota, which differ in having the beaks 2 or 3 mm. longer. They may be distinguished as

#### *Eriocnemis mosquera bogotensis* subsp. nov.

(Type in Mus. Rothschild, Tring.) A similar case is represented in *Eriocnemis derbyi*, the skins from the Bogota region having been distinguished by me as *E. derbyi longirostris*. Recently received specimens confirm the latter subspecies well.

### 9. *Schistes albogularis* Gould.

This rare species is not yet recorded from Colombia. We have received a perfect *male* found in a Bogota collection.

### 10. *Eriocnemis berlepschi* sp. nov.

Speciei *E. nigrivestis* dictae affinis, differt rostro longiore, macula gulari subcaudalibusque paullo splendentibus, magis purpurascens, supra magis viridi.

Above blackish green with coppery gloss, upper tail-coverts with a dull greenish sheen. Tail black with a blue tint. Throat black, with a large spot of a dark metallic somewhat leaden blue. Abdomen of a very dark green. Under tail-coverts deep purplish blue, almost black, with a metallic gloss. Tibial tufts large, white.

Wing 61 mm.; tail 42 mm.; bill (from end of feathering) 19 mm. (against 15 to 16 in *E. nigrivestis*).

*Hab.* Colombia. (One skin found in a Bogota collection, received from Mr. Dunstall, London.)

Named in honour of my friend Count Hans von Berlepsch, who first planted in me the now deep-rooted special love and interest for the fascinating family of the *Trochilidae*, and from whom I have learnt so much.

11. *Heliangelus claudia* Hartert.

A skin has come to hand which entirely resembles in every way the type in this Museum, only the under tail-coverts are pure white and the wing is 6 mm. longer, but on re-examining the type I find that both wings are slightly damaged at the tip, and therefore the length of the wing given in the original diagnosis must be considered too small.

The second specimen of *H. claudia* was also found in a Bogota collection. (Cf. Nov. Zool. II. p. 484.)

12. *Heliangelus dubius* sp. nov.

With the last-named specimen the Museum received an *Heliangelus* to which I give the name *H. dubius*. It differs from *H. clarissae* in having the throat shining violet-blue, and not so glittering as the rosy red throat of *H. clarissae*. The feathers of the throat are elongated as in the other species, but it seems that the glittering throat-patch is more oval and not so straight below as in *H. clarissae*, it being shaped more as in *H. spencii* and *H. macors*. The green above is a shade darker, but not much.

The specimen in Mons. Simon's collection, mentioned by him in note 2 on p. 32 of his *Catalogue de la Famille des Trochilides*, which I have seen, is like my *H. dubius*. I admit that it is with some hesitation that I describe this bird, but if it is not separated nominally many other species would have to be sunk as synonyms, for example *Heliotrypha violicollis* Salv., which differs from *H. strophianus* in about the same characters as my *H. dubius* does from *H. clarissae*. It is possible that Mons. Simon's theory that these darker forms are melanistic aberrations is right, but as yet we have no proof of it, and we do not know their proper locality, so that it will be better to give names to those at least of which several entirely similar specimens are known and which seem to be distinct enough. This proceeding will more incite future research, and thus be of more advantage for the present than treating such peculiar forms with neglect.

That *Heliangelus dubius* should be a specimen with the brilliant throat-patch discoloured by any process is out of question. The Tring Museum has such discoloured specimens, for example of *H. exortis*, but they look quite different and are detected at a glance.

13. *Heliangelus barrali* (Muls. & Verr.).

Of this rare species I have seen specimens, all from Bogota, in the British Museum, in the Boucard and Simon collections, and the Tring Museum has now received three skins which seem to belong to it, but it is remarkable that the colour of the glossy throat-patch differs a little in all three. In all three, however, the glossy throat is sharply separated from the colour of the breast, and there is a conspicuous dark area surrounding the throat.

With the three specimens which I must consider to be *H. barrali*, this Museum received one which in its coloration agrees with

14. *Heliangelus speciosus* (Salv.).

The throat is of a glittering golden green, which is not so sharply separated from the green of the breast as in *H. barrali*, and there is not such a distinct dark area round the throat. The length of the bill of this bird, however, is *not* greater than in the *H. barrali*, while in the type and in the specimen in the Boucard collection it is slightly longer. Boucard has further described a skin as *H. simoni* which has the bill like our *H. speciosus*, i.e. equalling that of *H. barrali*, while the colour of the throat differs very slightly from that of *H. speciosus* Salv. Boucard says that his *H. simoni* must be considered a species if *H. speciosus* is kept separate from *H. barrali*, and there is some sense in that remark; on the other hand, if the length of the bill is dismissed as being not decisive in our case, Boucard's as well as our skin can, taking into consideration the variation of the throat-colour in *H. barrali*, without difficulty be united with *H. speciosus*, as Simon did with Boucard's *H. simoni* (*Cat. Trochil.* p. 31, n. 330). Nevertheless we have much to learn concerning all these forms, and I cannot help being somewhat sceptical with regard to *H. speciosus*, but shall not of course disregard it as a species until further researches are made.

To recognise the genus *Heliotrypha* as distinct from *Heliangelus* seems unnecessary, if not inconsequent. If the form of the tail is the distinguishing character, then *H. strophianus* would rather have to be classed with *Heliotrypha*: if the want of the white collar is taken as decisive, then certain specimens of *H. clarissae*, in which it is almost if not quite wanting, are inconvenient, besides that mere colour-markings are in my opinion not good generic characters.

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## INDEX.

- abbreviata (Gonodela), 251.  
 ablinearia (Leucula), 464.  
 abnormalis (Trotothyris), 19.  
 abnormipennis (Brachyprota), 432, 445.  
 abornata (Craspedia), 432.  
 abortivata (Remodes), 231, 233.  
 Abraxas, 86, 396.  
 Abraxinae, 86, 240, 396.  
 absconditaria (Brachycola), 48, 216.  
 absorpta (Arycanda), 82.  
 abyssinica (Galerida), 145, 146.  
 acaciaria (Chogada), 93.  
 Acadra, 104.  
 Acanthochoera, 369.  
 Acanthopnenste, 525.  
 acapulcae (Proculejus), 293.  
 — (Undulifer), 303.  
 Accipiter, 165.  
 accumulata (Semiothisa), 480.  
 accentra (Craspedia), 217.  
 Acidalia, 54, 434.  
 Acidalis, 225.  
 Aemonorhynchus, 155, 161, 518, 519.  
 Acropterus, 21, 198.  
 Acrosemia, 486.  
 Acrotomia, 439.  
 Acrotomodes, 486.  
 Actenochroma, 207.  
 actiosaria (Ptychopoda), 60.  
 aculeata (Micronia), 23.  
 acuta (Lycauges), 57.  
 acutilinea (Dirades), 384.  
 acutirosstris (Heterolocha), 133.  
 adaneta (Bursada), 240.  
 Addea, 19.  
 Adeixis, 27.  
 Adelomyia, 2, 9.  
 adulatrix (Episteme), 310.  
 aegaeus (Papilio), 181.  
 Aegialitis, 273.  
 Aegocera, 184, 311.  
 aequalis (Aganais), 331.  
 — (Asota), 330.  
 — (Hypsa), 331.  
 acquiferaria (Semiothisa), 485.  
 Aetbeolepis, 68.  
 aetheraria (Trimetopia), 233.  
 Aethopyga, 11, 161.  
 affinis (Caprimulgus), 163, 268.  
 — (Microgonia), 495.  
 affinis (Milvus), 514.  
 — (Strepsigonia), 17.  
 — (Terpsiphone), 526.  
 Aganaidae, 314, 335.  
 Aganais, 315, 317, 360.  
 Agape, 333.  
 Agarista, 311, 332.  
 agarista (Hypsa), 332.  
 Agaristidae, 184, 310.  
 agassizi (Sertorius), 303.  
 Agathia, 32, 208, 388.  
 aggravata (Craspedia), 50.  
 Agirpa, 84, 85.  
 Aglaeactis, 2, 4, 59.  
 Agnibesa, 65.  
 Agraptoclora, 32, 208.  
 Agyrtia, 2, 4, 6, 151.  
 Alauda, 142.  
 alba (Pristoceraea), 183.  
 albapex (Glaucopteryx), 235.  
 Albara, 12.  
 albata (Heterusia), 456.  
 albertisi (Arrhipis), 178.  
 albescens (Certhia), 139.  
 albibasis (Gathynia), 204.  
 albicapilla (Macropygia), 165.  
 albicandata (Gymnoscelis), 228.  
 albiceps (Capnophylla), 411.  
 albiclathrata (Apostates), 214.  
 albiclausula (Pterocymia), 236.  
 albicollis (Streptocitta), 158, 159.  
 albidata (Gelasma), 425.  
 albidiscata (Euephyra), 438.  
 albidulata (Craspedia), 432.  
 albifera (Aganais), 359, 360.  
 — (Asota), 359—364.  
 — (Hypsa), 359, 360, 364.  
 albifimbria (Norcia), 206, 387.  
 — (Thalassodes), 214.  
 albifimbriata (Banisia), 196.  
 albiformis (Asota), 315, 357—363.  
 — (Hypsa), 362.  
 albifrons (M-somima), 85.  
 albifureata (Hyposidra), 119.  
 albigrisca (Fidonia), 100.  
 albigularis (Eriocnemis), 148.  
 albigutta (Craspedosis), 241.  
 albilauta (Anisogamia), 33, 35.  
 albinacula (Anisogamia), 33, 34.  
 — (Eumelca), 29.



- albinigra (*Nephodia*), 464.  
 albiocellata (*Epiplema*), 412.  
 albipicta (*Victoria*), 46.  
 albipilaga (*Momonipta*), 421.  
 — (*Potera*), 89.  
 albipunctata (*Prasinocyma*), 370.  
 albiquadrate (*Potera*), 89.  
 albiextrigulata (*Hemitea*), 39.  
 albivena (*Asota*), 315, 340—342.  
 — (*Hypsa*), 341.  
 — (*Neochera*), 341.  
 — (*Pergama*), 499.  
 albiventris (*Pisorhina*), 527, 528.  
 — (*Pnoepyga*), 168, 516.  
 albiviridis (*Chlorostrota*), 36.  
 albugularis (*Schistes*), 531.  
 albomarginata (*Seroligera*), 312.  
 albomedia (*Chalcosia*), 309.  
 albosignata (*Petrodava*), 115.  
 albula (*Thysonotis*), 368.  
 Alcedo, 11, 160, 163.  
 alciphron (*Damalis*), 315, 316, 317.  
 — (*Hypsa*), 315, 316, 317.  
 — (*Phalaena*), 316.  
 Alcis, 96, 245.  
 alexomaria (*Oenoptila*), 475.  
 alfredi (*Pisorhina*), 527, 528.  
 algeriensis (*Ammomanes*), 140, 141.  
 algidaria (*Eumelea*), 29.  
 aliciae (*Aglaeactis*), 5.  
 alienata (*Agamais*), 332.  
 — (*Agarista*), 332.  
 — (*Asota*), 315, 332.  
 — (*Damalis*), 332.  
 allicornis (*Aulacocyclus*), 278, 279.  
 Allaxithea, 237.  
 Almodes, 417.  
 alopecodes (*Ptychopoda*), 223.  
 alpestris (*Nucifraga*), 132, 134.  
 alpinus (*Corvus*), 374.  
 Alseonax, 524.  
 alternata (*Banisia*), 380.  
 — (*Mixochlora*), 42.  
 alternifascia (*Eois*), 436.  
 alticola (*Certhia*), 139.  
 altirostris (*Galerida*), 146.  
 alyattes (*Hypochrysops*), 367.  
 Amaurinia, 446, 447.  
 Amaurornis, 165.  
 Amazonia, 1, 2, 6, 8.  
 ambagifera (*Craspedia*), 433.  
 americana (*Certhia*), 139.  
 Ammomanes, 140.  
 ampenaria (*Uliocnemis*), 392.  
 amplexicaudata (*Xantharpyia*), 263.  
 amplimargo (*Ptychopoda*), 413.  
 amygdalipennis (*Epiplema*), 201.  
 Amygdalopteryx, 451.  
 anableps (*Tenaris*), 313.  
 Anaca, 509.  
 Anagoge, 239, 476.  
 analipaga (*Buzura*), 244.  
 Anas, 273.  
 anastomosalis (*Stenolodes*), 409.  
 andamana (*Asota*), 325.  
 — (*Hypsa*), 325.  
 andromedae (*Geocichla*), 515.  
 Androphilus, 155.  
 Angenora, 125.  
 angulalis (*Hypolamprus*), 380.  
 angulata (*Thamnoboma*), 484.  
 angulataria (*Aploschema*), 22.  
 angulicollis (*Apatenia*), 177.  
 angulilinea (*Stesichora*), 24.  
 angulosa (*Remodes*), 66.  
 angusta (*Cyllopoda*), 419.  
 angusticornis (*Comacupes*), 285.  
 angustifascia (*Banisia*), 378.  
 angustipennis (*Chlorostilbon*), 151  
 (*Ptychopoda*), 223.  
 angustistriata (*Galerida*), 146.  
 Anisephyra, 47.  
 Anisodes, 48, 221, 412, 415, 431.  
 Anisogamia, 33.  
 Anisogonia, 486.  
 Anisographie, 254, 400.  
 Anisoperas, 187.  
 anna (*Antberaea*), 182.  
 annae (*Acmonorhynchus*), 518.  
 annulata (*Buzura*), 244.  
 annulicornis (*Tribotropis*), 173.  
 anomala (*Zosterops*), 157.  
 Anomalopteryx, 188, 190.  
 Anonychis, 101.  
 ansorgei (*Aegocera*), 311.  
 — (*Ceranchia*), 309.  
 — (*Charaxes*), 181.  
 — (*Zamarula*), 261.  
 antennalis (*Asota*), 314, 315, 340.  
 antennata (*Tephрина*), 399.  
 Antheraea, 182.  
 anthore (*Arhopala*), 367.  
 Anthreptes, 161, 519.  
 Anthus, 265, 521.  
 Anthyperythra, 255.  
 Antichera, 365.  
 antiphon (*Hypochrysops*), 367.  
 Antitrygodes, 47.  
 antucaria (*Dectoclilus*), 490.  
 Apatenia, 176.  
 Aphengium, 187.  
 apicata (*Plebdomophruda*), 101.  
 — (*Psilocerea*), 98.  
 apiciata (*Psilocerea*), 259, 402.  
 apicipuncta (*Stesichora*), 200.  
 Apidania (*Microgonia*), 495.  
 Aplochloa, 76.  
 Aplodes, 423, 428.  
 Aplogomphia, 459, 461.  
 Aploschema, 22.

- apollinaria (Problepsis), 59.  
 Apostates, 214.  
 Appias, 153.  
 approximans (Hemiteha), 39.  
 Apterygidae, 188.  
 aquaticus (Corvus), 372.  
 Arcina, 124.  
 Arcoscelia, 102.  
 arcuata (Dendrocygna), 166.  
 arcuatoclypeatus (Aulacocyclus), 278, 282.  
 Ardea, 264, 272.  
 Ardetta, 263.  
 Arenaria, 272.  
 arenicola (Galerita), 143—147.  
 arenicolor (Ammomanes), 140, 141.  
 arenosa (Cataspilates), 474.  
 argentea (Bapta), 462.  
 argenteola (Ausaris), 12.  
 argentifusa (Mixochlora), 42.  
 argentilinea (Ausaris), 195.  
 argentiplaga (Cirrochrosta), 130.  
 — (Turekheimeria), 243.  
 argentipecta (Dichromatopodia), 435.  
 Argyris, 59.  
 argyromma (Phrissosecles), 222.  
 Argyrotope, 459.  
 Arhopala, 366.  
 aridata (Heterostegane), 78.  
 armatus (Straboscopus), 176.  
 Arquata, 374—376.  
 arquata (Nucifraga), 132.  
 Arrhipis, 178.  
 Artamides, 11, 162, 523.  
 Artamus, 157, 522.  
 arthuri (Sphinx), 307.  
 aruensis (Aulacocyclus), 281, 282.  
 Arycanda, 82.  
 Ascotinae, 92, 245, 398, 402, 466.  
 Ascotis, 92.  
 Asota, 314, 315—365.  
 Aspilates, 27, 99, 473.  
 Aspilatopsis, 100.  
 Aspilonaxa, 386, 387.  
 assimilis (Asota), 331.  
 — (Chlorostilbon), 152.  
 — (Milionia), 510.  
 assmanni (Sertorius), 303.  
 associata (Sterrha), 62.  
 astheninae, 65, 226, 446.  
 Astur, 165, 270.  
 atacamensis (Rhodopsis), 1, 8.  
 atala (Chlorostilbon), 151.  
 ateraea (Melanchroia), 463.  
 atomaria (Buzura), 244.  
 — (Craspedia), 433.  
 — (Parasyngia), 80.  
 atomosalis (Pyralis), 383.  
 — (Symphleps), 383.  
 atricapilla (Munia), 11, 161.  
 atriceps (Parns), 518.  
 atridisca (Hemiteha), 40.  
 atridiscata (Craspedia), 217.  
 atrifrons (Zosterops), 161.  
 atrimargo (Panaethia), 86.  
 atropunctaria (Anisopercas), 487.  
 attacus (Phalaena), 316, 343.  
 attenuata (Nemoria), 42.  
 — (Pogonopygia), 240.  
 Atthis, 2.  
 Atyriodes, 419.  
 Aulacocyclus, 274.  
 Aulacocyclus, 277, 283.  
 aulacota (Oligopleura), 449.  
 Anophylla, 423.  
 aurantiaca (Cocytia), 509.  
 — (Eugnesia), 77.  
 — (Magida), 495.  
 aurata (Anisephyra), 47.  
 — (Cambogia), 447.  
 — (Neochorista), 440.  
 auratisquama (Steiophora), 67.  
 — (Zamarada), 122.  
 aurea (Eriocnemis), 148.  
 — (Hamnaptera), 452.  
 aureifrons (Zosterops), 520.  
 aureofulva (Chloromachia), 209.  
 aureola (Anaes), 509.  
 aureolimbatus (Acmonorhynchus), 155, 161.  
 auricincta (Scardamia), 240.  
 auriculifera (Problepsis), 59.  
 aurifera (Fascellina), 118.  
 auriflamma (Milionia), 513.  
 aurimargo (Chrysocraspeda), 216.  
 aurora (Diphlogaena), 2.  
 Ausaris, 12, 13, 195.  
 austeni (Ceraucupes), 274.  
 australiae (Catharsius), 152.  
 australiensis (Eumela), 29.  
 australis (Aganais), 329.  
 — (Asota), 315, 329—331.  
 — (Eurystomus), 159.  
 — (Hypsa), 328—331.  
 Auzata, 13.  
 Auzeodes, 255.  
 avacta (Asota), 315—326.  
 — (Hypsa), 325.  
 Azata, 104, 251.  
 Azelina, 487, 488.  
 Azelinopsis, 115.  
 aztecus (Pseudacanthus), 305.  
 azurea (Hypotbymis), 525.  
 balzani (Thalurania), 149, 150.  
 bandana (Asota), 354.  
 Banisia, 20, 196, 378, 380.  
 banyumas (Siphia), 158.  
 Bapta, 237, 255, 462.  
 baptata (Sterrha), 224.  
 baroni (Buarremon), 4.

- barrali (Heliangelus), 532.  
 Barrama, 28.  
 basalis (Comacupes), 283, 285.  
 bastialis (Siculodes), 382.  
 batesi (Hypsotroptis), 173.  
 batjanensis (Apatenia), 176.  
 belfordi (Melirrhophetes), 369, 370.  
 belluaria (Percnia), 89.  
 bengalensis (Alcedo), 11, 160.  
 bergii (Sterna), 273.  
 berlepschi (Eriocnemis), 531.  
 betularia (Chogada), 93.  
 bhurmitra (Ectropis), 94.  
 biangulifera (Ozola), 388.  
 bicanthatus (Tachioecerus), 276.  
 bicolor (Artamides), 162.  
 — (Microgonia), 495.  
 — (Oreta), 16.  
 bicornis (Spurius), 304.  
 bienspis (Tachioecerus), 277.  
 bifimbriata (Banisia), 20.  
 biformis (Asota), 322—325.  
 bigeminata (Craspedia), 50.  
 bihastatus (Ceracupes), 274.  
 bilinearia (Odontoptera), 115.  
 bilineata (Pristostegania), 81.  
 — (Sabulodes), 503.  
 bimacla (Haemalea), 438.  
 bimaculata (Phlegoenas), 153, 160.  
 bimaënsis (Chibia), 523.  
 binotata (Nothomiza), 239.  
 biplagiata (Oricia), 421.  
 bipunctata (Stesichora), 200.  
 bipunctatus (Hypolamprus), 198.  
 biseriata (Molybdogompha), 461.  
 Biston, 386.  
 Bistoninae, 90, 244.  
 bistriata (Microloxia), 426.  
 blanda (Charaxes), 507.  
 boarmiaria (Racotis), 98.  
 boarmiata (Polygraphodes), 442.  
 boarula (Motacilla), 521.  
 Bociraza, 512.  
 bogotensis (Eriocnemis), 531.  
 bobbsi (Gymnognathus), 174.  
 boliviana (Thalurania), 149.  
 bombus (Chaetocercus), 6.  
 Bombyx, 332, 352.  
 bonaventura (Craspedia), 50.  
 bonthaina (Pachycephala), 158.  
 — (Siphia), 158, 159.  
 borbonica (Aganais), 334.  
 Bordeta, 83.  
 borealis (Phylloscopus), 515.  
 bos (Passalus), 286.  
 boysii (Certhilauda), 145.  
 Braccinae, 82, 240, 397, 463.  
 Brachycola, 48, 392—394.  
 brachyactyla (Certhia), 136, 139.  
 Brachyprota, 432, 445.  
 Brachypteryx, 170, 516.  
 brachyrhyncha (Nucifraga), 132.  
 brachyrhynchus (Nucifraga), 131, 132, 134, 136.  
 brachyura (Galerita), 146.  
 brevicaudatus (Chlorostilbon), 150.  
 brevioripennis (Odontotaenius), 290.  
 brevipennis (Asota), 349.  
 brevis (Proculajus), 293, 294.  
 brittanica (Certhia), 138, 139.  
 brunnea (Azelinopsis), 115.  
 — (Dectochilus), 490.  
 — (Endotricha), 129.  
 — (Odontoptila), 440.  
 brunneiceps (Munia), 11, 161.  
 brunneoiviridis (Chlorocystis), 449.  
 Bryoptera, 466.  
 Buarremon, 4.  
 Bubalis, 377.  
 bucerus (Cylindrocantus), 304.  
 Bursada, 84, 240.  
 burnanus (Papilio), 181.  
 busclaphus (Bubalis), 377.  
 Buzura, 244.  
 cabanidis (Petasophora), 148.  
 Cacatua, 164.  
 Cacomantis, 164.  
 caesia (Epiplema), 25.  
 — (Hyposidra), 257.  
 caledonicus (Nycticorax), 264, 272.  
 Calicodes, 246.  
 calidata (Heterostegane), 78.  
 Callidrepana, 13.  
 Callinaias, 129.  
 Calluga, 228.  
 calorhynchus (Phoenicophæus), 160, 164.  
 Calornis, 158, 514.  
 calvus (Ibis), 375, 376.  
 Cambogia, 447, 448.  
 cambogiata (Eois), 437.  
 Camptogramma, 233, 451.  
 canaraica (Asota), 315—319, 337, 339, 357.  
 — (Hypsa), 339.  
 candida (Craspedia), 432.  
 candidata (Aspilates), 473.  
 canisquama (Spilocraspedia), 504.  
 caniveti (Chlorostilbon), 150.  
 Capnopbylla, 410, 411.  
 caprata (Pratincola), 155, 161, 264, 515.  
 Caprimulgus, 163, 268.  
 capucinus (Monachalcyon), 153, 160, 163.  
 cardinalis (Cobanilla), 13.  
 carca (Stenalcidia), 172.  
 caribaeus (Chlorostilbon), 151.  
 caricae (Aganais), 315.  
 — (Asota), 314, 315.  
 — (Damalis), 315—317.  
 — (Hippocrita), 317.  
 — (Hypsa), 315, 316—319.

- caricae (Noctua), 316.  
 — (Phalaena), 316.  
 carnearia (Symmaera), 63.  
 carneola (Ptychopoda), 223.  
 caroli (Sappho), 4, 7.  
 Carphodactylus, 403—406.  
 Carpophaga, 160, 165.  
 Cartaletis, 28.  
 caryocatactes (Nucifraga), 132—136.  
 cassandra (Eois), 446.  
 castanearia (Heteromiza), 118, 119.  
 castissima (Craspedia), 51.  
 casuarinus (Meionornis), 189.  
 Catascia, 250.  
 Cataspilates, 474.  
 catharina (Eriocnemis), 8.  
 Catharsius, 152.  
 catoriata (Pseudalcis), 96, 97.  
 caucasica (Galerida), 146, 147.  
 Caulifer, 274.  
 cavicornis (Tristortus), 283.  
 celebense (Trichostoma), 161.  
 celebensis (Aganais), 333.  
 — (Agape), 333.  
 — (Anthreptes), 161.  
 — (Asota), 315—333.  
 — (Hypotaenidia), 166.  
 — (Melilestes), 157.  
 — (Merula), 155.  
 — (Oriolus), 158, 159—162.  
 — (Pitta), 163.  
 — (Pyrrhocentor), 160, 164.  
 — (Rhipidura), 266, 526.  
 celebicum (Dicaenm), 155, 161.  
 Cenoctenucha, 115.  
 centralis (Asota), 360.  
 Centropus, 269.  
 Ceracupes, 274.  
 Cerauchia, 309.  
 Ceratus, 177.  
 ceraunia (Motacilla), 167.  
 Certhia, 136.  
 Certhilanda, 145.  
 Certinia, 488.  
 Cerygone, 264.  
 Cethosia, 154.  
 Ceyceopsis, 163.  
 ceylonensis (Culicicapa), 526.  
 Chaetocercus, 6.  
 Chalcophaps, 160, 165.  
 Chalcosia, 309.  
 Chalcosiidae, 309, 310.  
 chalybeata (Microgonia), 195.  
 — (Tasta), 76.  
 championi (Ogyges), 292.  
 — (Popilius), 297.  
 Charadrius, 272.  
 Charaxes, 181, 507, 508.  
 Chelonia, 335.  
 chendoola (Alauda), 145—147.  
 Chesias, 124.  
 Chiasmia, 82.  
 Chibia, 523.  
 Chlenias, 124.  
 chloris (Halcyon), 158, 269, 314.  
 Chlorocharis, 157.  
 Chloroclystis, 69, 70, 71, 229, 230, 395, 449.  
 Chloroglyphica, 208.  
 chlorolaemus (Chrysolampis), 531.  
 Chloromachia, 209.  
 Chloromma, 36.  
 chlorophora (Omiza), 129.  
 Chloroplintha, 69.  
 chloptera (Myzomela), 157.  
 chlorosata (Ptychopoda), 445.  
 Chlorostilbon, 150, 151.  
 Chlorostrota, 36, 389.  
 Chogada, 93, 247.  
 Chondrocephalus, 301.  
 Chorodnodes, 105.  
 Chrysoclystis, 228.  
 Chrysocraspeda, 49, 216, 238, 392.  
 chrysocraspedata (Amaurinia), 446, 447.  
 Chrysolampis, 531.  
 Chrysolene, 49.  
 Cidaria, 236.  
 Cimicodes, 489.  
 cincta (Asota), 361.  
 cinctura (Ammomanes), 140, 141.  
 cindica (Stenalcidia), 471.  
 cinerascens (Pseudalcis), 97, 249.  
 cinerea (Hyposcotis), 468.  
 cinereicollis (Phyllergates), 517.  
 cinereus (Parns), 518.  
 — (Poliolimnas), 272.  
 Cinyris, 11, 155, 161, 519.  
 circumscripta (Spilocraspeda), 504.  
 cirrhigera (Remodes), 395.  
 Cirrhochrista, 130.  
 cissa (Parthesia), 465.  
 Cisticola, 155, 161, 264, 515.  
 cisticola (Cisticola), 155, 264, 515.  
 citrina (Ratiaria), 459.  
 citrinella (Zosterops), 157, 265, 520.  
 Cittura, 163.  
 claclia (Parthesia), 465.  
 clara (Asota), 314, 363.  
 — (Hypsa), 363.  
 clarissa (Arhopala), 366.  
 clarissae (Heliangelus), 532.  
 clathratus (Gymnognathus), 173.  
 claudia (Heliangelus), 532.  
 clavata (Asota), 338, 340—343, 348, 551.  
 — (Hypsa), 343.  
 Cleora, 466.  
 Clepsimelea, 261.  
 Cobanilla, 13, 398.  
 cochevis (Alauda), 145.  
 coctata (Peratostega), 80.  
 Cocytia, 509.

- Coccytiidae, 509.  
 coelestis (Cyanolesbia), 529.  
 Coelura, 411.  
 coerulescens (Lohocraspeda), 242.  
 Collesis, 37, 210.  
 collinca (Semiiothisa), 478.  
 Collocalia, 264, 268.  
 colonus (Myiagra), 266, 267.  
 columbaris (Dirades), 384.  
 columbica (Thalurania), 149.  
 Comacupes, 283, 284.  
 comata (Comatibis), 375, 376.  
 — (Ibis), 371—376.  
 — (Macropteryx), 111.  
 Comatibis, 371—376, 377.  
 comatus (Comacupes), 285.  
 — (Geronticus), 376.  
 combinata (Stesichora), 24, 200.  
 cometifera (Semiiothisa), 482.  
 Comibaena, 391, 424.  
 comitata (Pelurga), 454.  
 commaculata (Dysephyra), 435.  
 — (Notabraxas), 88.  
 commixta (Gonodela), 106.  
 Comostolodes, 210.  
 complana (Hypsa), 358—361.  
 complicata (Parasygnia), 79.  
 complicatalis (Sicnolodes), 198.  
 concana (Aganais), 338.  
 — (Damalis), 338, 339.  
 concentrata (Racheospila), 430.  
 Conchocomete, 216.  
 concinna (Pitta), 526.  
 concurrens (Eugnesia), 77.  
 — (Lycauges), 57.  
 confinis (Asota), 320.  
 confiniscripta (Perixera), 394.  
 conflictata (Heterusia), 457.  
 confusa (Psaliodes), 454.  
 confusata (Agathia), 32.  
 confusidentata (Remodes), 66.  
 congener (Tephriopsis), 113.  
 conifera (Dirades), 204.  
 — (Pbellinodes), 417.  
 conjuncta (Goniopteroloba), 230.  
 consobrina (Comostolodes), 210.  
 — (Endotricha), 129.  
 consocia (Amaurinia), 447.  
 conspicua (Orthocabera), 79.  
 constellata (Camptogramma), 233.  
 constrictifascia (Azehina), 487.  
 contorta (Asota), 314, 315, 365.  
 — (Hypsa), 365.  
 — (Remodes), 232.  
 contortilinea (Alcis), 245.  
 contracta (Oreta), 16.  
 convergens (Ourapteryx), 75.  
 — (Parasygnia), 79, 80.  
 conversa (Simotricha), 396.  
 Cophophlebia, 116.  
 Copidryas, 312.  
 coquina (Gymnoscelis), 69, 228.  
 cora (Thaumastura), 7, 8.  
 Coracia, 374.  
 coreensis (Galerida), 146, 147.  
 cornutus (Gymnodactylus), 105.  
 — (Passalus), 286.  
 coronatus (Phyllergates), 517.  
 corrasata (Triphosa), 73.  
 correspondens (Eugnesia), 77.  
 corruptata (Neagathia), 426.  
 coruscans (Waigeum), 367.  
 Corvidae, 371.  
 Corvus, 267, 371—376, 522.  
 Corymica, 116.  
 corydoni (Heliocopris), 185.  
 Cosmogonia, 210.  
 Cossidae, 307.  
 costae (Certhia), 137, 139.  
 costalis (Calluga), 228.  
 — (Hypsopygia), 126.  
 — (Nothomiza), 120.  
 costata (Chelonia), 335.  
 — (Eudule), 456.  
 costinigrata (Acropteryx), 21.  
 costinotata (Neodora), 497.  
 — (Nothomiza), 239.  
 costipuncta (Cyclomia), 489.  
 Cosymbia, 54, 217.  
 Craspedia, 50, 217, 247, 392, 432, 434, 443.  
 craspediata (Problepsis), 222.  
 Craspedosis, 241, 397.  
 crassata (Peridela), 110.  
 crassirostris (Nucifraga), 132.  
 — (Zosterops), 172, 519.  
 crassiquama (Sphinctocera), 128.  
 crataegata (Rumia), 122.  
 crenulata (Atyriodes), 419.  
 — (Eubyja), 90.  
 crepuscularia (Epirrhoe), 234.  
 — (Semiiothisa), 478.  
 Crinala, 312.  
 crinipes (Ptychopoda), 224.  
 crinita (Platycerota), 120.  
 cristata (Alauda), 143, 144, 145.  
 — (Coracia), 374.  
 — (Galerida), 142, 147.  
 — (Gymnoscelis), 229.  
 cristatus (Heterops), 145.  
 cruoraria (Chrysolene), 49.  
 cruorata (Eois), 437.  
 Cryptolopa, 158, 171, 524, 525.  
 cnbitata (Odontoptila), 441.  
 cucullatus (Phyllergates), 517.  
 Culicicapa, 158, 526.  
 cumingi (Megapodius), 166.  
 enneifascia (Synecta), 473.  
 cupraria (Eudule), 456.  
 cupreata (Eumelea), 29.  
 cupreipennis (Aglactis), 2, 4, 9.



- eūpreiventris (Eriocnemis), 148.  
 eūpreum (Aphengium), 187.  
 curticornis (Remodes), 231, 232.  
 curvifascia (Peridela), 110.  
 curvigntta (Anisogamia), 34.  
 curvilinea (Hebdomophruda), 101.  
 — (Spilocraspeda), 505.  
 curviplena (Lipomelia), 439.  
 Cuscus, 514.  
 Cusiala, 90.  
 cuspidatus (Passalotaenius), 289.  
 cyaneicollis (Cyanomyia), 3, 4, 6.  
 cyanifera (Milionia), 510, 512, 513.  
 cyanocephalus (Monachalcyon), 163.  
 Cyanolesbia, 2, 3, 4, 529.  
 Cyanomyia, 3, 4, 6.  
 cyanotis (Cittura), 163.  
 cyanoxantha (Xanthomima), 86, 243.  
 Cyclomia, 489.  
 Cyclura, 14.  
 cylindraceus (Aulacoeyclus), 280.  
 — (Comacupes), 285.  
 Cylindrocaulus, 304.  
 Cyllopoda, 419.  
 Cyllopodinae, 419.  
 Cymatophora, 466.  
 Cyrtostomus, 156.  
 daguanus (Gymnognathus), 174.  
 dama (Aganais), 355.  
 — (Asota), 355.  
 — (Hypsa), 346, 347, 354, 355.  
 — (Noctua), 355.  
 Damalis, 315, 317, 339.  
 daphne (Chlorostilbon), 150, 151.  
 Daphnis, 307.  
 Darisa, 247, 398.  
 darsania (Asota), 315, 326.  
 — (Hypsa), 326.  
 daudini (Testudo), 407, 408.  
 dayi (Hyla), 406.  
 debiliata (Semiothisa), 479, 483.  
 debilis (Chondrocephalus), 302.  
 decessata (Traminda), 65.  
 Decetia, 24, 412.  
 Decetiodes, 412.  
 decipiens (Petrejus), 291.  
 decolorata (Brachycola), 215.  
 — (Oenochroma), 206.  
 — (Ozola), 207.  
 decorata (Cosmogonia), 210.  
 — (Thalerura), 210.  
 decoratus (Gymnognathus), 175.  
 Dectochilus, 490.  
 deerraria (Tephрина), 112.  
 deflavata (Fascellina), 256.  
 Deilimia, 462.  
 deiliniata (Craspedia), 433.  
 Deiliiniac, 76, 237, 396, 462.  
 deiphobus (Papilio), 181.  
 deiphontes (Papilio), 181.  
 deipylus (Papilio), 181.  
 deletaria (Bapta), 255.  
 deliaria (Problepsis), 59.  
 delicata (Haemalea), 439.  
 delicatior (Uliocnemis), 391.  
 delicatula (Epiplema), 202.  
 — (Strix), 264, 269.  
 delphinae (Petasophora), 148.  
 deltae (Galerida), 144—147.  
 deludens (Syrphizodes), 506.  
 delusa (Perissopteryx), 477.  
 Dendrocygna, 166.  
 denigrata (Remodes), 66.  
 densicornis (Craspedia), 392.  
 dentata (Anisogamia), 33, 34.  
 dentifascia (Iodis), 212.  
 deutilinea (Autitrygodes), 47.  
 — (Phaselia), 245.  
 — (Prochasma), 82.  
 — (Racheospila), 430.  
 derasata (Strigina), 382.  
 derbyi (Eriocnemis), 531.  
 Derxena, 206.  
 deserta (Craspedia), 51, 52.  
 deserti (Ammomanes), 140, 141.  
 designata (Xanthorhoe), 75.  
 detenta (Proholosceles), 213.  
 deustata (Anisogonia), 486.  
 deva (Galerida), 142, 147.  
 — (Spizalauda), 142.  
 devexata (Rhomborista), 14, 45, 371.  
 deviaria (Chrysolene), 49, 50.  
 deyrollei (Taeniocerus), 275.  
 diana (Agauais), 331.  
 — (Asota), 315, 331.  
 — (Hypsa), 331.  
 Dicaeum, 155, 161, 264, 518.  
 Dichromatopodia, 435, 506.  
 dichlorhyncha (Pelargopsis), 163.  
 Dierurus, 162.  
 dicta (Aganais), 344, 350.  
 — (Asota), 344.  
 — (Hypsa), 344—350.  
 didiformis (Anomalopteryx), 190.  
 didina (Meionornis), 194.  
 diducta (Syndromodes), 45.  
 differens (Darisa), 398.  
 — (Metallochloa), 41.  
 — (Spilocraspeda), 505.  
 — (Stenaleidia), 471.  
 diganmata (Problepsis), 59.  
 dilatus (Aulacoeyclus), 281, 282.  
 dilucida (Chrysolene), 49.  
 — (Tanaostyla), 422.  
 diluta (Asota), 348.  
 — (Rhipidura), 525.  
 — (Tridrepana), 18.  
 Dinornithidae, 188—191.

- dione (*Nychitona*), 153.  
*Diphlogaena*, 2, 4, 5, 9.  
*Diplodesma*, 389.  
*Diplurodes*, 93.  
*Dipriodonta*, 14.  
*Dirades*, 200, 384.  
*discata* (*Abraxas*), 86.  
 — (*Arycanda*), 83.  
 — (*Chlorostrota*), 389.  
 — (*Craspedia*), 218.  
 — (*Derxena*), 206.  
 — (*Epiplema*), 202.  
*discoidalis* (*Asota*), 327.  
*discolor* (*Asota*), 323.  
 — (*Certhia*), 138.  
 — (*Paraprasina*), 43.  
*discreta* (*Hypsa*), 334.  
*disjunctus* (*Passalus*), 286.  
*dispar* (*Ochyria*), 72.  
 — (*Parametrodes*), 250.  
*disparata* (*Eulype*), 234.  
*dispartita* (*Euchloris*), 390.  
*dissectuens* (*Cinnyris*), 155, 156.  
*dissessa* (*Probolosceles*), 213.  
*dissimilis* (*Anisographe*), 254.  
 — (*Darisa*), 247.  
*dissimulans* (*Banisia*), 380.  
 — (*Pyralis*), 126.  
*dissocia* (*Tephрина*), 112.  
*dissociata* (*Xanthorhoe*), 73, 74.  
*dissonans* (*Craspedia*), 51.  
*Dissoprugna*, 22.  
*distincta* (*Magida*), 494.  
*distinctus* (*Passalus*), 286.  
*distinguenda* (*Gonodela*), 106, 108.  
*divapala* (*Chloromachia*), 209.  
*divaricata* (*Gathynia*), 26.  
 — (*Lipomelia*), 439.  
*diversicolor* (*Letchena*), 381.  
 — (*Oligopleura*), 449.  
*diversilinea* (*Anonychia*), 101.  
*djampeana* (*Cacatua*), 164, 165.  
*djampeanus* (*Trichoglossus*), 172.  
*Docephora*, 449.  
*Docimastes*, 9.  
*dognini* (*Sieya*), 503.  
*dohertyi* (*Asota*), 314, 315, 340.  
 — (*Banisia*), 196.  
 — (*Craspedia*), 393.  
 — (*Daphnis*), 307.  
 — (*Edoliosoma*), 523.  
 — (*Geocichla*), 515.  
 — (*Lophozosterops*), 1, 7, 169, 171, 521.  
 — (*Milionia*), 313, 512.  
*dolosa* (*Micrologia*), 125.  
*domesticalis* (*Pyralis*), 126.  
*dominicus* (*Charadrius*), 272.  
*donovani* (*Xylentes*), 307.  
*dora* (*Nelo*), 464.  
*doriai* (*Ceratus*), 177.  
*dorsenotatus* (*Gymnognathus*), 174.  
*doryca* (*Aganais*), 354.  
 — (*Asota*), 330, 354—356.  
 — (*Hypsa*), 352, 353.  
*doubledayi* (*Iache*), 530.  
*draco* (*Epiplema*), 413.  
*Drepana*, 15.  
*Drepanulidae*, 12, 195, 378.  
*Dryadopsis*, 424, 425.  
*Dryocoetis*, 96.  
*dubiosa* (*Milionia*), 511.  
*dubium* (*Scissirostrum*), 162.  
*dubius* (*Heliangelus*), 532.  
*dulciferata* (*Amygdalopteryx*), 451.  
*dulitana* (*Milionia*), 510.  
*dumetoria* (*Erythromyias*), 524.  
*duplicifimbria* (*Strigina*), 383.  
*duplicilinea* (*Gonodela*), 107.  
*durvillei* (*Coeytia*), 509.  
*dybowskii* (*Eriocnemis*), 8.  
*Dysephyra*, 435.  
  
*Eariodes*, 463.  
*ecclipticus* (*Popilius*), 298.  
*Eelectus*, 514.  
*ectochlora* (*Gymnoscelis*), 70.  
*Ectropis*, 93, 248.  
*edeutata* (*Phalacra*), 195.  
*edentulus* (*Aulacocyclus*), 280—282.  
*edmondsii* (*Tetraxis*), 506.  
*Edoliosoma*, 523.  
*efformata* (*Euchloris*), 390.  
*egens* (*Aganais*), 321.  
 — (*Asota*), 314, 315, 320, 326, 357.  
 — (*Damalis*), 321—325.  
 — (*Hypsa*), 320—325.  
*Egernia*, 405.  
*elegans* (*Miliouia*), 313, 511.  
 — (*Perusia*), 501.  
*elephantina* (*Testudo*), 407.  
*elliotti* (*Galerida*), 141.  
*emersaria* (*Macaria*), 399.  
 — (*Semiothisa*), 399.  
*Emeus*, 189.  
*emiliae* (*Chlorocharis*), 157.  
*enca* (*Corvus*), 267.  
*Endotricha*, 129.  
*Endotrichinae*, 129.  
*enganensis* (*Asota*), 345.  
*enhydria* (*Hexeris*), 401.  
*Eunomiae*, 115, 254, 400, 402, 486.  
*ensiferus* (*Docimastes*), 9.  
*Eois*, 219, 436—438, 446.  
*ephippium* (*Mus*), 263.  
*ephyrata* (*Ptochophyla*), 69.  
*Epicosymbia*, 51.  
*epionata* (*Paracrocota*), 258.  
*Epiplema*, 25, 201—204, 385, 412.  
*Epiplemidae*, 24, 200, 384, 408, 410.

Epirrhoe, 72, 234, 452.  
 Episothalma, 38.  
 Episteme, 310.  
 Erateina, 459.  
 erebata (Camptogramma), 451.  
 Eremita, 371.  
 eremita (Comatibis), 371—376.  
 — (Corvus), 373—376.  
 — (Upupa), 371—376.  
 Ergolis, 153.  
 erici (Cartaletis), 28.  
 Erilyces, 421.  
 Eriocnemis, 8, 148, 530, 531.  
 Erionomus, 304.  
 Eriopterus, 306.  
 Erosia, 411, 494.  
 erycinaria (Dissoprimum), 22.  
 Erycinidae, 262.  
 erythrochlams (Ammomanes), 141.  
 erythrogastra (Motacilla), 167.  
 — (Ruticilla), 167.  
 — (Sylvia), 167.  
 Erythromyias, 524.  
 erythronata (Geocichla), 161.  
 ethocles (Charaxes), 508.  
 Eubyja, 90, 91.  
 Euchera, 15.  
 Euchloris, 37, 38, 43, 210, 389.  
 euchloris (Chlorostilbon), 151.  
 — (Panychlora), 151.  
 Encrostes, 38, 211.  
 Eudisia, 530.  
 Eudule, 440, 456.  
 Eudulinae, 456.  
 Eudulophasia, 456.  
 Eudynamis, 164.  
 Euephyra, 438.  
 Eugnesia, 76, 396.  
 Eulabes, 522.  
 Eulype, 234.  
 Eumelca, 29, 387.  
 Euomoea, 124.  
 Euphalacra, 195, 196.  
 Euphia, 234.  
 euphrosyne (Arhopala), 366.  
 Eupithecia, 395.  
 eurisus (Arhopala), 366.  
 euroa (Asota), 316.  
 Eurystomus, 159.  
 Eurytaphria, 255.  
 Eurythecodes, 117.  
 Eusarca, 490.  
 eusemioides (Aganais), 336.  
 — (Hypsa), 336.  
 — (Methypsa), 336.  
 Eustenophasma, 291.  
 Eutomopepla, 492.  
 Euxena, 39.  
 eva (Diphlogaena), 4, 5.  
 everetti (Androphilus), 155.

everetti (Gerygone), 264, 267.  
 — (Orthocicila), 170, 515.  
 — (Phyllergates), 517.  
 — (Pnoepyga), 168, 515, 516.  
 — (Xanthorhoe), 74.  
 ewingi (Ptilinopus), 264, 270, 271.  
 exangulata (Dirades), 200.  
 exarhatus (Pencelopides), 164.  
 excellens (Cinnyris), 11.  
 — (Ourapteryx), 75.  
 excisa (Cyclura), 14.  
 exclamationis (Heliocopriss), 186.  
 excursaria (Mnesigea), 95.  
 Exelis, 467.  
 exiliota (Ptychopoda), 224.  
 exilis (Cisticola), 161, 515.  
 exortis (Heliangelus), 532.  
 expositus (Soranus), 294.  
 expulsaria (Oenoptila), 475.  
 exquisita (Eois), 219.  
 extensa (Asota), 345, 350.  
 externa (Azelinopsis), 115.  
 extersaria (Hymenomima), 467.  
 extremata (Lycauges), 57.  
 falcata (Traminda), 64.  
 falcicuellus (Ibis), 371.  
 fallax (Ceyxopsis), 163.  
 — (Decetiodides), 412.  
 falsus (Passalotenus), 289.  
 familiaris (Certhia), 136, 139.  
 fauny (Myrtis), 3, 9.  
 farinalis (Pyralis), 126.  
 farinosa (Rhodostrophia), 394.  
 — (Stenalcidia), 471.  
 Fascellina, 118, 256.  
 fasciata (Ascotis), 92.  
 — (Ozola), 30.  
 — (Strophidia), 23.  
 fasciolata (Perizoma), 454.  
 faustiata (Alcis), 246.  
 felderi (Tristerthus), 283.  
 felschei (Popilius), 298.  
 femoralis (Gymnognathus), 175.  
 fergussonis (Asota), 362.  
 ferrugata (Xanthorhoe), 74, 456.  
 ferruginata (Cambegia), 447.  
 ferruginea (Ammomanes), 141.  
 — (Argyrotome), 459.  
 fibulata (Craspedia), 53, 247, 393, 443.  
 fidelis (Semiothisa), 479.  
 Fidonia, 100, 459, 461, 475.  
 fidoniinae, 99, 473.  
 figurata (Somatina), 61.  
 finschi (Trichostoma), 155, 159, 161.  
 flagrans (Aethopyga), 11.  
 — (Cinnyris), 11.  
 flammea (Strix), 264, 269, 270.  
 flava (Galerida), 144—147.

- flavareata* (*Brachycola*), 215.  
*flavata* (*Gandaritis*), 235.  
 — (*Pristostegania*), 81.  
*flaveola* (*Gerygone*), 158, 162.  
*flavescens* (*Troides*), 180.  
*flavibasis* (*Hylemera*), 241.  
*flaviceps* (*Siculodopsis*), 416.  
*flavicollis* (*Ptilinopus*), 271.  
*flavicosta* (*Thalassudes*), 214.  
 — (*Zamarada*), 122.  
*flavdiventris* (*Sporaeiginthus*), 522.  
*flavifimbria* (*Aplodes*), 423.  
*flavilinea* (*Hydrelia*), 227.  
 — (*Oenospila*), 212.  
*flavimargo* (*Callinaias*), 129.  
*flavinigra* (*Fidonia*), 475.  
*flavipectus* (*Heterusia*), 457.  
*flavirubra* (*Perixera*), 215.  
*flavitincta* (*Hemistola*), 211.  
*flaviventris* (*Asota*), 332.  
*flavocellata* (*Heterusia*), 457.  
*flavostriata* (*Aethopyga*), 161.  
*flavotogata* (*Milionia*), 512.  
*flexilimes* (*Cartaetis*), 28.  
*flexilinea* (*Azata*), 251.  
*fleximargo* (*Mesoglypta*), 205.  
*floccosa* (*Zanclopteryx*), 418, 419.  
*flora* (*Nelo*), 463.  
*florensis* (*Corvus*), 522.  
*floresiana* (*Crinala*), 312.  
*floris* (*Artamides*), 523.  
 — (*Brachypteryx*), 170, 516.  
 — (*Cryptolopha*), 171, 524.  
 — (*Graeculus*), 523.  
 — (*Terpsiphone*), 526.  
*fluidata* (*Gubaria*), 108.  
*forata* (*Drepana*), 15.  
*forsteni* (*Trichoglossus*), 172.  
*fortis* (*Tristorthus*), 283.  
*foveata* (*Calichodes*), 246.  
*foveicollis* (*Comacupes*), 284.  
*foveipunctatus* (*Aulacocyclus*), 278.  
*fracticornis* (*Aulacocyclus*), 279, 282.  
*fractimacula* (*Pithecia*), 242.  
*frantzi* (*Popilius*), 297.  
*fraterculus* (*Aumoumancus*), 141.  
 — (*Phaethornis*), 529.  
*frenata* (*Cinnyris*), 155, 156, 161.  
*frenatus* (*Cyrtostomus*), 156.  
*frerei* (*Egernia*), 405.  
*frondaria* (*Synchlora*), 428.  
*fronticornis* (*Ceracupes*), 274.  
*fruhstorferi* (*Mimeusemia*), 183, 311.  
*fuciphaga* (*Collocalia*), 268.  
*fulgorigera* (*Arcina*), 124.  
*fulgurata* (*Halterophora*), 39.  
*fulvata* (*Euphia*), 235.  
*fulvia* (*Aganais*), 335.  
 — (*Asota*), 315, 335, 357.  
 — (*Chelonia*), 335.  
*fulvia* (*Noctua*), 335.  
 — (*Spilosoma*), 335.  
*fulvifusa* (*Rhopalista*), 455.  
*fulvilauta* (*Ausaris*), 12.  
*fulvilunata* (*Teblenia*), 18.  
*fulvisparsa* (*Acadra*), 104.  
*fulvitincta* (*Cleora*), 466.  
*fulvotincta* (*Pachycephala*), 523.  
*fulvus* (*Charadrius*), 272.  
 — (*Microstictus*), 164.  
*fumatis* (*Zenzerodes*), 410.  
*fumicosta* (*Gathynia*), 26.  
*fumosa* (*Hydatocapnia*), 78.  
*funchris* (*Galba*), 178.  
 — (*Heterusia*), 457.  
 — (*Photocotosia*), 235.  
 — (*Picus*), 164.  
*furcata* (*Tephрина*), 112.  
 — (*Thalurania*), 149.  
*furcatoides* (*Thalurania*), 149.  
*furcicornis* (*Aulacocyclus*), 280.  
*furfurata* (*Craspedia*), 218.  
*furva* (*Petelia*), 398.  
*fusca* (*Acanthochoera*), 369.  
 — (*Stenaleidia*), 472.  
*fuscata* (*Epiplema*), 385.  
 — (*Goniopterocha*), 231.  
*fuscescens* (*Craspedia*), 432.  
*fuscibrunnea* (*Alcis*), 96.  
*fuscicapilla* (*Cisticola*), 515.  
*fuscicollis* (*Phalacrocorax*), 273.  
*fuscifimbria* (*Micronia*), 22.  
*fuscigrisea* (*Cidaria*), 236.  
*galaxia* (*Charaxes*), 508.  
*Galba*, 178.  
*galeopsis* (*Eustenophasma*), 491.  
*Galerida*, 142.  
*Galerita*, 143, 146.  
*galerita* (*Alauda*), 145.  
*gallica* (*Galerida*), 146.  
*gambrius* (*Papilio*), 181.  
*gamuza* (*Azelina*), 487.  
*Gandaritis*, 235.  
*ganglbaueri* (*Eriopterus*), 306.  
*Gathynia*, 26, 204, 410, 414, 415.  
*Gazzola*, 159.  
*Gelasma*, 425.  
*gelatina* (*Epirrhoe*), 452.  
*geminata* (*Tephрина*), 113.  
*genuflexus* (*Triorisma*), 395.  
*Genusa*, 88.  
*Geocichla*, 161, 515.  
*geoffroyi* (*Ochthodromus*), 272.  
*Geometridae*, 27, 206, 385, 416, 510.  
*Geometrinae*, 32, 208, 388, 423.  
*Geopelia*, 271.  
*georgiata* (*Arycanda*), 83.  
*gerana* (*Acidalia*), 434.

- germaui (Gymnognathus), 173, 174.  
 Geronticus, 376.  
 Gerygone, 158, 162, 267, 525.  
 ghara (Asota), 330, 342, 354, 355.  
 — (Hypsa), 354.  
 gibbosus (Popilius), 299, 300.  
 gigantea (Testudo), 407.  
 gigas (Patagona), 2, 3, 4, 6, 7.  
 gilolensis (Milionia), 512.  
 glabriusculus (Aulacocyclus), 280, 282.  
 glauca (Milionia), 510.  
 — (Traminda), 64.  
 glaucaria (Aplodes), 423, 428.  
 Glaucopteryx, 235.  
 Goniopteroloha, 230.  
 Gonodela, 251.  
 Gonophaga, 400.  
 gopala (Cylopoda), 420.  
 gorgo (Cyanolesbia), 529.  
 gouldi (Lesbia), 5, 9.  
 — (Pteropus), 263.  
 gracilis (Petrejus), 290.  
 gracillima (Albara), 12.  
 graculus (Corvus), 374.  
 — (Pyrrhocorax), 375.  
 grandis (Ruticilla), 167.  
 granulifrons (Chondrocephalus), 302.  
 granulum (Chondrocephalus), 302.  
 grata (Malia), 159.  
 Graucalus, 11, 158, 162, 523.  
 grayi (Ammomanes), 141.  
 grisea (Anonychia), 102.  
 — (Chloroclystis), 227.  
 — (Eubyja), 91.  
 — (Gymnoscelis), 229.  
 griseata (Stibarostoma), 226.  
 griseatus (Caprimulgus), 268.  
 griseiceps (Astur), 165.  
 griseiventris (Cyanolesbia), 2, 3, 4.  
 griseola (Synecta), 472, 473.  
 griseotincta (Neoreta), 378.  
 — (Oreta), 378.  
 grisescens (Cataspilates), 474.  
 Gubaria, 108, 109.  
 guderiana (Charaxes), 507.  
 guianensis (Phaethornis), 529.  
 gularis (Ptilinopus), 165.  
 gustavi (Anthus), 521.  
 Gymnodactylus, 405.  
 Gymnognathus, 173.  
 Gymnopera, 68.  
 Gymnoscelis, 69, 70, 228.  
 Gynopteryx, 492, 493.  
 haagi (Soranus), 296.  
 haberi (Odontoteneius), 290.  
 Haemulea, 438, 439.  
 haesitandus (Spilospizias), 159.  
 hagedash (Hagedasbia), 377.  
 Hagedashia, 377.  
 Halcyon, 158, 268, 514.  
 Haliaetus, 514.  
 Haliastur, 270.  
 Halterophora, 39.  
 hamata (Nucifraga), 132.  
 Hammaptera, 452.  
 Hebdomophruda, 100.  
 hebes (Popilius), 300.  
 hebetior (Bapta), 462.  
 hectori (Megapteryx), 188—194.  
 Hedyle, 418.  
 Heliangelus, 532.  
 Helianthea, 530.  
 helianthea (Culicicapa), 158.  
 heliconia (Aganais), 338, 352.  
 — (Asota), 314—356.  
 — (Hypsa), 337—352.  
 — (Noctua), 343—352.  
 — (Phalaena), 343, 352.  
 heliconiaria (Hedyle), 418.  
 heliconioides (Asota), 315, 338.  
 — (Hypsa), 338.  
 — (Neochera), 338.  
 Helicopage, 390.  
 Heliocopris, 185.  
 Heliotrypha, 9, 533.  
 helius (Arhopala), 367.  
 heloisae (Atthis), 2.  
 hemicyclata (Problepsis), 59.  
 Hemipogon, 54.  
 hemispila (Nucifraga), 135.  
 Hemistola, 211.  
 Hemitheia, 39.  
 hemixantha (Microeca), 524.  
 hepaticata (Cohanilla), 13.  
 Herbita, 493.  
 hermaphroditus (Paradoxurus), 514.  
 hermearia (Anthyperythra), 255.  
 Herodias, 263.  
 heros (Oileus), 288.  
 Hesperomiza, 493.  
 Heterophrya, 439.  
 Heterolocha, 118, 133.  
 Heteromiza, 118, 256.  
 Heterops, 145.  
 heterospila (Phrissocles), 222.  
 Heterostegane, 78.  
 Heterusia, 456.  
 Heterusiinae, 456.  
 Hexeris, 401.  
 himalayana (Certhia), 138.  
 Himera, 494.  
 Hippocrita, 317.  
 hirtaria (Biston), 386.  
 hirtus (Proculjeus), 294.  
 Hirundo, 267, 526.  
 hodgsoni (Certhia), 138.  
 hololissa (Testudo), 407.  
 honestus (Rimor), 287.



- horsfieldi (Mirafra), 266, 521.  
 huonis (Immetalia), 184.  
 hyalina (Oospila), 427.  
 hyalodisca (Neoreta), 378.  
     (Oreta), 378.  
 Hydatocapnia, 78.  
 Hydrelia, 226.  
 Hydrimeninae, 72, 233, 451.  
 Hyla, 406.  
 Hylemera, 241, 397.  
 Hymenocharta, 84.  
 Hymenomima, 467, 469, 472.  
 Hyostomodes, 252.  
 Hyperplema, 414.  
 hyperythra (Musciapula), 158, 524.  
 hyperythraia (Amaurina), 447.  
 hyphenata (Banisia), 198.  
 Hypochroma, 207.  
 Hypochrysops, 367.  
 Hypococla, 41.  
 hypocyanea (Cyllopoda), 419.  
 Hypolamprus, 198, 380.  
 hypoleucus (Tringoides), 273.  
 Hyposcotis, 468.  
 Hyposidra, 119, 257, 401.  
 Hypotaenidia, 166, 272.  
 hypothous (Daphnis), 307.  
 Hypothymis, 158, 162, 525.  
 Hypsa, 315, 316—319, 365.  
 Hypselotropis, 173.  
 Hypsidac, 311.  
 Hypsopygia, 125.  
 Iache, 530.  
 Ibis, 370—376.  
 idaliae (Phaethornis), 529.  
 Idiodes, 257.  
 ignifera (Rhopalista), 455.  
 igniferum (Dicaeum), 518.  
 illepidaria (Anisodes), 221.  
 illineata (Parrhesia), 465.  
 illitirata (Acropterus), 198, 199.  
     — (Anthyperythra), 255.  
 imbuta (Perixera), 58.  
 imitata (Cenoctenucha), 115.  
 imitator (Taeniocerus), 276.  
 immoaculata (Apatenia), 176.  
     — (Corymica), 116.  
     — (Gynopteryx), 493.  
 Immetalia, 184.  
 impar (Gonodela), 107.  
 impicta (Semiolitha), 480.  
 impunctata (Barrana), 28.  
     — (Euerostes), 211.  
     — (Lygropis), 129.  
     — (Tetraxis), 506.  
 imo quilinea (Miantochora), 111.  
 incaudata (Ourapteryx), 75.  
 incisus (Undulifer), 303.  
 includaria (Auophylla), 424.  
 inconspicua (Tephрина), 113.  
 inculta (Saucerotia), 530.  
 indecretata (Microloxia), 42.  
 indentata (Diplurodes), 93.  
 indica (Asota), 320, 321.  
     — (Thalophaps), 165.  
 indularia (Heterostegane), 78.  
     — (Stegania), 78.  
 Induna, 55.  
 indus (Haliastur), 270.  
 ineffectaria (Isandria), 469.  
 inermis (Phyllurus), 405.  
 inexcisa (Semiolitha), 480.  
 infantilis (Azelina), 488.  
 informis (Nyetibates), 416.  
     — (Omiza), 120.  
     — (Strophoptila), 225.  
 infota (Craspedia), 434.  
 innomaria (Gynopteryx), 492.  
 innotata (Anisogonia), 486.  
     — (Spilocraspeda), 505.  
     — (Zomia), 402.  
 inobtrusa (Mnesithetis), 393.  
 inornata (Brachycola), 216.  
     — (Gerygone), 267.  
 inquinata (Sicya), 503.  
 insignata (Adeixis), 27.  
 insignis (Decetia), 25.  
 instabilata (Epiplema), 25, 385.  
 insticta (Acropterus), 21.  
 insuavis (Eois), 220.  
 insularis (Taeniopygia), 266.  
 insulsata (Euxena), 39.  
 intacta (Aganais), 347.  
     — (Asota), 338, 343, 347, 350.  
     — (Hypsa), 347—350.  
 integra (Dirades), 200.  
     — (Miantonota), 425.  
 intesa (Eugnesia), 396.  
     — (Nothomiza), 120.  
 interalbicans (Banisia), 379.  
 interfusata (Siriopteryx), 122.  
 intergens (Soranus), 295.  
 intermedia (Asota), 359.  
     — (Zosterops), 157, 161, 520.  
 intermedius (Haliastur), 270.  
     — (Monachaleyon), 163.  
 intermissa (Asota), 323.  
 interpres (Arenaria), 272.  
 interrupta (Ligdia), 88.  
     — (Peridela), 110, 111.  
     — (Petelia), 476.  
 intervenata (Epiplema), 113.  
 invalida (Microxena), 238.  
 invaria (Eudulophasia), 456.  
 invasata (Abraxas), 87.  
     — (Auophylla), 424.  
 invenusta (Syndromodes), 46.  
 inversa (Asota), 324.  
 invisibilis (Aplochloa), 76.

- iodamia (Aganais), 334.  
 — (Asota), 315, 334.  
 — (Hypsa), 334.  
 Iodis, 212, 425.  
 iolata (Petasophora), 3—7.  
 Iramba, 70.  
 Iridopsis, 469.  
 iris (Diphlogaena), 9.  
 isabella (Stiltia), 272.  
 isabellina (Ammomanes), 141.  
 — (Galerida), 142, 144—147.  
 — (Oenohimnas), 165.  
 Isandria, 469.  
 Isoplenia, 55.  
 ispidula (Alcedo), 11, 160, 163.  
 ispidoides (Alcedo), 160, 163.  
 isthmia (Asota), 315, 364, 365.  
 — (Hypsa), 364.  
 — (Neochera), 364.  
 ithome (Appias), 153.  
 Ixias, 153.  
 Iyngipicus, 158.  
 Iza, 408.  
  
 jabensis (Asota), 332.  
 jagori (Munia), 11.  
 jalappensis (Pseudacanthus), 305.  
 jamaicensis (Ptychopoda), 443.  
 japonica (Certhia), 138, 139.  
 — (Hirundo), 526.  
 japonicus (Nucifraga), 134, 136.  
 jaspidata (Racheospila), 430.  
 jaspidea (Cyclomia), 490.  
 — (Hesperomiza), 494.  
 javana (Aganais), 332.  
 — (Agape), 333.  
 — (Asota), 314—332.  
 — (Bombyx), 332.  
 — (Damalis), 333.  
 — (Hypsa), 332.  
 — (Phalaena), 332.  
 javanica (Hirundo), 267.  
 — (Mirafr), 266.  
 javanicus (Centropus), 269.  
 javensis (Conehocomete), 216.  
 — (Medasina), 95.  
 jelskii (Thalurania), 149.  
 junctistriatus (Trienurgus), 306.  
 jupiter (Charaxes), 508.  
  
 kalaonica (Asota), 349.  
 karinthiaca (Galerida), 146.  
 kaupi (Aulacocyclus), 280.  
 keianus (Charaxes), 508.  
 kinabaluensis (Asota), 315, 365.  
 kingi (Cyanolesbia), 529.  
 kiriwinae (Asota), 356.  
 klingelhoferi (Popilius), 300.  
 kochii (Graeculus), 11.  
 kuhli (Scotophilus), 263.  
  
 kuluensis (Asota), 318.  
  
 lacrimans (Ptilotis), 369.  
 lactea (Dirades), 385.  
 lactenta (Asota), 358, 359.  
 — (Chogada), 247.  
 — (Hypsa), 358.  
 laevicornis (Tristortilus), 283.  
 laevior (Ogyges), 292.  
 laevipennis (Uraspedia), 52.  
 laevis (Carphodactylus), 403, 406.  
 laevissimus (Ogyges), 291.  
 lafayi (Aplogompha), 459.  
 Lalage, 158, 162, 267, 514.  
 Lampadopteryx, 75.  
 Lampornis, 531.  
 Lampribis, 377.  
 lanceolata (Aganais), 353.  
 — (Asota), 342, 351, 353, 355.  
 — (Hypsa), 353.  
 languescens (Iodis), 425.  
 Lanius, 522.  
 lansbergi (Pericrocotus), 523.  
 lara (Asota), 343—347.  
 Larentia, 451.  
 Lasiochlora, 45.  
 Lassaba, 398.  
 laticornis (Pseudacanthus), 304, 306.  
 latigrisea (Epirrhoe), 72.  
 latilineata (Microloxia), 42.  
 latimargo (Cyllopoda), 420.  
 — (Zamarada), 261.  
 latonaria (Argyris), 59.  
 leautungensis (Alauda), 146.  
 — (Galerida), 145, 146, 147.  
 lemonia (Cyllopoda), 420.  
 lempiji (Pisorhina), 527.  
 lentiginosaria (Ctenoctenucha), 115.  
 lenzi (Popilius), 301.  
 leopardata (Hypolamprus), 380.  
 lepida (Anthreptes), 519.  
 lepidaria (Comibaena), 424.  
 Lepiodes, 94.  
 Leptacme, 56.  
 Leptoctenopsis, 417.  
 leptorhynchus (Nucifraga), 132.  
 Leptostegna, 233.  
 Lesbia, 4, 5, 7, 9.  
 Letchena, 381.  
 leucocephalata (Dirades), 381.  
 leucogaster (Artamus), 522.  
 — (Haliaetus), 514.  
 Leucomica, 494.  
 leuconaura (Aganais), 355, 356.  
 — (Asota), 356.  
 — (Hypsa), 356.  
 leuconota (Aganais), 338.  
 — (Asota), 338.  
 — (Hypsa), 337.  
 Leucootha, 415.

- leucophaea (Amazilia), 1, 2, 6, 8.  
 leucops (Dicrurus), 162.  
 leucopygialis (Lalage), 162.  
 leucopygius (Graucalus), 158, 162.  
 leucospilaria (Leucomiera), 191.  
 Leucula, 464.  
 lichenosus (Phyllurus), 404, 405, 406.  
 Lichtensteinipicus, 164.  
 Ligdia, 88.  
 lignata (Gathynia), 204.  
 — (Pergama), 499.  
 lignicolor (Paracomistis), 498.  
 — (Scotopteryx), 90.  
 lilacina (Albara), 12.  
 — (Microgonia), 496.  
 limitata (Ptychopoda), 443.  
 — (Syntaracta), 396.  
 Limonites, 273.  
 linearis (Hyposidra), 257, 401.  
 — (Xyloloba), 597.  
 lineata (Asota), 330.  
 — (Aspilonaxa), 386, 387.  
 — (Ptochophyle), 60.  
 lineolata (Cambogia), 448.  
 Lipomelia, 220, 439.  
 Lissostolodes, 493.  
 lithina (Scioglyptis), 99.  
 lituratus (Xylentes), 307, 308.  
 Loboeraspeda, 242.  
 Loboparadisea, 169.  
 Loddigesia, 9, 10.  
 lombokensis (Mimeuscemia), 310.  
 longicarpus (Tephroclystia), 450.  
 longifimbria (Tephroclystia), 450.  
 longimacula (Bordeta), 83.  
 — (Perenia), 89.  
 longipennis (Bapta), 237.  
 longirostris (Eriocnemis), 531.  
 Lophozosterops, 157, 171, 521.  
 Loriculus, 165, 514.  
 lucigerata (Heterusia), 457.  
 lucinda (Simotricha), 395, 396.  
 luctuosa (Myristicivora), 165.  
 ludovicata (Eumelca), 29.  
 lugens (Epiplena), 202.  
 lunifera (Dysephyra), 436.  
 lusitana (Ammomanes), 141.  
 lutea (Galerida), 146.  
 luteiceps (Azata), 251.  
 lutetiae (Helianthica), 530.  
 Luxiaria, 109.  
 Lycauges, 51, 57.  
 Lygris, 236.  
 Lygropis, 129.  
 Macacus, 514.  
 Macaria, 399.  
 macariata (Ectropis), 248.  
 mackloti (Dicaeum), 264, 265.  
 macleayi (Caulifer), 275.  
 macrodaetyla (Certhia), 137.  
 Macropteryx, 11.  
 Macropygia, 165.  
 macrorhyncha (Galerida), 142, 144—146, 147.  
 — (Nucifraga), 132.  
 macrorhynchus (Nucifraga), 131, 132—136.  
 macrorhynchus (Corvus), 267, 514, 522.  
 macrostieta (Asota), 324.  
 maculata (Chloroglyphica), 208.  
 — (Entomopepla), 492.  
 — (Galerida), 146.  
 — (Paradirades), 205.  
 — (Paragonia), 498.  
 — (Scardamia), 240.  
 maculicincta (Abraxas), 87.  
 maculicosta (Azolina), 488.  
 maculifera (Bursada), 84, 240.  
 maculosa (Arycanda), 83.  
 — (Turnix), 166.  
 maculosata (Procypha), 121.  
 maculosus (Turnix), 264, 271.  
 Magida, 494.  
 magna (Galerida), 145—147.  
 magnifica (Daphnis), 307.  
 mailua (Tenaris), 313.  
 major (Bubalis), 377.  
 — (Galerida), 146.  
 — (Macropteryx), 23.  
 — (Panychlora), 151.  
 malabarica (Galerida), 142—147.  
 malaccensis (Anthreptes), 161.  
 malaris (Phaethornis), 529.  
 malayensis (Anthus), 265.  
 malescripta (Cusiala), 90.  
 — (Hemithea), 40.  
 — (Leptacme), 56, 57.  
 Malia, 159.  
 malisa (Asota), 353.  
 — (Hypsa), 353.  
 manadensis (Turacoena), 165.  
 mandibularis (Nycticorax), 272.  
 manifesta (Xenographia), 402.  
 manipurensis (Certhia), 138.  
 mardinata (Lygris), 236.  
 margarita (Odontoptila), 441.  
 margaritata (Metrocampa), 37.  
 — (Problepsis), 223.  
 marginalis (Copidryas), 312.  
 marginata (Asota), 324.  
 — (Chlorostrota), 36.  
 — (Chrysocraspeda), 392.  
 — (Epiorthalma), 38.  
 — (Oospila), 127.  
 — (Ozola), 207.  
 marginatus (Popilius), 299.  
 maria (Pitta), 526.  
 mariorata (Chogada), 247.  
 — (Tephroinopsis), 114.  
 masoni (Comacupes), 285.  
 mastersi (Tachiocerus), 275.

- matthewsi (Panoplites), 9.  
 matutina (Alanda), 145.  
 maugeus (Geopelia), 271.  
 mavors (Heliangelus), 532.  
 Mecoceratinae, 417.  
 Medasina, 95, 96.  
 mediofasciata (Milonia), 510.  
 mediofusca (Micronidia), 238.  
 mediostrigata (Banisia), 197.  
 medius (Anthus), 265, 521.  
 mediusta (Brachycola), 392.  
 — (Perixera), 392.  
 meeki (Immetalia), 184.  
 meforana (Milonia), 512.  
 Megalapteryx, 188—194.  
 Megapodius, 166.  
 megaspilaria (Phorodesma), 44.  
 Megatheca, 230.  
 megisto (Phalaenoides), 311.  
 Meionornis, 188—194.  
 Melanchroia, 463.  
 melanogenys (Adelomyia), 2, 9.  
 melanoleucus (Phalacrocorax), 273.  
 melanope (Motacilla), 521.  
 melanopogon (Taphozous), 263.  
 melanorhyncha (Eudynamis), 164.  
 — (Pelargopsis), 163.  
 Melilestes, 157.  
 Meliphagidae, 369.  
 meliphila (Agyrtia), 151.  
 Melirrhophetes, 369, 370.  
 Melitulas, 236, 452.  
 melliflua (Craspedia), 52.  
 meloda (Melopelia), 6.  
 Melopelia, 6.  
 menete (Aegocera), 311, 312.  
 meonaria (Phyletis), 222.  
 meridionalis (Melilestes), 157.  
 — (Oriolus), 158, 159, 162.  
 — (Pachycephala), 158.  
 — (Phoenicophaeus), 160, 164.  
 — (Stoparola), 158.  
 — (Troides), 180.  
 merionoides (Ergolis), 153.  
 Merops, 164, 268, 514.  
 Mernla, 155.  
 mernlinus (Cacomantis), 164.  
 Meskea, 410.  
 Mesoglypta, 205.  
 Mesomima, 85.  
 Mesopteryx, 188—190.  
 Metallochloa, 41.  
 Metallura, 3, 4, 5, 7, 9.  
 metaspila (Anisogamia), 33.  
 Methypsa, 336.  
 Metrocampa, 37.  
 mexicana (Certhia), 139.  
 mexicanus (Pseudacanthus), 305.  
 mexicaria (Microgonia), 496.  
 meyeri (Cinnyris), 156, 161.  
 Miantochora, 401.  
 Miantonota, 425.  
 micacealis (Pharambara), 382.  
 micaceata (Tasta), 76.  
 micantaria (Bapta), 462.  
 micra (Iodis), 212.  
 Microeca, 170, 524.  
 Microgonia, 495.  
 Micrologia, 124.  
 Microloxia, 42, 212, 390, 426.  
 Micronia, 22, 24.  
 Micronidia, 238.  
 microrhynchum (Rhamphomicon), 530.  
 Microstictus, 158, 164.  
 Microxena, 238.  
 micrura (Myrmia), 268.  
 Milonia, 313, 510, 513.  
 Milvus, 514.  
 mimeticus (Papilio), 314.  
 Mimensemia, 183, 310.  
 mimica (Chloromma), 36.  
 — (Collesis), 37, 210.  
 — (Prochasma), 81.  
 Mimochroa, 116.  
 Mimogonodes, 497.  
 minahasa (Rallina), 165.  
 mindanensis (Artamides), 11.  
 mindarus (Thysonotis), 368.  
 miniata (Rhodogonia), 410.  
 minima (Azelina), 488.  
 — (Chloroclystis), 227.  
 miniosata (Photoscotia), 235.  
 minor (Calornis), 158.  
 — (Nucifraga), 132.  
 — (Tachypetes), 263.  
 minorata (Brachycola), 48, 394.  
 — (Eurytaphria), 255.  
 minuta (Hymenomima), 468.  
 mirabilis (Loddigesia), 9, 10.  
 Mirafr, 266, 521.  
 miranda (Anaca), 509.  
 Mixochloa, 42.  
 mixtata (Oenoptila), 475.  
 Mnesigea, 95.  
 Mnesithetis, 393.  
 modesta (Agraptochlora), 32.  
 mollis (Ceranchia), 399.  
 molucca (Munia), 157, 521.  
 moluccana (Alcedo), 160—163.  
 moluccensis (Tinnunculus), 270.  
 Molybdogompha, 460.  
 Momonipta, 421.  
 Monachalcyon, 153, 160—163.  
 monachus (Artamus), 157.  
 (Monachalcyon), 160—163.  
 moniliata (Abraxas), 87.  
 — (Anisogamia), 34.  
 montana (Certhia), 139.  
 Upupa, 376.  
 montanus (Eremita), 371

- montis (Cryptolopha), 171, 224.  
 monycha (Aganais), 353.  
 — (Asota), 340, 343.  
 — (Attacus), 343.  
 — (Hypsa), 339, 355.  
 — (Phalaena), 343.  
 moorei (Phaethornis), 529.  
 morbillata (Dryadopsis), 425.  
 — (Nemoria), 425.  
 morio (Volvocivora), 162.  
 moritzi (Popilius), 299.  
 mortipax (Heterusia), 457.  
 mosquera (Eriocnemis), 531.  
 Motacilla, 167, 521.  
 mulleri (Tanygnathus), 164.  
 multilincata (Phalacro), 16.  
 multiplagiata (Anophylla), 424.  
 multipunctata (Nucifraga), 135.  
 multistrigata (Gonodactylus), 108.  
 munda (Gelasma), 425.  
 Munia, 11, 157, 161, 266, 521.  
 muricolor (Noreia), 30.  
 — (Rhodostrophia), 61, 224.  
 murina (Asota), 347.  
 Mus, 263.  
 Muscicapa, 525.  
 Muscicapula, 158, 524.  
 muscicolor (Omiza), 120.  
 muscosa (Anisogamia), 35.  
 mutabilis (Azata), 104, 251.  
 — (Cymatophora), 166.  
 mutata (Arctoscelia), 103.  
 Mychonia, 491.  
 mycroceristata (Galerida), 145.  
 Myiagra, 264, 266.  
 myrina (Ethosia), 154.  
 Myristicivora, 165.  
 Myrmia, 2—8.  
 Myrtis, 3—9.  
 mysticus (Popilius), 298.  
 Myzomela, 157.  
 Nadagirodes, 253.  
 nana (Epiplema), 204.  
 — (Eucheria), 15.  
 — (Leucula), 464.  
 — (Nothomiza), 239.  
 nanata (Hemipogon), 54.  
 nanula (Eucrostes), 211.  
 napensis (Chlorostilbon), 150, 151.  
 nasuta (Zamarada), 122.  
 natalensis (Tycoonina), 111.  
 nattereri (Certhia), 137.  
 natunensis (Asota), 346.  
 Naxa, 386.  
 Neagathia, 426.  
 nebulosa (Aganais), 322, 325.  
 — (Asota), 322.  
 — (Hypsa), 322, 325.  
 — (Nobilis), 58.  
 nebulosa (Microgonia), 496.  
 Negeta, 88.  
 neglecta (Collocalia), 264, 268.  
 neglectum (Dicaeum), 264, 265.  
 neglectus (Philemon), 265, 519.  
 nehrkorni (Dicaeum), 155.  
 Nelo, 463, 464.  
 Nemoria, 42, 125, 426.  
 Neochera, 338, 341—364.  
 Neochorista, 440.  
 Neodora, 497.  
 Neopsittacus, 369.  
 Neoreta, 378.  
 Nephelolenca, 498.  
 Nephodia, 464.  
 Nephodiinae, 461.  
 nervosa (Asota), 351.  
 Nesalcis, 96.  
 nesophora (Hypsa), 334.  
 nestor (Himera), 494.  
 neumanni (Bubalis), 377.  
 Neurotoea, 43.  
 nicobarica (Asota), 345.  
 — (Hypsa), 345.  
 nietata (Craspedia), 51.  
 nietitans (Epiplema), 203.  
 nigra (Galba), 178.  
 nigrilabata (Pogonopygia), 240.  
 nigra (Meskea), 410.  
 nigriceps (Galerida), 146.  
 nigrilavata (Parasynegia), 80.  
 nigricola (Eurythecodes), 117.  
 nigricornis (Agraptochlora), 208.  
 — (Lygropis), 130.  
 nigrirorsata (Euphalacro), 195, 196.  
 nigrifrons (Parasynegia), 239.  
 nigrilineata (Oenoptila), 476.  
 nigrimacula (Phellinodes), 418.  
 nigrimaculata (Anisogamia), 35.  
 — (Strepsigonia), 17.  
 nigrimedia (Xanthorhoe), 74.  
 nigrinotata (Craspedia), 52.  
 nigripennis (Episteme), 310.  
 nigriplaga (Cambogia), 448.  
 nigripuncta (Acrotomodes), 486.  
 — (Petrodava), 111.  
 — (Traminda), 225.  
 nigripunctata (Ectropis), 93.  
 — (Spilocraspeda), 505.  
 — (Thalassodes), 46.  
 nigrisculpta (Trichopteria), 68.  
 nigrisquama (Acropterus), 21.  
 nigristica (Thysanopygia), 477.  
 nigristriata (Banisia), 197.  
 nigrivena (Parrhesia), 465.  
 nigrivestis (Eriocnemis), 531.  
 nigrocellata (Pterocymia), 236.  
 nigrofasciata (Thalaurania), 149.  
 nigromaculata (Psilocera), 98.  
 nigropunctata (Semiorthia), 480.



- nigroseriata (Anzcodes), 25.  
 nigrosticta (Ptychopoda), 61.  
 Ninodes, 238.  
 Ninox, 159, 264, 269.  
 nipalensis (Certhia), 138.  
 nisa (Lipomelia), 439.  
 uisoria (Munia), 266, 521.  
 nitida (Iache), 530.  
 nitidata (Semiiothisa), 481.  
 nitidisquama (Opisthoxia), 461.  
 nivea (Stesichora), 24, 384.  
 niveipuncta (Epiplema), 25.  
 niveopuncta (Brachycola), 48.  
 nivisparsa (Anisogania), 33.  
 nivitacta (Hyposidra), 257.  
 Nobilia, 58, 220.  
 Noctua, 316—355.  
 nocturnus (Corvus), 374.  
 Norcia, 30, 206, 387.  
 nortia (Aplodes), 423.  
 notata (Neurotoca), 43.  
 Nothabraxas, 88.  
 Nothomiza, 120, 239.  
 novaehollandiae (Ardea), 264, 272.  
 novus (Popilius), 299.  
 nubigena (Nemoria), 42.  
 nubilata (Hystomodes), 252.  
 nubimargo (Bapta), 462.  
 Nucifraga, 131, 132—136.  
 Nudaurelia, 182.  
 nudigula (Pachycephala), 1, 1, 522.  
 nugata (Euphia), 235.  
 Numenius, 273.  
 numicusaria (Decetia), 24.  
 nummulifera (Hylemera), 397.  
 Nychitona, 153.  
 Nyctibates, 415.  
 Nycticorax, 264, 272.  
 Nymphalidae, 507.  
 obliqua (Aegocera), 312.  
 obliquifascia (Eumelea), 387.  
 obliquiscripta (Sterrha), 62.  
 oblitterata (Iodis), 212.  
 — (Lassaba), 398.  
 — (Nobilia), 220.  
 oblongata (Sphalerosticha), 127.  
 obrinaria (Brachycola), 215.  
 obscurata (Peucele), 126.  
 obsolescens (Stesichora), 384.  
 obsoleta (Agathia), 208.  
 — (Timandra), 63.  
 obtusimacula (Cyllopoda), 420.  
 occidentalis (Certhia), 139.  
 — (Tinuunculus), 159, 270.  
 occlusa (Pharambara), 382.  
 occultata (Semiiothisa), 480, 481.  
 ocellata (Lepiodes), 94.  
 — (Ninox), 264, 269.  
 — (Sicyodes), 260.  
 ocellata (Spilactenia), 458.  
 — (Terpna), 207, 388.  
 ochodontaria (Epiplema), 414.  
 ochracea (Sienlodes), 383.  
 ochrea (Actenochroma), 207.  
 — (Euchloris), 210.  
 — (Hypochroma), 207.  
 — (Mnesithestis), 393.  
 — (Pleuroprucha), 442.  
 ochrealis (Asota), 328.  
 — (Hypsa), 328.  
 ochrifascia (Thamnomoma), 184.  
 ochrifluea (Thysanopyga), 478.  
 Ochthodromus, 272.  
 Ochytia, 72, 236.  
 octopunctata (Synopsis), 92.  
 ocularis (Stigmatops), 265.  
 Odontopera, 115.  
 Odontoptila, 440, 441.  
 Odontotaeniis, 288, 289.  
 Oenochroma, 206.  
 Oenochrominae, 27, 206, 385, 416.  
 Oenolinnae, 165.  
 Oenoptila, 475.  
 Oenospila, 44, 212.  
 Oenothalia, 476.  
 Ogyges, 291.  
 Oileus, 288.  
 oleagina (Euchloris), 58.  
 olga (Neoreta), 378.  
 — (Oreta), 378.  
 Oligopleura, 449.  
 olivacea (Ibis), 376.  
 — (Microgonia), 496.  
 — (Phthonoloba), 67.  
 olivaceonotata (Dichromatopodia), 435.  
 olivata (Cophophlebia), 116.  
 — (Diplodesma), 389.  
 — (Petrodava), 253.  
 olivescens (Organopoda), 394.  
 omana (Erosia), 411.  
 omassa (Arycanda), 83.  
 — (Siphia), 158.  
 Omiza, 120, 258, 441.  
 Omphacodes, 428.  
 onusta (Arctoscelia), 102, 103.  
 — (Asota), 325.  
 — (Dumalis), 325.  
 Onycodes, 27.  
 Oospila, 426, 427.  
 opaca (Metallura), 3, 4, 7.  
 opalescens (Albara), 12.  
 opalina (Terpna), 207.  
 Ophthalmodes, 249.  
 Opisthoxia, 461.  
 opulenta (Trichogompha), 461.  
 orbifera (Gathynia), 414.  
 orboma (Aganais), 326.  
 — (Asota), 315, 326—331.  
 orbonis (Hypsa), 327.

- ordiuaria (Banisia), 197.  
 Oreotrochilus, 2, 7.  
 Oreozosterops, 157.  
 Oreta, 16, 378.  
 Organopoda, 393.  
 Oricia, 421.  
 orientalis (Eurystomus), 159.  
 Oriolus, 159.  
 orizabae (Petrejus), 291.  
 ormenus (Papilio), 181.  
 ornatus (Gymnognathus), 174.  
 — (Merops), 164, 514.  
 — (Trichoglossus), 159, 165.  
 Orthnocichla, 170, 515.  
 Orthobrachia, 237.  
 Orthocabera, 79.  
 Orthostixinae, 28, 206, 386, 418.  
 Orthotomus, 518.  
 oscillans (Microeca), 170, 524.  
 Osmotreron, 165.  
 ossicolor (Craspedia), 218.  
 Ourapteryginae, 75, 459.  
 Ourapteryx, 75.  
 ovalis (Craspedosis), 241.  
 Oxycephina, 409.  
 Oxydia, 475, 476.  
 Ozola, 30, 207, 387.  
 Pachycephala, 158, 171, 522.  
 Pachycopsis, 428.  
 Pachydia, 477.  
 Pachyglossa, 519.  
 pachyrhynchus (Nucifraga), 132.  
 Pachythalia, 220.  
 pagorum (Galerida), 146.  
 paliura (Asota), 315, 339.  
 palliceps (Pitta), 163.  
 pallicostata (Cimicodes), 489.  
 pallida (Ammomanes), 141.  
 — (Anonychia), 102.  
 — (Galerida), 143, 144.  
 — (Microloxia), 390.  
 — (Munia), 161, 266.  
 — (Petelia), 103.  
 — (Tephropsis), 114.  
 — (Xenochlorodes), 47.  
 pallidata (Xenocista), 484.  
 pallidicincta (Probolosceles), 213.  
 pallidilinea (Craspedia), 218.  
 pallidior (Synoicus), 271.  
 pallidipars (Hammaptera), 452.  
 pallidiplaga (Nemodes), 232.  
 pallidirufa (Gymnoscelis), 70.  
 palpebrosa (Zosterops), 157.  
 Palydiniae, 75, 459.  
 Pamphlebia, 213.  
 Pauaethia, 82, 86.  
 panamensis (Chlorostilbon), 152.  
 Panoplitus, 9.  
 Panychlora, 150, 151.  
 paphos (Asota), 315, 337, 338, 343.  
 — (Hypsa), 337.  
 — (Noctua), 337.  
 Papilio, 181, 314.  
 papillosa (Aethcolepis), 68.  
 papuensis (Noreia), 387.  
 Parachorcutes, 416, 417.  
 Paracomistis, 498.  
 Paracrocota, 258.  
 paradeicta (Epiplema), 26.  
 Paradirades, 205.  
 paradisens (Troides), 180.  
 Paradoxurus, 514.  
 Paragonia, 498.  
 parallacta (Semiolitha), 112, 399.  
 parallela (Xenoprora), 226.  
 parallelaria (Eusarca), 490.  
 Parametroides, 250.  
 Paraprasina, 43.  
 Paraptychodes, 85.  
 Parasyngia, 76, 79, 239.  
 Pareuchloris, 43.  
 parisnattei (Medasina), 95.  
 Paromphacodes, 428, 429.  
 Parrhesia, 465.  
 parryi (Anulacocylus), 281, 282.  
 particolor (Heterusia), 458.  
 Parus, 518.  
 parva (Anomalopteryx), 190.  
 — (Mirafra), 521.  
 parvidentata (Acropteryx), 199.  
 parvirostris (Ammomanes), 141.  
 parvula (Cacatua), 165.  
 parvus (Taeniocerus), 276.  
 Passalinae, 286.  
 Passalotaenius, 288.  
 Passalus, 286, 289.  
 Patagona, 2, 3, 4, 6, 7.  
 patalata (Anzeodes), 255.  
 patinata (Syncoemia), 70, 71.  
 paulina (Carpophaga), 160, 165.  
 pauper (Physoleora), 469.  
 peetinata (Pseudalcis), 97, 98, 249.  
 pectoralis (Cinnerys), 519.  
 Pelargopsis, 163.  
 Pellonia, 222.  
 pelloniarina (Phyletis), 222.  
 Pelurga, 454.  
 Penclopides, 164.  
 perangusta (Gymnoscelis), 229.  
 Peratophyga, 238.  
 Peratostega, 80.  
 percheroni (Anulacocylus), 279.  
 Percnia, 89.  
 perconfusa (Gonodela), 252.  
 percrinita (Ptychopoda), 432, 444, 445.  
 Pergama, 499.  
 Pericrocotus, 523.  
 Peridela, 110.  
 perimele (Asota), 346, 352.

- perimele (Hypsa), 346.  
 Perissopteryx, 447.  
 Perixera, 48, 58, 215, 221, 226, 392, 394.  
 Perizoma, 454.  
 perlatus (Aulacocyclus), 281, 282.  
 pernitescens (Banisia), 379.  
 peroni (Aegialitis), 273.  
 perornata (Chrysoclystis), 228.  
 perrufa (Epicosymbia), 54.  
 persecta (Asota), 358, 359.  
 — (Hypsa), 358—360.  
 persimilis (Chloromma), 36.  
 perspersata (Eois), 229.  
 perstrigata (Iridopsis), 469.  
 perturbans (Taeniocerus), 276.  
 Pernsia, 501.  
 perviata (Paracrocota), 258, 259.  
 peshwa (Mimeusemia), 311.  
 Petalia, 103, 250, 334, 398, 476.  
 Petasophora, 3—7, 148.  
 Petrejoides, 290.  
 Petrejus, 290, 306.  
 Petrodava, 111, 115, 253.  
 Pencela, 126.  
 phaeopus (Numenius), 273.  
 Phaethornis, 529.  
 Phalacra, 16, 195.  
 Phalacrocorax, 273, 372, 376.  
 Phalaena, 316, 332, 343, 352.  
 Phalaenoides, 311.  
 Pharambara, 382.  
 Phaselia, 245.  
 Phellinodes, 417, 418.  
 Philemon, 264, 265, 519.  
 philippensis (Hypotaenidia), 272.  
 philippina (Asota), 350—354.  
 philippinus (Phyllergates), 517.  
 philyra (Parrhesia), 465.  
 Phlegoenas, 153, 160.  
 Phoenicophacs, 160—164.  
 phoenicoptera (Acidalia), 225.  
 Phoenicura, 168.  
 phoenicura (Amaurornis), 165.  
 — (Ammomanes), 141.  
 phoenienroides (Ammomanes), 140, 141.  
 Phorodesma, 44.  
 Photoscotia, 235.  
 Phrissosceles, 222.  
 phroso (Thysonotis), 313.  
 Phrudocentra, 429.  
 Phryganeidae, 262.  
 phryganeoides (Clepsimela), 262.  
 Phthonoloba, 67.  
 Phyletis, 222.  
 Phyllergates, 155, 517.  
 Phyllodonta, 502.  
 Phylloscopus, 515, 525.  
 Phyllurus, 404—406.  
 Physocleora, 469.  
 picaria (Graspedosis), 397.  
 picta (Sterrha), 62.  
 pcticolor (Xanthorhoe), 456.  
 Picus, 164.  
 pieridaria (Micronia), 24.  
 — (Stesichora), 24.  
 pieroides (Anisogamia), 33, 34.  
 Piezorhynchus, 524.  
 pilosa (Dochephora), 449.  
 — (Prochaerodes), 502.  
 — (Uliolepis), 386.  
 Pingasa, 31.  
 Piprisoma, 519.  
 pimal (Heliocopriss), 185.  
 Pisoraca, 221, 222.  
 Pisorhina, 527.  
 pitmani (Euchera), 15.  
 Pitta, 163, 526.  
 Pitthea, 242.  
 plagiata (Asota), 315, 334.  
 — (Hypsa), 334.  
 — (Letchena), 382.  
 — (Petalia), 334.  
 plagifera (Letchena), 381.  
 plaginota (Aganais), 317.  
 — (Asota), 314—319, 337.  
 — (Damalis), 317.  
 — (Hypsa), 317, 318.  
 plagodiata (Pergama), 500.  
 Plagodis, 500.  
 plana (Anisogonia), 486.  
 — (Asota), 315, 357, 364, 369.  
 — (Hypsa), 358—360.  
 planorum (Galerida), 146.  
 plateni (Gimnyris), 156.  
 platurus (Phyllurus), 404, 405, 406.  
 Platycerota, 120, 121.  
 platypus (Taeniocerus), 275.  
 platyrhynchos (Nucifraga), 131, 132.  
 pleniguttata (Abraxas), 87.  
 pleniluna (Perixera), 394.  
 Plerocymia, 236.  
 Pleuropracha, 442.  
 plumata (Alauda), 145.  
 plumbea (Dirades), 201.  
 plurilincata (Aspilates), 473.  
 pluviosa (Micronia), 22.  
 Pnoepyga, 168, 515, 516.  
 Poecilaleis, 96.  
 Pogonopygia, 240.  
 Poliolimnas, 272.  
 politia (Nephelolenca), 498.  
 pollux (Charaxes), 181.  
 polygonaria (Pergama), 500.  
 Polygraphodes, 442.  
 Polystroma, 236.  
 Pompelon, 310.  
 ponderosa (Testudo), 407.  
 poortmani (Chlorostilbon), 151.  
 — (Panychlora), 151.  
 Popiliinae, 294.

- Popilius*, 290, 297, 304.  
*porphyrolaema* (*Cinnyris*), 157, 161.  
*Potera*, 89.  
*praeampla* (*Chlorostrota*), 36, 37.  
*praeceipua* (*Ptilotis*), 370.  
*praeternissa* (*Alauda*), 142, 143, 145.  
*praeusta* (*Banisia*), 20, 379.  
*Prasinocyma*, 44, 390.  
*prasinus* (*Chlorostilbon*), 150, 151.  
*Pratineola*, 155, 161, 261, 515.  
*presbytis* (*Acauthopneuste*), 525.  
— (*Muscicapa*), 525.  
— (*Sylvia*), 525.  
*Prionochilus*, 519.  
*Pristoceraea*, 183.  
*Pristostegania*, 81.  
*Problepsis*, 59, 222.  
*Proboloptera*, 121.  
*Probolosceles*, 213.  
*Prochaerodes*, 502.  
*Prochasma*, 81.  
*Proculejinae*, 291.  
*Proculejoides*, 292.  
*Proculejus*, 292.  
*Procypha*, 121.  
*producta* (*Asota*), 315, 320, 341.  
— (*Damalis*), 319.  
— (*Hyppsa*), 319.  
*Progonodes*, 429.  
*propinqua* (*Euphia*), 234.  
— (*Munia*), 157, 521.  
*Prosopopolpha*, 101, 124.  
*Prosopopolphinae*, 124, 261, 262.  
*prospectata* (*Argyrotoeme*), 460.  
*protusa* (*Zamarada*), 123.  
*prunicolor* (*Hyposidra*), 119.  
*Psaliodes*, 454.  
*Pseudacanthinae*, 304.  
*Pseudacanthus*, 304, 306.  
*Pseudaleis*, 96, 249.  
*Pseudasthena*, 223.  
*Pseudeuchlora*, 233.  
*Pseudomieronia*, 23, 199.  
*Pseudoterpninae*, 31, 207, 388.  
*Psilaleis*, 82.  
*Psilocambogia*, 227.  
*Psilocerea*, 98, 259, 402.  
*Psilonaxa*, 386.  
*Psilopora*, 470.  
*Psilotaphria*, 256, 259.  
*Psittacula*, 6, 8.  
*Pterophanes*, 2.  
*Pteropus*, 263.  
*Ptilinopus*, 165, 264, 270, 271.  
*Ptilopus*, 271.  
*Ptilotis*, 369, 519.  
*Ptochophyle*, 50.  
*Ptychopoda*, 54, 60, 223, 432, 443, 446.  
*pubicostis* (*Proculejus*), 292.  
*pucheraui* (*Chlorostilbon*), 151.  
*puciolia* (*Agarista*), 311.  
— (*Mimusemia*), 311.  
*puella* (*Hypothymis*), 158, 162.  
*pulchra* (*Xyleutes*), 308.  
*pullicauda* (*Neopsittacus*), 369.  
*pulverosa* (*Perusia*), 501.  
— (*Stenalcidia*), 472.  
*pulverulenta* (*Catascia*), 250.  
— (*Ozola*), 50.  
— (*Ptochophyle*), 60.  
*punctata* (*Aspilatopsis*), 100.  
— (*Pisoraca*), 222.  
*punctatissima* (*Steirophora*), 67.  
*puncticorpus* (*Bursada*), 240.  
*punctifrons* (*Comacnipes*), 285.  
*punctilineata* (*Steroha*), 63.  
— (*Syndromodes*), 45.  
*punctilla* (*Physocleora*), 469.  
*punctulata* (*Munia*), 266, 521.  
— (*Ninox*), 159.  
*pupillaria* (*Cosymbia*), 217.  
*pupillata* (*Phrudocentra*), 429.  
*pura* (*Buzura*), 245.  
*purpurascens* (*Allexitheca*), 237.  
*purpurea* (*Eois*), 220.  
— (*Megatheca*), 230.  
*purulensis* (*Chondrocephalus*), 302.  
*pusilla* (*Physocleora*), 470.  
— (*Pnoepyga*), 168, 516.  
*pustulata* (*Buzura*), 244.  
*pustulosus* (*Tribotropis*), 173.  
*pygaria* (*Thysanopyga*), 478.  
*pygmaea* (*Tephroclystia*), 450.  
*pygmaeus* (*Taeniocerus*), 276.  
*pygmeata* (*Dirades*), 201.  
*Pyalidae*, 125.  
*Pyalis*, 126, 383.  
*Pyraustinae*, 127, 129.  
*pyrolaria* (*Exelis*), 467.  
*Pyrrhocentor*, 160, 161.  
*Pyrrhocorax*, 374, 375.  
*pyrrhus* (*Charaxes*), 508.  
*quadraria* (*Thalassodes*), 391.  
*quadripuncta* (*Exelis*), 467.  
*quadripunctata* (*Tridrepana*), 18.  
*quadrirubrata* (*Eois*), 437, 438.  
*quadristrigata* (*Stesichora*), 24.  
*queenslandica* (*Asota*), 328.  
*quinquelineata* (*Iza*), 408.  
*quinticolor* (*Munia*), 521.  
*quisquiliaria* (*Stenalcidia*), 471.  
*raalteni* (*Synoicus*), 271.  
*Racheospika*, 430, 431.  
*Racotis*, 98.  
*radiata* (*Chiasmia*), 82.  
— (*Craspedia*), 434.  
— (*Perixera*), 221.  
*radiolata* (*Tigridoptera*), 85.  
*Rallina*, 165.

- Rambara, 28.  
 ramifera (Banisia), 380.  
 rondonii (Galerita), 146.  
 rara (Lamprobis), 377.  
 Ratifaria, 459.  
 rawakensis (Milionia), 513.  
 recticornis (Soranus), 296.  
 rectisecta (Addea), 19.  
 recurvata (Bociraza), 512.  
 reducta (Asota), 320, 321.  
 reduplicata (Gaudaritis), 235.  
 reevesi (Phocicura), 168.  
 refulgens (Thalaurania), 149.  
 regulus (Ammomanes), 141.  
 relicta (Nucifraga), 134.  
 Remodes, 66, 67, 231, 395.  
 rendalli (Nudaurelia), 182.  
 renifera (Hylemera), 397.  
 restrictus (Phalaenoides), 311.  
 reticulata (Acropteris), 21.  
 — (Epiplema), 202.  
 reversa (Bociraza), 28.  
 — (Oenoptila), 476.  
 reversaria (Albara), 12.  
 Rhaphomicon, 530.  
 Rhinodia, 111, 112.  
 Rhipidura, 158, 266, 525.  
 rhodariata (Eois), 437.  
 rhodogaster (Accipiter), 165.  
 Rhodogonia, 409, 410.  
 Rhodophthitus, 89.  
 Rhodopsis, 1, 8.  
 Rhodostrophia, 61, 214, 222, 224, 394, 395.  
 rhombifera (Epiplema), 202.  
 Rhomborista, 44, 391.  
 Rhopalista, 455.  
 ribbei (Waigmann), 367, 368.  
 ridiculus (Rimoricus), 287.  
 riedeli (Phyllergates), 155.  
 rigidata (Semiolitha), 482.  
 rimator (Rimoricus), 288.  
 Rimor, 287, 291, 306.  
 Rimoricus, 287.  
 riukiwana (Asota), 350.  
 rivulata (Tetraxis), 506.  
 robustus (Gymnognathus), 174.  
 roua (Milionia), 510.  
 rosea (Ptychopoda), 444.  
 roseicapillus (Ptilinopus), 271.  
 roseipuncta (Pleuroprucha), 442.  
 rosenbergi (Aulacocyclus), 279, 281, 282.  
 — (Hypsototropis), 173.  
 roseofusa (Perixera), 394.  
 rosipara (Racheospila), 431.  
 rothi (Chorodnodes), 105.  
 rothschildi (Ceratulus), 177.  
 rotundata (Pachythalia), 221.  
 rotundatoelyptus (Aulacocyclus), 278, 282.  
 rotundinacula (Hursada), 241.  
 rubida (Aegocera), 312.  
 rubida (Heterophyra), 439.  
 rubra (Oenoptila), 476.  
 — (Onycodes), 27.  
 rubridentata (Syndromodes), 213.  
 rubridisca (Euerostes), 38.  
 rubrifusa (Eumela), 29.  
 rubrilineata (Agathia), 389.  
 rubrimargo (Paromphacodes), 428, 429.  
 rubripicta (Tephroclystia), 230, 233.  
 rubriplaga (Agraptoclidora), 33.  
 — (Turekheimeria), 243.  
 rubripuncta (Perixera), 394.  
 rubristellata (Paromphacodes), 429.  
 rubrisuffusa (Eois), 438.  
 rubrolimbata (Gelasma), 425.  
 — (Pamphlebia), 213.  
 rubroviridis (Gymnopera), 68.  
 rudimentaria (Pleuroprucha), 442.  
 rudis (Hyperplema), 415.  
 rufa (Anzcodes), 255.  
 — (Pnoepyga), 168, 516.  
 — (Traminda), 65.  
 rufannularia (Perixera), 221.  
 rufaria (Racotis), 98.  
 rufescens (Galerita), 146.  
 — (Pyrrhocentor), 160, 164.  
 ruficollis (Limonites), 273.  
 ruficoloraria (Terpna), 32.  
 ruficornis (Microloxia), 12, 212.  
 — (Ophthalmodes), 249.  
 ruficornis (Tephroclystia), 230.  
 rufigenis (Buarremon), 4.  
 rufigula (Myiagra), 264, 266, 267.  
 — (Siphia), 153, 159.  
 rufilatus (Turnix), 166.  
 rufilineata (Aplodes), 423.  
 rufimargo (Chloromachia), 209.  
 rufipectus (Spilornis), 159.  
 rufisalsa (Induna), 55.  
 rufitincta (Prasinocyma), 44.  
 rufivinctata (Sriuropteryx), 122.  
 rufulus (Anthus), 265, 521.  
 Raunia, 122.  
 räppelli (Galerita), 142, 146.  
 ruptifascia (Epiplema), 204.  
 — (Xanthorhoe), 74.  
 ruptifasciata (Gonodora), 252.  
 ruptilinea (Timandra), 61.  
 Ruticilla, 167.  
 Sabulodes, 497, 503.  
 sabulosa (Conchocometes), 216.  
 — (Ectopis), 94, 248.  
 sagittarius (Rimoricus), 288.  
 sagittata (Tephroclystia), 71.  
 sagittilinea (Craspedia), 219.  
 saleyerensis (Gimyrus), 156.  
 salsa (Pareuchloris), 43.  
 salvadorii (Ptilotis), 369.  
 salvadoris (Undulifer), 303.



- samoana (Brachycola), 216.  
 sanctus (Halcyon), 268.  
 sanghirensis (Cittura), 163.  
 sangirensis (Asota), 351.  
 sanguinalis (Hypsopygia), 125.  
 sanguinata (Eugnesia), 78.  
 — (Eumelea), 29.  
 sanguinsecta (Craspedia), 53.  
 sanguinolentum (Dicaeum), 518.  
 Sappho, 4, 7.  
 sarasinorum (Cryptolopha), 158, 525.  
 — (Zosterops), 157.  
 sargi (Rimor), 287.  
 sartorii (Procnlejus), 294.  
 satellitia (Nelo), 464.  
 saturataria (Anisogamia), 33.  
 Saturniidae, 309.  
 Saucerottia, 530.  
 Sauris, 67.  
 scandulaca (Certhia), 137, 138.  
 Scardamia, 240.  
 scelestia (Apatenia), 177.  
 Schistes, 531.  
 Schoenobiinae, 130.  
 scintillans (Lampadopteryx), 76.  
 scintillata (Anasaris), 13.  
 Scioglyptis, 99.  
 Scissirostrum, 162.  
 Scotomera, 127.  
 Scotophilus, 263.  
 Scotopterix, 90.  
 Scotopteryginae, 90, 250.  
 Scrobigera, 312.  
 scutellopunctatus (Popilius), 301.  
 Scythrops, 514.  
 secutaria (Stegania), 261.  
 seitzii (Charaxes), 508.  
 sejuncta (Culicicapa), 526.  
 selenaria (Ascotis), 92.  
 Selidoseminae, 101, 124, 250, 398, 475.  
 semialba (Chloromachia), 209.  
 — (Hymenomima), 468.  
 semicollaris (Rhipidura), 525.  
 semidivisa (Cyllopoda), 420.  
 semifascia (Scioglyptis), 99.  
 semifulva (Epiplema), 25.  
 semifusca (Asota), 356.  
 — (Hypsa), 356.  
 semigrisea (Episothalpa), 38.  
 seminigra (Dirades), 384.  
 — (Gathynia), 204.  
 — (Xanthomima), 86.  
 Semiothisa, 112, 399, 478, 479.  
 Semiothisinae, 104, 251, 399, 478.  
 semipallida (Tephropopsis), 483.  
 semipicta (Cambogia), 448.  
 semiplaga (Craspedosis), 241.  
 semipurpurea (Rhomborista), 45.  
 semirosea (Eumelea), 29.  
 semisericea (Ptychopoda), 60.  
 semitessellalis (Letchena), 382.  
 semitorques (Pisorhina), 527.  
 semiturpis (Abraxas), 396.  
 semiviridis (Gymnoscelis), 228.  
 senegallensis (Alauda), 145.  
 — (Galerida), 143, 144, 147.  
 senescens (Semiothisa), 482.  
 septemnotata (Bursada), 84.  
 septentrionalis (Asota), 330.  
 seriata (Banisia), 20.  
 sericea (Asota), 315, 338.  
 — (Damalis), 338.  
 — (Deilinia), 462.  
 — (Dipriodonta), 14.  
 — (Euchera), 15.  
 — (Hypsa), 338.  
 — (Loboparadisea), 169.  
 serpentaria (Zomia), 412.  
 serraticornis (Microloxia), 42.  
 Sertoriinae, 302.  
 Sertorius, 302.  
 severini (Tristorthus), 284.  
 severzovi (Ruticilla), 167.  
 siccifolia (Hyposidra), 119.  
 Siculodes, 198, 382, 409.  
 Siculodopsis, 416.  
 Sicya, 503.  
 Sicyodes, 260.  
 sieberi (Soranus), 295.  
 sigillata (Dichromatopodia), 506.  
 significans (Aganais), 326, 327.  
 — (Hypsa), 326.  
 silonaria (Phyletis), 222.  
 silvandra (Aganais), 346, 352.  
 — (Asota), 343, 352.  
 — (Bombyx), 352.  
 — (Hypsa), 343, 347, 355.  
 — (Phalaena), 352.  
 similaria (Cenoctenucha), 115.  
 similis (Phyllergates), 517.  
 simoni (Heliangelus), 533.  
 Simopteryx, 503.  
 Simotricha, 395, 396.  
 simplex (Genusa), 88.  
 — (Hemithea), 40.  
 — (Oenochroma), 206.  
 — (Rhodophthitus), 89.  
 simplicata (Auzata), 13.  
 — (Micronidia), 238.  
 sinelinea (Decetia), 24.  
 sinuata (Mnesigea), 95.  
 — (Ozola), 387.  
 sinuosa (Asota), 329.  
 — (Micronia), 23.  
 Siphia, 153, 158.  
 Sirinopteryx, 122.  
 smaragdnicollis (Metallura), 5, 9.  
 smaragdus (Comostolodes), 210.  
 snellenaria (Cambogia), 449.  
 snelleni (Phyllodonta), 502.

- sofalaria (Scardamia), 240.  
 solaris (Ciunyris), 519.  
 solilucis (Erilyces), 421.  
 Somatina, 61.  
 Soranus, 291.  
 sordida (Pseudasthena), 223.  
 sordidata (Rhinodia), 111.  
 sordidum (Aphengium), 187.  
 sororeula (Azata), 105.  
 speciosus (Chlorostilbon), 151.  
 — (Heliangelus), 533.  
 spencii (Heliangelus), 532.  
 sphaerifera (Aganais), 334.  
 — (Hypsa), 334.  
 Sphalerosticha, 127.  
 Sphinctocera, 128.  
 Sphingidae, 307.  
 Sphinx, 307.  
 Spilocraspeda, 504.  
 Spiloctemia, 458.  
 Spilopera, 117.  
 Spilornis, 159.  
 Spilosoma, 335.  
 Spilospizias, 159, 165.  
 Spizalauda, 142.  
 splendens (Ausaris), 195.  
 splendidum (Dicaeum), 265.  
 Sporaeginthus, 522.  
 spurcata (Heterolochia), 118.  
 Spuriinae, 303.  
 Spurius, 303.  
 squamata (Mimogonodes), 497.  
 — (Pnoepyga), 168, 516.  
 squamiceps (Chlorocharis), 157.  
 — (Zosterops), 157.  
 ssewerzowi (Ruticilla), 167.  
 stagonata (Progonodes), 430.  
 stanleyi (Passalus), 281.  
 Stegania, 78, 81, 237, 261.  
 Steirophora, 67.  
 stellata (Camptogramma), 235.  
 — (Oenospila), 213.  
 stellataria (Racheospila), 430.  
 Stenalcidia, 469, 472.  
 Stenoplastis, 422.  
 stephani (Chalcophaps), 160, 165.  
 Sterna, 273.  
 Sterrha, 62, 224.  
 Sterrhinae, 47, 214, 392, 431, 440.  
 Stesichora, 24, 200, 384.  
 Stibarostoma, 226.  
 sticta (Perusia), 592.  
 sticticata (Craspedia), 434.  
 stigmatica (Asota), 320.  
 Stigmatops, 265.  
 stigmatus (Loriculus), 165.  
 Stiltia, 272.  
 stoliczkae (Urtbia), 138.  
 stolzmanni (Oreotrochilus), 2, 4, 5.  
 Stoptarola, 158.  
 Straboscopus, 176.  
 straminea (Eurythecodes), 117.  
 — (Microgonia), 496.  
 — (Pelurga), 154.  
 Strepsigonia, 17.  
 Streptocitta, 158, 159, 162.  
 striata (Hypotaenidia), 272.  
 — (Lipomelia), 220.  
 striataria (Acropteris), 21.  
 striatopunctatus (Odontotaenius), 289.  
 strigata (Nobilia), 58.  
 — (Petelia), 103.  
 strigivenata (Damalis), 319.  
 — (Hypsa), 319, 320.  
 Strigina, 382.  
 strigosa (Aganais), 318.  
 — (Asota), 315, 318.  
 — (Hypsa), 318.  
 strigosata (Fidonia), 100.  
 striolata (Hirundo), 526.  
 Strix, 264, 269, 270.  
 strophe (Arhopala), 366.  
 strophianus (Heliangelus), 533.  
 Strophidia, 23.  
 Strophoptila, 225.  
 subalbata (Glaucopteryx), 235.  
 subapicata (Cimicodes), 489.  
 subaspersa (Agraptochlora), 32.  
 subbrunnea (Organopoda), 393.  
 subcarnea (Gynopteryx), 493.  
 — (Lissostolodes), 493.  
 subcastanea (Munia), 161.  
 sublathrata (Semiothisa), 482.  
 subcornutus (Soranus), 297.  
 suberistata (Lophozosterops), 521.  
 suberistatus (Lophozosterops), 171.  
 subdecorata (Lassaba), 398.  
 subdiversa (Xenoecesta), 484.  
 subfasciata (Eusarea), 491.  
 subflavata (Simopteryx), 503.  
 subfulva (Hypocoela), 41.  
 subfulvata (Anisoperas), 487.  
 subfumosa (Arycanda), 83.  
 subfurcatus (Chlorostilbon), 150, 151.  
 subhyaliata (Abraxas), 87.  
 subintrusa (Erilyces), 421.  
 sublimbaria (Omiza), 401.  
 subnietitans (Hypolamprus), 380.  
 subnotata (Melanchroia), 463.  
 subobliqua (Tridrepana), 18.  
 subochracea (Angenora), 125.  
 subochrea (Oenothalia), 476.  
 subolivescens (Hammaptera), 453.  
 subopacus (Traenurgus), 306.  
 subperlaria (Craspedia), 53.  
 subpilosa (Ptychopoda), 444.  
 subpulehra (Gonophaga), 400.  
 subpunctata (Eubyja), 91.  
 subpurpurea (Parachoreutes), 417.  
 — (Pingasa), 34.

- subquadrata (Craspedia), 433.  
 subradiata (Terpna), 388.  
 subreeticornis (Soranus), 296.  
 subrosea (Hydrelia), 226.  
 subrosealis (Hypolamprus), 380, 381.  
 subrubifa (Ziridaya), 71.  
 subrufa (Almodes), 417.  
 — (Rhodostrophia), 224.  
 subrupta (Asota), 336.  
 subscripta (Comibaena), 424.  
 subsimilis (Asota), 315, 357.  
 — (Hypsa), 357.  
 — (Perixera), 394.  
 — (Zanclopteryx), 418.  
 subspersa (Trisyudeta), 260.  
 subspissata (Polystroma), 236, 237.  
 subtineta (Lipomelia), 439.  
 — Poecilaleis), 96.  
 subtractata (Paracomistis), 498.  
 subtransversalis (Iza), 408.  
 subvalida (Semiolitha), 483.  
 subvestita (Ptychopoda), 445.  
 succedanea (Agathia), 388.  
 sufficiens (Craspedia), 53.  
 suffusa (Asota), 315, 361—364.  
 — (Euguesia), 77.  
 sulcatipons (Aulacocyclus), 279, 282.  
 sulcirostris (Phalacrocorax), 273.  
 sulfurea (Gerygone), 525.  
 sulphurea (Uacatua), 161, 165.  
 sumatrensis (Arrhipis), 178.  
 sumbaensis (Astur), 270.  
 — (Strix), 270.  
 — (Terpsiphone), 526.  
 — (Urospizias), 270.  
 sumbana (Asota), 324.  
 — (Episteme), 310.  
 sambawensis (Rhipidura), 525.  
 sumbensis (Rhipidura), 266, 526.  
 sunia (Pisorhina), 528.  
 superciliaris (Zosterops), 172, 520.  
 superciliosa (Anas), 273.  
 superciliosus (Lanius), 522.  
 — (Phaethornis), 529.  
 — (Trochilus), 529.  
 superflua (Anisodes), 431.  
 — (Galerida), 144—147.  
 supremus (Troides), 180.  
 sylvaticus (Corvus), 371—376.  
 — (Eremita), 371.  
 Sylvia, 167, 525.  
 sylvicola (Pisorhina), 527.  
 Symmaera, 63.  
 Symphleps, 383.  
 Synchrona, 428.  
 Syncosmia, 70, 71.  
 Syndromodes, 45, 213.  
 Synecta, 472, 473.  
 Synoicus, 271.  
 Synopsia, 92.  
 Syntaracta, 76, 396.  
 Syrrhizodes, 505.  
 Tachypetes, 263.  
 taczanowskii (Agrytria), 2, 4, 6.  
 taeniata (Luxaria), 109.  
 Tacnlocerus, 275.  
 Taeniopygia, 266.  
 taeniura (Certhia), 138.  
 Tanaorhinus, 41.  
 Tanaostyla, 422, 423.  
 Tanygnathus, 164.  
 Taphozous, 263.  
 Tasta, 76.  
 tau (Popilius), 300.  
 Teldenia, 18.  
 temminckii (Lyngipicus), 158.  
 — (Pterophanes), 2.  
 Tenaris, 313.  
 tenebrosa (Argyrotoeme), 460.  
 tenellata (Eois), 437.  
 tenuipes (Megapteryx), 188—194.  
 tenuirostris (Galerida), 146.  
 — (Nucifraga), 132.  
 tenuis (Ectopis), 219.  
 — (Paraptychodes), 85.  
 — (Petrojus), 290.  
 Tephria, 110, 112, 237, 252, 399.  
 Tephriopsis, 110, 113, 483.  
 Tephroclystia, 71, 230, 450, 451.  
 Tephroclystiinae, 68, 227, 395, 449.  
 Tephrosia, 469.  
 tercoides (Aulacocyclus), 277.  
 teres (Aulacocyclus), 277.  
 ternateus (Asota), 363.  
 Terpna, 32, 207, 388.  
 Terpsiphone, 526.  
 tessellata (Cambogia), 449.  
 tessellatus (Straboscopus), 176.  
 Testudo, 407.  
 Tetraxis, 506.  
 tetragonata (Banisia), 197.  
 textilis (Chlorostrota), 389.  
 teysmauni (Rhipidura), 158.  
 Thalassodes, 44, 46, 214, 391.  
 Thalerura, 210.  
 Thalurania, 148.  
 Thamnonoma, 484.  
 Thaumastura, 7, 8.  
 theklae (Galerida), 142, 143—147.  
 thesa (Psilopora), 470.  
 thiemei (Popilius), 301.  
 thricophora (Acidalia), 51.  
 Thyrididae, 19, 196, 378, 401, 408.  
 Thysanopyga, 477, 478.  
 thysi (Charaxes), 508.  
 Thysonotis, 313, 368.  
 tibialis (Iramba), 70.  
 Tigridoptera, 85, 86.  
 tigrina (Agunais), 329.

- tigrina (Asota), 315.  
 — (Damalis), 329.  
 tigrinus (Turtur), 165, 271.  
 tikotepekensis (Soranus), 296.  
 Timandra, 63, 64.  
 timorana (Asota), 349.  
 timoriensis (Lalage), 158, 267, 514.  
 — (Philemon), 264, 265.  
 Tinnunculus, 159, 270.  
 tinnunculus (Tinnunculus), 270  
 titania (Stesichora), 384.  
 tithonus (Troides), 179, 180.  
 tomentosa (Galba), 178.  
 tora (Bubalis), 377.  
 torquata (Streptocitta), 162.  
 — (Bourcieria), 530.  
 torquatus (Astur), 270.  
 tortuosa (Antichera), 365.  
 — (Asota), 315, 365.  
 — (Hypsa), 365.  
 — (Omiza), 258.  
 Traminda, 64, 225.  
 transiens (Asota), 359.  
 transitaria (Oenoptila), 475.  
 translineata (Macaria), 399.  
 transtincta (Prochaerodes), 503.  
 transversata (Coelura), 411.  
 — (Herbita), 493.  
 — (Perixera), 58.  
 traviesi (Helianthea), 530.  
 Triaenurgus, 306.  
 triangularis (Ptychopoda), 445.  
 triangulifera (Iza), 409.  
 Tribotropis, 173.  
 Trichoglossus, 159, 165, 172, 514.  
 Trichogompha, 461.  
 trichophora (Chloroclystis), 71.  
 Trichopteria, 68.  
 Trichopteryginae, 66, 230, 395.  
 Trichostoma, 155, 159, 161.  
 tricolor (Aspilates), 99.  
 — (Bordeta), 83.  
 — (Ruticilla), 167.  
 triconjuncta (Xenocista), 485.  
 tricuspis (Tristorthus), 284.  
 tridentata (Pachycopsis), 428.  
 Tridrepana, 18.  
 trigonata (Semiobisa), 483.  
 trilineata (Pristostegania), 81.  
 trilunaria (Oospila), 426.  
 trimacula (Stenoplastis), 422.  
 trimaculata (Pseudomicronia), 199.  
 Trimetopia, 233.  
 Tringoides, 273.  
 trinotatus (Spilosipizias), 159, 165.  
 Triorisma, 226, 395.  
 tripartita (Scotomara), 127.  
 Triphosa, 73.  
 triplagiata (Hymenocharta), 84.  
 Triprora, 401.  
 trisecta (Eubya), 91.  
 trisinuata (Isopenia), 56.  
 trispilata (Bursada), 81.  
 Tristorthus, 283.  
 Trisyndeta, 260.  
 tritrophus (Banisia), 379.  
 triumbrata (Peridcla), 111.  
 trivirgatus (Piezorhynchus), 524  
 trizonata (Hexeris), 401.  
 — (Triprora), 401.  
 Trochiodes, 458.  
 Troides, 179, 180, 263.  
 tropicus (Soranus), 297.  
 Trotothyris, 19.  
 runcatipennis (Tephroclystia), 451.  
 truquii (Procnlejus), 293.  
 (Pseudacanthus), 395.  
 tschudii (Thalurania), 149.  
 Tyraocena, 165.  
 turlata (Nobilia), 58.  
 — (Xanthorhoe), 235.  
 Turckheimeria, 243.  
 Turnix, 166, 264, 271.  
 turpis (Nadagarodes), 253.  
 Turtur, 165, 271.  
 Tycoonla, 114.  
 typica (Gazzola), 159, 160.  
 — (Munia), 157.  
 — (Thalurania), 149.  
 Uliocnemis, 391.  
 Uliolepis, 385.  
 umbrata (Gubaria), 169.  
 undata (Alauda), 145.  
 undiferata (Comibaena), 44, 391.  
 — (Rhomborista), 391.  
 undilinea (Aerosemia), 486.  
 — (Anisogamia), 35.  
 undimarginata (Zamarada), 123.  
 Undulifer, 303.  
 Unduliferinae, 303.  
 undulosaria (Psilocambogia), 227.  
 naica (Zosterops), 520.  
 unicolor (Hypolamprus), 381.  
 — (Syndromodes), 45.  
 unidentaria (Polystroma), 237.  
 unifascia (Iodis), 212.  
 uniformis (Pergama), 500.  
 — (Xanthiodes), 31.  
 unilinea (Hemithea), 40.  
 — (Heteromiza), 118, 256.  
 unilineata (Certinia), 488.  
 — (Eumela), 387.  
 (Euomela), 124.  
 unimacula (Hyposidra), 258.  
 (Pseudomicronia), 23.  
 (Tanaostyla), 423.  
 uninotata (Craspedia), 219.  
 unipuncta (Prasinocyma), 41.  
 unocula (Cosymbia), 217.

- Upupa, 371—376.  
 Uraniidae, 21, 198, 384.  
 urannus (Tenaris), 313.  
 Uroszias, 270.  
 ustulalis (Phyllodonta), 502.  
 ustifumosa (Bryoptera), 166.  
 uvidula (Euchloris), 211.  
  
 vacuata (Acropterus), 199.  
 valenciana (Thalaurania), 149.  
 vampyrus (Pteropus), 263.  
 variabilis (Hyposidra), 119.  
 varicoloraria (Terpna), 32.  
 variegatus (Numenius), 273.  
 variolosus (Aulacocyclus), 282.  
 variomacula (Eriodes), 163.  
 varius (Popilius), 298.  
 veitchi (Coecytia), 510.  
 velata (Helicopage), 390.  
 velutina (Chloroplintha), 69.  
 — (Hemipogon), 54, 55.  
 venalba (Asota), 314, 315, 339, 341.  
 — (Hypsa), 339, 340, 343.  
 venata (Zanclopteryx), 419.  
 veneratus (Eulabes), 522.  
 venezuelata (Auophylla), 424.  
 venosa (Leuconotha), 415.  
 venusta (Agnibesi), 65.  
 — (Thalaurania), 149.  
 vermicularia (Prasinocyma), 44.  
 vermiculata (Hemithea), 41.  
 vernaus (Osmotreron), 165.  
 versicolor (Aganais), 336.  
 — (Asota), 314, 315, 336.  
 — (Hypsa), 336.  
 — (Noctua), 336.  
 vespertina (Cyllopoda), 420.  
 Veturius, 303.  
 vexillaria (Petelia), 399.  
 viarum (Galerida), 145.  
 vicino (Gymnognathus), 175.  
 Victoria, 46.  
 viduata (Apatenia), 176.  
 rigorsi (Ruticilla), 167.  
 villei (Popilius), 388.  
 vinaria (Oenochroma), 206.  
 vinculotaenia (Ogyges), 292.  
 viola (Heliotrypha), 9.  
 violacea (Oospila), 427.  
 — (Triorisma), 226.  
 virescens (Cacomantis), 164.  
 — (Ptilotis), 519.  
 virginea (Ptychopoda), 446.  
 viridicaput (Thalassodes), 391.  
 viridicaudatus (Phaethornis), 529.  
 viridiceps (Neopsittacus), 369.  
 viridifrons (Euchloris), 389.  
 viridigaster (Saucerotia), 530.  
 viridis (Upupa), 371.  
 viridulata (Psilotaphria), 256, 257.  
 vitessoides (Aganais), 341, 351.  
 — (Hypsa), 341, 351.  
 vittata (Mixochlora), 42.  
 vitticollis (Gymnognathus), 175.  
 Volvocivora, 162.  
 vulgaris (Galerida), 146.  
 — (Hippocrita), 317.  
 vulpecularia (Acrosemia), 486.  
 vulpina (Strigina), 383.  
 — (Zamarada), 123.  
  
 wagneri (Soranus), 295.  
 waigucensis (Troides), 179, 180.  
 Waigum, 367.  
 wallacei (Lichtensteinipicus), 164.  
 — (Microstictus), 158.  
 — (Munia), 521.  
 — (Osmotreron), 165.  
 — (Thysonotis), 314.  
 websteri (Milionia), 511.  
 westermanni (Cormacupes), 284.  
 — (Muscicapula), 158, 524.  
 whiteheadi (Pisorhina), 527.  
 whitelyi (Eratina), 459.  
 wiedi (Chlorostilbon), 151.  
 wilhelminae (Dicaeum), 265.  
 woodfordi (Asota), 315, 335.  
 — (Hypsa), 335.  
  
 Xantharpyia, 263.  
 Xantheliodes, 30, 31.  
 Xanthomima, 86, 243.  
 Xanthoperata (Amaurinia), 447.  
 xanthops (Psittacula), 6, 8.  
 Xanthorhoe, 73, 456.  
 Xenochlorodes, 47.  
 Xenoeista, 484.  
 Xenographia, 402.  
 Xenoprora, 226.  
 Xyleutes, 307.  
 xylinaria (Ziridava), 71.  
 Xylolocha, 507.  
  
 yucatanus (Soranus), 297.  
  
 Zamarada, 122, 261.  
 Zanclopteryx, 418.  
 zebrina (Asota), 350.  
 — (Hypsa), 350.  
 Zeuzerodes, 410.  
 Ziridava, 71.  
 zodiacus (Passalotaenius), 289.  
 Zonia, 402.  
 zonalis (Peucela), 126.  
 zonata (Syndromodes), 45.  
 Zosterops, 157, 161, 169, 172, 265, 519, 521.



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### CONTENTS OF NO. I.

	PAGE
1. NOTES ON THE LOCALITIES VISITED BY O. T. BARON IN NORTHERN PERU AND ON THE <i>TROCHILIDAE</i> FOUND THERE. (PLATE I.) . . . . .	O. T. Baron . . . . . 1
2. ON SOME NECESSARY AND SOME DESIRABLE CHANGES OF NAMES LATELY USED IN CONNECTION WITH PHILIPPINE BIRDS. . . . .	Ernst Hartert . . . . . 11
3. NEW GENERA AND SPECIES OF MOTHS FROM THE OLD-WORLD REGIONS IN THE TRING MUSEUM . . . . .	W. Warren . . . . . 12
4. NOTES ON PALAEARCTIC BIRDS AND ALLIED FORMS . . . . .	Ernst Hartert . . . . . 131
5. NOTES ON HUMMING-BIRDS . . . . .	Ernst Hartert . . . . . 148
6. ON A NEW <i>CATHARSIS</i> FROM WESTERN AUSTRALIA . . . . .	John W. Shipp . . . . . 152
7. MR. WILLIAM DOHERTY'S BIRD-COLLECTIONS FROM CELEBES . . . . .	Ernst Hartert . . . . . 153
INTRODUCTION.	
I. BIRDS COLLECTED IN AUGUST 1896 ON BONTHAIN PEAK.	
II. ON SOME BIRDS COLLECTED IN LOW COUNTRY NORTH OF MAKASSAR IN JULY 1896.	
III. LIST OF BIRDS COLLECTED AT TAWAYA AND DONGALA, NORTH AND SOUTH OF PALOS BAY, IN WEST CELEBES, IN AUGUST AND SEPTEMBER 1896.	
8. ON DIFFERENCES BETWEEN GÜLDENSTÄDT'S REDSTART AND ITS EASTERN ALLY . . . . .	Walter Rothschild . . . . . 167
9. DESCRIPTION OF A NEW HILL-WREN FROM FLORES . . . . .	Walter Rothschild . . . . . 168
10. ON THE FIGURES ON PLATE II. (PLATE II.) . . . . .	Walter Rothschild . . . . . 169
11. DESCRIPTIONS OF SEVEN NEW SPECIES OF BIRDS AND ONE NEW SUBSPECIES FROM FLORES, AND OF ONE NEW SUBSPECIES FROM DJAMPEA (ALFRED EVERETT COLL.) . . . . .	Ernst Hartert . . . . . 170
12. SOME NEW <i>ANTHRIBIDAE</i> IN THE TRING MUSEUM . . . . .	K. Jordan . . . . . 173
13. TROIS ESPÈCES NOUVELLES D'EUCNÉMIDES DE LA COLLECTION DU MUSÉUM DE TRING . . . . .	E. Fleutiaux . . . . . 177
14. DESCRIPTIONS OF SOME NEW SPECIES AND SUBSPECIES OF <i>LEPIDOPTERA</i> . . . . .	Walter Rothschild . . . . . 179

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CONTENTS OF NO. II.

	PAGE.
1. ON THREE UNDESCRIBED COPROPHAGOUS LAMELLICORNS IN THE TRING MUSEUM . . . . .	<i>John W. Shipp</i> . 185
2. ON A COMPLETE SKELETON OF <i>MEGALAPTERYX</i> <i>TENUIPES</i> LYD. IN THE TRING MUSEUM. (PLATE VI.) . . . . .	<i>C. W. Andrews</i> . 188
3. NEW GENERA AND SPECIES OF <i>DREPANULIDAE</i> , <i>THYRIDIDAE</i> , <i>EPIPLEMIDAE</i> , <i>URANIIDAE</i> , AND <i>GEOMETRIDAE</i> IN THE TRING MUSEUM. (PLATE V.) . . . . .	<i>W. Warren</i> . 195
4. ON THE BIRDS COLLECTED BY MR. EVERETT ON THE ISLAND OF SAVU . . . . .	<i>Ernst Hartert</i> . 263
5. DIE PASSALIDEN DICHOTOMISCH BEARBEITET . 2 <sup>TER</sup> THEIL.—DIE ARTEN.	<i>A. Kuwert</i> . 274
6. SOME NEW SPECIES OF <i>HETEROCERA</i> . (PLATE VII.)	<i>Walter Rothschild</i> 307
7. TWO NEW SPECIES OF BUTTERFLIES IN THE TRING MUSEUM . . . . .	<i>H. Grose Smith</i> . 313
8. NOTES ON <i>HETEROCERA</i> , WITH DESCRIPTIONS OF NEW GENERA AND SPECIES. (PLATE IV.) . .	<i>Walter Rothschild</i> <i>and K. Jordan</i> 314
9. DESCRIPTIONS OF FIVE NEW SPECIES OF <i>LY-</i> <i>CAENIDAE</i> , CAPTURED BY MR. DOHERTY, IN THE TRING MUSEUM . . . . .	<i>H. Grose Smith</i> . 366
10. ON SOME <i>MELIPHAGIDAE</i> AND OTHER BIRDS FROM NEW GUINEA . . . . .	<i>Ernst Hartert</i> . 369

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CONTENTS OF NO. III.

	PAGE
1. <i>COMATIBIS EREMITA</i> (LINN.), A EUROPEAN BIRD. (PLATES VIII., IX., X.) . . . . .	W. Rothschild, E. Hartert, and O. Kleinschmidt . 371
2. NEUMANN'S HARTEBEEST. (PLATE XIV.) . . . .	Walter Rothschild 377
3. NEW GENERA AND SPECIES OF MOTHS FROM THE OLD-WORLD REGIONS IN THE TRING MUSEUM . . . . .	W. Warren. . 378
4. DESCRIPTIONS OF NEW SPECIES OF LIZARDS AND OF A TREE-FROG FROM NORTH-EASTERN QUEENSLAND. (PLATES XI., XII.) . . . .	A. Günther . 403
5. FURTHER NOTES ON GIGANTIC LAND TORTOISES. (PLATE XIII.) . . . . .	Walter Rothschild 407
6. NEW GENERA AND SPECIES OF <i>THYRIDIDÆ</i> , <i>EPIPLEMIDÆ</i> , AND <i>GEOMETRIDÆ</i> IN THE TRING MUSEUM . . . . .	W. Warren. . 408
7. ON SOME NEW BUTTERFLIES AND MOTHS . . .	Walter Rothschild 507
8. ON THE BIRDS COLLECTED BY MR. EVERETT IN SOUTH FLORES. PART I. (PLATE III.) . . . .	Ernst Hartert . 513



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CONTENTS OF NO. IV.

1	VARIOUS NOTES ON HUMMING-BIRDS . . . . .	<i>Ernst Hartert</i>	PAGE 529
2.	INDEX TO VOL. IV. . . . .		535

(TITLE-PAGE AND CONTENTS OF VOL. IV.)

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