









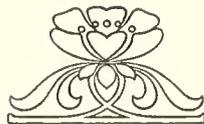
The  
**Macrolepidoptera**  
of the World

==== A systematic description ====  
of the hitherto known Macrolepidoptera

edited in collaboration with well-known specialists

by

Dr. Adalbert Seitz, Professor



STUTT GART

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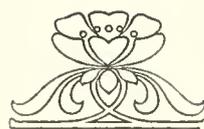
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XII. Volume:

# The Indoaustralian Geometridae





# Introduction.

The family *Geometridae* contains altogether an enormous number of species, occurring for the most part in such individual abundance that in most regions nearly as many *Heterocera* of this family are met with as of all the rest put together. In dull weather sometimes almost exclusively *Geometridae* are found, and in collecting with light they usually represent 50 per cent. of the captures, and this in nearly all faunas and climates. Only as visitors to sugar are they greatly in the minority, probably because they are almost all attached to flowers and have little taste for decaying matter, fermented liquids, exudations from trees and the like.

The main character of the group is the arrangement of the larval legs. Almost invariably the prolegs of the middle segments are wanting, one pair being developed before the anal claspers. For the Palaearctic Fauna (and, so far as was earlier known, also for the others) this criterion passed without exception until latterly the group *Brephinae*, consisting of only 8 palaearctic and nearctic species and not occurring in the other faunas, was transferred to the Geometrids.

While we refer the reader to the Introduction which L. B. PROUT gives in Vol. 4 (p. 1—5) for the palaearctic Geometrids, it may here be further remarked that different authors have had a different conception of the division into subfamilies. The *Geometrinae* are sometimes regarded as synonymous with *Boarmiinae*, but by others again as designating the group that contains the striking green geometers which are hardly wanting in any temperate locality. Further, the genera related to *Orthostixis* have — as already mentioned in Vol. 4 — been separated out from the *Oenochrominae* as *Orthostixinae*. To this have been referred in particular a number of very remarkable Indian genera, which as a matter of fact will not fit accurately into any group; thus the sometimes wholly purple-red *Eumelea*, the bright yellow, black-bordered *Celerena*, *Alex* with its oblique stripe straight through both wings, the snow-white, black-dotted *Naxa*, the falcate-winged *Ozola* and some other genera. We here place all these in the *Oenochrominae*, while recognizing that the latter represents a rather vague division and still requires thorough investigation, especially in respect of the early stages, which are at present little known.

As regards specially the Indo-Australian geometrid fauna, it is subject to the law which applies also to the other families, that the forms deviate the more widely from their palaearctic relatives the more tropical is their habitat, and not according to their geographical remoteness from palaearctic localities. That is to say, for example, there are found at the most distant points of the Australian region, e. g. on New Zealand, a relatively much greater number of geometers which resemble the palaearctic species than, for instance, on the much less remote Sumatra, on Ceylon or even in Hindostan, from which latter our region is not separated by any sea.

In the Indo-Australian Region we may also look for those territories in which the prevalence of Geometrids relatively to the total of species is the most manifest. In Australia, at least in the south, the *Geometridae* pretty well balance all the rest of the Macco-Heterocera, and on New Zealand there are even  $1\frac{1}{2}$  times as many geometers as other moths, if one disregards the Microlepidoptera. Whereas in the Palaearctic Region there is only one species of Geometrid to three of Heterocera, in the extreme south of the Indo-Australian Region we may count three Geometrids to two other species of Heterocera; in S.W. Australia the proportion declines to 1 : 1, and northwards, in India proper, where there are approximately 1200 *Geometridae* against some 3000 other Heterocera, we already see a transition to the proportion which prevails in the greater part of the Palaearctic Region.

Numerically one of the principal constituents of the moth fauna of the whole world, the Geometrids further become especially familiar to us through two other circumstances. In the first place we find among them many of the commonest insects, but in addition they are, as already mentioned in Vol. 4, particularly

active by day. While the great majority of the Noctuids and especially most Bombycids and Sphingids pass the day in such a lethargic condition that one can approach, and mostly indeed even touch them without alarming them, the slightest shaking of a branch or twig, often indeed a mere incautious approach, suffices to make the Geometrids take wing. A not inconsiderable number fly chiefly by day in the sunshine and *Dysphania* are even among the most shy moths known to me and in order to catch them it is necessary to creep up very cautiously, even when they are feeding at flowers. The moths must, moreover, have very good sight, for some fly up to a height, like an *Orgyia*, as soon as they are chased.

The *Geometridae* commonly evince a very marked need of water. One notices that they have a predilection at night for flying in damp, moist thickets, in the true jungle, and they may be found commonly drinking at damp spots before the sun has evaporated the dews. In certain species of *Pantherodes* in America it has been observed that they regularly purge themselves with water so that when they are drinking at the pools or brooks the water taken in is always ejected again at the anus. DUKINFELD JONES counted 50 large drops of water which one of these Geometrids passed in a minute and he estimates the amount of water which would pass through the abdomen within three hours at two hundred times the weight of the body.

At rest, as stated in more detail in the Introduction to Palaearctic *Geometridae*, the majority of the Geometrids are protectively coloured: some exactly assimilate to the bark of the tree on which they settle, being greenish like the lichen or grey like the bark, and are finely speckled, so that only the outline of the wing betrays them. But even here the difficulty of recognizing them is often increased by a remarkable habit of the species. Certain species of the Indian *Pingasa*, which are fond of sitting on fences and palings, rest with the forewings in about the position which they assume in our modern system of setting, while the hindwings are withdrawn to the abdomen: there is thus between the fore- and hindwing a wide space in which the uncovered surface of the background shows. In this way an impression is created of a half moth, or still more of a fore and a hinder half which do not fit well together. The giant *Medasina* of tropical India, which reach upwards of 10 cm. expanse, are fond of sitting on rather narrow stems, but as in the normal resting posture the tips of the wings would project beyond the tree-trunk and reveal the insect they are obliged to settle sideways with the body horizontally placed and one pair of wings spread out above, the other below.

The larvae are no less protected than the imagines and are often so difficult to detect that one has to touch them in order to distinguish them with certainty from a twig or a leaf-stalk or the like. They always, however, betray their identity by the peculiarity of their gait, the „looping“ progression to which the family owes its name („Geometer“, „groundmeasurer“) and which further appeared to the ancients the most striking among all the lepidopterous larvae, so that in Greek the larva itself was designated  $\kappa\alpha\mu\pi\eta$ , i. e. „bending insect“: the bent posture of the Geometrid larva giving allegorically the antithesis to the liberated soul ( $\psi\upsilon\chi\eta$ ), the light-winged imago.

Almost all the Geometrid larvae are so slightly haired that it would be possible to describe them as „glabrous“ or „naked“, but they often develop fleshy processes, warts or knobs, which deceptively resemble similar formations on the foodplant and do good service in protecting their possessors.

On the distribution of the individual genera and the relative development of the subfamilies in the separate countries of the Indo-Australian Region, no definite data can be obtained, so long as the division into the subfamilies is treated in such contradictory ways as has been the case up till quite recently. A satisfactory cataloguing of the family has only just been commenced (L. B. PROUT, in *Lepidopterorum Catalogus*). HAMPSON had earlier (in his *General System, List Heteroc. Ceylon*) maintained numerous subdivisions of the family to which we cannot deny some justification but which have mostly now been abandoned: thus *Eumelea* was kept separated as „*Palyanae*“, *Dysphania* as „*Euscheminae*“, *Abraxas* as „*Zereninae*“, etc.: all groups which today are arranged in the large subdivisions referred to above.

Of the first subfamily, the *Oenochrominae*, nearly three fourths inhabit the Indo-Australian Region, for the most part Australia itself or New Zealand. It may justly be suspected that Australia is the centre of distribution of the subfamily, since several of its genera, such as *Dichromodes* and *Taxeotis*, each with 30—50 species, are entirely confined to Australasia\*); indeed of the 100 genera of *Oenochrominae*, over a third, with almost 200 species, have not yet been found at all outside Australia. India with the Archipelago produces only a little more than 100 species, but these mostly surpass the Australian in beauty and bold colouring. For the other faunas the subfamily is almost negligible, and on closer study its delimitations can be brought still more into unison with zoogeography. Of the 30 or 50 palaearctic species very many are only provisionally placed here, the American genera belong mostly to one of the lateral branches (*Ametridicae* or *Hedylicae*),

\*) We sometimes find the view held that some of the islands to the north of the continent also belong to Australasia: this is erroneous; Australasia signifies the Australian continent and Tasmania and New Zealand collectively, in contradistinction to Australia itself, which only embraces the 5 colonies of the mainland.

and the African species are so few in number that they can be left out of account; the more so since several of them, such as the well-known *Aletis helcita*, have doubtless been modified mimetically.

In the Indo-Australian region itself we may specify as particularly outstanding forms *Epidesmia tricolor* from the Blue Mountains (pl. I i) with its striking banded forewing and *Carthaea saturnioides* from West Australia with very large eye-spots in the centre, resembling those of an *Aglia tau*. In India *Sarcinodes* reaches a considerable size and shows for the most part wine-red or purple-violet shades of colour, similar to those of the typical Australian genus *Oenochroma*, which derives its name from this coloration. Common to both faunas, the Indian and Australian, is *Eumelea*, which has its centre of distribution on the Malayan and Papuan islands. They are among the most remarkable moths known, combining with a by no means inconsiderable size (often even surpassing an *Ourapteryx sambucaria*) a blood-red or purple colouring such as is only very rarely found in the whole realm of the Lepidoptera. Whilst *Eumelea* is distinguished from nearly all the *Geometridae* by its colour and *Carthaea* by its form and markings, only a few of the *Oenochrominae* are at all strongly aberrant in shape. The body indeed varies from very robust (as in the South Australian *Monoctenia falernaria*) to the greatest imaginable slenderness (*Epidesmia hypenaria*), but the wing-form keeps mostly within the confines of rectilinear or ordinary forms. Only a few genera, e. g. *Ozola* and *Sarcinodes*, show a tendency to falcation at the apex, such as is quite usual among American Geometrids, and abortion of the wings, such as we find in some Palearctic and American *Oenochrominae* (*Alsophila*), is also quite rare in the Indo-Australian Region.

The second large sub-group, the *Hemitheinae*, embraces most of the green Geometers. They are distributed throughout the world, with the exception of the cold parts, but have their headquarters in the Indo-Australian Region and are most numerous in New Guinea. Thence over 200 species have already been recorded, which means, with our present incomplete knowledge of the interior of the island, that several hundreds of species of *Hemitheinae* must occur there. Some genera, mostly composed of green species only, are almost confined to New Guinea and the neighbouring Papuan islands, e. g. the extensive genera *Prasinocyma*, *Anisozygia*, *Hypodoxa*, *Metallochloa*, etc., and many more widely distributed genera, such as *Comibaena*, *Gelasma* and *Comostola*, are well represented in New Guinea. Southwards the green geometers diminish, yet one could probably easily make up 100 species from Australia, while New Zealand, which is otherwise not so very poor in *Geometridae*, does not appear to harbour a single Hemitheine species, the few green geometers known from there belonging to other groups.

Also northward from their centre the *Hemitheinae* decrease rapidly. The huge area comprised in „British India“ has not hitherto yielded 100 green geometers and scarcely over 150 *Hemitheinae* in all. Ceylon, with its tropical climate and luxuriant vegetation, has among almost 200 Geometrids only some three dozen *Hemitheinae*; in the Himalayas the number rises a little again, but then sinks rapidly towards the palaeartic boundary; the huge Palearctic Region has only a little over 100 species (Germany only 11).

It must not be supposed, however, that *Hemitheinae* swarm in the countries which are rich in species. An unusually large number of *Hemitheinae* are among the rarer moths and this applies in a quite special degree to the Indo-Australian species. The infrequency of their visits to the lamp shows that most of the species do in fact occur sparingly, as is also the case among the European species of *Hemitheinae*, very few of which are really common. Only in their head-quarters, the Papuan or Australian subregion, can I recall excursions which have yielded more than a few species at one time.

As the preceding group presents in *Eumelea* a quite aberrantly coloured and outstanding genus, so among the Indo-Australian *Hemitheinae* we find in the genus *Dysphania* a highly specialised development. Neither moth nor larva gives the impression of a geometer, though the arrangement of the legs of the latter at once teaches us as to its affinities. Of the sharp, stout, green appearance of a Sphingid larva, but without the horn on the tail and with Geometrid legs, the larva of *Dysphania* sits extended on the food-plant, showing nothing of the twig-like protective guise and striped design of most Geometrid larvae. The imagines are shy day-fliers, feed at flowers and, evidently avoided by birds, frequent the same bushes with Papilios, Pierids and Hesperids. *Dysphania* are absolutely confined to the Indo-Australian Region and have their centre of distribution on the Sunda Islands and the Moluccas: mostly yellow or sky-blue with dark spots and hyacinthine apex to the forewing, they are among the most striking of the geometers and may be regarded as one of the characteristic forms in the Indo-Australian Lepidopterous fauna as a whole. Among the subfamily *Oenochrominae* we find an analogous appearance in *Celerena*, which sometimes looks like a smaller edition of *Dysphania*.

The *Acidaliinae* show in our region, as regards the most extensive genera, just the same inconspicuous, pale-coloured forms, mostly also poor in markings, which characterize this subfamily throughout the world. It is noteworthy that almost all the Indian representatives of this group have congeners in Europe or the Palearctic Region. Besides the true *Acidalia* and *Ptychopoda* we find in India *Timandra* and *Rhodostrophia*, *Somatina* and *Problepsis*. The widely distributed Indian *Anisodes* penetrates into the Australian subregion but on the other hand does not spread northwards.

The *Larentiinae* become decidedly less numerous in the tropics. They inhabit principally light forests with tall tree-trunks, and such forests are almost unknown to tropical Nature with its luxuriant growth. In the Palaearctic Region we have named no less than 1500 forms; the whole of British India numbers only 264 species. Ceylon, according to HAMPSON (1893), harbours scarcely 50 species, while e. g. GRIEBEL in his Fauna of the Rheinpfalz cites even for this limited area three times that number. Southwards the *Larentiinae* again increase in number rapidly. In the southern part of Australia especially they are of everyday occurrence and on New Zealand they attain the ascendancy, not only over the Geometrids in particular but even over the whole of the Lepidoptera occurring there.

In aspect the Indo-Australian *Larentiinae* present nothing extraordinary; most are of moderate or even small size; forms like the East Asiatic *Gandaritis*, *Triphosa*, etc. are scarcely reached, let alone surpassed. Peculiar to the region are the numerous green *Sauris*; almost all very rare, extremely slender moths, found both in India and in Australia and having lobes on the inner margin of the male hindwing leading over to the *Lobophora* group. Here we come upon the highly remarkable species of the *Tatosoma* group, with the abdomen elongate almost as in a dragon-fly; they are found in New Zealand, but South America also possessed some quite near relatives of equally fantastic appearance. *Eupithecia* produces throughout quite similar forms in the Indo-Australian Region to the European; in their life-history, time of flight, frequency, etc., the last-named group also shows in the Indian fauna the constancy attaching to it throughout the rest of the world.

By far the greatest number of Indo-Australian Geometrid species falls to the subfamily *Boarmiinae*, and here belong too the largest known geometers. Such are the giant forms of the genus *Medasina*, already mentioned above; also *Erebomorpha*, which may reach an expanse of 8 or 9 cm., *Elphos*, *Xandrames* and *Amblychia*, the latter expanding 11—12 cm. Thence there are all transitions in size to some tiny *Boarmia* and very small *Macaria*. Similarly we find here every conceivable colour, although grey, yellow and brown are the commonest. Here again we have a genus which — like *Celerena* in the *Oenochrominae* and *Dysphania* in the *Hemitheinae* — stands entirely outside the typical scheme; namely *Milionia*, which extends from China and N. India to Australia and especially is widely-distributed over the intervening islands. In this genus bright carmine-red or orange bands are placed on a deep-black ground, often adorned with a metallic gloss and there is sometimes an astonishing degree of variability in individuals of the same species. Beside these marvellously beautiful developments, to which the Geometrids of the Palaearctic North afford no analogy, we find also forms very familiar to us northerners, such as certain *Abraxas*, representatives of our *Boarmia crepuscularia* and *selenaria*, etc., reaching far towards Australia. Altogether this subfamily shows such diversity as scarcely to admit of many generalisations and we refer the reader to the special part of this volume for further details.

In their general habits the Geometrids of the Indo-Australian Region do not differ essentially from their palaearctic relatives. There is nothing parallel to that which we noticed regarding the Noctuids, namely that their resting habits by day differ in the tropics from those of our northern species. We mentioned concerning this, that in the tropics it is quite rare to find Noctuids asleep on tree-trunks, palings or walls, the usual resting-places of the family in the temperate zone. In addition to the explanation that the brilliance of the tropical sunshine and the great abundance of their enemies which patrol the trees may be uncongenial to the Noctuids, there is yet this further fact, that most of the tropical *Noctuidae* belong to genera other than those (*Mamestra*, *Hadena*, *Acronicta*, *Catocala*, etc.) which characterize our fauna. The few outliers of the more tropical Noctuid groups which reach the Palaearctic Region, such as the *Heliothinae* (*Heliopsis*), *Acontiinae* (*Taarche*, *Acontia*), *Calpinae* (*Calpe*), *Ophiulinae* (*Ophiusa*), *Ommatophorinae* (*Patula*), *Hypopyrinae* (*Spirama*), *Euclidiinae* (*Euclidia*), etc., do not even in the more temperate North rest on tree-trunks and walls. From this we can understand that for the *Geometridae* a different law holds, inasmuch as *Boarmia*, *Cidaria*, *Acidalia*, *Eupithecia*, etc., are of constant occurrence in the Indo-Australian Region under much the same conditions as with us, and therefore, being nearly related to the representatives of our fauna, behave in the same manner. They have the habit of sitting with wings spread out flat on rocks, fences, tree-trunks, etc., just as with us. As for the few geometrid genera of the Indo-Australian fauna which are entirely unrepresented with us, such as *Eumelea*, *Dysphania*, *Celerena*, etc., their hiding-places when at rest seem hard to discover; they appear to be chiefly day-fliers and to conceal themselves by night among foliage, for it only rarely happens that a specimen of even one of the quite common species is disturbed out of the bushes.

Economically the Geometrids of the Indo-Australian Region are apparently of little importance. In plantations in India we find the Cinnamon Geometer (*Fascellina chromataria*) on cinnamon bushes and several Boarmiine larvae on tea. The latter, however, like our Boarmias, do not seem to do any damage worth mentioning, or at any rate the tea plantations of Ceylon suffer much less from the depredations of Geometrids than from certain Chalcosiinae larvae.

## 1. Subfamily: **Oenochrominae.**

A rather small subfamily, having its head-quarters in the Indo-Australian Region. As already pointed out in Vol. 4 (p. 2), it is doubtful whether the outliers in other regions have much phylogenetic affinity with it. Build robust or moderate, in a few genera (as *Eumelca*) very slender. Eye naked. Antenna in ♂ usually pectinate, the pectinations often uniseriate. Wings in both sexes fully developed in all the Indo-Australian forms. Forewing usually with all veins present, „areole“ usually wanting. Both wings with second radial generally from or before middle of discocellulars, first median not stalked (except in *Thaumatographe* and in the hindwing of *Satraparchis* and a few American forms). Hindwing with all the veins present, the costal free or connected with the subcostal by a short bar near the base.

The earlier stages have been but little studied. The larvae sometimes show some ancestral characters which have disappeared from nearly all the rest of the Geometridae. Thus those of *Oenochroma vinaria*, *Arhodia lasiocamparia* and some other species in the same group have retained the prolegs on the fifth abdominal segment in addition to the usual two pairs.

### 1. Genus: **Dirce** Prout.

Face and palpus clothed with long hairs. Body beneath and the femora also densely hairy. Antenna nearly simple. Forewing with the 1st subcostal free, 2nd and 3rd stalked, the 3rd anastomosing with the 4th and 5th. Hindwing with cell rather long, 2nd radial weak, abdominal area ample, 3rd submedian running to anal angle. — A mountain genus, perhaps related to the *Brephinae*. Only two species are known, both confined to Tasmania.

**D. lunaris** Meyr. (1 a). The blackish forewing sprinkled with pale ferruginous scales, the lines ill-defined, *lunaris*. whitish. Hindwing white in the middle, dark at base and round the margins. Common on the summit of Mount Wellington, Tasmania in November and December, flying strongly over rocky ground.

**D. solaris** Meyr. Much rarer than the preceding species, similar in form, but easily distinguished by *solaris*. having the hindwing bright deep reddish-orange. Mount Wellington in November and December, with the preceding.

### 2. Genus: **Diceratucha** Swinh.

Face with two bluntly conical, chitinous projections. Antenna in ♂ shortly ciliated. Hindtibia in ♂ with a small hair-pencil. Neuration nearly as in *Dirce*, 2nd subcostal of hindwing long-stalked with 1st radial. Only one species certainly known, bearing a superficial resemblance to the *Noctuidae*.

**D. xenopis** Lower (1 a). Forewing grey-brown, irregularly irrorated with black, some rather conspicuous white costal dashes in distal half of wing; lines sinuous, pale-edged, the postmedian curving round an oval or somewhat kidney-shaped discal spot. Hindwing paler, only distinctly marked on abdominal margin, suggesting that the forewing nearly covers the hind in the position of rest. Victoria, Australia.

**D. (?) euryscia** Lower (described as *Stawopus!*) may belong to this genus. According to a figure in *euryscia*. the British Museum, copied from LOWER's specimen, it is similar to *xenopis*, but with the wings rather narrower, forewing still darker, hindwing whitish, with elongate cell-mark, distinct postmedian line and some dark shading at distal margin. New South Wales.

3. Genus: **Xenogenes** *Meyr.*

Small moths, differing from the preceding genera in the smooth-scaled face, less hairy palpus and some slight neurational characters. The two species are very different in aspect and colouring, both very rare and insufficiently known. Confined to Australia.

*chrysoplaca.* **X. chrysoplaca** *Meyr.* Expanse about 24 mm. Forewing rather elongate-triangular, costal margin nearly straight, distal margin not very oblique; blackish with yellow markings, consisting of costal and terminal streaks, neither of which reaches the apex, a pyramidal antemedian blotch on hindmargin and a moderate postmedian band. Hindwing blackish, with an orange patch in basal half and a narrow, incomplete subterminal band. Queensland.

*eustrotiodes.* **X. eustrotiodes** *Prout* (1 a) Smaller and more glossy winged, recalling the texture of *Eustrotia* and other Noctuids. Forewing creamy white, base of costa blotched with brown; lines velvety black, the first broken (except at its extremities) into vein-spots, the second arising from a thick costal spot, strongly curved inwards between the 3rd radial and the submedian fold; a brown or plumbeous band distally of the first line, a blotch between cell and second line, subterminal blotches on costal and hind margins. Hindwing yellow, with a terminal dark band (sometimes indistinct), divided by a pale yellowish line. West-Australia.

4. Genus: **Debos** *Swinh.*

An extremely anomalous genus, originally described in the *Zygaenidae*, stated by HAMPSON (Faun. Ind. Moths Vol. 1, p. 289) to be „probably a *Tinea*“, but later referred by MEYRICK to the *Oenochrominae*. Antenna rather short, unipectinate. Tongue wanting or rudimentary. Legs rather short and stout, hindtibia with all spurs. Wings long and narrow, smoothscaled. Forewing unique among the *Geometridae* is having the 2nd and 3rd subcostals on a rather long stalk quite apart from the stalk of the 4th and 5th. Hindwing with the 2nd radial weak. Until recently only a single species was known, but a second has been added from Portuguese East Africa.

*iratus.* **D. iratus** *Swinh.* (1 a). Head mostly orange-ochreous. Body beneath also tinged with ochreous, but paler. Body above and wings uniform bronzy brown, glossy. ♀ unknown. India: Poona (the type specimen), Nilgiris, Bhotan; only 3 specimens yet known to me.

5. Genus: **Theoxena** *Meyr.*

Slenderly built. Face smooth, palpus of moderate length, antenna of ♂ with rather long fascicles of cilia. Hindleg slender with 4 spurs. Wings glossy; forewing with apex minutely falcate, the 1st and 2nd subcostal veins anastomosing to form a narrow areole, the 2nd afterwards anastomosing strongly with the 3rd—4th. Hindwing rather narrow, with costal margin relatively long, costal vein approximated to subcostal to near end of cell, 2nd subcostal shortly stalked with 1st radial. Only one species known.

*scissaria.* **T. scissaria** *Guen.* (1 a) Recognizable at once by the pale forewing and white hindwing, the former with a single curved dark streak arising from hindmargin close to the base and running in the direction of the apex, which it does not quite reach, the latter only with a cell-dot and terminal dots. New Zealand in January, frequenting the plains and apparently local.

6. Genus: **Samana** *Walk.*

Similar in shape and texture to *Theoxena*. Venation also essentially the same, except that the 2nd radial of both wings arises well before the middle of the discocellulars. Distinguished chiefly by the very long palpus and by having a projecting cone of scales from the face. Confined to New Zealand.

*falcatella.* **S. falcatella** *Walk.* (1 a). Larger than *Theoxena scissaria*, hindwing similar, forewing more tinged with yellow and bearing two oblique streaks, one from the base, almost longitudinal, the other from near the middle of hindmargin to near apex; in addition, a longitudinal dash at extremity of cell. Has been taken near Dunedin, but apparently not common.

**S. acutata** *Btlr.* (1 a) is at once distinguished from *falcatella* by having the outer streak acutely angulated inwards on the fold; first streak short, cell-dot small, not elongate. South Island, N. Z. Besides Butler's type, I know only a single example, from Queenstown. *acutata.*

### 7. Genus: **Adeixis** *Warr.*

Face sloping, with a small cone of scales. Palpus moderately long. Antenna of ♂ bipectinate, the branches of the inner series very short. Hindtibia of ♂ with a small hair-pencil. Wings rather elongate glossy. Forewing with apex not falcate, distal margin anteriorly straight and not very oblique, 1st subcostal vein free, 2nd anastomosing with 3rd—4th. Small and inconspicuous, ♀ smaller than ♂.

**A. inostentata** *Walk.* (= *insignata* *Warr.*) (1 a). Very variable in colour, from whitish grey, with the hindwing white, to dark mouse-colour, with the hindwing more or less darkened. When netted, this species feigns death, folding the wings close round the body rather like a Noctuid. Common and widely distributed in Australia, reaching Melville Island. — **griseata** *Huds.*, the New Zealand form, is generally strongly marked, showing the curved oblique line or shade almost complete, distally edged with whitish. *inostentata.* *griseata.*

### 8. Genus: **Dichromodes** *Guen.*

An extensive genus of pretty uniform structure, differing from *Adeixis* in the unipectinate ♂ antenna. Forewing in general with the distal margin longer, anteriorly more oblique. Three species — *steropias*, *ptilomacra* and *nexistriya* — have longer palpi and narrower wings, with tufts of raised scales. Hindtibia of ♂ generally simple, but in the *molybdaria* group greatly swollen, the tarsus shortened. Australia and New Zealand.

**D. ainaria** *Guen.* (= *divergentaria* *Guen.*, *metaxanthata* *Walk.*, *subflava* *Bastelb.*) (1 a) differs from nearly the other species in the clear orange, sharply dark-bordered hindwing; from *diasemaria* and *scothima* in that they have the base of palpus white beneath. ♀ (*divergentaria* = *ainaria*) is more sharply marked than the ♂. Common in the end of October and in November, South Australia and Tasmania to New South Wales. *ainaria.*

**D. scothima** *Prout* (1 a) described from a single specimen from Albany, West Australia, may possibly prove to be a form of the following. Characterized by having the forewing almost uniformly darkened from base to beyond middle. *scothima.*

**D. diasemaria** *Guen.* Generally much duller than *ainaria*, the postmedian line of the forewing noticeably bent inwards behind cell, the hindwing with more or less strong smoky suffusion. Decidedly variable. Tasmania, flying in December and January. — **uniformis** *Bastelb.* (2 a) is a form from Katoomba with nearly unicolorous dirty-grey forewing. I have seen it also from Mount St. Bernard, Victoria. *diasemaria.* *uniformis.*

**D. exsignata** *Walk.* is perhaps an extreme melanic form of the preceding species. The underside is almost identical but both wings above are blackish throughout; the central band of the forewing is just perceptible, and appears unusually broad. Sydney, only Walker's type known to me. *exsignata.*

**D. anelictis** *Meyr.* (1 b) is distinguished by the acute outward projections of the principal lines, in particular by the sharp tooth of the postmedian behind the 3rd radial vein; the central band is generally intersected by a white line along the fold. The hindwing, in this and nearly all subsequent species of the genus, shows little that is distinctive. October to December, common in West Australia, also occurring in the South. — **deprivata** *Prout*, described from a single ♀, is an aberration, or perhaps a related species, of a pale grey colour with the markings mostly suppressed; central band indistinct excepting a narrow oblique patch in its anterior part; costal spot beyond developed, also a double ferruginous spot beyond the tooth of the central band. Sea Lake, Victoria. *anelictis.* *deprivata.*

**D. odontias** *Meyr.* Head whitish ochreous, face brownish ochreous. Antennal pectinations longer than in the preceding species. The wings lack the ochreous tinge; the lines which bound the central area are irregularly dentate and double, the subterminal line is accompanied proximally by irregular dark cloudings; terminal dots well developed, triangular. Victoria, in December, apparently not common. *odontias.*

**D. disputata** *Walk.* (= *dentigeraria* *Walk.*) (1 b). Distinguished by the dark head and thorax, purple-reddish suffusions on the forewing and the numerous whitish, but not very sharply expressed, waved transverse lines, which show a more or less strong tendency to become broken up into dots. Rather common, Victoria to Queensland, apparently decreasing in size towards its northern limit. *disputata.*

- rufula*. **D. rufula** Prout (1 b). A small species, with rather narrow, straight-margined forewing. Conspicuous by its strong rust-red coloration (particularly in the central area and beyond the subterminal line); subterminal line shaded with red and fuscous proximally. Geraldton, West Australia.
- haematopa*. **D. haematopa** Turn., described from Sea Lake, Victoria, is unknown to me. It is another reddish species, but larger than *rufula*, with a white, dark-sprinkled costal streak, the lines dark fuscous, not red; costal and hindmarginal dark spots near base, the former mixed with red; fringe dirty whitish, divided by a dark line.
- compsotis*. **D. compsotis** Meyr. (1 b). The dark, irregularly mottled forewing has the veins partially ochreous, the antemedian and postmedian lines white-margined, the former broadly, the latter moderately; in the median area two dark bars (the anterior one crossing the cell-spot) connect the lines; subterminal line slender, whitish, trisinate. Hindwing more variegated than in most of the allies. Fremantle, West Australia. flying in October.
- orthozona*. **D. orthozona** Lower is said to be probably nearest to *compsotis* but apart from the longer antennal pectinations (nearly 6 times as long as diameter of shaft) recognizable at once by the almost straight lines which limit the central band, recalling those of *orthotis* (1 b); basal third ferruginous-ochreous, central band moderately broad, „fuscous-whitish“. Roeburne, West Australia.
- cirrhoplaca*. **D. cirrhoplaca** Lower. Likewise only known to me from the description. Silvery grey-whitish, with minute and irregular dark irroration; an interrupted blackish streak on fold; antemedian line slender, waved, black, accompanied proximally by a ferruginous band, which does not reach the wing-margins; postmedian fine, blackish, with a slight inward projection touching the cell-spot; beyond it a broad ferruginous band which is strongly suffused with blackish distally and here sends out three obtuse projections. Pinnaroo, South Australia.
- partitaria*. **D. partitaria** Walk. (1 b). A neat but not very striking species, distinguished from the others in which the veins are partially ochreous by having a sharply-defined white marginal band, which almost reaches the subterminal line anteriorly and is confluent with it towards the hindmargin. According to Meyrick common in *angasi*. West Australia in November and December. Occurs also in New South Wales and Victoria. — **angasi** Fldr., only the type known, unfortunately without indication of exact locality, is a large aberration or local form of an almost uniformly dark colour with the exception of the whitish distal band of the forewing.
- aristadelpha*. **D. aristadelpha** Lower. According to its author very close to the preceding but totally different in colouring and in the shape of the antemedian line, besides other details. „Ochreous, somewhat mixed with ferruginous-fuscous“, central band dark and well-defined, antemedian line strongly curved in anterior two-thirds and with a sharp angulation near hindmargin. Henley Beach, South Australia.
- mesozona*. **D. mesozona** Prout (1 b). A very distinct species, of a rust-brownish colour, irrorated with white and fuscous; the dark central band of the forewing very conspicuous, rather narrow, with its edges rather irregular, its proximal boundary-line strongly bent basewards near the costal margin; a conspicuous narrow subbasal band; distal area and hindwing slightly recalling *partitaria*. Nhill, interior plains of Victoria.
- paratacta*. **D. paratacta** Meyr. (1 b). Scarcely to be confused with any other species. The dark central band is rather broad, at least posteriorly, its strongest distal projection is behind the middle of the wing; characteristic are the subtriangular whitish or light buff costal patch beyond this band and the somewhat ferruginous bar which separates this patch from the subterminal line. Described from Sydney, whence come also the specimens in my collection. Flies in October and November.
- semicanescens*. **D. semicanescens** Prout (1 b). Much smaller than *paratacta*, the basal and central areas almost uniformly light grey, with some scattered black scales, the distal area a little darker than the rest, whereas in *paratacta* it is paler; the light subcostal patch is not followed by a ferruginous bar and the white subterminal line is wanting. Hindwing almost uniformly dark above, beneath paler, with a dark cell-dot and dark distal border. West Australia.
- obtusata*. **D. obtusata** Walk. (= *devitata* Walk.) (1 b). Central band rather narrow, slightly wider anteriorly, the lines which bound it fine, dentate, thickened somewhat at costal margin; a straighter, thicker, more conspicuous dark ferruginous line proximally to the antemedian is generally distinctive of this species, frequently also there is a ferruginous band proximally to the subterminal. South Australia to New South Wales in October and November. A small form occurs in Queensland. — **longidens** Prout is a darker form (or closely allied species), with central area especially dark, postmedian line twice dentate outwards, almost as in *anelictis*. Beaconsfield, Victoria.
- liospada*. **D. liospada** Meyr. is a more dusky, obscurely-marked species, with the lines which limit the central area scarcely discernible, except as blackish spots at the costal margin; the head and thorax, which in *obtusata* are irrorated with whitish, are here uniformly dark-coloured, as is *disputata* (1 b), which, however, is a

more brightly marked species. with the fringes mottled with purplish. New South Wales, in September, apparently rare.

**D. explanata** Walk. (2 a). Generally of a very uniform dark colour with fine black and white irro- *explanata*.  
ration, the two fairly broad whitish lines standing out very sharply by contrast; the antemedian is almost straight, the postmedian characterized by a sharp projection outward in the middle and an unusually deep bend inward at the fold. WALKER's type is merely labelled „Australia“, but the species is distributed from West and South Australia to New South Wales.

**D. sigmata** Walk. (1 b). Only known from WALKER's type, a ♀ from Sydney. Possibly only a remark- *sigmata*.  
able aberration of the preceding; lighter grey, postmedian line of forewing more proximally placed, less deeply angulated posteriorly, distal area more variegated, the whitish subterminal line accompanied proximally by irregular dark suffusions.

**D. orthotis** Meyr. (1 b). Recognizable at once by the nearly straight yellow-white lines and especially *orthotis*.  
by having the central area pale grey, conspicuously lighter than the rest of the wing. Distributed in West Australia, November and December.

**D. poecilotis** Meyr. (= tridenta Swinh.) (1 c). Forewing with the veins in part thickly streaked with *poecilotis*.  
reddish ochreous, the lines slender, whitish, blackish-edged distally, the antemedian acutely angulated in the middle, the postmedian sinuate inwards posteriorly, followed distally by a fine straight dark line. West Australia, common in October and November. Also from Victoria (?).

**D. ioneura** Meyr. (1 c). A rather pretty species, with the veins marked nearly as in *poecilotis*, but with *ioneura*.  
the ground-colour lighter, more violet-grey, the markings more interrupted and irregular; antemedian line not acutely angulated in the middle. Likewise from West Australia, October and November.

**D. fulvida** Lower is said to be apparently near *ioneura* but quite distinct in colouring and in the form *fulvida*.  
of the lines. Fuscous, densely irrorated with dull whitish, veins with rather thick ochreous streaks; a nearly straight dark subbasal band; a broad dentate-edged median band, its proximal edge indented in middle; a sub-marginal band apparently shaped somewhat as in *stilbiata* (1 d). Pinnaroo, South Australia.

**D. euprepes** Prout (1 c). Also near *ioneura*, but with the lines straight, oblique, the head and veins *euprepes*.  
without reddish colouring; antemedian line incomplete, postmedian accompanied proximally by some wedge-shaped black vein-spots. Waroona, Swan River, West Australia, in October.

**D. orectis** Meyr. A variable species, said to be common at Geraldton, West Australia. Like *indicataria* *orectis*.  
(1 c) it has the cell-spot of the forewing merely outlined in blackish, the centre remaining pale, but that species is smaller and has the palpus dark at the base beneath, while in *orectis* it is whitish. Postmedian line angulated outwards in middle, curved inwards behind middle, the central angle marked with a small reddish-ochreous spot; proximally bordering the postmedian is a row of triangular spots, somewhat as in *euprepes* (1 c), or these may be confluent into a more or less thick black shade. — The larva feeds on an undetermined myrtaceous shrub in November and beautifully imitates the leafy stems of its food-plant; bright green, the spiracular line pale yellowish, a series of oblique white marks on sides, meeting on back. Moth in November and December.

**D. atrosignata** Walk. (= linda Btlr.) (1 c) is likewise variable and is subject to rather strong sexual *atrosignata*.  
dimorphism. The ♀ (*atrosignata*) is conspicuous in having the lines stronger, margined with blackish in the median area except towards the costa, and has the postmedian acutely angled in the middle, rather deeply in-curved behind. The ♂ has the postmedian less strongly bent and only rarely (form *linda*) resembles the ♀ in the sharp black markings. — **usurpatrix** Prout (= *exsignata* Meyr., nec Walk.) (1 c) is the usual ♂ form, much *usurpatrix*.  
more weakly marked than the ♀, the fine whitish lines sometimes broken up into dots. — *atrosignata* is common in Victoria and New South Wales, apparently in two generations. I have also a dwarf form from Stradbroke Island.

**D. raynori** sp. nov. Smaller than *atrosignata* (1 c). Palpus longer, of a less blackish brown colour. *raynori*.  
Antennal pectinations in the ♂ longer. Rather paler, beneath rather more strongly marked. Markings almost identical and with similar sexual dimorphism, but the cell-mark of the forewing forms a large open ring, as in *indicataria* (1 c). New South Wales, 3 ♂♂ and 2 ♀♀ in coll. Brit. Mus. collected by Rev. G. H. Raynor, the ♂♂ from Parramatta, end of August. From the wing-expanse given by Meyrick (Proc. Linn. Soc. N. Sth. Wales, Ser. 2, Vol. 4, p. 1184), his mention of a „sometimes pale centred“ discal spot, and especially his measurements of palpus and pectinations, this was certainly confused by that author with *atrosignata*. The last-named has the shorter palpus and pectinations of *indicataria*.

- berthoudi*. **D. berthoudi** *Prout* (1 c). Dark bluish grey, irrorated with whitish and more sparsely with fuscous; differs from *atrosignata* in having the antemedian line slightly angled outward at costal and median veins, the postmedian irregularly dentate and sinuous; from *indicataria* in its larger size and small, not pale-centred cell-dot. Waroona, West Australia, in October.
- albitacta*. **D. albitacta** *Prout* (1 c). Rather above the average size for the genus; basal and central areas darkened, the latter moderately broad, crenulate on both margins, somewhat constricted behind the middle; postmedian line represented by well separated white dots. Antennal pectinations rather long. Nhill, interior plains of Victoria, in November.
- euscia*. **D. euscia** *Meyr.* (1 c). Rather suggests a large *atrosignata* ♀ in the heavy black shade which accompanies the postmedian line, though this is more obtusely angled in the middle and more gently curved posteriorly; but the antemedian is reduced to a few blackish dots. New South Wales, October and November, also from Tasmania.
- ophiucha*. **D. ophiucha** *Meyr.* „Fuscous, irrorated with whitish; a short blackish mark beneath costa almost at base; a short outwardly oblique blackish streak from costa at  $\frac{1}{3}$ ; a short longitudinal blackish streak in middle of disc; an obscure cloudy darker dot on costa at  $\frac{3}{4}$ .“ Distinguished by the absence of the postmedian line. Sydney, August and November.
- indicataria*. **D. indicataria** *Walk.* (1 c) is an inconspicuous little grey species, apparently variable and possibly embracing two or three species which have not yet been differentiated. Generally recognizable by the cell-mark of the forewing, which consists of an open ring instead of a dark spot or dot; lines fine, finely crenulate, whitish-edged. WALKER's type, from Swan River, is rather larger and paler grey than the forms from Victoria etc. Differs from *raynori*, apart from structure, in its greyer colour and more crenulate postmedian line.
- ornata*. **D. ornata** *Walk.* (1 d). Not appropriately named, as it is a rather sober dark-grey species; sometimes, however, the central area of the forewing is decidedly darker than the distal; antemedian line weak, punctiform; postmedian well expressed, feebly or scarcely sinuate, nearly parallel with the distal margin, finely pale-edged distally, often shading off gradually into the ground-colour proximally. S. E. Australia to Queensland, in two generations.
- triparata*. **D. triparata** *Walk.* (= *molybdaria* *Walk. nec Guen.*) (2 a). Has the median area distinctly darkened rather narrow, its distal edge pointed in the middle and forming a regular proximal curve in the posterior half; the whitish bands on each side of it rather broad, divided by a fine line; apex whitish. New South Wales, Victoria and West Australia, August to December.
- strophiodes*. **D. strophiodes** *Lower* (1 d). Somewhat similar to *triparata* but more variegated, the projection in the distal edge of the median band more acute, the subbasal dark band developed in posterior half only, the fine lines in the pale areas shaded with bright rust-colour. Range as in the preceding species, including South Australia.
- mesogonia*. **D. mesogonia** *Prout* (1 d). Forewing shaped nearly as in the two preceding, hindwing with the costal margin rather less elongate. Forewing with subbasal dark mark still less developed, less oblique than in *strophiodes*; central band broader with two comparatively equal distal projections; coloration similar but less variegated. Sea Lake, Victoria, in January.
- consignata*. **D. consignata** *Walk.* (= *petrilineata* *Walk.*) (1 d). A rather pale grey species, the wings with more pointed apices than most of those which precede, the anterior half of the termen being almost straight or even feebly concave. Very characteristic are the broad whitish, dark-edged lines which bound the central area and the curved dark line beyond this area, which run almost into the apex. West Australia, South Australia, Victoria, New South Wales, October to December.
- rimosa*. **D. rimosa** *Prout* (1 d). Similar in shape to the preceding. Palpus not quite as long as in *confluaria* (1 d). Antennal pectinations long. The dark ground-colour is very strongly frosted with white scales, the antemedian and postmedian lines indicated by white vein-spots edged anteriorly and posteriorly by dark ones; a strong dark shade proximally to the subterminal. Sea Lake, Victoria, in October.
- stilbiata*. **D. stilbiata** *Guen.* (= *plusiata* *Walk.*) (1 d). A very glossy species, the median area longitudinally dark-shaded rather than uniformly dark; the pure white line which bounds it distally is broad anteriorly, gradually narrowing, and makes a sharp bend about at the fold, thence running obliquely outward to the hindmargin. Generally common in the summer, Tasmania to New South Wales and South Australia.
- exocha*. **D. exocha** *Prout* (2 a). On account of the pale head this species would perhaps be better placed near

*odontias*; the central band, moreover, in less obliquely placed than in *stilbiata*, has an indentation in the middle on its proximal side and a small projection in the middle on its distal side; a rather conspicuous dark sub-basal band; the whitish line (or narrow band) which borders the central area distally is broad anteriorly, narrow posteriorly, slightly oblique outward at hindmargin; beyond it comes a fine brown line, then an irregular blackish band shaped as in *stilbiata* but much more conspicuous, the distal area remaining pale. Kelso, New South Wales, only two examples known to me.

**D. perinipha** *Lower* is said to be remarkable in having the distal margin of the hindwing unevenly wa- *perinipha*. ved. Further distinguished by its pale colouring. Head, palpus, thorax and wings whitish; markings dark fuscous; antemedian and postmedian lines thick, the former not reaching the costal margin, slightly projecting at the fold, the latter from  $\frac{3}{4}$  costa to near anal angle, dentate throughout and with a bidentate projection in the middle; a dull subterminal shade. Pinnaroo, South Australia.

**D. confluaria** *Guen.* (1 d). A very distinct species, unique in the broad whitish subcostal streak, very *confluaria*. oblique central one, bent postmedian and straight subterminal and terminal. Common and widely distributed in the southern parts of Australia, October to December.

**D. personalis** *Fldr.* (= *ophiosema Lower*) (1 e). A very remarkable and unmistakable species, unique *personalis*. in the arrangement of the dark markings, the elongate spot in the middle of the wings flat anteriorly and gently curved posteriorly, the hinder dark marking forming a projection proximally, distally confluent with a sinuous-edged submarginal band which tapers to a point near apex. West Australia.

**D. triglypta** *Lower.* A rather large species, doubtfully referred by its author to this genus, the head *triglypta*. in the unique type being in bad condition. Forewing elongate; brownish ochreous, the lines rather thick, black; postmedian curved outwards in middle, edged proximally with ferruginous, distally with clear white; subterminal line sinuous, clear white, dark-bordered proximally. Dundas, West Australia, in November.

**D. trychnoptila** *Turn.*, founded on a single male in poor condition, differs from all other known species *trychnoptila*. in having 3 tufts of raised scales on the costal margin of the forewing between the base and the discal spot and by the exceptionally short antennal pectinations, which are only as long as diameter of shaft and as broad as long. Dirty whitish with 3 transverse lines, the first and second arising from the second and third tufts, the third subterminal. Zeehan, Tasmania.

**D. steropias** *Meyr.* Palpus long. Forewing rather elongate, fuscous, with irregular light suffusion; *steropias*. four small tufts of raised scales, proximally blackened, the first two being subcostal, placed near the base and at one-fourth; lines dark, slender, the postmedian sharply dentate throughout. West Australia, in November.

**D. nexistriga** *Warr.* (1 c). Related to *steropias*, but very distinct. Forewing light wood-brown with some *nexistriga*. fine dark irroration; a tuft of raised, mostly blackened scales at base of cell, giving rise to an irregular blackish longitudinal streak which runs along the median vein, then between the first and second radials and finally rather more oblique to distal margin near the apex; transverse markings indistinct and incomplete. Roebourne, West Australia.

**D. ptilomacra** *Lower.* „The most remarkable of the genus, nearest *steropias* Meyr., but differs in length *ptilomacra*. of palpi and especially antennal pectinations of ♂.“ The latter are said to be nearly 12 times as long as diameter of shaft, the palpus 6 to 8 times diameter of eye. Forewing fuscous, with four small tufts of raised scales, the first two being subcostal and hindmarginal at about one-fourth; lines white; a number of irregularly placed cheese-coloured streaks. South Australia.

**D. niger** *Btlr.* (2 a). Both wings dull black, the forewing with the central area faintly discernible on *niger*. account of very slightly paler shades which bound it and especially on account of the deeper black costal and median spots which indicate the two lines; cell-spot also faintly discernible. Near Nelson, New Zealand, resting on bare ground in the hot sunshine in openings in the birch forest at 1500 to 2000 feet altitude.

**D. gypsotis** *Meyr.* (= *niger Meyr. nec Btlr.*). Forewing white, slightly mixed with grey, hindmargin *gypsotis*. and hindwing darker grey; bands of forewing (subbasal, antmedian and postmedian) black, slender, the two latter thickened at costa, the postmedian sharply angled in the middle, connected behind middle with the antmedian by a suffused bar and closely followed distally by a rather broad grey band. Lake Wakatipu, New Zealand at about 1500 feet altitude, taken in December. Unknown to me.

**D. sphaeriata** *Fldr.* (= *petrina Meyr.*). (1 e). Stonegrey (pale grey with dark irroration), somewhat *sphaeriata*. variable in colour but generally with a slight yellowish admixture at least in the pale area beyond the central area, while this latter remains rather more slaty; lines nearly parallel, slightly thickened at costa, in middle,

and at hindmargin, very slightly projecting outwards in middle; subterminal line pale, sinuous, generally with some irregular dark shading proximally. New Zealand, distributed, December to February.

*simulans.* **D. simulans** Huds. Distinguished by the yellowish brown tone, conspicuous on the hindwing. Said to bear a deceptive resemblance to *Notoreas (Dasypuris) fulva* Huds. but with the wings somewhat broader, the lines more indented, the fringes not barred. New Zealand.

*ida.* **D. ida** Huds. Forewing very pale greenish blue, speckled with black, the lines which bound the paler central area black, the postmedian conspicuous and jagged, followed by a very conspicuous pale ochreous line; cell-spot conspicuous; two ill-defined black bands in distal area. Hindwing reddish ochreous, speckled with black; a clear yellowish band beyond the postmedian line. — Larva suspected of feeding on lichen, very protective. Pupa in a cleft of rock, in a chamber formed of moss-dust and silk. Ida Valley, Central Otago.

*cynica.* **D. cynica** Meyr. Dark grey, sprinkled with black and grey-whitish, the veins partly suffused with yellow-ochreous; lines formed of black irroration, obscurely edged on their reverse sides with whitish irroration; these markings most distinct near costa and hindmargin, the postmedian forming a moderate bidentate prominence in the middle; subterminal obsolete. Differs from *niger* in the form of the lines. Lyttelton, New Zealand, in November.

*molybdaria.* **D. molybdaria** Guen. (= *carbonata* Walk.). (1 d). This species and the two which follow form a separate section of the genus, the ♂ having the hindtibia swollen, compressed laterally, the hindtarsus shortened. The typical form of *molybdaria* is of a smooth leaden-grey tone with a moderate black-grey central band and black terminal dots, sometimes also with indistinct pale subterminal lunules, filled-in with slight dark spots on their proximal side. — ab. **estigmara** Walk. has the band obsolete, its boundary-lines very fine and more or less strongly interrupted or obsolete, thickened antemedian and postmedian spots on the costa and an irregular postmedian mark in the centre remaining conspicuous. — ab. **costinotata** Walk. (= *schistacearia* Walk.) is a more extreme aberration with only the costal spots remaining and even these occasionally (as in WALKER's type of *schistacearia*) quite rudimentary. *molybdaria* is only known to me from New South Wales and Moreton Bay. Common, October to December and in February.

*orthogramma.* **D. orthogramma** Lower is said to differ from the preceding in having the antennal pectinations only about half as long, the lines and a cell-spot dark fuscous, the antemedian at one-third, slightly sinuate near costa, the postmedian almost straight, somewhat punctiform, from three-fourths of costa to two-thirds hindmargin-edged distally by an equal width of whitish; subterminal indistinct, strongly waved throughout, dark-shaded proximally. Duaringa, Queensland, taken in November. „Superficially not unlike a large *ischnota*.“

*ischnota.* **D. ischnota** Meyr. (1 d). Smaller than *molybdaria*, the central area narrow, not or scarcely darkened, bordered on each side by a fine black, then by a white line; antemedian sharply bent near costa; a distinct cell-dot present in the central area; a slightly sinuous whitish subterminal line. Described from West Australia but also occurs in Queensland. October.

### 9. Genus: **Arcina** Walk.

Distinguished by its strong frontal protuberance, whence TURNER — unacquainted with WALKER's type — described the genus under the name of *Prorocrania*. Antenna in ♂ bipectinate. Legs long and slender. Both wings elongate anteriorly. Venation not very different from that of *Dichromodes*, *Adeixis* etc., but with the 1st subcostal vein anastomosing with the second. Only one species.

*fulgorigera.* **A. fulgorigera** Walk. (= *argyritis* Turn.) (1 e). A very distinct species, brown with irregular light patches and black lines in proximal part, a strikingly zigzag silvery line from beyond two-thirds of costa to well before middle of hindmargin and elongate silvery dashes at distal margin. West Australia, apparently scarce. Occurs in August.

### 10. Genus: **Nearcha** Meyr.

Face with projecting cone of scales. Palpus often long. Antenna in ♂ bipectinate. Forewing with the 2nd subcostal anastomosing both with the 1st and with the 3rd—4th. Hindwing with costal closely approximated to subcostal almost to the end of the cell, cell rather short, 2nd subcostal stalked with 1st radial. Sexual dimorphism usually somewhat pronounced; the ♂ commonly with tufts of hair on the hindwing beneath. Another exclusively Australian genus.

A. Section: hindwing of ♂ not tufted; hindtibia of ♂ without hair-pencil.

**N. curtaria** (*Guen.*) (= *corrogata* *Walk.*) (1 f). Wings more pointed than in the other species, apex *curtaria*. of forewing almost falcate, distal margin of hindwing almost straight; ♀ narrower winged than ♂. Coloration always light, though rather variable; lines marked by dots, the postmedian also generally by a double line (variably developed), the proximal one blackish and very fine, the distal brown, not reaching costa. Common in South and Southeast Australia, in March.

**N. pseudophaes** *Lower* (1 f). Both wings less extremely produced apically than in *curtaria*. Antennal *pseudophaes*. pectinations very long, palpus shorter and blacker than in *curtaria*, antemedian dots accompanied proximally by a whitish-ochreous streak, cell-spot large, pale centred. South Australia and Victoria.

**N. uncta** *Prout* (1 f). Near *pseudophaes* but very distinct in its very dark, very glossy coloration. The *uncta*. lines themselves are scarcely noticeable on the dark ground but are offset by white dots on the veins, those of the postmedian series, however, very small; subterminal line distinct, regularly dentate. Waroona. West Australia, in May.

B. Section: hindwing of ♂ not tufted; hindtibia of ♂ with hair-pencil.

**N. staurotis** *Meyr.* (1 e). Apart from the structure, this species and all which follow differ from *staurotis*. those of Section A in the less elongate wings. *Staurotis* is a neat grey species, the lines slightly curved, formed of (sometimes nearly confluent) black dots, the postmedian accompanied distally by a pale yellow-whitish line, this again generally by a narrow dark shade which tapers anteriorly and is wanting in the costal third; cell-spot moderately large. West Australia, November. Also from North Queensland.

**N. recisa** *Prout* is perhaps merely a giant form of the preceding. but the palpus and antennal pecti-*recisa*. nations seem appreciably longer; the cell-spot is large, the dark band beyond the submedian broad, generally strongly developed, sometimes reaching the costa; occasionally traces of a similar band appear on the hindwing. Bridgetown and Waroona, West Australia, November.

**N. caronia** *Swinh* (1 e). Again closely similar to *staurotis*, on an average rather smaller, distally darker, *caronia*. distal margin of forewing rather more oblique, postmedian line rather straighter, the pale line beyond shading off gradually into the ground-colour distally, the dark outer band entirely wanting, hindwing with conspicuous cell-dot, underside less uniform. Port Darwin, Parry Island and Queen's Islet, N. W. Australia, September and December.

**N. ophla** *Swinh*. (1 e). Excessively variable, but generally more tinged with brown or reddish than *ophla*. the three preceding; hindwing rather more regularly rounded. Both wings with the black irroration generally copious, though very fine; cell-mark of forewing generally rather large and ocellated; central area generally broad; antemedian line often indistinct, very rarely marked with black spots. SWINHOE's type is a grey form, rather sharply marked. — ab. **innolata** *Warr.* is almost entirely without markings. — ab. **notata** *Warr.* has *innolata*. two rows of dark-grey blotches in the distal area, one on each side of the subterminal line. — ab. **strigata** *Warr.* has the postmedian line unusually strong and black. — ab. **anemodes** *Lower* is fleshy-ochreous with well-*notata*. developed annular cell-marks, the lines obsolete. — ab. **pyrosema** *Lower* has the lines of the forewing red. The *strigata*. species inhabits West Australia, apparently abundant on the Sherlock River; also Tennant's Creek, South *anemodes*. Australia. *pyrosema*.

**N. nephocrossa** *Turn.* Unknown to me and described from a single male with the hindlegs lost; *nephocrossa*. hence only doubtfully referred to this section. Antennal pectinations unusually long (10 times diameter of shaft). Further distinguished by having a dark streak along the basal quarter of the costal margin; antemedian pale line not accompanied by dark dots, postmedian sinuate, with dark dots proximally; beyond the postmedian a broad dark-grey band, with crenate distal edge. Near Brisbane, in April.

C. Section: hindwing of ♂ tufted beneath; hindtibia of ♂ with hair-pencil.

**N. atyla** *Meyr.* Extremely like *subcelata* (1 f) in general appearance, slightly larger, hindwing with a *atyla*. distinct black cell-dot. Further distinguished structurally in the ♂ by having merely a small subcostal patch of pale greyish-ochreous hair on the underside of the hindwing, placed proximally to the middle. Perth and Albany, West Australia, in November.

**N. subcelata** *Walk.* (1 f). A rather pale, weakly marked species, the antemedian black dots generally, *subcelata*. the postmedian sometimes, almost obsolete; a fine white-yellowish line distally to the postmedian and some-

times traces of a still finer, ferruginous-tinged line beyond this; the ♂ shows further a characteristic party of blackish dots at the 3rd radial, but these are almost or quite obsolete in the ♀, which has the ground-colour rather darker. The ♂ hindwing has beneath a strong curled tuft of black-mixed hair arising near base of costa and more appressed light-ochraceous hair distally thereto. Tasmania to New South Wales, in March and April.

*aridaria*. **N. aridaria** Walk. (1 e) differs structurally from *subclata* in having the black-mixed tuft of hair much less strong and placed beyond the cell, at the base of the 2nd subcostal vein; slighter pale hair between costal and subcostal. Rather darker than *subclata*, more distinctly marked, postmedian line rather strongly incurved behind the middle, generally flowed by a brown shade. ♀ in general less strongly marked. Queensland and New South Wales, November and March.

*agnata*. **N. agnata** Prout (1 f). The dark mixed hairs are placed in two tufts, one in the end of the cell and the other in front of it, while a light tuft occupies the position of the dark one of *aridaria*. Markings smaller than in *aridaria*, first line nearly obsolete, line beyond postmedian dots fine but bright, less sinuate than in *aridaria* but rather more so than in *subclata*. Perth and Swan River, West Australia.

*benecristata*. **N. benecristata** Warr. (1 f) has the proximal tufts placed nearly as in *agnata* but united into one large, irregular patch, the one at base of 2nd subcostal also mixed with black and an additional small pale posterior one; costal and subcostal veins of hindwing somewhat curved. Forewing with dark postmedian shade strong in posterior part, wanting in anterior; a perceptible dark shade proximally to the subterminal. Hindwing with a central line and dark distal shade, the latter also distinct on the paler underside. Prince of Wales and Thursday Islands, in June.

*buffalaria*. **N. buffalaria** Guen. (♀ = *tristificata* Walk., *transactaria* Walk., *resignata* Walk.) (1 e). Rather darker than any of the preceding, the markings in general stronger and coarser than in *agnata*, though very variable, the postmedian similarly shaped; a dark shade generally developed beyond the postmedian, though not very sharply defined. The ♂ is again distinguishable structurally, the irregular dark tuft near the end of the cell being connected by a ridge of lighter hair with an equally dark tuft at the fork of the veins beyond (2nd subcostal and 1st radial); venation of hindwing even more curved than in *benecristata*. Distributed throughout the greater part of Australia.

*prosedra*. **N. prosedra** Turn. Differs from *buffalaria* in the rather longer palpus and in the „large fovea in end of cell, preceded by a curled tuft of long, fuscous hairs, succeeded by a tuft of shorter fuscous hairs, and bounded posteriorly by a high ridge of pale grey hairs“. Markings rather weak. Stradbroke Island, Queensland, November and December.

*didymochroa*. **N. didymochroa** Lower perhaps belongs to this section, but was only described from the ♀. Lines complete, black, the antemedian indistinct, the postmedian fine, with a characteristic sharp angulation near costa; ground colour pale ashy-grey proximally and distally, pale yellowish in central area. Duaringa, Queensland, in August.

D. Section: both wings of ♂ tufted beneath, venation contorted, hindtibia of ♂ with hair-pencil.

*ursaria*. **N. ursaria** Guen. (= *oxyptera* Lower) (1 e). Larger and paler than *buffalaria*, especially in the ♂; apex of forewing more falcate. The ♂ further distinguished by the hair in the distal part of the cell of forewing beneath, culminating in a ridge posteriorly, and by the distortion of the veins behind the cell, especially the second median, which is angularly bent. New South Wales and Queensland.

## 11. Genus: **Antasia** Warr.

Nearly related to *Nearcha*, differing in having the costal vein of the forewing connected by a short bar with the anastomosed portion of the first two subcostals and in having the ♂ antennal pectinations rudimentary, surmounted by fascicles of long cilia. Underside of hindwing not tufted.

*flavicapitata*. **A. flavicapitata** Guen. (= *capitata* Walk., *mundiferaria* Walk.) (1 f). Rather variable but easy to recognize. The contrast between the dark thorax and light yellowish crown always striking; the yellow-whitish lines distinct, generally finely edged with dark ferruginous on their reverse sides; distal area always paler (in dark specimens very strikingly so) in the terminal than in the proximal part. ♀ smaller and darker than ♂. South Australia and Tasmania to New South Wales, common in October.

**A. (?) pachygramma** *Lower*. I have not seen this species and doubt whether it really belongs to the *pachygramma* genus. It is said to measure 18 mm and to be aberrant, superficially resembling a small *Dichromodes*. Forewing short, stone-colour, with minute and sparse black irroration; costal margin blackish towards base; a very thick black streak from near base of hindmargin to beyond middle of disc, curved upwards and attenuated at both extremities, paler-edged distally; a similar streak from apex to anal angle; terminal dots small. Hindwing similarly coloured, with a very indistinct postmedian line, not reaching costa. Eucla, West Australia, one ♂ in June.

## 12. Genus: **Zeuctophlebia** *Warr.*

Palpus less long than in most of the preceding genera. Antenna of ♂ strongly bipectinate, with apex simple; of ♀ simple. Forewing with apex subfalcate; the first two subcostals stalked, their stalk anastomosing with the costal, the 2nd subsequently anastomosing with the 3rd—4th; hindwing with the 2nd subcostal arising at or just before end of cell. The only two known species appear to be closely related in structure.

**Z. squalidata** *Walk.* (= *rufipalpis* *Warr.*) (1 g). Face, palpus and costal edge of forewing more or less strongly red; both wings also with a reddish shade distally to the postmedian line; postmedian of forewing extremely oblique outwards from near costa to 1st radial, then oblique inwards; an oblique mark from the apex and some dark proximal spots bordering the subterminal sometimes conspicuous. Queensland, September to December.

**Z. tapinodes** *Turn.* Only the type yet known, measuring 24 mm. Distinguished by the grey head and palpus, dark grey basal half of costal margin and especially by the postmedian line, which runs from three-fourths of costa to three-fourths of hindmargin, fine and dentate. Stradbroke Island, Queensland.

## 13. Genus: **Tapinogyna** *Prout.*

Slenderly built, the ♀ considerably smaller than the ♂. Antenna of ♂ nearest that of *Antasia*. Venation of forewing also nearly as in *Antasia*, the costal vein rather far from the subcostal, the connecting bar consequently long. Hindwing with costal margin long, apex produced, though rounded, costal vein diverging from subcostal from about middle of cell, 2nd subcostal not stalked with 1st radial.

**T. perichroa** *Lower* (1 g). A dingy brownish or fuscous species, not very densely scaled, the lines rather widely separated, marked by black vein-dots, the postmedian angulated at the 1st radial and accompanied distally by some whitish scales on the veins. Hindwing paler, virtually without markings. Victoria, common at Birchip in September. Large, broad-winged specimens have recently been received from the vicinity of Perth, West Australia, and will perhaps prove to represent a local race.

## 14. Genus: **Taxeotis** *Meyr.*

An extensive Australian genus, in facies often similar to *Dichromodes*, from which it differs in the simply ciliate ♂ antenna and in having the 1st subcostal vein of the forewing anastomosed strongly with the 2nd and usually also connected by a bar (or occasionally anastomosing briefly) with the costal.

### 1. Section: forewing with costal vein free.

**T. endela** *Meyr.* (2 a). Distinguished by the pale ferruginous face and palpus, whitish-ochreous colouring, absence of antemedian line and straightness of postmedian, which consists of blackish vein-dots. The forewing beneath is much less whitish than above, though its base, distal and posterior margin are paler than the rest. I suspect the venation will prove variable, as I have examples in which the costal seems to touch the 1st subcostal. Local. In Victoria it occurs at Melbourne and Beaconsfield, in New South Wales at Bathurst, at 2500 feet altitude. November and December.

**T. stereospila** *Meyr.* (1 g). Less whitish than *endela*, lines marked by costal spots and vein-dots, postmedian placed on a ferruginous shade, followed by a cloudy, sinuous dark line from apex to hindmargin. But the best distinction is in the cell-mark of the forewing which is annular (oval, with pale centre). New South Wales and Victoria, common in October and November, also from Brisbane.

**T. oraula** *Meyr.* Only known to me from MEYRICK's two originals, which were taken in January on Mount Kosciusko, New South Wales, at 5000—5800 feet. Palpus wholly dark. Forewing pale grey with dark

irroration; antemedian line at two fifths, consisting of dark marks on both margins and a dot between: postmedian arising from a similar costal mark at three-fourths, acutely angulated outwards subcostally, dotted on the veins, very fine or obsolete between them; cell-dot minute.

*mimela*. **T. mimela** Prout (1 g). Near *oraula*, but with the face ferruginous, the dark palpus mixed with ferruginous, the wings also much browner or more ferruginous, with almost exactly the markings of *inconcisata*. Gisborne and Lorne, Victoria, Sydney and Hornsby, New South Wales, occurring in February and March.

*epigaea*. **T. epigaea** Turn. Unknown to me. An extraordinarily large species, unless the indication („38 mm“) is a misprint. Distinguished by its red-ochre colour, which harmonises with the red earth of the locality in which it was captured on Mount Tambourine, Queensland, in November. Forewing with costal dots at one-third and two-thirds, the latter followed distally by a postmedian line of dots which does not reach the costal margin and is succeeded by a pale line. Hindwing similarly coloured and marked.

*adelpha*. **T. adelpha** Turn. is said to be extremely similar to *orphnina* but with the venation different and the ♂ antennal ciliation shorter than the diameter of the shaft. Katoomba district, New South Wales, one example, taken in February.

*dasyzona*. **T. dasyzona** Lower. Also unknown to me. As the cell-mark is annular, it should perhaps be placed next to *stereospila* (1 g), but it is said to be nearest *anthracopa*, except in the venation. Basal half of palpus sharply white beneath. Expanse 26 mm. Wings ochreous-grey; antemedian line present on forewing only, formed of 3 small dark spots; a moderately thick dark shade at three-fourths, somewhat sinuate inwards in posterior half on forewing, almost straight on hindwing; cell-spot of forewing of moderate size. Hoyleton, South Australia, one ♀, in December.

B. Section: forewing with costal vein connected or anastomosing with subcostals.

*orphnina*. **T. orphnina** Turn. Face and palpus dark fuscous. Antenna in ♂ laminate, with ciliation about twice as long as diameter of shaft. Wings pale grey; forewing with costal edge ochreous-whitish, dark costal spots at one-third and two-thirds, the latter followed distally by an interrupted ferruginous-fuscous line which does not reach the costa; a more distally placed spot near hindmargin; fringe grey-whitish. ♀ uniformly suffused with fuscous. Mount Tambourine, Queensland, in March.

*isomeris*. **T. isomeris** Meyr. A rather small grey species, with suffused light greyish-ochreous irroration, dark-grey costal strigulation and two characteristic triangular blackish costal spots, at two-fifths and two-thirds; a central dot and a short hindmarginal mark of mixed blackish and ochreous behind the first costal spot, a series of vein-dots from the second to a short mark on hindmargin at three-fourths. Albany, West Australia, one specimen, in December.

*exsectaria*. **T. exsectaria** Walk. Another small species, distinguished by its ferruginous head and wellmarked ferruginous antemedian line. — **eugenestera** form. nov. (1 g) is a larger (21—23 mm) and more brightly coloured form, with all the markings accentuated, the dark shadings between the postmedian and subterminal lines very conspicuous. Waroona, West Australia, type in coll. G. LYELL, Gisborne. — *exsectaria* is common in West and South Australia, Victoria and New South Wales, September to December.

*anthracopa*. **T. anthracopa** Meyr. (1 g). Palpus shorter than in most of the allies, towards the base white beneath. The forewing has the costal edge yellow proximally and lacks the ferruginous lines which are present in most of the similarly marked species. Otherwise it shows little that is distinctive. Occurs in New South Wales and Tasmania in September, October and December.

*inconcisata*. **T. inconcisata** Walk. (= *delogramma* Meyr.) (1 g). One of the commonest and most widely distributed species of the genus, occurring almost throughout Australia except in the most northerly parts. Proximal half of fringe grey, like the ground-colour, distal half whitish, the two colours divided by a generally sharp dark line. Palpus blackish, towards base white. Spots and clouds distally to the postmedian line generally strong. October to January.

*semifusca*. **T. semifusca** Warr. Near the preceding, rather larger and more brownish. Distinguished chiefly by having the distal area almost entirely filled up with dark fuscous, bounded anteriorly by an oblique line from apex. Founded on a single ♀ from the Dawson district, Queensland.

*adelia*. **T. adelia** Prout (1 g). Considerably smaller than *inconcisata*, rather more uniformly greyish, the mark-

ings distally to the postmedian line more confused, antemedian line straight, often complete and distinct (though fine), postmedian less oblique anteriorly, hence less acutely angulated, terminal dots more elongate. Gisborne, Victoria, common in January and February. It seems scarcely possible that this might be a second generation of *inconcisata*.

**T. calypsis** *Prout* (1 g). Also related to *inconcisata*, but with the face and palpus more ferruginous, *calypsis*. the forewing more strongly irrorated and strigulated, causing the markings to become very indistinct or almost obsolete; postmedian dark dots, with a slight paler (less irrorated) line distally to them, are discernible, the costal spot a little thicker and more proximal, but the sharp subcostal angulation of that of *inconcisata* is wanting, while on the other hand there is a slight outward curve in the middle. West Australia, in November.

**T. intextata** *Guen.* (= *perlinearia* *Walk.*) (1 g as *perlinearia*). A very variable species. I formerly *intextata*. doubted the common determination of *GUENEE*'s species, but think it must be accepted, although he says „apex not falcate“. Larger than *inconcisata*, apex of forewing more falcate, fringes not sharply divided, palpus more mixed with ferruginous, antemedian line of forewing (in the rare cases when this is fully developed) sharply projecting outward subcostally. *GUENEE*'s type form is „cinereous-testaceous“ with the postmedian line of the forewing double, ferruginous. In *WALKER*'s type, this double line is also developed on the hindwing and the antemedian line of the forewing is strong, so that this is probably a separable aberration. — ab. **areniferata** *areniferata*. *Walk.* is a greyer form, with the ferruginous lines scarcely developed, the postmedian markings consisting chiefly of small blackish (or ferruginous) dots on the veins and (on the forewing) larger and blacker dots distally thereto between the veins. — ab. **explicataria** *Walk.* has the forewing so densely irrorated as to appear almost *explicataria*. melanic, the double postmedian line of the type form present but inconspicuous. — A very common species, South Australia to Queensland. August to December.

**T. collineata** *Warr.* is probably a more aberration or local modification of the preceding, nearest the *collineata*. *perlinearia* form. Central area of forewing less strongly irrorated than the rest; the outer postmedian line strongly developed, black, dentate outwards. Founded on a rather large ♂ from Burdekin River, County Davenport, Queensland.

**T. egenata** *Walk.* (1 h). Base of palpus nearly concolorous with forewing, thus intermediate between the species in which it is wholly dark and those in which it is sharply white. Pale ochreous grey, the irroration sparse and not strong; dots of antemedian line quite small; postmedian line more distally placed than usual, very gently curved anteriorly, otherwise almost straight, the macular markings beyond not very strong. Queensland. *egenata*.

**T. goniogramma** *Meyr.* is allied to *egenata* but rather duskier, with a dark suffusion about the celldot, *goniogramma*. the postmedian line normally placed, right-angled about the 1st radial. Duaringa, Queensland, in May.

**T. intermixtaria** *Walk.* (= *promelanaria* *Walk.*) (1 h, as *promelanaria*). Rather variable, in most *intermixtaria*. respects intermediate between the two preceding, the postmedian line punctiform, angulated (but not generally very acutely) at the first radial. Distinguished by having the fringe sharply divided, almost as in *inconcisata*. Tasmania to New South Wales, in November.

**T. epigypsa** *Meyr.* is another light-coloured species. Smaller than *intermixtaria*, palpus shorter, wings *epigypsa*. rather more elongate, subterminal spots better developed, terminal dots large. Founded on a single ♂, not in very good condition, but „certainly a good species“. Quorn, South Australia, in October.

**T. acrothecta** *Turn.* (1 h). Also smaller than *intermixtaria*, which it resembles in its light-grey colour; *acrothecta*. apex acute, but scarcely so produced as in *intermixtaria*. Palpus rather short, wholly dark. Antemedian line almost wanting, postmedian with the black dots almost or altogether wanting (when present, formed as in *intermixtaria*), the ferruginous shade remaining, accompanied distally (at least in the ♀) by a whitish line; fringe almost uniformly pale. Townsville, North Queensland, in August.

**T. subvelaria** *Walk.* (= *reserata* *Walk.*, *isophanes* *Meyr.*) (1 h). Wings rather broad, apex of forewing *subvelaria*. not produced. Palpus at base white. Plain grey, with dark irroration, but without ochreous or ferruginous lines or shades; the lines represented by well-developed vein-dots, the postmedian excurved (but not angulated) anteriorly and incurved posteriorly, sometimes followed distally by some dark interneural spots; a spot near anal angle of each wing commonly conspicuous. South Australia and Tasmania to New South Wales, common and widely distributed, flying in October and I think till December.

**T. xanthogramma** *Lower.* Close to the preceding, perhaps even a form of it. Differs in having a ferruginous line proximally to the antemedian dots and a brighter, more ochreous one distally to the postmedian *xanthogramma*.

and in having the underside silvery grey, without markings, whereas that of *subvelaria* is almost as strongly marked as the upperside. Broken Hill, New South Wales, in October. Also a duller (thus more intermediate) form from Melbourne.

*pelopa*. **T. pelopa** *Meyr.* Unless perhaps the palpus is a little shorter, this only seems to differ from *subvelaria* in its rather paler, more ochreous or brownish shade of colouring and it may prove to be an aberration of the same — perhaps the Victorian form mentioned by Lower under *xanthogramma*. Melbourne, 1 ♂.

*holoscia*. **T. holoscia** *Lower* (1 h) is another grey species without ochreous shades; rather more leaden in tone and more glossy than *subvelaria*. Palpus wholly dark. Forewing with vein-dots rather large, but with additional markings in the subterminal area only slightly developed or entirely wanting; terminal dots small, slightly connected by a fine line. Brisbane and Dawson district, in October.

*gonosemela*. **T. gonosemela** *Lower*. Unknown to me. Head and palpus greyish-ochreous. Forewing with termen rounded; greyish-ochreous, with minute black irroration, costal margin strigulated with blackish; antemedian indistinct, blackish, angulated, then strongly oblique to hindmargin at one-sixth; postmedian more distinct, oblique from close to apex to two-thirds hindmargin, twice strongly angulated inwards; cell-dot small. Hindwing more whitish, with very indistinct and minute postmedian dots (better developed beneath). Parkside, South Australia.

*phaeopa*. **T. phaeopa** *Lower*. This species — as also *gonosemela*, described above — is only conjecturally referred to Section B of the genus, as the venation is not mentioned. *phaeopa* is said to be the only known species of *Taxeotis* in which the face is grey. Head whitish. Forewing with distal margin not sinuate; pale grey-whitish with faint ferruginous markings, the lines best developed as costal spots, the postmedian twice angulated outwards, a submarginal row of obscure spots, the terminal black dots small. Broken Hill, New South Wales, April to June.

*bigeminata*. **T. bigeminata** *Prout* (1 h). One of the smallest species. Palpus whitish at base. Ground-colour as bright ochreous-grey as the brightest specimens of *intextata*, the double postmedian line rather recalling that of the species just mentioned; differs from all others yet known in having the antemedian also double, the more distal line of the pair the thicker, but both quite strong. Sherlock River, West Australia; only the type known.

*philodora*. **T. philodora** *Meyr.* A very distinct species. Unique in wanting the cell-mark of the forewing. Ground-colour whitish ochreous, with yellower suffusion in the middle; antemedian line thick and black, placed beyond one-third, accompanied proximally, except at costa, by brownish suffusion; a second, similar line running from distal margin near apex to hindmargin at three-fourths, curved inwards and bisinuate, accompanied distally by some brownish suffusion; a straight, cloudy whitish subterminal line runs from costa to anal angle and interrupts the last-named markings. Carnarvon, West Australia, in October.

### 15. Genus: **Epidescmia** *Westw.*

Consists of larger species on an average than those of the preceding genera, mostly with apex of forewing pointed and termen of hindwing (as least in its middle part) almost straight. Face sometimes (*tricolor*) with a tuft. Palpus long. Antenna of ♂ unipectinate. Forewing with costal vein free, 2nd subcostal anastomosing rather strongly with 1st and more shortly with 3rd—4th. Hindwing with cell not shortened, costal vein approximated to it to about two-thirds, 2nd subcostal arising from or a little before its apex. The species are all Australian (one also reaching New Guinea) and show a good deal of variety in coloration and markings, as well as in some details of the structure.

*reservata*. **E. reservata** *Walk.* (1 h). Antennal pectinations much longer than in any of the species with which it could be confused. Further distinguished, except from *perfabricata* (1 h), by the light-coloured palps. Smaller than *perfabricata*. distal margin of both wings more rounded. A dark line at base of fringe, except towards anal angle. Inhabits Queensland, Melville Island and British and Dutch New Guinea.

*oxyderces*. **E. oxyderces** *Meyr.* A very distinct species. Forewing dark fuscous, the proximal part tinged with ferruginous, the distal part with purplish; a whitish costal streak from base to four-fifths, tapering at its extremities, some ferruginous suffusion behind it; a narrow, straight white postmedian streak from hindmargin, reaching about three-fourths across the wing; indistinct dark subterminal dots. Hindwing rather dark, tinged with purple distally; a well-marked whitish straight postmedian streak, interrupted near costa; subterminal dots preceded by a fine and indistinct paler waved line. Described from a single ♂ taken by Mr. MEYRICK himself in a jungly swamp near Sydney, where collecting was exceedingly difficult. November.

**E. phaedropa** *Lower* is said to be allied to the preceding. Expanse 32 mm. Forewing with apex rounded; *phaedropa*. pale reddish fuscous, costal edge whitish, with a reddish streak behind it from base to middle and behind this a dark streak which is suffusedly continued to apex; 3 dark dots, one placed near hindmargin at two-fifths, a second in front of this, the third more distal; a dark streak from  $\frac{3}{4}$  hindmargin to costa near apex, with a paler shade proximally and a purplish shade distally. Hindwing with termen nearly straight; dull purplish white, the postmedian line present on abdominal half of wing; an indistinct pale subterminal line. Mackay, Queensland.

**E. perfabricata** *Walk.* (1 h). The differentiation of this species from *reservata* has already been given *perfabricata*. above. From *tryxaria* (1 i) it differs in its paler colour, light palpus, and still straighter termen of hindwing, which in consequence appears to have the apex rather more produced. Queensland and New South Wales, December and January, locally common.

**E. tryxaria** *Guen.* (1 i). A common, rather variable species, intermediate in appearance between the *tryxaria*. preceding and *hypenaria*; the latter, however, is abundantly distinct, apart from its larger size, in the much longer palpus and pectinations, the wing-shape and the darker, more weakly marked hindwing. *tryxaria* is widely distributed from Tasmania to Queensland. November, March and April.

**E. thermistis** *Lower.* 32 mm. Forewing reddish fuscous, darker distally, the costal edge reddish through- *thermistis*. out, edged behind by a thicker blackish shade; antemedian represented by a spot at about one-fourth of hindmargin; cell-spot large, roundish; postmedian from near costa at about five-sixths to hindmargin at four-fifths, straight, ochreous red, distally bordered by a macular blackish band, the spots which compose it darkest in their centres; beyond this, a cupreous shade. Hindwing with termen rounded, apex rather prominent; greyish white, darker distally (*LOWER*). Founded on a ♀ from Uraidla, South Australia, in November. In general appearance resembling a *Nearcha*.

**E. cygnea** *Prout* (1 i). Also founded on a single ♀. Face and palpus ferruginous, the latter less long *cygnea*. than in most *Epidesmia*. Further aberrant in the less acute apex of forewing. Forewing rather glossy, dark grey; the lines pale yellowish, conspicuous, the postmedian more oblique than termen, finely edged with ferruginous distally. Waroona, Swan River, in August.

**E. brachygrammella** *Lower* is said to be nearest to *hypenaria* (1 i), but distinct in having two black lines, *brachygrammella*. a thick black antemedian being developed in addition to the similar postmedian, though both become faint at hindmargin, colour clearer ochreous between the postmedian and the subterminal, which is represented by a row of black, paler-edged dots from near apex to hinder angle. Croydon, Victoria.

**E. hypenaria** *Guen.* (= *inspersa* *Feld.*) (1 i). Named by *GUENÉE* from the long beak-like palpus, which *hypenaria*. recalls those of *Hypena*. The ground-colour also is not unlike that of *H. proboscidalis*, sometimes paler, sometimes rather more reddish. Antennal pectinations of ♂ very long. Common from Tasmania to New South Wales, September to February. A specimen from „New Zealand“ in the British Museum, presented by a Mr. *SINCLAIR*, R. N.; must have been an accidental importation, or he must have mistaken the locality.

**E. chilonaria** *H.-Sch.* (= *aurinaria* *Guen.*) (1 i). Similar in size, shape and markings to the preceding *chilonaria*. but with less extremely long palpus and much less long pectinations. The bright reddish-brown forewing and orange hindwing render confusion with any other species impossible. Victoria to Queensland. (Mount Tambourine), November and December, flying readily in the sunshine.

**E. tricolor** *Westw.* (1 i). A remarkably fine species, much larger than any of the others and recogni- *tricolor*. zable at a glance by its scheme of markings, which suggest a *Milionia* more than any other Oenochromine. Sydney, very uncertain in its appearance.

**E. replicataria** *Walk.* (1 k). This species and the following have been separated of as a different genus *replicataria*. under the name of *Phrataria*, but the distinctions, so far as yet investigated, seem to be chiefly superficial. Antenna rather slender; hindwing more fully rounded than in most *Epidesmia*; the long dark mark on the discocellulars, encircled by a pale and then by a slender dark ring, is very distinctive. *replicataria* may be known by the pure white hindwing, which is almost entirely without markings above but elaborately marked on the underside, where it bears a strong celldot, fine postmedian line and more or less strong brown maculation in the distal area, always including a large patch in posterior half. New South Wales and Victoria in January and February, reaching considerable altitudes. It flies in Eucalyptus forests.

**E. transcissata** *Walk.* (1 k) is evidently much scarcer. It differs in the pale grey (not white) hindwing *transcissata*. which bears a grey cell-ring, enclosing a smaller one, and an indistinct whitish postmedian line. The markings of the forewing also differ, a white band from before middle of costa, a white line from two-thirds costa

and a second white line from close to apex all converging towards the anal angle. Underside not very different from upper, the forewing rather less sharply marked, the hindwing rather more sharply. Queensland and Victoria.

#### 16. Genus: **Satraparchis** *Meyr.*

An offshoot of *Epidesmia*, founded by MEYRICK on a single species which differs therefrom in the venation. Forewing with the first two subcostals stalked, their stalk anastomosing with that of the 3rd and 4th. Hindwing with the cell rather short, the 2nd subcostal shortly stalked with the 1st radial.

*bijugata*.

**S. bijugata** *Walk.* (= *teliferata* *Walk.*) (1 k). Recalls, in the wing-form and the character of the markings, the last two species of *Epidesmia*, but cannot be confounded with any known species. The darker forewing with the two convergent pure-white central bands, and the large cell-mark and broad dark border of the hindwing distinguishes it abundantly. Queensland and New South Wales, in August. not common.

#### 17. Genus: **Systatica** *Turn.*

Palpus densely haired, terminal joint concealed. Antenna of ♂ unipectinate. Legs smooth, the middle- and the hindtarsus slightly spinulose. Forewing with the first two subcostals stalked, the 2nd closely approaching the 3rd but not anastomosing. Hindwing with 2nd subcostal not stalked. TURNER considers this genus a link between the preceding group and the more robust group which follows. Only the one species is known.

*xanthastis*.

**S. xanthastis** *Lower.* Wing-expanse 55 mm. Forewing pale ochreous with fine greyish irroration; lines dark, the antemedian straight, the postmedian curved inwards, from  $\frac{3}{4}$  costa to  $\frac{2}{3}$  hindmargin; cell-dot linear; fringe dark brown with yellow line near base. Hindwing rounded; bright golden orange, with dark postmedian line and dark fringe. Forewing beneath bright golden yellow, hindwing strigulated with dark brown. Gympie, Queensland.

#### 18. Genus: **Monoctenia** *Guen.*

Very large Geometrids, stoutly built and with strongly hairy vestiture. Antenna of ♂ unipectinate, with long branches. Hindtibia with the spurs approximated. Wings very thickly scaled. Forewing with a bar (perhaps the base of the 3rd subcostal) connecting the 2nd subcostal vein with the 4th. Hindwing with the 3rd discocellular very deeply bent inwards, 2nd radial arising much nearer to the 1st radial than to the 3rd. Only two species are definitely referable here, but two of LOWER'S, of which I have no first-hand knowledge, are provisionally added.

*smerintharia*.

**M. smerintharia** *Feld.* (2 a, b). Both wings with distal margin crenulate, the colour reddish-grey, both wings crossed by a pale dentate line which runs obliquely from near the apex of the forewing but is not very sharply defined. South Australia.

*eximia*.

**M. eximia** *Lower.* Described from a ♀, measuring 65 mm. Said to be intermediate between *smerintharia* and *calladelpha* but immediately recognizable by the rather broad pale pinkish or flesh-coloured costal streak. Face deep crimson. Wings rosy purplish-ochreous, the base of hindwing much paler; fringes blackish with a pinkish line at base. Port Lincoln, South Australia.

*calladelpha*.

**M. calladelpha** *Lower.* Size of the preceding or slightly smaller. Said to be intermediate between *smerintharia* and *falernaria* but differing from both in the absence of markings on forewing. Face deep purplish-ferruginous. Forewing rosy purplish-ochreous, the veins more yellowish; fringe ochreous with dull purplish spots opposite the veins. Hindwing rosy purplish, much paler towards base and abdominal margin; an indistinct curved whitish postmedian band. Parkside and Port Lincoln, South Australia.

*falernaria*.

**M. falernaria** *Guen.* (1 l). Differs from the three preceding in having the distal margins scarcely crenulate and in having a large darker triangular costal patch on the forewing, commonly also a blackish central spot on the submedian vein. Tasmania to New South Wales.

#### 19. Genus: **Enochroma** *Guen.*

Differs from *Monoctenia* only in small characters. Antennal pectinations of ♂ less extremely long. Hindtibial spurs normally placed. Hindwing generally narrower, with straighter distal margin; costal vein

closer to subcostal, discocellulars normal, 2nd radial rarely arising near 1st radial. In *polyspila* and *privata*, which should perhaps form a separate genus, the foretibia has a small apical claw. A fairly numerous genus, exclusively Australian, the species generally rather large or of moderate size, mostly rare or of retiring habits. The larva, so far as is yet known to me, has an additional pair of claspers.

**Æ. ochripennata** *Walk.* (= *gastropacharia Walk.*) (1 l as *gastropacharia*). Rather approaches the *ochripennata* preceding genus in shape, though the distal margin is not at all crenulate. Colour apparently variable, the type more ochreous-reddish, the ab. *gastropacharia* browner on the forewing, more rosy on the hindwing. West Australia, only WALKER'S types known to me.

**Æ. decolorata** *Warr.* differs from *vinaria* (1 k) in having the ground-colour grey, the first line of the *decolorata* forewing reddish, only distinct on the costa, the cell-spot indistinct, the oblique line not dark-edged proximally, an antemedian line present also on the hindwing, purplish. Forewing beneath paler, with a much smaller purple posterior spot than in *vinaria*. Moreover, the hindwing is slightly more rounded, showing a rather closer approach to *ochripennata*, to which it may possibly be related in spite of the shorter wings and the presence of the purple spot beneath forewing. North Queensland.

**Æ. vinaria** *Guen.* (1 k). The type of the genus and one of the best-known species. Variable in *vinaria* colour but distinguished by its strong vinous or purple suffusions and by the strong dark-grey lines which bound the pale yellowish lines on their approximated sides. Underside very variegated, the forewing beyond the middle with a large deep-purple spot reaching from the 2nd median vein almost to the hindmargin. The type form is bright vinous or rosy, the ♀ in general darker or more brownish than the ♂. — **decora** *Walk.* *decora*. is a lighter form of the ♂, prevalent in Victoria. — The larva has 2 black horny processes on the metathorax and 2 smaller conical yellow protuberances on the 8th abdominal. Feeds on *Hakea*, perhaps also on other plants. Distributed from South Australia to N. Queensland.

**Æ. orthodesma** *Lower* (= *pallidula T. P. Luc.*, *pallida Warr.*) (1 l). Closely related to the preceding *orthodesma* but paler and lacking the dark-grey lines; the yellowish oblique line reaches the costal margin rather farther from the apex. Underside less variegated, with the markings narrower. Queensland and West Australia.

**Æ. erubescens** *Prout.* Forewing a little broader than in *vinaria* (1 k), hindwing less truncate at apex. *erubescens*. Fleshy-ochreous, the antemedian line and cell-mark wanting, the double postmedian pale yellowish (proximally) and brownish red (distally) arising at costa close to apex, faint at first but mostly very strong. Founded on a single ♀ from Manly, New South Wales, captured in March.

**Æ. niphosema** *Lower.* Founded on a ♀ from Perth, West Australia, taken in November. Systematic position doubtful, as it is said to have antennal pectinations as long as the diameter of the shaft. Wing-expanse 50 mm. Forewing dull ochreous-carmine, more suffused with carmine in central area, costal edge wholly of the latter colour; a well-defined snow-white, slightly dark-edged spot in cell; a large dusky spot on discocellular; a dark, slightly excurved postmedian line at three-fourths; a row of subterminal dark spots. Hindwing with termen moderately rounded; greyish-ochreous, broadly shaded with fuscous-purple distally.

**Æ. vetustaria** *Walk.* (= *digglesaria Guen.*) Very distinct from all the other species known to me, the *vetustaria*. hindwing having the distal margin prominently toothed at the end of the 3rd radial. Rather dark purple-grey, the pale lines accompanied on their approximated sides by blackish vein-dots, a faint dark median line present, rather closely approximated to the postmedian. Tasmania.

**Æ. quadrigamma** *T. P. Luc.* The 2nd subcostal vein of the forewing is free (A. J. TURNER, in *quadrigamma* litt.) and both wings have the distal margin dentate towards the anal angle, but the former of these characters is shared by *subustaria* and the latter by *vetustaria* and LUCAS' proposed new genus *Galanageia* has not been adopted. Ochreous fuscous, suffused with light lilac; costal margin of forewing strigulated with black and suffused with ferruginous; cell-spot large, light bluish grey, edged with ferruginous and containing proximally a hyaline dot and a lunular ferruginous-bordered figure; an oblique ochreous, proximally darker-bordered band from  $\frac{5}{6}$  costa; terminal line ferrous, conspicuously edged with ochreous; fringe ochreous, spotted with ferrous. Hindwing similar, the cell-spot quadrate, cut by the ochreous band. Brisbane.

**Æ. polyspila** *Lower* (= *guttilinea Warr.*) (1 k). One of the smaller species of the genus. Variable, but *polyspila*. always recognizable by the white costal spots; commonly also the posterior ones are white and sometimes even some of those in the middle of the wing; in any case the macular character of the markings is distinctive. — Larva rather stout, with the head relatively small; a pair of rudimentary claspers on the 5th abdominal segment; dorsal area bright red, with pale yellowish dorsal and lateral lines. — Queensland.

- privata*. **Æ. privata** Walk. (= *hypotaeniaria* Guen., *subustaria* Meyr. nec Walk.) (2 c). Distinguished from the following by the foretibial claw, the stronger markings, including a rather broad, distally dentate brown central band beneath, which is indicated above on the hindwing by a variegated but ill-defined central patch. Australia, exact locality not known.
- subustaria*. **Æ. subustaria** Walk. (= *caprina* T. P. Luc.) (1 k). Grey, only slightly brownish, the dark lines represented by (sometimes indistinct) vein-dots, the hindwing beneath sometimes with an irregular blackish-red-mixed patch near the apex, faintly discernible also on the upper surface. Queensland. Has been bred by Dr. LUCAS from larvae found feeding on *Persoonia cornifolia*.
- phyllomorpha*. **Æ. phyllomorpha** Lower (= *stillans* T. P. Luc., *subcarnea* Warr.) (1 k). Distinguished by its fleshy ground-colour, white costal edge of forewing and red, black-mixed fringe of forewing except at anal angle and of hindwing from the 3rd radial to the fold only, the rest of the fringe remaining white. The two lines consist generally of vein-spots only, the spots on the submedian the largest, but in darker, more heavily marked aberrations they are partly connected into a macular band. Larva with 3 pairs of prolegs; tapering anteriorly; red-brown, mottled with black; some irregular dorsal spots of the ground-colour, partly bordered with black; on *Persoonia cornifolia*. — Queensland, Port Darwin and Melville Island. Is LOWER's locality (Newcastle, New South Wales) correct?
- infantilis*. **Æ. infantilis** Prout (1 l). Smaller than *phyllomorpha* (1 k) and totally different in the whitish green ground-colour and whiter lines. Fringes nearly as in that species. North Australia in March; also from Melville Island.
- cycnoptera*. **Æ. cycnoptera** Lower. Described from a ♂, measuring 40 mm. Forewing with apex acute, termen sinuate behind apex; pale slaty grey, with a ferruginous spot on hindmargin at about two-thirds, from which proceeds a faint pale-yellowish streak towards the apex. Hindwing rounded, rather prominent at apex; snow white. Forewing beneath with a large claret-coloured blotch just behind middle of termen. Lake Mulligan, S. Australia.
- simplex*. **Æ. simplex** Warr. Perhaps a form of the preceding. Forewing above more brownish, entirely without markings; hindwing above less pure white, but I think chiefly through discoloration in the unique type. Underside apparently similar to that of *cycnoptera*. West Australia.
- postcarneata*. **Æ. postcarneata** Prout (1 i as *postcarnearia*). The type ♀ unique, generic position doubtful. Hindwing with 2nd subcostal stalked (though quite shortly) with the 1st radial. Forewing light ochreous brown, unmarked. Hindwing proximally white, then pink, the pink part with a large irregular dark-grey blotch between the 1st radial and 2nd median and a small indistinct brownish blotch at anal angle. Perth, West Australia.
- cerasiplaga*. **Æ. cerasiplaga** Warr. Remarkably distinct in its bright green colour, chrome-yellow costal margin and yellow, red-spotted fringe. The single line of the forewing is central yellow slightly oblique and not reaching costa. Hindwing paler, the median line fainter and rather more proximal, a large, round ochreous blotch (on the underside predominantly deep-red) placed just beyond it. Perth, West Australia.

## 20. Genus: **Antictenia** Prout.

Allied to *Ænochroma* but with flatter face, short palpus and differently formed ♂ antenna, which is bipectinate but very unequally, the branches on the outer side being long, on the inner side quite short, in the type species not longer than the diameter of the shaft.

- punctunculus*. **A. punctunculus** T. P. Luc. (= *leucospila* Warr.) (1 k). Rather variable but easy to recognize. The underside of the hindwing is distinctive, having two whitish apical spots, surrounded by reddish and blackish scales. — Larva rather stout, tapering anteriorly; 3 pairs of prolegs; tubercles large, very shiny, yellow to bright red, the posterior trapezoidals of the 1st abdominal segment set on a tiny hump; reddish brown, heavily mottled with black. — Queensland.

- torta*. **A. torta** sp. nov. Similar in coloration to the greyer forms of the preceding and following species, in structure somewhat intermediate, but best referred to *Antictenia*. Face rather less smooth-scaled than in *punctunculus*, palpus rather less short (about 1½ times the diameter of the eye), but with the 3rd joint small. Antennal pectinations of the inner series less short than in *punctunculus*. Characterized especially by the sinuous distal margin of both wings, that of the hindwing in particular being irregularly excavated close to the anal angle. Forewing with antemedian line very faint, gently curved; cell-dot small, black. Both wings with the double postmedian line broad; on the forewing it is slightly curved and placed very little beyond the cell-

dot, reaching the costal margin at little beyond two-thirds. Hindwing above without cell-dot. Both wings beneath with cell-dot and faint postmedian line. Yallingup, S. W. Australia, Nov. and Dec. 1913, 2 ♂♂ in coll. Brit. Mus., collected by R. E. TURNER.

### 21. Genus: **Phallaria** Guen.

The sole species is large and heavily built, somewhat recalling a Lasiocampid or Saturniid, or perhaps especially an *Anthela*. Differs in but few essentials from *Monoctenia*. Antenna of ♂ bipectinate, palpus rather stronger, tarsi perhaps still more strongly spinulose, cell of forewing rather longer, discocellulars of both wings hyaline.

**Ph. ophiusaria** Guen. (= *quaternaria* H.-Sch., *wayii* Tepper) (1 l). Varies between grey-brown and reddish-brown, but the markings seem constant. Rests with the wings spread and bears a protective resemblance to a dead leaf. — Larva stout, twig-like with a horn on the tail; no additional prolegs; colour varying from putty-colour to dark smoke-brown. On Eucalyptus, feeding only at night. Imago in February and March. South Australia to New South Wales.

### 22. Genus: **Carthaea** Walk.

Of this genus again only one species is known — the largest and finest in the subfamily. It is characterized by the very hairy clothing, protuberant frons, strongly bipectinate ♂ antenna, strongly spinulose tarsi and by having the 3rd subcostal vein of the forewing (which, as usual in this group, is stalked with the 2nd) rather widely removed from the 4th.

**C. saturnioides** Walk. (1 l). Quite remarkable in its close superficial resemblance to a Saturniid. A rare species, known only from West Australia.

### 23. Genus: **Gastrophora** Guen.

Antenna of ♂ strongly bipectinate, of ♀ somewhat lamellate, strongly biserrate. Palpus rather short, especially in the ♀. Tarsi not strongly spinulose. Forewing of ♀ with costal margin curved, apex produced, distal margin very oblique. Both wings with 2nd radial arising before the middle of the discocellulars, 3rd discocellular (especially of hindwing) deeply curved inwards; 1st radial of hindwing (sometimes also of forewing) stalked.

In several respects more specialised than the genera from which it appears to be derived.

**G. henricaria** Guen. (2 b). Remarkable for its sexual dimorphism not only in shape but in markings, the median line of the forewing being strong and straight in the ♂, very feeble and curved in the ♀, the hindwing of the ♀ having a broad whitish border which is almost entirely wanting in the ♂, etc. Forewing beneath with a very large black, violet-grey-marked patch beyond the cell. At rest the brightly-coloured hindwing is concealed and the moth is well protected among withered leaves. — Larva stout, twig-like, with some very small humps and without additional prolegs; sienna brown, with light lateral stripes, assimilated to a piece of stringy-bark. On Eucalyptus. Widely distributed in Australia, excepting the West and North.

### 24. Genus: **Homospora** Turn.

Face with strong obtuse conical chitinous projection. Antenna of ♂ bipectinate. Palpus with 3rd joint very short. Hindtibia with the proximal spurs wanting. Hindwing with 2nd radial arising before the middle of the discocellulars, 2nd subcostal from apex of cell. Two species, both Australian.

**H. rhodospota** Lower (= *procrita* Turn.) (2 c). A rather long-winged ashy-grey species with the lines very fine and faint, somewhat lunulate-dentate, arising from better-defined costal spots and somewhat accentuated on the veins; median shade weak or obsolete. Hindwing more whitish. Underside more mixed with brown anteriorly, whitish beyond the postmedian line. Abdomen with a bright ochreous-brown anterior patch dorsally. Queensland.

**H. lymantriodes** Prout (2 c). Rather smaller than *rhodospota*, wings slightly broader. Forewing very light, whitish brown, costal edge with some small dark dots; two strong dark lines and a thick median shade, the last-named placed very near the postmedian line; postmedian dentate outwards on all the veins. Hindwing

whiter, with weak postmedian line, marked with darker spots on the veins, and a faint band proximal to it. Abdominal patch less ochreous. Sherlock River, West Australia.

### 25. Genus: **Arhodia** Guen.

Differs from *Homospora* in wanting the frontal projection and in having the 2nd subcostal vein of the forewing free. Perhaps all the known forms are referable to a single variable and widely distributed species.

- lasiocamparia.* **A. lasiocamparia** Guen. (= *subpurpurea* Walk., *rosalinda* Th.-Mieg.) (2 b). The sexes differ in shape in a way analogous to that of *Gastrophora henricaria*, to which it is evidently really related. Forewing beneath with a dark mark on the discocellulars and a large blackish purple blotch midway between this and the distal margin. The type form has the ground-colour ochreous brown-grey. — ab. **retractaria** Walk. (= *semirosea* Walk.) *retractaria.* has the forewing less ochreous, the hindwing strongly suffused with rosy pink. — ab. **carnea** Warr. is an extreme form with the pink of hindwing rather intense and the shadowy line wanting, the forewing also more fleshy in tone. — Larva with a rudimentary pair of prolegs on the 5th abdominal segment; smooth except for a projecting semicircular dorsal disk near anal extremity. South Australia and Tasmania to Queensland.
- ozora.* **A. ozora** Swinh. is smaller and paler, both wings very light ochreous grey with a very slight fleshy tinge, the markings of the underside not very strong. Not unlikely a mere aberration or local form, but the costal margin of the forewing looks slightly more concave and the distal margin anteriorly slightly rounder. West Australia, only the type known.

### 26. Genus: **Dinophalus** Prout.

Nearly related to the following genus. Frons with a long horny projecting plate, rough-scaled laterally and terminating in two strong points, the interspace roundly concave. Tongue wanting (?). Hindtarsus of ♂ with 1st joint dilated and hollowed, concealing a small comb of spines at proximal extremity. Abdomen long, especially in the ♀. Wings narrow. Only the type species is known.

- cyanorrhaea.* **D. cyanorrhaea** Lower (2 c). Grey-brown, with the central area sometimes paler and of a more slaty tone, containing an indistinct brown median line, rather near the postmedian; the other lines blackish, the antemedian remarkably oblique and zigzag from the hindmargin rather near the base to the end of the cell. N. Queensland and West Australia.

### 27. Genus: **Ophiographa** Prout.

Face with strong chitinous projection, which often terminates in a horny beak-like process below. Tongue developed. Antenna of ♂ unipectinate. Head, thorax and femora densely hairy. Hindtibia in ♂ with 2, in ♀ with 4 spurs. Wings with distal margin generally crenulate. Forewing with 1st subcostal anastomosing with costal. Hindwing with costal and subcostal anastomosing in middle third of cell. Early stages unknown. All the species are Australian.

- serpentaria.* **O. serpentaria** Guen. (= *undulifera* Walk.) (2 d). Distinguished by the very complicated pattern of zigzag lines, which nearly meet at the veins and are more or less connected by longitudinal dashes on the veins. Base of hindwing white. "Australia".
- macrophyes.* **O. macrophyes** Prout (2 c). Lines much less zigzag than in *serpentaria*, though the ante-median forms an acute tooth outward behind the cell; postmedian fine, accompanied distally by a fine white line; the elongate dark marks between this and the fine white subterminal conspicuous. Hindwing pale proximally but not white. West Australia.
- dilutaria.* **O. dilutaria** Warr. (2 c) is a small species, with the distal margins nearly smooth, scarcely crenulate. Forewing whitish in the central area, otherwise suffused with brownish and with some black irroration: antemedian line deeply dentate, postmedian rather inconspicuous, being accompanied proximally by a band of red-brown shading; a short, ill-defined dark shade from costa midway between postmedian line and apex.
- postmarginata.* Hindwing white proximally, brownish distally, with a dark postmedian line. — **postmarginata** Prout seems to be an aberration with less whitish central area. — Roebourne, West Australia.
- drakei.* **O. drakei** Prout (2 c). Differs from the other species in not having the frontal prominence produced into a beak below. Wings of a delicate grey, the hindwing slightly paler proximally; forewing with the lines black, the postmedian dentate; dark shades proximally to the antemedian and distally to the postmedian; median shade faint. Beaconsfield, Victoria, in November.

28. Genus: **Lissocraspeda** *Prout*.

Differs from *Ophiographa* in that the frontal armature consists of a pair of pointed processes, the tongue is apparently wanting, the hindtibia in both sexes is 2-spurred and the wing margins are smooth. Two Australian species.

**L. eremoea** *Lower*. Expands about 30 mm. Forewing pale ashy grey with the lines black, the ante-*eremoea*. median at one-third, angulated, the postmedian from  $\frac{5}{6}$  costa to  $\frac{2}{3}$  hindmargin, terminal line interrupted at the veins, fringe dotted with blackish at the vein-ends. Hindwing whitish with a dusky terminal band, edged proximally by 2 wavy lines, all these markings becoming blacker at abdominal margin; fringe dotted as on forewing. Townsville, Queensland.

**L. pygmaea** *Prout* (2 f). Possibly a dwarf form of the preceding, with which I cannot now compare *pygmaea*. it. Forewing darker, obscuring the markings, the antemedian line only represented by the costal mark. Hindwing almost unmarked except at abdominal margin. We figure the unique type, from Sherlock River. West Australia.

29. Genus: **Lissomma** *Warr*.

Of this genus only the ♀ is yet known to me and this has the antenna strongly unipectinate, nearly as in the ♂♂ of the preceding genera. Face without horny armature. Foretibia with strong claw; hindtibia 4-spurred. Wings rather broad, distal margins smooth. Forewing with 1st subcostal vein anastomosing with costal and afterwards touching 2nd subcostal. Australian.

**L. minuta** *Swinh.* (= *pallida* *Warr.*) (2 c). Pale and very indistinctly marked but easily recognizable by *minuta*. the shape and structure. Roebourne, West Australia.

**L. himerata** *Warr.* scarcely differs from *minuta* except in being of a bright deep pink colour (the hind-*himerata*. wing anteriorly whiter) and in having the first line of the forewing much more distally placed. Perhaps the wings are still ampler. Eureka, north territory of South Australia, in February, only WARREN's type known.

30. Genus: **Hypographa** *Guen*.

Face protuberant, usually densely hairy. Palpus, thorax and femora strongly hairy. Antenna in ♂ unipectinate, in ♀ simple. Abdomen in the first two species terminating in a triple tuft, particularly in the ♂. Hindtibia 4-spurred. Both wings with distal margin weakly or strongly crenulate or dentate; venation similar to that of the preceding genera, but in the first two species the costal vein of the hindwing is merely appressed to the subcostal; without anastomosing. The species are exclusively Australian and are mostly scarce and little known.

**H. phlegetonaria** *Guen.* (3 b). Distal margins strongly dentate. Both wings of an obscure grey-brown, *phlegetonaria*. the forewing suffused with light violet-grey in the basal and central areas, at least anteriorly, also in the anterior part of the terminal area; antemedian costal mark mixed with red scales, median line straightish, placed near the crenulate postmedian; white marks at base of fringes between the teeth. New South Wales and Queensland; according to MEYRICK also in Tasmania.

**H. aristarcha** *Prout* (2 d). Rather larger, with somewhat shorter palpus, less yellowish ♂ antenna, ante-*aristarcha*. median line of forewing represented by three spots, median and postmedian curved inwards between 1st median and 2nd submedian veins, fringe less strongly white-marked. Beaconsfield, Victoria, in October, only the type known.

**H. incongrua** *Walk.* (2 d) is a very obscure species with moderately dentate margins and almost black *incongrua*. forewing, the lines indistinctly deeper black; postmedian more proximally placed than in *phlegetonaria*, crenulate, deeply incurved at both folds, antemedian angled outward at submedian fold. Hindwing proximally white, distally blackish, white-mixed near apex. Australia, the exact locality unknown.

**H. hiracopis** *Meyr.* differs structurally in having the 2nd subcostal of the hindwing stalked. Distal *hiracopis*. margins strongly dentate. Forewing elongate, the dark ground-colour strongly sprinkled with whitish; costal margin and veins marked with darker dashes; lines very fine, deeply dentate, the antemedian strengthened at costal margin, otherwise partly obsolete; median shade indistinct, at three-fifths, strongly curved outwards in anterior part; a broad but ill-defined dark subterminal shade. Hindwing white, distally suffused with fuscous, veins on distal half darkened. South Australia, the unique type in Mr. MEYRICK's collection.

*bathrosema.*

**H. bathrosema** Prout. Forewing with distal margin strongly and rather regularly dentate; differs from that of *incongrua* (2 d) in being considerably more variegated; proximal half of median area markedly irrorated with white; a white patch at base containing longitudinal black dashes before and behind the cell and an irregularly triangular one between the fold and the submedian vein; lines dentate and irregular, white-edged on their reverse sides; subterminal line white, zigzag. Hindwing whitish proximally, darkening distally. Face less prominent than in *incongrua*, 3rd joint of palpus somewhat longer. Kelmscott, West Australia, in May. Only the type known.

*atmoscia.*

**H. atmoscia** Meyr. (4 a). I formerly referred this doubtfully to *Ophiographa*, but have since been able to study the ♂. This has 4 very unequal hindtibial spurs, the outer two quite short, the inner proximal moderate, the inner distal strongly specialised, being long, broadened and flattened. Distal margins less dentate than in the other species. Further characterized by the proximally straight-edged dark shade beyond the middle of the forewing. Only known from Perth, West Australia, November.

### 31. Genus: **Amphiclasta** Turn.

Founded by TURNER on a single ♀ specimen, which I have never seen. It seems to agree in most characters with the first two species of *Hypographa* but has the costal vein of the forewing free, the 2nd subcostal arising from the 1st and anastomosing with the 4th before the origin of the 3rd. Antennal structure not indicated, therefore probably simple.

*lygaea.*

**A. lygaea** Turn. "50 mm. Forewing triangular, costa straight, except near base and apex, apex acute, somewhat produced, termen oblique, dentate, with more prominent teeth on veins 3 and 6; grey, towards termen brownish-tinged. Hindwing with termen irregularly dentate, with stronger teeth on veins 3, 6 and 7; purplish-grey; a short darker subterminal line from abdominal margin near tornus, edged distally with obscure whitish; cilia brownish." Birchip, Victoria, in August.

### 32. Genus: **Cernia** Walk.

Face and palpus smoother than in the preceding group, 3rd palpal joint in ♀ elongate. Antenna of ♂ very shortly bipectinate. Breast and femora moderately hairy. Hindtibia of ♂ with hair-pencil; all spurs present. Wings irregularly crenulate; venation as in the *Hemitheinae*. Again founded on a single Australian species.

*amyclaria.*

**C. amyclaria** Walk. (= *diphtherina* Meyr.) (2 d). Recognizable by the shape of the wings and other generic characters. Face and palpus predominantly bright-red; legs spotted red and white. Both wings with the markings weak and incomplete above, stronger beneath, where there are in addition reddish terminal shades in the radial area. Queensland and Port Moresby, British New Guinea.

### 33. Genus: **Onycodes** Guen.

More slenderly built. Face and palpus smooth. Antenna of ♂ strongly bipectinate. Femora only slightly hairy. Foretibia with a minute terminal claw. Hindtibia slender, with all spurs. Forewing with 1st subcostal free, 2nd and 3rd stalked, the 3rd sometimes anastomosing with the 4th. Australia and New Guinea.

*traumataria.*

**O. traumataria** Guen. (= *flagrantaria* Walk.) (2 d). ♂ smaller and broader winged than ♀ and with the costal area of the hindwing above, the posterior area of the forewing and the ground-colour of the hindwing beneath yellow. Variable in colour, the ♂♂ more brownish, the ♀♀ brighter rosy; the costal spots and the subterminal double mark at the fold always blackish and conspicuous. New South Wales to Tasmania.

*leptoctenopsis.*

**O. leptoctenopsis** Prout (4 a). ♂ with the distal margin not appreciably incised behind the apex. Variable in colour, but less bright than *traumataria*, the hindwing beneath more reddish; costal marks less black, nearer together, the proximal one thin and very oblique; the oblique line across both wings is always traceable, though sometimes very weak; wedge-shaped subterminal marks inconstant. Mount Goliath, Dutch New Guinea. 1 ♀ from the Arfak Mountains has been described by JOICEY and TALBOT.

### 34. Genus: **Onychopsis** Prout.

Less slenderly built than *Onycodes*, palpus stouter, rough-scaled, antenna of ♀ shortly unipectinate, forewing with 1st subcostal anastomosing with costal, both wings with 1st median farther from 3rd radial than in *Onycodes*.

**O. lutosaria** *Feld.* (2 d). ♀ narrower than ♂, with longer-produced apex of forewing. Characteristic *lutosaria*. of the species is the orange hindwing, with the ground-colour of the forewing reappearing in the anal region and with the pale blue-grey abdominal irroration and postmedian spots. FELDER's type-form has the forewing ochreous with a tinge of olive-grey. — ab. **punicea** *Feld.* has the forewing bright rosy. — South Australia to *punicea*. New South Wales. FELDER also says "North Australia".

### 35. Genus: **Circopetes** *Prout.*

Differs from the *Ænochroma* group in its smoother face and in the wing-form, from *Onychopsis* and *Parepisparis* in being rather more robust and having the 1st subcostal of the forewing free. Antenna in ♂ bipectinate, in ♀ dentate. Hindtibia with all spurs. Australian.

**C. obtusata** *Walk.* (= *himeroides* *Walk.*, *modesta* *Warr.*) (2 e). A dingy species and apparently little *obtusata*. subject to variation. The abdominal markings of the hindwing slightly recall those of *Onychopsis lutosaria*: the forewing beneath bears a large purple-blackish spot between the 3rd radial and the 2nd median, and this generally shows through feebly in grey shading on the upperside. Queensland, Victoria, Tasmania, West-Australia. I have a specimen also from "Port Moresby" (error or accidental importation?).

### 36. Genus: **Parepisparis** *B.-Bak.*

This genus was described by BETHUNE-BAKER among the Noctuidae (!), in consequence of which his description was overlooked and WARREN renamed it *Gerusia*. It agrees in most characters with *Onychopsis* but the palpus is generally stronger, the 1st subcostal vein of the forewing anastomoses with the 2nd and — except in *rasimargo* — the costal of the hindwing anastomoses with the subcostal. Inhabits New Guinea and Australia. The early stages are unknown.

**P. rasimargo** *Warr.* Similar to *virescens* (2 e) but much yellower, especially beneath, and very distinct *rasimargo*. in having the distal margins smooth, not erenulate, as well as in the venational character given above. Biagi, Mambare River, British New Guinea, at 5000 feet altitude, only WARREN's type ♂ known, taken in April.

**P. crenulata** *B.-Bak.* (= *polydaedala* *Prout*) (2 g). This and the two following form a natural group, *crenulata*. with a pencil of hair from the base of the forewing beneath. The distal margin of the hindwing, strongly erenulate in all the ♂♂, is almost smooth in the ♀ of *crenulata*, and probably of the others. *crenulata* is distinguished by the strong pinkish and purple shades on both wings, by having the antemedian line of the forewing strongly oblique outward behind the submedian vein, etc. — ab. **maculata** *Prout* has a black blotch in the submedian *maculata*. area of the forewing beyond the postmedian line. — British and Dutch New Guinea.

**P. virescens** *Warr.* (2 e). More mixed with green than the allies, hindwing with a patch of blackish *virescens*. (androconial?) scales opposite the hair-pencil of the forewing. ♀ unknown. — ab. **viridimacula** *Warr.* has a *viridimacula*. black-green blotch in the submedian area of the forewing beyond the outer line. — Biagi, Mambare River, British New Guinea, February to April.

**P. olivescens** *Warr.* has much darker and thicker markings than *virescens*, vertex of head and base of *olivescens*. antenna almost white, hair-pencil of forewing slighter, lines less erenulate, their course more regular. ♀ unknown. Taken with the preceding in March.

**P. excusata** *Walk.* In coloration rather like *crenulata*, but with the hindwing predominantly light *excusata*. yellowish brown; forewing with median shade thicker, less oblique anteriorly, postmedian line rather ill-defined, hair-pencil wanting; hindwing clouded on posterior part of distal area with purple-grey; forewing beneath with a blackish blotch beyond the postmedian line. — ab. **multicolora** *T. P. Luc.* has the hindwing darker, more *multicolora*. nearly concolorous with the forewing. — ab. **rubra** *Warr.* has both wings varied with pink and purple, the *rubra*. markings almost obliterated; underside without the dark distal blotch. — *excusata* inhabits Queensland and according to LUCAS has also been taken in New South Wales.

### 37. Genus: **Palaeodoxa** *Warr.*

Apparently nearly related to *Parepisparis*, but with the 2nd subcostal of the forewing free, the hindwing with distal margin rather deeply excised between the radials, thence smooth to the anal angle, costal vein free, discocellulars deeply angulated inwards just before the origin of 2nd radial. Only one species known.

**P. subignea** *Warr.* (2 e) cannot be mistaken for any species of *Parepisparis*. Apart from the difference *subignea*. of shape, the bright orange-red shadings in the anal area of the hindwing above and in the distal area of both

*suffusa*. wings beneath are distinctive. ♀ unknown. — ab. *suffusa* Warr. has the forewing and part of the hindwing (excepting the costal and anal regions) clouded with dark purple-grey, the bright brown line and band of the forewing changed to dark black-brown. — Biagi, British New Guinea, in April.

### 38. Genus: **Dicyclodes** Warr.

Perhaps really nearer to *Enochroma* than in our sequence of the genera, yet in shape (though rather narrower) and in the markings of the underside strongly recalling *Sarcinodes*. The extremely sinuous, somewhat hyaline discocellulars of the hindwing are distinctive. Antenna of ♂ unipeetinate. Hindtibia with all spurs. Forewing with 1st subcostal free. Only one species known.

*hieroglyphica*. **D. hieroglyphica** Warr. (2 e). Cannot be confused with any other known species. In addition to the cell-mark of the hindwing, attention may be called to the sharply white costal marks of the forewing. British and Dutch New Guinea.

### 39. Genus: **Sarcinodes** Guen.

In the robust build, hairy clothing and unipeetinate ♂ antenna, this genus has much in common with the typical *Enochroma* group, but it may be at once distinguished by a noteworthy specialisation in the venation, the 2nd radial of both wings arising close to the 1st, on the hindwing sometimes actually just stalked with it. Forewing with 1st and 2nd subcostals free. Unlike its allies, *Sarcinodes* is well represented in India and does not reach Australia. Of the early stages I can find no account, though some species are common.

*susana*. **S. susana** Swinh. (2 e). Brighter yellow above and beneath than any other *Sarcinodes*; further characterized by the strong, irregular dark mottlings, the band accompanying the proximal line of the hindwing tolerably constant. Only known from the Khasia Hills, Assam, where the ♂ appears to be common. I do not know the ♀.

*debitaria*. **S. debitaria** Walk. (2 e). Paler yellowish-brown, with strong black cell-dots, at least on the forewing, the dark antemedian line of the forewing and the common oblique white, distally dark-edged line from the apex also sharply expressed. Sikkim to Assam; ? Sumatra.

*carnearia*. **S. carnearia** Guen. (= *bilinearis* Moore) (2 f) has a similar (though yellower) outer line to the preceding but differs in its rufous colour, absence of cell-dots, reduction of antemedian line to a few weak dots, and presence of a fine median line nearly parallel with the postmedian. N. India, Birma, Formosa.

*lilacina*. **S. lilacina** Moore (2 f). Postmedian line as in *carnearia*: ground-colour delicate lilacine; median line reddish, obsolescent on forewing, followed distally by an indistinct smoky shade; a very faint, pale dentate subterminal line generally indicated. Khasia Hills, Assam.

*aequilinaria*. **S. aequilinaria** Walk. (= *trilineata* Walk.) (2 f). Slightly variable in colour, the ♀ glossy lilacine grey, the ♂ more or less strongly suffused with reddish. Distinguishable at once from all the preceding by the three fine, double, parallel lines of the forewing. Sikkim to Assam, also from West China. — V. Vol. 4, p. 5.

*luzonensis*. **S. luzonensis** Wilem. a. *South* represents *aequilinaria* on Luzon. Antennal pectinations rather longer, continued farther down the shaft, forewing with base whitish, antemedian line slightly less oblique, postmedian beneath more developed, shades at border of hindwing beneath stronger.

*punctata*. **S. punctata** Warr. represents *aequilinaria* on Borneo. More uniformly reddish, with stronger black irroration, both wings with strong black cell-dot.

*restitutaria*. **S. restitutaria** Walk. (2 f). Distinguished by its large size, robust build and the single fine oblique line which — unlike that of *lilacina* — is finely dark-edged proximally as well as distally. Ground-colour rather variable but never approaching that of *lilacina*, central area generally slightly darkened. The Indian race is generally dark rufous. From the North Shan States, West China and Formosa I have seen but few specimens. — ab. **aegrota** Bthr. is paler, especially in the distal area. — **sumatraria** Walk. is on an average darker and duller, sometimes grey-brown rather than red, but I doubt whether the distinctions are altogether constant. Sumatra. — **perakaria** Swinh. is also less red than typical *restitutaria*, rather inclining to violet-grey; characterized by having a yellow-whitish spot just outside the cell instead of a black cell-dot. Malay Peninsula. — I do not know the Borneo form, recorded by SWINHOE (Cat. Lep. Het. Oxf. Mus. Vol. 2, p. 320).

*vultuaria*. **S. vultuaria** Guen. seems to be a rather rare species and I have only ♀♀ before me. Broader-winged than any of the preceding, costal margin of forewing more strongly arched proximally, cell shorter (only one-

third the length of the wing). In colour perhaps nearest to the redder ♂♂ of *aequilinaria* but less glossy, strongly sprinkled with black, especially in the distal area; both wings with distinct cell-dot, a fine grey median line (very weak on the forewing) and oblique yellow, distally dark-edged postmedian. Penang, Nias, Borneo.

**S. holzi** Pagenst. (= *compacta* Warr.). Of this form, from Amboina, I only know WARREN'S type, *holzi*, which clearly represents a local race, if not a mere aberration, of the better-known New Guinea *subfulvida*. Rather smaller and lighter and still more uniform in colour than the New Guinea ♂♂; a ♀ from the mountains of Central Ceram is much like a small, poorly-marked *subfulvida*. — **subfulvida** Warr. (♀ = *subvirgata* Prout) *subfulvida*. (2 g). Rather smaller than *vultuaria*, the ♀ perhaps still broader-winged, though with less arched costal margin. Variable, but always with stronger red or purple shades than *vultuaria*; cell-dots wanting; a yellow or reddish spot generally present just beyond the discocellulars of the hindwing; postmedian line sometimes strong and black, sometimes yellow, sometimes scarcely indicated except by black or white vein-dots. Sexual dimorphism strong, the ♂♂ lighter and less variegated than the ♀♀, which always have a well-developed white costal mark near the apex. Widely distributed in New-Guinea and its satellite islands. — ♂-ab. **flaviplaga** Prout has *flaviplaga* on the distal part of the forewing an irregular, extended patch of light yellow, nearly reaching the cell, the costa and the distal margin, but narrower posteriorly and not approaching the hindmargin.

**S. derufata** Warr. (= *olivata* Warr.) (2 f) differs from *holzi subfulvida* in having the postmedian line *derufata* still more oblique, reaching the abdominal margin of the hindwing nearer the base; it is also rather more glossy, the colouring lighter proximally of the postmedian line than distally, with the darker distal colouring reappearing at the costal margin and base of the forewing. Otherwise the ♂ — which has not hitherto been described — is remarkably like some ♀ forms of *subfulvida*, though without the yellow postcellular spot of the hindwing or the distal blotches. ♀ much duller, grey-brown, with the postcellular spot of the hindwing almost white. In the mountains of Dutch and British New Guinea.

#### 40. Genus: **Thaumatographe** Warr.

A rather isolated genus. The long and narrow forewing and short hindwing slightly recall some of the *Biston* group. Tongue wanting. Antenna strongly bipectinate in both sexes. Breast and femora strongly hairy. Hindtibia with 4 short spurs. Forewing with 1st subcostal free, 2nd—5th stalked. Hindwing with 2nd radial as in *Sarcinodes*. Only one species known.

**Th. singularis** Warr. (2 g). Quite distinct from every other known species. The remarkable course of the *singularis* postmedian line of the hindwing and the sharp contrast between the dark colouring in front of it and the whitish — in the ♂ partly reddish-clouded — area behind it is particularly striking. Dutch and British New Guinea.

#### 41. Genus: **Abraxaphantes** Swinh.

A rather isolated genus, named from its superficial resemblance to a giant *Abraxas*. Palpus long, strikingly rough-scaled. Antenna in both sexes unipectinate. Hindtibia with all spurs. Abdomen of ♂ long and slender. Frenulum rudimentary, the retinaculum wanting. Forewing with cell long, 1st and 2nd subcostals stalked, 1st median remote from 3rd radial. Hindwing produced to a point at end of 2nd subcostal. Only one species.

**A. perampla** Swinh. (2 g). Recognizable at once by the bright ochreous palpus and by the pattern *perampla* of the wings, with their spotted margins and irregular central stripes. Local; Assam to Canton. TUTT (Entom. Record, Vol. 12, p. 13) records a specimen as having been taken off Cochin China, 100 miles from land, in June 1894 (as "*Abraxas phantes*"!).

#### 42. Genus: **Doratoptera** Hmps.

Of this still more remarkable genus only one specimen is known, described as a ♂, but really a ♀. Its hindwing is not unlike that of *Abraxaphantes* in shape, but the forewing has its apical part so greatly narrowed and produced and the anal angle so completely rounded off as to look like a malformation; the 1st subcostal does not arise from the 2nd but from the cell, and anastomoses with the costal. Face with a rounded prominence, vertex with a large conical tuft. Palpus, breast and femora hairy. Antenna almost simple. Hindwing with 2nd radial so weak that the genus might even be excluded from the present subfamily.

*nicevillei*. **D. nicevillei** *Hmps.* (2 g). Expanse about 60 mm. Both wings moderately robust, strongly glossy, ochreous whitish, the forewing suffusedly streaked with brownish at the costal margin and on the veins and more narrowly on the folds. Darjiling.

#### 43. Genus: **Loxorhombia** *Warr.*

Point at end of the 2nd subcostal of hindwing slightly sharper than in the two preceding genera, forewing shorter, though with minutely produced apex; the forewing venation differing from that of *Abraxaphantes* in that the stalk of the first two subcostals anastomoses with the costal, the 2nd subcostal afterwards anastomosing with the 3rd—4th. Palpus slenderer than in *Abraxaphantes*, with smooth, elongate 3rd joint. Antenna of the ♂ bipeetinate. Hindtibia of ♂ with hair-pencil. Again only one species known.

*idea*. **L. idea** *Swinh.* (2 h). Brown-grey, in places suffused; markings pale, partly dark-edged, conspicuous being the costal streak of forewing and the common oblique line from apex to abdominal margin rather near the base; hindwing with two more distal lines. Local in Burma.

#### 44. Genus: **Heteralex** *Warr.*

Differs from *Loxorhombia* in its rather more slender wings, with the hindwing rounded, not toothed at the 2nd subcostal, and in having the antenna of the ♂ unipeetinate. Range rather restricted, Greater Sunda Islands to Formosa.

*rectilineata*. **H. rectilineata** *Guen.* (= *mieroneata* *Walk.*, *rarata* *Walk.*, *aspilataria* *Pagenst.*) (2 g). In both this species and the following, the whitish forewing shows the strongest dark irroration in the proximal part of the subcostal region, especially beneath, and they further agree in having a erenulate line on the underside of the hindwing distally to the cell-spot. *rectilineata*, however, has the costal margin of the forewing straighter, apex not produced, distal margin of hindwing rounder, oblique line differently placed, on hindwing proximal to the cell-dot, hindwing with a postmedian line developed. Known to me from the Malay Peninsula, Nias, Borneo, Banguay and Palawan.

*aspersa*. **H. aspersa** *Warr.* further differs from *rectilineata* in the appreciably longer pectinations of the ♂ antenna. The name-typical race inhabits Burma and the Malay Peninsula, and is distinguishable by its stronger brown irroration. — **formosana** *Matsumura* (= *albescens* *Prout*) (2 g) is the race from Hainan and Formosa and is larger and much clearer white, with the terminal dots stronger, altogether recalling pale forms of *rectilineata*.

*unilinea*. **H. unilinea** *Swinh.* Very close to the preceding but with the ♀ antenna shortly peetinate, distal margin of forewing slightly more convex, its line not quite so oblique, cell-dot of hindwing more strongly developed. Hong Kong and Hainan.

#### 45. Genus: **Eumelea** *Duncan.*

A quite isolated genus, consisting of a large number of closely related species which are often difficult to distinguish one from another, though their generic position can be recognized at a glance. Moderately large, build extremely slender, antennae and legs extraordinarily long. Antenna nearly simple. Femora hairy. Hindtibia of ♂ fringed with hair; both sexes with all spurs. Abdomen elongate. Forewing with the 1st subcostal vein anastomosing with the costal and then with the 2nd subcostal. Hindwing with the 2nd subcostal shortly stalked. ♂ genitalia very complicated, but giving some good characters for the differentiation of the species; uncus trifid (except in *obliquifascia*), the arms forming the "crux" of BURROWS (in litt.), and with two further arms ("chartae" of BURROWS) articulated to the joint of the uncus and tegumen. In most species the crux is therefore placed well beyond the chartae, but in *fumicosta*, *genuina* and *praeusta* it is long, narrow and situate behind the chartae.

Since publishing part 8 of the "Lepidopterorum Catalogus" I have given careful attention to the genus and I trust that the brief survey given below will mark some real advance in our knowledge. All the species are Indo-Australian.

**E. biflavata**. Not very variable, the sexes nearly alike, yellow aberrations of the ♀ almost unknown. Except for the two clear yellow patches of the forewing between the median line and the subterminal shade, the yellow apices and generally one or two ill-defined patches on the hindwing, the red irroration is nearly uniform throughout. Median line almost straight. Three races are known, but are not very sharply defined. *assamensis*. — **assamensis** *subsp. nov.* (= *ludovicaria* part. *Warr.* n. *Guen.*) has on the whole more yellow admixture,

particularly in the terminal area of both wings; yellow patches of forewing ill-defined, commonly encroached upon by some red irroration, the posterior one sometimes almost obsolete; subterminal band rather strong, nearly always marked with some dark dots or dashes on the veins. Assam, Bhotan, East Pegu, Tonkin and perhaps Hainan; the type from the Khasia Hills in the Tring Museum. — **insulata** Warr., from the Liu-Kiu Islands and Formosa, has the subterminal band nearly as strong as in the preceding, the yellow patches strongly developed. — **biflavata** Warr. has the yellow patches generally strong, subterminal band almost or altogether obsolete, apex of forewing not or scarcely yellow. Borneo (type), Sumatra, Java, Sulu. Specimens from Nias and Penang begin to show an increase of yellow in the terminal area, particularly at the apex. The form from Palawan is possibly another intermediate race. *insulata.* *biflavata.*

**E. atomata** Warr. Distal margin of forewing straighter. ♂ much more deeply coloured than *biflavata*, the yellow patches more numerous but small and ill-defined; ♀ yellow. Both sexes with a small blackish cell-dot on forewing, the common median line dark and dentate, a prominent postmedian spot on 2nd radial. Java, rare. *atomata.*

**E. unipuncta** Warr. (2 i). Coloration and markings nearly as in *atomata*; distal margin of forewing rather more oblique. Differs markedly in the large, pale-centred cell-mark of the forewing and the larger, blacker postmedian spot; moreover the dentate median line is thicker, especially in the ♀, and bears on the hindwing a black dot at the bifurcation of the 2nd subcostal and 1st radial. Underside very coarsely and heavily irrorated. New Guinea, the D'Entrecasteaux and Solomon Islands. *unipuncta.*

**E. ludovicata** is the most widely distributed species and decidedly variable, yet to the practised eye rarely difficult to recognize. The antemedian and median lines of the forewing are almost invariably marked by blackish spots on the costa, the median line, though weak (unless marked by dark vein-spots), is nearly always traceable, and then shows a stronger angulation before the middle than in any allied species; the hindwing generally shows a costal spot beyond the middle, especially large and strong in most ♀♀. The variation is partly geographical, but in part too inconstant to admit of my naming the forms. — **ludovicata** Guen. (2 i) (♀ = *aureliata* Guen.) may be used as the name for all the forms from India, Hainan, Formosa, the Malay Peninsula and the Sunda Islands, the ♂♂ red, moderately blotched, submarginal band darkened, the ♀♀ orange, heavily marked. — **enantia** *subsp. nov.*, from Celebes and Sula, has the sexes more nearly alike, the ♂♂ being more mottled with yellow, the ♀♀ with red; the red is of a more rosy tone and there are few or no blackish markings excepting at the costal margin of the forewing, the ♀ consequently presenting a very different appearance. Type from Celebes, in the Tring Museum. On the Moluccas and Mafor the ♂♂ are deeper coloured than in the majority of typical *enantia*, but I do not propose to separate them racially. — **cupreata** Warr. is a small form from the Tenimber Islands, the ♀ otherwise similar to name-typical *ludovicata*, the ♂ very distinct in its nearly uniform irroration of three colours, yellow, red and grey. — **rubra** Rothsch. has the ♂ almost uniform deep rosy, even the yellow apex of the hindwing usually almost entirely wanting; markings shadowy, excepting the blackish costal spots of the forewing; ♀ very like that of typical *ludovicata*. Dutch and British New Guinea. — **salomonis** *subsp. nov.* from the Solomon Islands, has the ♂ rather small, with yellow patches as in *biflavata*, the ♀ often rather small, intermediate in coloration between *ludovicata* and *enantia*. Type from Bougainville, in the Tring Museum. Similar forms occur on Woodlark and St. Aignan. — **fulvida** *subsp. nov.* is a small form from Rossel Island, the ♂♂ yellow coarsely sprinkled nearly throughout with red, the transverse markings very weak, the ♀♀ nearest those of the preceding race but brighter, with the spots of the median line enlarged on the 3rd radial and the median veins, obsolete before and behind these, the subterminal spots posteriorly reduced. Type in the Tring Museum. *ludovicata.* *enantia.* *cupreata.* *rubra.* *salomonis.* *fulvida.*

**E. rubrifusa** Warr. (2 i). Ground-colour of ♂ approaching that of *ludovicata rubra*, wings rather more elongate, yellow postmedian spots (placed somewhat as in *biflavata*) standing out very prominently. The costal edge of the forewing is blackened, but the characteristic costal spots of *ludovicata* are wanting, as also the antemedian and median lines. The only known ♀ is similar to that of *enantia*, but with the markings thicker and rather ill-defined. Kina Balu, N. Borneo. — **multiplagiata** *subsp. nov.* has in addition a yellow apex to the forewing, a large yellow spot behind the 2nd median near its base, a smaller one near the end of the cell and on the hindwing two large spots between the radials, besides other small spots and wisps. Costal margin of forewing sprinkled with blackish. Ramboekers, Tondano, N. Celebes. Type in the Tring Museum. *rubrifusa.* *multiplagiata.*

**E. sanguinifusa** Warr. (3 a) is perhaps another local race of *rubrifusa*. ♂ forewing with similar spots to those of *multiplagiata*, but in addition with an ill-defined yellow basal patch, costal margin more strongly blackened, subterminal dark band indicated; hindwing nearly as in *rubrifusa*, but darker. ♀ generally distinguishable from those of the *ludovicata* races by having a stronger dark apical patch and a less sharply angulated median line. Dutch New Guinea to Goodenough Island. *sanguinifusa.*

**E. fumicosta** Warr. (2 i). ♂ forewing marked nearly as in *multiplagiata* and *sanguinifusa*, but with the costal margin more broadly black-mixed and the entire distal area (excepting the small yellow marginal *fumicosta.*

spots) darkened; hindwing with numerous not very sharply defined yellow spots. ♀ yellower than that of *sanguinifusa*, with broad and strong submarginal band but with an apical patch and most of the distal margin remaining yellow. Common on the Solomon Islands, Dampier Island, Rook Island and the Bismarck Archipelago.

*vulpenaria*. **E. vulpenaria** is a rather puzzling polymorphic species, which was formerly considered to embrace three or more distinct species. The study of the genitalia, however, reveals no difference whatever and there are various intergradations. The second line of the forewing is almost as thin as in *biflavata* and *atomata* but is gently curved anteriorly, thus intermediate between those species and the *ludovicata*-group. In nearly all the ♂ forms the forewing beneath shows some smoky suffusion, at least in the distal area. — **vulpenaria** Stoll (2 h) is very distinct in the ♂ in having the upper surface strongly smoky, the lines standing out sharply in red. ♀ reddish orange, with some smoky admixture on the lines and especially on the subterminal band. Both sexes show a blackish costal dot on the second line. — ♀-ab. **flavata** Moore is a lighter yellow form; subterminal band generally reduced to dark spots or dashes on the veins — ♂-ab. **olivacea** Hmps. (3 b) is of a more olive tone, with the lines dark grey instead of red. — *vulpenaria* seems to form a definite race in S. India and Ceylon, but in N. India appears occasionally (seasonally?) among the following. — **feliciata** Guen. Yellow with rather uniform and (especially in the ♂) copious red irroration, the lines and subterminal shade deeper red. No blackish costal spot. Forewing of ♂ beneath with slight or moderate smoky suffusion. — Yellow aberrations of the ♀ (♀-ab. **luteata** *luteata* nov., type from Mount Wuchi, Hainan, in *Tring Museum*) very rare, very distinct from ab. *flavata* in the rosy lines and subterminal band. N. India to Malay Peninsula and Hainan. — **florinata** Guen. (3 a) is deeper red in the ♂ and with broader, duller markings in the ♀. ♂ above sometimes almost unicolorous, sometimes with lines and distal area still darker and more smoky; beneath strongly (sometimes almost entirely) smoky. ♀ beneath with the markings predominantly smoky. Nias, Batoe Islands, Sumatra, Natuna Islands, Borneo, Java and Lombok.

*unilineata*. **E. unilineata** Warr. (3 b) is a smoother-looking species, the irroration being much finer and less conspicuous. ♂ delicate rosy; ♀ orange or yellow. First line wanting or extremely faint, second, on the contrary, strong except at costal margin of forewing, rather obliquely placed, little curved. Philippines and N. Borneo.

*isozygus*. **E. isozygus** sp. nov. (2 h). Both wings light orange, with the rosy-purple irroration very uniformly disposed and forming an abundance of fine transverse strigulae, which are longer than those of most of the species; base and costal margin of forewing yellow, the costal margin blotched with dull purple near the base, then very finely and sparsely strigulated and dotted with the same; lines entirely wanting; cell-mark of forewing faintly indicated; fringes distally pale yellow. Underside slightly yellower, in places (especially on the hindwing) slightly suffused with pink; the irroration coarser. Philippines Islands: Baco River, South Mindoro, 3 April 1910, the type ♂ and another in my collection, kindly presented by Mr. W. SCHAASSMANN; Mindanao and West Samar in coll. JOICEY. This was evidently included by SEMPER in his comprehensive species "*rosalia*". It is very distinct, both in appearance and in the ♂ genitalia (which have the uncus bilobed and a small hairy protuberance on the valve) from any species known to me. I had supposed — notwithstanding its totally different superficial aspect — that it might be the ♂ to *obesata* Feld., of which I have only seen ♀♀, but I find that SEMPER knew both sexes of *obesata* and that they do not differ.

*degener*. **E. degener** Warr. (2 i). The smallest species of the genus, probably representing the following on the Loyalty Islands. ♂ darker reddish, sometimes smoky, ♀ lighter yellow; subterminal spots generally strong, especially in the ♀. — ♀-ab. **umbrata** Warr. is a handsome form with a dark band beyond the second line, on the forewing reaching the subterminal spots, on the hindwing less extended.

*australien-sis*. **E. rosalia** is another very widely distributed and variable species. ♂ red, nearest that of *florinata* but of a rather brighter, more carmine colour and without smoky admixture beneath. ♀ dimorphic, either similar to the ♂ but with more yellow admixture or bright deep yellow with the markings reddish, the second line almost as strongly bent as in *ludovicata*. — **australiensis** Warr. (2 h) is either strikingly dimorphic in both sexes or else includes two species which have not yet been differentiated. In general smaller than the following races. WARREN'S ♂ type (with which, however, I associate the yellow form of the ♀) has the ground-colour more mixed with yellow than in most forms of *rosalia*, the markings generally distinct, apex of hindwing yellow. Queensland, perhaps also on the Tenimber Islands. Together with it at Cedar Bay, near Cooktown, occurs — **stipata** form. nov., both sexes with the irroration duller purple-red or almost purple-grey, much denser, giving to the wings an almost uniform appearance, the markings becoming very weak; apex of hindwing not yellow. The ♂ is even darker and more unicolorous than the ♀, but there is no strong dimorphism. WARREN associated the ♀♀ of this form with the ♂ of the preceding. — **rosalia** Stoll. (2 h). Rather large. ♂ bright deep red, almost unicolorous, apex of hindwing sometimes yellow; transverse markings feeble or wanting. ♀ somewhat more mixed with yellow, markings better developed; occasional aberrations quite yellow, well marked. Distributed from the Moluccas to New Britain and I cannot at present differentiate the forms from Nias, Sumatra, Banka Island,

Borneo and Palawan, though these ought to be separable. It is not certain that STOLL's unsatisfactory figure may not rather be meant for a markingless aberration or rubbed specimen of *obliquifascia* Warr., which is commoner on Amboina. — **sangirensis** Warr. is a more yellowish ♂ form from Sangir. I do not know its ♀. — **marginata** Prout, from Celebes and Sula Mangoli is in the ♂ less yellow than *sangirensis* but of a less deep red than *rosalia* and is characterized by having the apex of the forewing and generally a narrow distal border yellow. The ♀ either corresponds to this ♂ or is yellow, in either case with the markings rather broad and rosy. — **aurigenaria** Warr. (3a). This name has been given to the forms which prevail on Java and the Lesser Sunda Islands, but is perhaps not tenable. They are more mixed with yellow and more strongly marked than *rosalia* but the ♂♂ are not so yellow as in *sangirensis* and lack the yellow apex of the forewing which distinguishes *marginata*. Second line commonly more proximally placed. The ♀, when yellow, has the markings narrower and greyer than in *marginata*. — **attenuata** Warr. The ♂ is rather darker than in typical *rosalia*, the lines rather thin, but is scarcely worth naming. British New Guinea. — From the Solomon Islands I have seen too few examples to be able to discuss the variation.

**E. infulata** Warr is a striking species. Both wings proximally pale yellowish with rosy irroration, distal half bright rose-colour, bearing a white-yellow transverse band, on the forewing straight, on the hindwing curved. Apex of hindwing also white-yellow. Choiseul Island.

**E. semirosea** is very close to some forms of *rosalia* but I believe a good species, as the wings are appreciably more rounded, especially the forewing apically. The subterminal band is generally wanting, never strong, the first line often also wanting (when present, straighter than in *rosalia*); second line fairly strong, more gently and evenly curved than in *rosalia*. — **semirosea** Warr., from the North Moluccas, has the ♂ mixed with yellow (especially in proximal half), generally with some yellow scales at apex of hindwing. ♀ yellow, with dull rosy markings. — **phoenissa** Warr., from Obi and Buru, has the ♂ deeper and more unicolorous red, as in typical *rosalia*, the hindwing without yellow at apex. ♀ as in the preceding.

**E. choiseulensis** sp. nov. seems to connect *unipuncta* with *obliquifascia*. The ♂ is bright red, blotched with yellow, nearly as in *unipuncta* or *fulvida*, but has the second line straight and parallel with the distal margin as in *obliquifascia*, though more proximally placed; the characteristic blackish distal spot of *unipuncta* is entirely undeveloped. The ♀ is yellow, with the speckles and markings bright red, not greyish as in *unipuncta*, the second line placed as in the ♂ but more noticeably crenulate. Described from 5 ♂♂ and 1 ♀ in the Tring Museum, collected by MEEK on the North side of Choiseul Island, December 1903.

**E. obliquifascia** Warr. (3 a) is generally easy to distinguish by the nearly straight, oblique second line, which, though often thin and indistinct in the ♂, is almost always discernible; in the ♀, which has the ground-colour yellow, it is always strong and nearly always thickened. Widely distributed, occurring on Buru, Amboina, New Guinea and most of its islands, the Bismarck Archipelago and North Queensland.

**E. obesata** Feld. (2 i). A rather broad-winged species, yellow in both sexes and generally recognizable at a glance by the very extended brown blotch on the hindwing. Only known from the Philippines. — **corpulenta** Th.-Mieg lacks the brown patch of the hindwing.

**E. praeusta** Warr. (3 a). Also very easy to recognize in the ♂ by the dark apical patch (leaving free the apex itself) and the broad band across the middle of the forewing. In the ♀ these markings are only indicated by irregular dark dusting and a dark distal spot is developed, recalling that of *unipuncta* (2 i). North Moluccas.

**E. apicata** Warr. possibly represents a local form of the preceding. The central line of the forewing is incomplete, as in *praeusta* ♀, but thinner, and is also thinner on the hindwing; the apical patch of the forewing, on the other hand, is more extended than in *praeusta* ♂, reaching the 2nd median vein, and is as dark as in *genuina* (3 a). Kapaur, Dutch New Guinea, only two examples known.

**E. genuina** Kirsch (= *gemina* Kirb., *craspedias* Meyr.) (3 a). A very constant species, quite distinct in the black-brown borders of both wings. Distributed in New Guinea, with Jobi, Goodenough and Fergusson Islands.

**E. algidaria** is an interesting species, of rather small size, characterized by the whitish band of the forewing (much more obliquely placed than in *infulata*), which is continued as an apical patch on the hindwing. The ground-colour is always dark, but there seem to be at least three geographical races. — **algidaria** Walk., from Mysol and Waigeu, is more mixed with purple than the following (especially in Waigeu specimens) and has the whitish band on both wings broad. — **lugens** subsp. nov. is dull brown-grey and has the band slightly narrowed, sometimes lightly speckled with the ground-colour. Near Oetakwa River, Snow Mountains, Dutch New Guinea, October to December, 1910, a pair in the Tring Museum. — **constricta** subsp. nov. (5 a) has the ground-colour of *algidaria*, the band of the forewing greatly constricted, more or less interrupted, especially in the

anterior half, where it generally forms a mere thread or may be entirely obsolete; transverse line of hindwing generally less vertical, reaching the costa nearer to the apex. Known from Milne Bay and Sariba Island, British New Guinea, the type being a ♂ in the Tring Museum from the latter locality.

#### 46. Genus: **Xyridacma** *Meyr.*

Palpus rather short. Antenna nearly simple. Hindtibia with all spurs. Build moderately robust. Wings with distal margin more or less erenulate; forewing with 1st subcostal anastomosing with costal, 2nd subcostal with 1st and afterwards with stalk of 3rd—4th, 1st median separate from 3rd radial; hindwing with costal vein slightly swollen near base, the subcostal here throwing out a slight protuberance towards it. Larva and pupa stout. Confined to New Zealand.

*hemipteraria.* **X. hemipteraria** *Guen.* (3 b) is distinguished by the less broad wings, more deeply erenulate margins and especially by having the hindwing produced to a strong tooth at the end of the 2nd subcostal. Variable. Larva on *Veronica*, closely resembling the stems of the foodplant; moderately stout, of fairly uniform width throughout. Pupa unusually robust, pale olive-brown, suffused with pink on wing-edges. Pupates among dead leaves, without making a cocoon.

*ustaria.* **X. ustaria** *Walk.* is perhaps merely a form of the following. On an average smaller. The wings are relatively rather shorter, the distal margin of the hindwing less strongly dentate. Both, but especially *ustaria*, excessively variable, with a marked protective resemblance to withered leaves. WALKER's type is ochreous brown, with cloudings of red-brown, looking as if it had been scorched, and with a distinct dark median line on both wings. — ab. **varians** *Butl.* is darker, with a short anterior ochreous band on forewing from the costa (or from subcostal nervules) close to the apex and with some slight or moderate ochreous clouding behind the middle of the cell. — ab. **achroiaria** *Feld.* (3 e) is not much variegated, but has two small white dots between the radial veins of the forewing, sometimes also reproduced on the hindwing. — ab. **hudsoni** *nov.* is more purplish, the forewing at the base redder and with an irregular speckling of grey-white „no doubt imitating the patches of mould which are often present on dead leaves“ (HUDSON). — ab. **unilinea** *nov.* (3 b) has no distinct markings except a strong black median line on both wings and sometimes the small white dots of ab. *achroiaria*. — Common in New Zealand, August to February or even in the winter.

*alectoraria.* **X. alectoraria** *Walk.* (3 c) in addition to the distinctions noted above, differs from *ustaria* in its generally lighter colour, with the costal edge of the forewing nearly always and the fringes commonly strongly rosy, and in wanting the black cell-dots. WALKER's type is weakly marked. — ab. **octomaculata** *Th. Mieg* (3 e) is characterized by having on each wing two large white, rosy-edged spots, which may be entire or cut by darkened veins; one is placed distally to the cell and reaches the 2nd subcostal, the other is behind the base of the 2nd median. — The early stages have been described by HUDSON and others. The egg is much flattened above; pale green at first, becoming olive-green. The larva feeds on *Pittosporum* and is pale green with yellow dots and stripes, a series of crimson dorsal blotches and crimson anal flap, prolegs and spiracles, beautifully assimilated to the buds of the food-plant. — Distribution similar to that of *ustaria*.

#### 47. Genus: **Derambila** *Walk.*

Small, delicately-built white moths, with rather thinly-sealed wings, their margins smooth, the apex of the forewing acute, generally minutely produced. Face smooth. Antenna long, ciliated in the ♂. Legs long and slender; hindtibia with only one pair of spurs. Forewing with the 1st subcostal running into the costal, 2nd subcostal wanting. Hindwing with the costal approximated to the subcostal near the base and here thickened. Most of the species are Indo-Australian but several occur in Africa. The early stages are unknown.

A. Section: Hindwing with 2nd subcostal not stalked. Hindleg of ♂ long and slender. Antennal ciliation of ♂ very short.

*dentifera.* **D. satellata** is very distinct from all the other species in having a conspicuous black spot on the 1st radial vein of the forewing not far from the distal margin. — **dentifera** *Moore* (= *cfila* *Swinh.*) is the form from N. India, Borneo, Talaut, Hainan and Formosa and has the markings fine and generally weak, the post-satellata. median line becoming stronger at the hindmargin, particularly on the hindwing. — **satellata** *Walk.* (= *galactina* *Th.-Mieg*) has the markings much thicker and browner, a very large cell-mark conspicuous on both wings. *rectiscripta.* Celebes, Sula and Ceram. — **rectiscripta** *Prout* (3 e) from Dutch New Guinea, Ron and the Key Islands, should probably be regarded as a separate species, as the postmedian line of the forewing, which is thicker

and browner than in *dentifera* but less macular and more uniform than in *satelliata*, runs straight from the black spot to the middle of the hindmargin, whereas in the other forms it is irregular and sinuous.

B. Section: Hindwing with 2nd subcostal not stalked. Hindtibia in ♂ greatly dilated, fringed and containing a brown hair-pencil, the tarsus abbreviated. Antennal ciliation of ♂ long.

**D. zincaria** is the most widely distributed species of the section and is perhaps separable into two races, though occasionally aberrations of the first closely resemble the second race. — **zincaria** *Guen.* has the *zincaria*. black cell-spots nearly rounded, on the forewing moderate or small, on the hindwing generally small. The spots of the postmedian line are also on an average rather smaller than in the eastern forms. Described from Borneo, known to me also from Penang. A form somewhat intermediate towards the following inhabits Palawan, Balabac and Sula and may be expected from Celebes. — **melagonata** *Walk.* (3c) has a slightly more *melagonata*. brownish tinge, is often more heavily marked and is especially characterized by the large triangular cell-dots. Moluccas, Aru and Mysol.

**D. candidissima** *Prout* (5b) is perhaps another race of *zincaria*, though the antennal ciliation scarcely *candidissima*. looks so long. Much purer white, the markings grey rather than brown, reduced to dots on the veins, the cell-spot of the forewing even larger, that of the hindwing small. British and German New Guinea, Dampier, Rook and Goodenough Islands.

**D. permensata** *Walk.* (= *guttilinea* *Walk.*). Nearest to *candidissima* (5b) in the punctiform lines, but *permensata*. the postmedian is rather nearer to the distal margin. Cell-dot of both wings very small. Java to Tenimber, according to WALKER also from Australia.

C. Section: Hindwing with 2nd subcostal stalked.

**D. lumenaria** *Hb.-Gey.* (= *oehreicostalis* *Hmps.*) (3e). Larger than the following species, the antennal *lumenaria*. ciliation of the ♂ minute. Further distinguished by the broad brown tinge at the costal margin of the forewing. Widely distributed in India, China, the Malay Peninsula and the Greater Sunda Islands. According to SNELLEN also on Celebes.

**D. costata** *Warr.* is apparently a very rare species. Antennal ciliation as in *saponaria* (3e). A little *costata*. larger than that species, the costal margin darkened but only narrowly, the other markings weak. Assam and Upper Burma. Possibly a local form of *saponaria*.

**D. infelix** *Swinh.* (3e) is also rare and imperfectly known. Perhaps merely a form of *saponaria* (3e) with *infelix*. the markings almost obsolete. Poona.

**D. saponaria** *Guen.* (= *zanclopterata* *Walk.*) (3c). Antenna of ♂ with fascicles of long fine cilia. Wings *saponaria*. snow-white, rather more opaque than in the three preceding, the black cell-dot of the forewing of medium size, the irregular brown transverse markings well expressed. Widely distributed but local. Specimens are before me from Ceylon, S. India, Lower Burma, Penang, Banka Island, N. Borneo and Palawan. — **fragilis** *Butl.* is *fragilis*. a form from Formosa with the lines — especially the antemedian — less dissolved into spots.

**D. adauca** *Prout* differs from *saponaria* (3e) in having all the markings larger, including a conspicuous *adauca*. dorsal black spot on the abdomen near its base. Distal margin of forewing more convex than in *saponaria*. Only known from Ceylon.

**D. catharina** *Prout* (5b) differs from *saponaria* in having all the markings smaller, the transverse *catharina*. lines and on the hindwing the cell-dot grey, not brown. Described from Queensland, but quite similar forms occur from Bali to the Tenimber Islands.

**D. aetherialis** *Butl.* (5b). ♂ antennal ciliation still longer. Otherwise very similar to *catharina* but *aetherialis*. with the cell-spots larger, that of the hindwing browner. Solomon Islands.

**D. dentiscripta** *Bastelb.* (= *obiana* *Th.-Mieg*) (3c). Rather variable in size, the larger specimens *dentiscripta*. superficially resembling small *lumenaria* in their strong markings. It belongs, however, to the group with long antennal ciliation and probably represents *strigicosta* on the Moluccas. Costal margin of forewing irrorated with brown, but less strongly and uniformly than in *lumenaria*. Batjan and Obi. — **sangirica** *subsp. nov.* is *sangirica*. rather larger, the cell-dot of the forewing not quite so large in proportion, the brown markings at least as thick as in the most heavily-marked *dentiscripta*; the antemedian line of the forewing is more obliquely placed and not curved, consequently reaching the costal margin further distad; the submarginal is not quite so close to the distal margin. Sangir, 3 ♂♂ in the Tring Museum.

*strigicosta.* **D. strigicosta.** Somewhat variable geographically and should probably be made to include the preceding. The transverse markings, however, are always comparatively slight and of a less bright brown, and appear to follow a slightly different course, the postmedian being more strongly bent outward. — **strigicosta** Warr. (5b), from New Guinea and its satellite islands, has the thinnest brown markings, the antemedian and subterminal, indeed, often almost obsolete; the black cell-dot and terminal dots, on the contrary, strongly developed. — **brunneicosta** Prout has the black cell-dot of the forewing smaller, the terminal dots brown, the brown transverse markings more strongly developed. Solomon Islands.

*colorata.* **D. colorata** Warr. The smallest species and easily distinguished by having all the markings brown, including even the cellspot of the forewing, which is rather large. Antennal ciliation of ♂ very long. Only known from the Tenimber Islands.

#### 48. Genus: **Holostixa** Swinh.

Larger and rather more opaquely sealed than *Derambila*, the clothing of palpus, breast and legs slightly more hairy. The ♂ also shows some remarkable modifications, the first two joints of the foretarsus being densely long-haired, the hindtibia with very strong hair-pencil, the forewing strongly bent at the end of the 2nd radial, the hindwing with acute apex and distorted costal margin, showing a long-fringed sinuosity beyond the middle. Only one species.

*manca.* **H. manca** Swinh. Cannot be confused with any other species. The broad, nearly straight postmedian band is quite different from the very sinuous and punctiform band of *Derambila*. Only known from Borneo.

#### 49. Genus: **Encryphia** Turn.

Antenna of ♂ bipectinate with rather short branches, each terminating in a long curved bristle; that of the ♀ with short bristles. Thorax and femora somewhat hairy. Hindtibia not dilated, all spurs developed. Forewing rather broad, with apex acute, especially in the ♀; 1st subcostal anastomosing with costal, 2nd to 5th stalked, the 2nd anastomosing with the 1st and afterwards with the 3rd to 4th. Hindwing with the costal approximated to the subcostal for some distance near the base, 2nd subcostal not stalked. An Australian genus of only one species, probably nearer to the following group than to the *Nearcha*-group, with which it was formerly associated.

*frontisignata.* **E. frontisignata** Walk. (= *punctilineata* Walk., *paraptila* Meyr., *argillina* Turn.) (1 f). Rather variable, greyer or browner, the lines generally marked with rather strong dots on the veins, the subterminal represented by spots between the veins. Sometimes the postmedian is accompanied by a thick dark shade. Queensland.

#### 50. Genus: **Noreia** Walk.

Palpus moderate or rather stout. Antenna of ♂ ciliate. Femora scarcely hairy. Hindtibia with all spurs, that of the ♂ dilated, with a hair-pencil. Wings broad, but with the apex of the forewing generally more or less acute or even minutely produced. Venation nearly as in *Encryphia*, but with the costal and subcostal of the hindwing more briefly approximated and both slightly more swollen at their point of approach. The ♂ wings often with interesting secondary-sexual modifications. The early stages are unknown. The genus is exclusively Indo-Australian but is scarcely more than a subgenus of the South American *Achlora*, in which the ♂ antenna is pectinate.

*venusta.* **N. venusta** Warr. (3 d). Very distinct from all the other species in the bright red markings and fringes. Antennal ciliation of ♂ very short. Borneo.

*lapidata.* **N. lapidata** Warr., described as a *Somatina*, evidently belongs here, though only the type ♀ is known. The apex of the forewing is minutely produced. The light wood-brown wings are irregularly irrorated with grey, leaving a clearer band beyond the postmedian; the lines are rather ill-defined, chiefly marked by vein-dots, the postmedian on the forewing acutely angulated before the 1st radial; distal border of forewing strongly darkened except at apex. Underside more sharply marked. Naga Hills, Assam, at 5—6000 feet.

*pulverosa.* **N. pulverosa** Warr. (5 b) furnishes a link towards *Encryphia*, as the antennal ciliation and bristles arise from projecting teeth or incipient pectinations. Rather variable in colour, greyer or redder, distinguishable from all the other species by the firm, straight antemedian line and the elongate cell-mark. Only known from the mountains of British New Guinea and one example from Mt. Goliath, Dutch New Guinea.

**N. punctilinea** Warr. Founded on a single, broad-winged ♀ from Sumba. Reddish grey, rather brighter *punctilinea*. red on the lines, which are otherwise only indicated by very small black (on one side pale-edged) vein-dots; these are placed more as in *Encryphia frontisignata* than in the other *Noreia* species, but the postmedian is less strongly excurved in the middle; subterminal spots small and incomplete.

**N. dentilineata** Warr. resembles in shape and colouring the *ajaia* group, but has the postmedian line *dentilineata*. dentate and on the forewing, instead of running to the apex, this line is angulated about the 1st radial and retracted, nearly as in *lapidata*. Sulu Archipelago.

**N. perdensata** Walk. (3 d). This and the four following species are all very similar in colour and *perdensata*. markings and require some care for their discrimination. *perdensata* and *ajaia* are, however, smaller than the others, on an average darker, with the fringes scarcely lighter than the ground-colour of the wings. All have in the ♂ a more or less prominently projecting tuft of hairs towards the middle of the abdominal margin of the hindwing, but this only becomes a strong cone in *albifimbria*. The structure of *perdensata*-♂ is simpler than that of the allies, the hindtibia being little dilated, the hindwing beneath without hair-tuft. India and Ceylon: other records are doubtful.

**N. ajaia** Walk. (3 d). Perhaps more variable than *perdensata*, on an average lighter or more tinged *ajaia*. with brown, on Timor approaching some forms of the Papuan and Australian *vinacea*. ♂ with moderate hind-tibial hair-pencil, hindwing beneath with appressed androconial hair about the 2nd median vein. N. India, Hainan, Malay Peninsula and the Sunda Islands to Timor.

**N. unilineata** Walk. (= *moestaria* Walk.) (3 d) was named from the absence of the 1st line of the fore- *unilineata*. wing, but this is inconstant. Best distinguished from *perdensata* by its larger size and the strong hindtibial hair-pencil of the ♂; from *ajaia* by the absence of the ♂ androconial patch on the hindwing beneath. Sumatra and Borneo. A lighter, more brownish ♀ from Celebes may represent a local race.

**N. albifimbria** Warr. (3 e). Distinguishable by the white or whitish fringes, especially in the ♀. Ante- *albifimbria*. median line faint, curved, but scarcely dentate outward on the veins. Cell-mark of forewing more elongate than in the three preceding. ♂ hindwing with an additional androconial tuft arising from the median vein proximal to the origin of the second median branch. Celebes and Sula Mangoli.

**N. papuensis** Warr. (3 e) replaces *albifimbria* eastward. Superficially similar, but the fringe, though *papuensis*. sometimes rather pale, is never whitish and the ♂ androconial tufts of the hindwing are different; that on the abdominal margin is quite slight, but those on the median vein and its 2nd branch are very strong, bright brown, and there is a further patch about the 1st median. Widely distributed and rather variable in colour. Moluccas to Solomons.

**N. vinacea** Warr. (= *loxosticha* Turn.) (5 b) is perhaps an eastern ally of *ajaia*, which it resembles *vinacea*. in the ♂ structure. Forewing with apex more produced (minutely subfalcate), ground-colour variable but in general much more shaded with vinous or (especially in the Australian forms) with red-brown; antemedian line of forewing very slender and weak, not angulated on the veins, postmedian generally continued into the apex, or to the distal margin close to the apex. Jobi and Dutch New Guinea, apparently very rare; Cedar Bay, N. Queensland, common.

**N. achloraria** Warr. (3 e). Very distinct in shape and markings from all the other species; tufts on *achloraria*. the ♂ hindwing nearest to those of *albifimbria*. Sumatra, Singapore, Borneo and Celebes.

### 51. Genus: **Callipotnia** Warr.

Scarcely more than a subgenus of *Noreia*, distinguished by having in the ♂ a small fovea near the base of the forewing, generally concealed on the upperside by hairs. Only known from New Guinea.

**C. multicolor** Warr. (5 a). Lighter brown than the other species, the postmedian line of the hindwing *multicolor*. less developed — chiefly shown by dots on the veins — less acutely angulated. Hindwing of ♂ beneath with much reddish hair at the base, a long dark tuft on the median vein, shorter brownish hair on base of 1st median branch and on 2nd submedian. Dutch and British New Guinea.

**C. allognota** Prout (5 a). The darkest species. Hindwing of ♂ beneath with less strong reddish hair, *allognota*. no long dark tuft on median vein, the short brownish hair stronger, encroaching into the cell. Biagi, Mambare River, British New Guinea.

*angulifera*. **C. angulifera** Prout (4 a). Rather variable in colour, browner or greyer. Structure similar to that of *allognota*, but the hindwing of the ♂ beneath has strong brown, partly red-mixed, hairy clothing on the distal part of the subcostal vein and the base of the 2nd subcostal and 1st radial branches. Snow Mountains, Dutch New Guinea.

### 52. Genus: **Physetostege** Warr.

Similar to *Callipotnia* but with the ♂ antenna bipectinate, the fovea enormously developed. Only one species.

*miranda*. **Ph. miranda** Warr. (4 a). The name-typical form is always dark in colour, though sometimes more purplish, sometimes more shaded with red-brown. A black subcostal patch on the hindwing just proximal to the post-median line may be present or absent. Dutch and British New Guinea. — *rufata* Warr. is founded on a small, brighter reddish ♂ from Geraldton, N. Queensland, which will perhaps prove to represent a local race.

### 53. Genus: **Alex** Walk.

Face terminating in a projecting cone of scales. Palpus long, especially in the ♀. Antenna of ♂ bipectinate with slender branches, which terminate in single bristles. Hindtibia of ♂ with hair-pencil. Forewing with the venation similar to that of *Noreia*, but the 2nd subcostal not anastomosing with the 3rd—4th. Hindwing of the ♂ remarkable for having the 2nd radial arising at a point with the 1st, or even very shortly stalked. Early stages unknown. A small genus of Indo-Australian moths.

*palparia*. **A. palparia** Walk. (= *nigrozonata* Walk., *rufolinearia* Pagenst., *indica* Warr.) (3 c). Variable in colour, greyer- or more ochreous-brown, but never so bright ochreous as the other species, the cell-dot of the forewing generally smaller. — In ab. *obsoleta* Warr. the oblique dark line is entirely wanting or scarcely traceable. — *palparia* inhabits Hainan, N. India, the Malay Peninsula, Java, Bali, Borneo and Palawan.

*niasica*. **A. niasica** Swinh. is unknown to me, perhaps a development of *palparia* ab. *obsoleta*. Greyish ochreous, uniformly covered with short brown striations, forewing with a pale brown mark at the upper end of the cell; both wings with indistinct traces of outwardly curved, pale brown, thin bands, antemedial and discal; a thin, marginal, pale brown line and ochreous cilia with grey tips. Underside similarly but more heavily marked. Nias, the type in the SWINHOE collection.

*ochracea*. **A. ochracea** Prout replaces *palparia* on Celebes, Sula and Batjan. Antennal pectinations of ♂ slightly longer. Ground-colour brighter ochreous, tips of fringe of hindwing not — as in *palparia* — appreciably darkened.

*aurantiata*. **A. aurantiata** Warr. (= *continuaria* ♀ Walk., in err.) (3 e) is distinguishable at a glance by its brighter, almost gold-yellow colour and the large, round cell-spot of the forewing. Only known from Batjan and Obi.

*continuaria*. **A. continuaria** Walk. (3 e). This and the following species are characterized by having the costal area of the hindwing above clear orange-ochreous while the rest of the ground-colour is much darker and more reddish. S. Moluccas to Sudest and Rossel Islands, generally rather common.

*longipecten*. **A. longipecten** Warr., from the Solomon Islands, is very similar to the lightest, most brightly-coloured forms of *continuaria* but differs in having the branches of the ♂ antenna much longer.

### 54. Genus: **Conolophia** Warr.

Characters nearly as in *Alex* but with the antenna of the ♂ ciliate, not pectinate, the 2nd radial of the hindwing normally placed. Not a large genus, but ranging from Africa to Borneo. The Indo-Australian species show a simpler ♂ structure than the African and have been formed into a separate genus under the name of *Geoglada* Swinh.

*helicola*. **C. helicola** Swinh. (3 f). Very like a duller, greyer form of *Alex palparia* (3 e), but with the apex of the forewing rather more acutely produced. In addition there is generally — though not always — a more or less strongly developed black spot near the anal angle of the forewing, which is then a further distinction from *palparia*. Best known from the Khasia Hills, Assam, but has also been taken in Sikkim and in West China.

**C. nigripuncta**. Paler and rather rounder-winged than *helicola*, the transverse line less obliquely

placed, consequently more central on the hindwing and running on the forewing towards the costal margin instead of the apex, but usually becoming obsolete at its anterior extremity. — **nigripuncta** *Hmps.* is *nigripuncta*, the Indian form, weakly marked with the exception of the transverse line and on the forewing the posterior black spot beyond it. — **rudis** *Prout* (3 f) from Borneo, is slightly narrower winged, much more heavily *rudis*. irrorated, the forewing with black antemedian spots, anterior black dots and posterior thickening on the oblique line, and a darker cell-mark; hindwing with the line obsolete anteriorly. Perhaps a separate species.

### 55. Genus: **Naxa** *Walk.*

Weakly-built white moths, with minute palpi, pectinate or serrate antennae in both sexes and spurless hindtibiae. See, further, Vol. 4, p. 9. Besides China and Japan, the genus inhabits India, Sumatra and Borneo.

**N. obliterated** *Warr.* (3 f). A rather small and weakly-scaled species with the black spots smaller than *obliterated*. in the other forms excepting *parvipuncta*, the subterminal series not so close to the distal margin as in that. Bhotan to Burma, apparently scarce.

**N. textilis**. This well-known species, occurs in two principal races: — **parvipuncta** *Prout* (Vol. 4, *parvipuncta* pl. 1 d as *textilis*), from S. India, has the cell-spot of both wings small, often a more dot; subterminal dots also decidedly smaller than in the northern race. — **textilis** *Walk.* (= *cypraria* *Guen.*, *hügeli* *Feld.*) (3 f), from *textilis*. N. India and Burma, has the cell-spots at least as large as in *seriaria* (Vol. 4, pl. 1 d), generally larger, more or less pale-centred.

**N. guttulata** *Warr.* (3 f) may possibly be another race of *textilis* but has the costal margin and apex *guttulata*. of forewing more strongly rounded; cell-spots similar, all the other spots much larger, longitudinally produced. Sumatra, Java, Borneo and the Philippines.

### 56. Genus: **Centronaxa** *Prout.*

Differs from *Naxa* in the presence of the frenulum and in having on the hindtibia a pair of short spurs. Three of the species occur in China on the confines of the Palearctic Region and have been dealt with in Vol. 4. The fourth is North Indian.

**C. orthostigialis** *Warr.* (5 d). Antennal pectinations of the ♂ rather shorter than in the Chinese allies, *orthostigialis*. the dot on the median vein of the forewing placed proximately to the origin of the 2nd median branch; both wings with some vein-dots developed between the cell-dot and hindmargin. Sikkim and Bhotan.

### 57. Genus: **Ozola** *Walk.*

Antenna of ♂ with fascicles of long cilia; legs rather long; hindleg of ♂ with a hair-pencil. both sexes with one of the proximal pair of spurs wanting. Abdomen rather long and slender. Wings elongate, the forewing acute or falcate, often with the distal margin excised in anterior half; 2nd subcostal vein of forewing absent; hindwing with costal vein remote from subcostal, connected by a bar near the base. The early stages are scarcely known. The genus is predominantly Indo-Australian, but a few species inhabit Africa and one reaches S. Japan. (See vol. 4, p. 10).

**O. sinuicosta** is recognizable by having the costal margin of the forewing appreciably concave from the end of the cell to a marked convexity near the apex. Two colour-forms are known. — **grisescens** *grisescens*. *Prout* (3 d), from Sikkim, is grey. — **sinuicosta** *Prout.* from Assam, is of a more or less warm ochreous *sinuicosta*. brown.

**O. impedita** *Walk.* (= *biangulifera* *Moore*) (3 d) differs from the preceding in its less sinuous costal- *impedita*. margin, sharper markings and especially in the whiter hindwing, with much larger, more blackish cell-spot. It occurs together with *sinuicosta* but is also known from Borneo.

**O. microniaria** *Walk.* (= *acutata* *Walk.*, ? *blitearia* *Walk.*) (3 d). Smaller: forewing rather broader, *microniaria*. the postmedian line of the forewing bending strongly inwards anteriorly, the black cell-dot not accompanied by a dark cloud. Ceylon to Assam: also on the Philippines. — Larva greyish, minutely speckled with black, feeding on *Premna latifolia*.

**O. convergens** *Warr.* Rather paler than *microniaria*, apex of forewing less acutely produced, ante- *convergens*. median line strongly bent outward in the middle so as to approach the postmedian, which is formed more as in *impedita*. Ceylon, not common.

- minor.* **O. minor** Moore is perhaps, according to the description, a whitish aberration of *microniaria* with the apex of the hindwing clouded with some dark irroration such as is oftener seen in *extersaria* and *macariata*. Calcutta, the type in coll. STAUDINGER.
- sinuata.* **O. sinuata** Warr. Only the type is known. This is very similar to some aberrations of *microniaria* in which the central area is very pale, the proximal and distal dark-clouded; it differs materially, however, in shape, having the distal margin of the forewing much more protuberant in the middle, more oblique behind, and the antemedian line is straight anteriorly. Sumba.
- basisparsata.* **O. basisparsata** Walk.. Rather variable, the ♂♂ light brown, the ♀♀ sometimes more redbrown, always with dark clouding in the distal area. Best distinguished from *macariata* by the narrower wings, the forewing with a stronger angle at the 3rd radial, more cut away posteriorly; median shade of hindwing indistinct, or broken into spots posteriorly. Malay Peninsula, Talaut, Sunda Islands, New Guinea and its islands, N. Queensland.
- extersaria.* **O. extersaria** Walk. (3 d) resembles a large *basisparsata*, but shows less marked sexual dimorphism and has not the darkened fringes of that species. N. India and Hainan.
- violacea.* **O. violacea** Warr. (4 a) differs from *basisparsata* in its larger size, its violet colouring, etc. Dutch New Guinea.
- leptogonia.* **O. leptogonia** Hmps. is perhaps merely the Ceylon form of *macariata*. The ♀ may be slightly narrower-winged, both sexes are of a more decided brown or fleshy-brown tone, the median line of the hindwing is slightly more irrorated, though still much firmer than in *basisparsata* and *extersaria*.
- macariata.* **O. macariata** Walk. (= *elongaria* Snell., *indefensa* Warr.) (3 d). Variable, the sexual dimorphism similar to that of *basisparsata*, though the ♂ generally shows some dark clouding behind the apex and at the posterior angle of forewing and at the apex of hindwing. Lines generally better expressed than in *basisparsata*, the median of the hindwing straight and firm. Distributed nearly throughout the Indo-Australian Region from the Malay Peninsula to the Solomons. — **exigua** Swinh. seems to be merely a small race from Claremont Island and N. Australia, perhaps on an average more whitish, at least at Port Darwin.
- decolorata.* **O. decolorata** differs from *macariata* in its smoother distal margins and less deeply curved postmedian line; the ♂ shows a more or less strongly developed postmedian dark shade, the ♀ is nearer that of *macariata*. — **decolorata** Warr., from Bali and Sambawa, is the paler form. — **incompleta** Warr., from Flores and Dammer, has coarser dark irroration, but probably more extensive material will show that the differences are not racial.
- auranticeps.* **O. auranticeps** Prout. A handsome species, somewhat resembling *atrofasciata* (3 f) but larger, the forewing with the apex not produced and without pale apical patch, some dark blotches in the median area. Head and front of thorax bright orange. Central Celebes, collected by DR. MARTIN.
- atrofasciata.* **O. atrofasciata** Pagenst. (= *marginata* Warr.) (3 f). Very easy to recognize by the broad, sharply-defined dark distal borders, that of the forewing enclosing pale apical and mid-terminal spots. Moluccas and throughout New Guinea, with Dampier Island.
- falcipennis.* **O. falcipennis** Moore (3 f). Apex of forewing slightly falcate. The yellow abdomen, and white wings, with the markings more macular, give to this species a more *Abraaxas*-like appearance. N. India, Malay Peninsula and Borneo. From N. India I have only seen ♂♂, from the other localities only ♀♀, showing sexual or geographical difference in the increase of the black markings.
- spilotis.* **O. spilotis** Meyr., from Sambawa, is smaller, apex of forewing not falcate, distal margin of hindwing rather more rounded, the grey markings rather less blackish; forewing with the anterior markings absorbed in an irregular costal stripe; posteriorly and on hindwing all the spots are detached.
- picaria.* **O. picaria** Swinh. (3 f) is another spotted, *Abraaxas*-like species. The body and the cell-spots resemble those of *falcipennis*, but the apex is not falcate, the markings are mixed with brown and the double, interrupted subterminal band of the forewing (almost parallel with the distal margin) is distinctive. Only known from N. India.
- acrophaea.* **O. acrophaea** Meyr. and the two following are small species, of a bright gold-yellow colour. *acrophaea* is distinguished by its (minutely) falcate apex and by having on the forewing a purple-brown terminal band, which is rather broad at the costa but narrows to a point at the tornus. Perhaps, however, merely an aberration of *hesperias*. New Hebrides.

**O. hesperias** *Meyr.* appears slightly broader-winged, with less appreciably falcate apex; rather *hesperias*, sparsely but almost uniformly irrorated with purple-brown. New Hebrides. The types of this and the preceding remain unique.

**O. plana** *Warr.* represents *hesperias* on the Loyalty Islands. Less irrorated, but showing traces *plana*, of two costal spots on the forewing.

**O. niphoplaca** *Meyr.* (5 b). Quite unlike any other species. Black, the forewing with two large *niphoplaca*, oval or roundish white spots, the hindwing with one very large one. Solomon Islands and Bismarck Archipelago.

**O. albimacula** *Warr.* is another rather isolated species. Large for the genus, rather narrow-winged, *albimacula*, the general coloration as in *niphoplaca*, but the white markings quite differently arranged, the principal patch of the forewing more distal, not reaching costal margin or anal angle, irregularly dentate-edged, no subapical patch, two small hindmarginal spots distally. Hindwing with a black cell-spot in the white patch. Obi.

### 58. Genus: **Derxena** *Walk.*

Much more delicately built than *Ozola*, more thinly scaled, in these respects resembling *Derambila*, from which it only differs essentially in having the costal vein of the hindwing remote from the subcostal, connected by a bar as in *Ozola*. Hindtibia of ♂ dilated; of both sexes with a pair of minute terminal spurs. Almost confined to the Papuan sub-region, though one species reaches the Moluccas. Early stages unknown.

**D. nivea** *Kirsch* (3 g). Larger than the other species, less transparent. White, with rather large *nivea*, black cell-spots. Described from Jobi. — **discata** *Warr.* is the ordinary form from Dutch New Guinea, but *discata*, does not differ very materially. Generally larger, with the spot on the hindwing enlarged. Examples from Mysol appear somewhat transitional.

**D. quadrinotata** *Th.-Mieg* (= *aluarua* *Prout*) (3 g). Described by THIERRY-MIEG from New Guinea *quadrinotata*, while my description from Solomon Islands examples was in the press. I do not think there is even a fixed racial difference, though in more easterly specimens the cell shows a tendency to become longer. Light blue, each wing with a small black cell-dot. Dutch New Guinea to the Bismarck Archipelago and Solomon Islands.

**D. coelivagata** *Walk.* (= *coerulea* *Pagenst.*) differs from *quadrinotata* in the complete absence of *coelivagata*, the cell-dots. Batjan, Aru, Mysol and New Guinea.

### 59. Genus: **Celerena** *Walk.*

Palpus of moderate length or rather short, the 3rd joint smooth, cylindrical, sometimes rather elongate. Antenna of ♂ ciliate, usually also with a tuft of sex-scales. Thorax densely hairy beneath. Femora more or less hairy. Hindtibia of ♂ with 3 spurs, of ♀ with 4; the hindleg of the ♂ generally with a long process from the end of the tibia and a strong triangular swelling on the 1st tarsal joint. Forewing with the first two subcostals stalked, their stalk anastomosing strongly with the costal; the ♂ generally with a deep furrow in the cell on the underside, overhung by androconial scales or hairs. Hindwing with similar venation to that of *Ozola*. All the species are rather large or of moderate size and all are of yellow colouring with black or grey borders, mostly very similar in pattern. The genus is confined to the Indo-Australian region. The flight is diurnal and is said to be rather sluggish. Of the early stages I have no knowledge.

**C. lerne** is a brightly coloured species, distinguishable from all the others by the pure white bands in the broad black borders. Midcostal black streak of forewing always short. — **lerne** *Bdv.* (3 g) is the form *lerne*, from the coasts of Dutch and German New Guinea and the islands (Waigeu, Mysol, Ron). — **amplimargo** *amplimargo*, *Prout* has the black borders broader, the enclosed white bands nearly twice as broad as in typical *lerne*. Described from the Snow Mountains, Central Dutch New Guinea, but also occur in other mountain ranges of the country.

**C. cana**. Paler yellow than most of the species, the borders whitish grey, the midcostal-mark much shorter still than in *lerne*. — **cana** *Warr.* has the costal mark of the forewing very small, ending in a point *cana*, midway between the subcostal vein and the cell-fold; a yellow band, 2—3 mm in width, in the proximal part of the grey border. Fergusson Island. — **nigrilinea** *Prout* (5 a) has the costal spot less small, almost or *nigrilinea*, quite reaching the cell-fold; the yellow band reduced to about, 1 mm width, or wanting. Owen Stanley Range, British New Guinea. — **fulvastra** *Prout* is smaller than the other races, of a rather deeper yellow, *fulvastra*, the black edging at base of costa of forewing narrowed, the curved dark proximal edging of marginal band rather broad, but not marked with a sharp line as in *nigrilinea*. Humboldt Bay, Dutch New Guinea.

- andamana.* **C. andamana** *Feld.* (3 g) represents *divisa* on the Andamans. Very distinct in the much thinner black lines.
- divisi.* **C. divisa** *Walk.* (3 g). A well-known species, fairly common from Sikkim to Burma. Midcostal spot broad, rather obtusely angulated. — ab. **extraluteata** *Th.-Mieg* has on both wings a slight yellow band on the proximal part of the grey border. — **siamica** *Swinh.* has narrower black markings, though still markedly different from those of *andamana*; midcostal mark generally rather sharply angulated. Further India, Malay Peninsula and Hainan.
- signata* **C. signata** *Warr.* (3 g). Distinguished from *divisa* by its darker borders, more suffused base of costa and longer midcostal streak, which reaches the fold instead of terminating at the 2nd median vein. Malay Peninsula, Sumatra, Borneo and Palawan. — **nigripalpis** *Swinh.* seems to be merely an aberration with an increase of black scaling on the outside of the palpus.
- palawanica.* **C. palawanica** *Pagenst.* (3 g). Midcostal streak slender, more oblique, joining the distal band at the 2nd median, enclosing an oval or somewhat kidney-shaped yellow costal patch. Mindoro, Palawan and Balabac. According to SEMPER also on Luzon, Island Camotes.
- semperi.* **C. semperi** *Prout* (= *eucnemis* *Semp. nec Feld.*) (3 h) has the black markings broader and the yellow postmedian patch extended broadly to the costal margin. The type is from Samar, but the species is locally common on Camiguin de Mindanao and Cebu.
- mutata.* **C. mutata** *Walk.* (= *eucnemis* *Feld.*) (3 h). One of the largest species and further characterized by the pale grey (generally yellow-mixed) band which traverses the dark distal border, at least on the forewing. This and the next 8 species have the 3rd joint of the palpus of moderate length, the 2nd tarsus joint of the ♂ shorter (generally very much shorter) than the unthickened terminal part of the 1st joint. *mutata* inhabits Mysol, Salawatti, Ron Island and New Guinea. FELDER's type was said to be from Celebes, but this seems to me doubtful.
- triflava.* **C. triflava** *Warr.* represents *mitis* on Biak. Distinguished by the yellow subapical patch of the forewing.
- mitis.* **C. mitis** *Warr.* (3 h) is best recognized by the shape of the black border of the forewing, which is narrow and proximally crenulate-edged from the submedian fold to the 2nd radial and then suddenly widens into a moderate apical patch. The name-typical form, from Humboldt Bay, Woodlark, St. Aignan and Sudest Islands, has the oblique black band of the forewing diffusely broadened posteriorly, generally reaching the hindmargin proximally to the anal angle. — **evitans** *Prout* (3 i) is a more deeply coloured, on an average larger, form from the Solomons, Rock Island and the Bismarck Archipelago, with the oblique black band generally narrowed posteriorly, meeting the distal border on the 2nd submedian vein, the hindmargin remaining yellow almost to the anal angle.
- vulgaris.* **C. vulgaris** *Butlr.* (= *proxima* *Meyr., nec Walk.*) (3 h) has the black markings much more extended. This and *mitis* are the only species of the group in which the ♂ antenna is without sexual tufts. British New Guinea and Fergusson Island.
- obiana.* **C. obiana** *Prout* (3 h). Similar to *vulgaris*, more deeply coloured, black hindmarginal area of forewing more sharply defined, black border of hindwing still broader. ♂ antenna with a strong tuft of sex-scales in the middle. Obi; also in a slightly less blackened form from Halmaheira, Batjan and Buru.
- waigeuensis.* **C. waigeuensis** *Joicey and Talbot.* Structure of *obiana*, markings more nearly as in *mitis*, than which it is larger, with slightly broader black markings. Tibial and tarsal processes more black-mixed than in *obiana*. Waigeu: ? Mysol.
- proxima.* **C. proxima** *Walk.* (3 h). A large, rather elongate-winged species. Ground-colour less bright yellow than in most of the group, hindwing beneath (except occasionally in the ♀) with a large black cell-spot, which also shows, though more weakly, on the upperside. The sexual patch in the cell of the forewing unusually highly developed. Celebes.
- spreti.* **C. sprete** *Walk.* (3 i) is perhaps a race of the following, but the ciliation of the proximal part of the ♂ antenna seems shorter and more even. In the greater extension of the yellow markings it resembles *waigeuensis* more than *perithea*. North Moluccas. — ab. **chrysaugae** *Feld.* has the oblique black band of the forewing tapering posteriorly. — **substigmata** *Warr.* is a form from Obi in which the ♂ hindwing develops a large cell-spot beneath as in *proxima*.
- perithea.* **C. perithea** *Cram.* (= *connexa* *Walk.*) (3 i). Easily distinguished from *obiana* and *waigeuensis* by having the proximal part of the ♂ antenna strongly ciliated in fascicles. Variable in the extent of the yellow markings,

though these are never so ample as in *spretata*. — In ab. **stenospila** Warr. they show their minimum of development, *stenospila*. the yellow outer band of the forewing being only about 3 mm wide. Name-typical *perithea* is common in the South Moluccas. — **keiensis** Prout is a large, deeply-coloured form from the Key Islands and perhaps *keiensis*. Manovolka, with the yellow ground-colour of the forewing extending along the hindmargin nearly to the anal angle and often showing also in streaks on the black costal margin. Distal border of hindwing broader than in *spretata*.

**C. exacta** Warr. In this and the following 7 species, many of which resemble the preceding group *exacta*. in the scheme of markings, the 3rd joint of the palpus is short and the 2nd tarsal joint of the ♂ is as long as, or longer than, the undilated terminal part of the 1st joint, only in *prodroma* very slightly shorter. *exacta* is a very distinct species in the deep colouring and in the thin grey line which on both wings traverses the black marginal band. Solomon Islands.

**C. prodroma** Meyr. (= *remutata* Prout). Oblique black band of forewing incomplete, terminating at *prodroma*. the fold or at the 2nd submedian vein. British New Guinea.

**C. commutata** Walk. (3 i). Oblique black band broader than in *prodroma*, unique in being acutely *commutata*. angulated at fold, thence running obliquely inward to hindmargin. Only known from the Aru Islands.

**C. angustisignata** Prout. Similar to *prodroma*, oblique black band narrower, slightly curved; distal *angustisig-* border of hindwing, also of forewing posteriorly, greatly narrowed, the latter consequently angulated about *nata*. the 2nd radial. Sudest Island.

**C. probola** Prout. Also similar to *prodroma* but with the oblique band continued to the anal angle, *probola*. joining the black border, and sometimes with some yellow scaling in the paler part of the apical area of the forewing, thus superficially recalling a small *mutata*, which is in a different structure-group. Tip of palpus with the black more extended than in *prodroma*, hindtarsus of ♂ predominantly blackish (in *prodroma* yellow). Humboldt Bay, Dutch New Guinea.

**C. pallidicolor** is geographically variable, or possibly there are two or three species mixed. ♂ antenna with less strong sex-scales in proximal part than in *probola*, hindtibial process and hindtarsus deeper black, the processes both of the tibia and tarsus very strongly developed. Oblique band of forewing always broader than in *probola*, reaching the base of the 2nd median vein. — **pallidicolor** Warr., from Waigeu and Dutch New Guinea. *pallidicolor*. has the oblique band well defined proximally, the proximal area (excepting the costal margin) being entirely yellow. — **hirtipes** Warr., from the Upper Aroa River, British New Guinea, has the borders less deep black but *hirtipes*. rather broader, the yellow subapical band of the forewing consequently somewhat less broad, the proximal area of the forewing usually, though not invariably, more or less strongly suffused with grey. — **griseofusa** Warr., *griseofusa*. from Fergusson and Normanby Islands and the coast districts of British New Guinea, has the yellow subapical band narrower still, the grey proximal suffusions always strongly developed, sometimes also extending to the abdominal region of the hindwing.

**C. aurata** Warr. (5 a) differs from all the other species in having the black markings reduced to lines *aurata*. — on the forewing one along the base of the costa and two oblique ones from nearly one-half and nearly three-fourth of the costal margin, on the hindwing a single submarginal line; none of these lines reach the hindmargin. Some specimens further show a minute black tip to the forewing. Confined to Rossel Island.

**C. mutalipes** Prout (5 a). Smaller than *pallidicolor*, rather more deeply coloured, the oblique band *mutalipes*. always broad, sometimes extremely broad. Hindtibia of ♂ yellow, tarsal process mixed with yellow; first tarsal joint shorter than in the allied species, not so long as the tibial process. Upper Aroa River, British New Guinea.

**C. latiflava** is still smaller, rather less narrow-winged and differs structurally in that the ♂ hindtibia, though dilated, lacks the terminal process and the first tarsal joint lacks the triangular swelling. — **latiflava** *latiflava*. Warr., from Dutch New Guinea, has the black border of the hindwing rather narrower than in the following race, tapering almost to a point at the anal angle; the black oblique band of the forewing is also on an average narrower, but is variable. Face predominantly yellow. — **nigriceps** Warr., from British New Guinea, has *nigriceps*. the face black-grey. — ab. **restricta** Warr. has the oblique band of the forewing greatly widened, the hindmargin *restricta*. of both wings broadly suffused with black; thus on the forewing only a very small yellow basal patch remains.

**C. recurvata** Warr. (= *flavotogata* Pagenst.) (3 i) resembles *latiflava* in the structure of the ♂ hind- *recurvata*. leg, but is very different in the black thorax, black base of hindwing and very broad black borders. Very characteristic is the extension of the yellow outer band along the costal margin nearly or quite to the base. North Moluccas. — **reversa** Warr. (3 i), from Obi, differs in the blacker abdomen and in not having the yellow *reversa*. band extended proximally along the costal margin.

## 2. Subfamily: **Hemitheinae.**

Some general notice of the *Hemitheinae* of the Indo-Australian Region has already been given in the Introduction to this volume. The subfamily shows in this region its full range of development, all the most archaic forms — Genus 1 to 4 below — as well as the overwhelming majority of the *Pingasa* group, belonging exclusively to it, while on the other hand some of the most specialised, such as the Australian *Cenochlora*, also have their home here.

On account of the comparative rarity of individuals relatively to the number of species, it is often difficult to collect enough material in a single locality to allow of a definite judgment as to the delimitation of the species and probably in some of the more difficult and obscure genera (*Hemithea*, *Iodis*, etc.) many single specimens are passing as mere aberrations which will ultimately prove to be overlooked species. As a matter of fact the *Hemitheinae* are for the most part not at all variable or only so to a very minor degree.

Most *Hemitheinae* are recognizable as such at a glance, on account of their bright green coloration, but the student must beware of a few pitfalls. One or two *Geometrinae* (= *Boarmiinae*) are of an equally vivid green and at least one genus (*Aplochloa*) has such a strongly Hemitheine facies as to have deceived even experienced workers. Conversely, a few brown or grey *Hemitheinae* (such as *Apodasmia* and *Gnophosema*) present a really Boarmiine appearance. The presence of the 2nd radial vein of the hindwing and its position — usually very near the 1st radial at its origin — are distinctive. From the *Oenochrominae* they are not always quite sharply differentiable. From almost all *Sterrhinae* (= *Acidaliinae*) and *Larentiinae* in lacking the characteristic anastomoses of the subcostal veins of the forewing which form the so-called „areole“.

Face generally smooth. Palpus variable in length, commonly differing in the sexes, rarely strongly hairy. Legs nearly always fully developed, but the proximal spurs of the hindtibia often wanting, especially in the ♂, in which sex even the terminal spurs are also at times obsolete. Wings generally ample, nearly always with all the veins present.

Comparatively few of the larvae of the Indo-Australian *Hemitheinae* are yet known, although their discovery ought not to be very difficult, as they probably feed, for the most part, on trees and shrubs. The *Comibaena*-group shows the same interesting larval habit as in the Palaearctic Region. *Anisozyga* larvae show some affinity with the *Hipparchus*-group but the protuberances are more highly developed, giving them a more fantastic appearance.

### 1. Genus: **Protophyta** Turn.

This and the four following genera are distinguished from almost the whole of the *Hemitheinae* by having the 2nd subcostal of the forewing arising from the cell, not from the stalk of the 3rd—5th. *Protophyta* is distinguished from the rest of its group by having no thoracic nor abdominal crests. More slenderly built than most of the primitive genera of the subfamily. Antenna of ♂ pectinate. Pectus strongly hairy. Hindtibia with all spurs. Forewing rather elongate. Distal margin of forewing moderately, of hindwing strongly crenulate, the latter with longer teeth at the ends of the 1st and the 3rd radials.

The early stages are not described.

This and the three following genera consist each of a single Australian species.

*castanea.*

**P. castanea** Lower. Ochreous whitish, with red-brown markings. Forewing with a suffused subcostal streak, wavy antemedian and central lines, the latter followed by a dark mark on hindmargin, and interrupted subterminal and terminal lines. Hindwing with a suffused antemedian band and double subterminal line. Near Sydney in January, very rare, suspected of feeding on tea-tree.

### 2. Genus: **Heliomystis** Meyr.

Distinguished from *Protophyta* by the strongly crested metathorax and abdomen, the somewhat hairy face, the dilated hindtibia of the ♂ (with a groove containing a hair-pencil) and by the coloration and markings.

Early stages unknown.

*electrica.*

**H. electrica** Meyr. Unknown to me, but will be recognizable at once by the generic characters, coupled with the bright orange, dark-bordered hindwing. The forewing is light brown, with scattered dark grey strigulae, the lines fine and black. First line extremely oblique outward, second beyond middle of wing, strongly angulated in the middle, its anterior half being straight, its posterior half incurved and dentate. A very fine, acutely dentate white subterminal line, nearly obsolete in its posterior half. Cell-mark of forewing crescentic, of hindwing linear. Victoria, in December, extremely rare.

3. Genus: **Rhuma** Walk.

Closely allied to the preceding genus. The thoracic crest is less strongly developed and the antenna of the ♂ is not pectinate but merely subserrate and ciliate.

**R. subaurata** Walk. (8 a). Fuscous, with the median area of the forewing whitish, the lines punctiform, *subaurata*. with costal spots, both wings with a large cellring, which on the underside becomes a solid black spot. Underside yellow, with broad dark submarginal band. Queensland (type) and New South Wales.

4. Genus: **Sterictopsis** Warr.

Differs from the three previous genera in having the 1st radial vein of the hindwing, sometimes also that of the forewing, stalked with the last subcostal. Antenna of ♂ pectinate. Thorax and abdomen with dense crests. Hindtibia of ♂ dilated, with a hair-pencil.

**S. inconsequens** Warr. (= ? *argyraspis* Lower) (8 a). Smaller and greyer than *R. subaurata*, the veins somewhat darkened, a blackish longitudinal streak on the fold proximally; discal ocellus less developed, lines not punctiform, the antemedian very oblique. Hindwing whitish proximally, blackish distally. Underside not yellow. Also from Queensland. LOWER'S *argyraspis* was from Blackwood, South Australia and his description does not fit this species. *inconsequens*.

5. Genus: **Archeobalbis** Prout.

Build robust. Face more or less protuberant. Antenna in both sexes simple. Thorax not crested. Abdomen with small crests. Wings, or at least the posterior, with the distal margin erenulate. Hindwing of the ♂ with abdominal margin always elongate, generally very strongly so, in the first three species with the posterior part of the distal margin also produced. An interesting link between the genera which precede and those which follow, having the facies of the latter but the 2nd subcostal of the forewing arising from the cell, as in the former. The species are all Indo-Malayan.

**A. urapteraria** is recognizable by the extreme shape of the hindwing, which is narrow and at the 3rd radial produced to a blunt tail; the forewing is also appreciably narrower than in *viridaria*. — **urapteraria** Walk. *urapteraria*. (5 g), from Borneo, has the distal area beneath predominantly red. — **eudicheres** Prout, from Mount Gedeh, *eudicheres*. Java, is smaller, slightly intermediate in shape towards the following species (or race) and has on the underside a black band, 3 or 4 mm in width but tapering anteriorly and posteriorly, between the orange ground-colour and the red borders. Similar forms occur on Nias, Penang and the Natuna Islands, an intermediate on Sumatra.

**A. aethalia** *sp. nov.* (8 b). Expanse 49—52 mm. Forewing with distal margin rather shorter than *aethalia*. in *viridaria*; rather deeper green, the rufous antemedian shades broader. Hindwing narrower than in *viridaria*, slightly produced at the medians, thus approximating to the shape of *urapteraria*; cell-dot weak; costal region with broad reddish and smoky suffusion. Forewing beneath with a blackish suffusion behind the median and its 2nd branch; both wings with the distal area, on the contrary, red, irregularly mottled with black, rather variable. S. W. Sumatra: North Korintji Valley, 5000 feet, September to October 1921, 8 ♂♂, including the type; slopes of Mt. Korintji, 7000 feet, August to September, 9 ♂♂; collected by the PRATT brothers for Mr. J. J. JOICEY.

**A. viridaria** Moore (= *suboehracea* Warr.) is often distinguishable from the two preceding, apart *viridaria*. from its broader wings, by having very broad blackish or black-mixed borders on both wings beneath. Forewing beneath, as also in *urapteraria*, pale behind M and M<sup>2</sup>. Common in Sikkim and Assam.

**A. sinapiaria** Pouj., from West China, figured in Vol. 4, Pl. 3 c, is probably near *viridaria* but is still *sinapiaria*. unknown to me. See p. 11 of that volume. It may prove to be a ♀ form of *ochreipicta*.

**A. ochreipicta** Swinh. is similar to *cristata* (5 h) but more variegated, distinguished chiefly by having a conspicuous ochreous antemedian spot at the hindmargin of the forewing. Underside with the submarginal bands dull, predominantly blackish. Venation inconstant, the 2nd subcostal of the forewing being sometimes just stalked with the 3rd, almost as in *Neobalbis*. Khasis; also from Sikkim and I think Kulu and Upper Burma.— **montana** *montana*.

*Bastellb.* (5 g). formerly placed in *Neobalbis*, may be a form of *ochreipicta* with the aberrant venation. Postmedian line more sharply dentate, underside less ochreous. Formosa.

- subtepens.* **A. subtepens** Walk. (5 h). Closely like *cristata*, though commonly smaller. Structurally it differs in that the hindtibia of the ♂ has a short terminal process. Underside with the black admixture in the submarginal band not reaching the costal margin. Borneo. Also from Penang and — though not commonly — the Khasis and Ceylon.
- cristata.* **A. cristata** Warr. (5 h). Hindtibia of ♂ with a hair-pencil, but without terminal process. Both wings beneath with a conspicuous red submarginal band, which is variable in width and is generally more or less overlaid with black except at its edges. — ab. **subopalina** Warr. has the band beneath predominantly or even entirely reddish. — *cristata* is distributed in North India, Burma, Perak, South China and Formosa. On Hainan Mr. C. T. BOWRING has bred it from a larva found on *Thespesia populnea*; the pupa was attached inside a partly rolled leaf. — **subspoliata** Prout is a large, ample-winged race from South India and Ceylon; submarginal band beneath without red admixture. The type was from the Nilgiris. — **nigrescentipalpis** Prout has the palpus at the tip black or blackish, the foreleg mixed with black, the submarginal band beneath interrupted, predominantly black. South Celebes.
- farinosa.* **A. farinosa** Warr. (8 c) is distinguishable at once by its greyer, scarcely greenish colouring and the absence of the reddish markings. Cell-spots beneath large, submarginal band scarcely indicated. Lahul, N. W. Himalayas, the type taken at 12, 300 feet altitude, in September.
- usneata.* **A. usneata** Feld. (= *hypoglaucia* Hmps.) (5 g). Distinguishable from the other green species by the less elongate abdominal margin of the hindwing, characteristic admixture of small whitish glaucous patches on the upperside, conspicuous black submarginal spots, grey-mottled underside, without dark submarginal bands, etc. Kashmir Vall ey to Sikkim.

## 6. Genus: **Neobalbis** Prout.

This genus was erected for the few species which agree with *Archaeobalbis* in most characters but have the 2nd subcostal of the forewing stalked. The discovery, however, that *A. ochreipicta* Swinh. varies in this character and that one Ceylon aberration of *A. cristata subspoliata* has it just stalked, has rendered the genus scarcely tenable.

- elaearia.* **N. elaearia** Hmps. (8 b) resembles a large, weakly marked *Archaeobalbis viridaria* except in the broader, more rounded wings. Underside not orange, at most slightly tinged on the hindwing with orange. Khasis (type), Sikkim and Upper Burma.
- flavibasalis.* **N. flavibasalis** Warr. (? = *bipunctata* Th.-Mieg) (8 b). Paler grey-green than the allies, termen of the forewing and especially its postmedian line less oblique. The underside recalls that of a *Pingasa* or *Hypodoxa*, being yellow at base, then white, distally with a very broad black band, forewing with white apex and large black cell-spot. Java (type), Malaya, Borneo, Sumatra.

## 7. Genus: **Herochroma** Swinh.

Wing-form nearly as in *Archaeobalbis viridaria*. Second subcostal of forewing stalked as in *Neobalbis*. Abdominal crests undeveloped. Hindtibia of ♂ with long terminal process. Only one species.

- baba.* **H. baba** Swinh. (5 g). Smooth green, without the strong irroration of the preceding genera. Underside somewhat orange, with the markings nearly as in *A. cristata*. Not uncommon in the Khasis; rarer about Darjiling.

## 8. Genus: **Actenochroma** Warr.

Near *Herochroma* but with the ♂ antenna ciliated, the hindtibial process wanting, the 1st subcostal of the forewing free (in *Archaeobalbis*, *Neobalbis* and *Herochroma* anastomosing or connected with the costal), the distal margin of the hindwing rounded. Also consists of only a single species.

- muscoloraria.* **A. muscoloraria** Walk. (5 g). Paler green than *H. baba*, the lines arising from costal spots, the postmedian strongly oblique outward anteriorly. Underside whitish, the submarginal band broad and dark. Described from Darjiling, where it seems to be fairly common, as also in Bhutan and Assam. I have seen one example from Perak.

9. Genus: **Orthorisma** Prout.

Probably related to *Epipristis* but with long terminal joint to the palpus, especially in the ♀, broader forewing, its distal margin anteriorly scarcely at all oblique, generally stronger abdominal crests and some slight differences in the venation. The frons is not — as in *Neobalbis*, *Terpna* and other allies — protuberant, the femora less hairy, the hindtibia of the ♂ not dilated. Only one species is known.

**O. netunaria** Guen. (= *crassistriga* Warr., *unicolor* Warr.) (8 a). Not likely to be confused with any *netunaria*. other species. The design of the underside bears some resemblance to that of *A. musicoloraria*, but the dark border of the forewing is still broader, almost straight-edged proximally, its proximal part almost black, its distal and broader part reddish grey, reaching the termen. Known from the Philippines, Borneo, the Natuna Islands and Perak; GUENÉE'S type was from Borneo.

10. Genus: **Epipristis** Meyr.

An offshoot of *Pingasa*, consisting of a few species, generally of smaller size, but characterized chiefly by their scarcely hairy pectus, smooth femora, short approximation of the costal vein of hindwing to the cell and non-pectinate ♂ antenna. Confined to the Indo-Australian Region.

**E. minimaria** Guen. (= *parvula* Walk., *truncataria* Walk.) (8 a) is the smallest species, whitish with *minimaria*. grey irroration, scarcely tinged with green, the lines slender, the spots outside the postmedian predominantly light reddish. Both wings beneath broadly dark-bordered almost to the distal margin. Described from Ceylon. Common in N. India and reaching Lower Burma. DOHERTY brought two specimens from S. Celebes, which may represent a race.

**E. nelearia** Guen. (8 a). Less small than *minimaria*, the lines stronger, the postmedian with sharper teeth, *nelearia*. the spots outside it clouded with dark grey. The dark bands beneath, especially that of the hindwing, do not reach the distal margin. Described from Borneo, but reaching N. India in one direction and the Moluccas in the other. — **oxycyma** Meyr., hitherto referred to *minimaria*, is evidently, according to a good series from *oxycyma*. N. Queensland in the Tring Museum, a more whitish race of *nelearia*.

**E. rufilunata** Warr. (5 e) is still larger, at least in the ♀, and may be likened to a giant, strongly- *rufilunata*. marked green *minimaria*, with rather broader hindwing, the proximal edge of its border beneath more curved. Only known from WARREN'S two originals, from Upper Aroa River, British New Guinea. — **viridans** Prout, *viridans*. erroneously described as a race of *nelearia*, is probably the ♂ to *rufilunata* or a slight geographical modification from a lower altitude. Except for its much smaller size and less strong markings, it differs little from the ♀. Founded on two ♂♂ from Lower Aroa River. — **antelucana** *subsp. nov.* Cell-dots larger, above and beneath; *antelucana*. upperside rather deeper green, with the spots outside the postmedian line rather stronger; underside suffused with dusky grey, the dark borders blackened. New Hanover, April 1923, a pair in Mus. Tring.

11. Genus: **Pingasa** Moore.

A moderately large genus, easily recognizable by its shape, scheme of markings, whitish or pale green ground-colour and especially by the tufts of raised scales at the end of the short cell of the hindwing. Antenna of ♂ shortly pectinate, of ♀ simple. The underside, unless otherwise stated, is white, at base generally yellow, with broad black borders, which enclose white spots at apex and midtermen. The species are chiefly Indo-Australian and African, but 3 enter the Palaearctic Region (see Vol. 4).

**P. angulifera** Warr. (♂ = *atriscrupta* Warr., *munita* T. P. Luc.) (5 e). The brightest green *Pingasa angulifera*. and showing rather strong sexual dimorphism. The ♀, on which WARREN founded the species, is generally larger than the ♂ and has a very broad red band outside the postmedian line. Distributed in New Guinea, the D'Entrecasteaux (from which both the types were described) and the Bismareks.

**P. meeki** Warr. (4 b). Closely related to *angulifera* and with similar dimorphism. Slightly larger and *meeki*. paler, the cell-dot reddish, not black, the median area a little broader, the postmedian line of the forewing right-angled at the 1st radial. Described from Biagi, Owen Stanley Range, since found in a few of the mountains of Dutch New Guinea.

- subviridis*. **P. subviridis** Warr. is also green, but more olivaceous, more variegated, partly white in the central area, abdominal margin of hindwing sprinkled with reddish. Cell-spot of forewing large, dull green. Underside with the broad borders deep purple, the yellow at base moderately extended. Described from the Khasis, known also from the Malay Peninsula and Sumatra, but always rare.
- subpurpurea*. **P. subpurpurea** Warr. (5 h). Rather smaller than *subviridis*, much paler, the cell-mark narrow, though elongate. Underside nearly as in *subviridis*, the borders in the ♂ scarcely so broad, the proximal yellow colouring rather less strong, in the ♀ a good deal restricted. Borneo, searee; also from the Philippines in Coll. WILEMAN. A worn ♀ from Sula Besi, in Mus. Tring seems to agree perfectly.
- venusta*. **P. venusta** Warr. (5 e). A striking species, on account of its golden-brown or reddish-brown colouring, with narrow white, grey-sprinkled median area, bounded by rather thick black lines. N. India. New Guinea specimens, though rather large and brightly coloured, differ so little that it has not yet been thought necessary to name them. The species has also been found on Borneo and Ceram.
- lariaria*. **P. lariaria** Walk. (= *irrorataria* Moore, *paulinaria* Pagenst.) (5 e). This large species, which was long erroneously identified with *chlora* Stoll, differs from all the others in its very deeply dentate postmedian line. The face is sharply black in its upper part, pale in its lower. Described from Sarawak, but common in N. India and the Malay Peninsula, Nias, Java, etc., and again in New Guinea.
- manilensis*. **P. manilensis** Prout resembles *lariaria*, but is smaller, perhaps shorter-winged, the teeth in the postmedian line less long, less blackened at their tips, the face above light brown, not black. Luzon (type) and Mindanao.
- porphyrochrostes*. **P. porphyrochrostes** Prout is possibly a race of *manilensis* but approaches *lariaria* in size, has a brighter, more uniform brown face, cleaner white median area above and dark purple, not black, borders beneath. ♂ underside strongly, that of ♀ feebly, yellow proximally. Central Ceram: Manusela, at 6000 feet. Also from Buru.
- aravensis*. **P. aravensis** Prout. A large species, with the face as in *lariaria*, the distal margin of forewing slightly more rounded, the postmedian line more as in *manilensis*. Borders beneath broad and very black, but enclosing larger white midterminal spots than in the allies. These spots also show clearly on the upperside, where they are wanting in *lariaria* and quite ill-defined in the others. Bougainville. Probable races also on New Ireland and New Britain, each at present only known from a single example.
- nobilis*. **P. nobilis** Prout (5 d). Very near the preceding, but with the distal margin straighter, more as in *lariaria*, the face brown. Recognizable by the cleaner white ground-colour, more deeply coloured borders, thicker black lines etc. Midterminal white spots as distinct as in *aravensis*, but smaller. Mountains of Dutch New Guinea, 3000—5000 feet. — **furvifrons** form. nov., from lower altitudes, scarcely differs except in its darker, more black-brown face. British New Guinea: Kumusi River, low elevation, August—September 1907, type ♂ and 4 others (Mus. Tring), Haidana, Collingwood Bay, April 1897, 1 ♂. Also a ♂ from Upper Setekwa River, Snow Mountains, 2000—3000 feet, August 1910. In the Weyland Mountains, at about 2000 feet, both forms seem to occur together.
- rufofasciata*. **P. rufofasciata** Moore (5 e). A white species, without yellow beneath, the lines much as in *porphyrochrostes*, the borders above light red, beneath not broad, grey rather than black, shadowy or (except towards costa of forewing) more or less obsolete. N. India.
- rubicunda*. **P. rubicunda** Warr. (5 e). Somewhat less roundwinged than *rufofasciata*, the red borders darker, at apex and mid-termen shaded with olive-grey. Postmedian line less bent, narrowing the median area. Underside with yellow base and broad black borders. N. India, the type from the Khasis. A similar form occurs on Mt. Gedeh, Java. — **tapungkanana** Strand (= *sapungkanana* Prout, err. transcr.) is a rather large race with the borders dark purple-grey, the antemedian line more acutely produced behind the 2nd median. Founded on a single ♂ from Tapung kanan, Central Sumatra, but the Tring Museum has a perfectly typical pair from the Upper Palembang district and the PRATTS obtained a variable series on Mt. Korintji. Similar forms occur on Borneo, the Malay Peninsula, etc.
- ruginaria*. **P. ruginaria** Guen. (= *perfectaria* Walk., *nyetemerata* Walk.) (5 d, f) is a common and well-known species in India, Malaya and the Greater Sunda Islands. The outward curve in the middle of the postmedian line distinguishes it at once from the similarly coloured *tapungkanana*. — **andamanica** Prout is a form from the *andamani*-<sup>ca</sup> Andamans, with the distal borders more deeply and uniformly coloured, dark reddish, the subterminal line almost obsolete. — Throughout Africa and Madagascar other races occur, which are dealt with in Vol. 16. —

PIEPERS has described the mimicry of the larva, which simulates a small snake, the head and legs being held a little separate to represent an open mouth, a pale lateral stripe on the body widening anteriorly.

**P. elutriata** *Pout* (5 f). May be likened to *rufofasciata* with the red borders wanting, only indicated *elutriata*. by faint grey shadows, the borders beneath even more shadowy than in that species. The narrower wings of the ♂, however, place it nearer to *chlora*. Darjiling, not common.

**P. alba** *Swinh.* (8 b). Also white with shadowy greyish borders above, but these become black *alba*. beneath and occupy the greater part of the distal area. The gently curved, deep black postmedian line above is also distinctive for this species. Khasis. The Palearctic representative is described in Vol. 4, p. 11.

**P. pauciflavata** *sp. nov.* (5 f). Close to *chlora*, of which it may prove a subspecies. Face on upper *pauciflavata*. part little darkened — light ochreous-brown, not blackish. Forewing above with the antemedian line shaped as in *crenaria*, the postmedian more rectangularly bent at the 1st radial than in the various *chlora* forms, at the submedian interspace less deeply curved than in *crenaria* but less flattened anteriorly than in *chlora*. Under-side with some yellow at the base, more extended in the ♂ than in the ♀, at least along costal margin of forewing and hindmargin of hindwing; the black borders less intense than in *chlora*, narrowed, tapering posteriorly, particularly on forewing, here generally curtailed. S.W. Sumatra: N. Korintji Valley, 5000 feet, September—October, higher slopes of Mt. Korintji, 7300 feet, August—September (PRATT brothers), the type from the higher altitude, in Mus. JOICEY. I have recently seen this species from Pahang (Malay Peninsula).

**P. chlora** is the most widely distributed Indo-Australian *Pingasa*. White, on the underside without *chlora*. or with extremely little yellow at base, the borders beneath broad and black, above grey with some red sprinkling and traversed by a rather strong, dentate, bluish-white subterminal line; postmedian more strongly dentate than in most of the species, but less so than in *lariaria*. The races which have been named are not very sharply differentiable. — **crenaria** *Guen.* (= *distenta* *Walk.*, ? *leucostigmata* *Nietner*) (5 f) is often smaller than *crenaria*. the name-typical race, its borders beneath on an average less broad. The antemedian line of the forewing is rounded rather than angled at the fold. India and Ceylon. Forms from China, Formosa, Siam, the Malay Peninsula and Borneo are similar. — **javensis** *Warr.*, from Java, is perhaps narrower bordered beneath, but *javensis*. doubtfully separable. — **lombokensis** *subsp. n.* has the size of *crenaria* and *javensis*, but the antemedian line is *lombokensis*. more angled, approaching that of *chlora*. The ♂ is more heavily irrorated and both sexes have the cell-mark of the forewing strengthened. Borders beneath moderately broad. Lombok, collected by FRUHSTORFER at 2000 feet, type in Mus. Tring. A ♂ from Sumbawa approximately agrees, but is in poor condition. — **subdentata** *subdentata*. *Warr.* resembles *crenaria* above, but with the cell-mark almost as strong as in *lombokensis*, the antemedian line often intermediate. Beneath, both sexes have the black border more dentate on its outside and the ♂ is further very distinct in having some yellowish suffusion at its base and on the hindwing a distinct, though small, black cell-spot. Celebes. — **chlora** *Cram.* (= *ecchloraria* *Hb.*, *latifascia* *Warr.*) (5 f) from the Moluccas, *chlora*. is a rather broadwinged, broad-bordered race, with the antemedian line angled at the fold. — **sublimbata** *Btlr.*, *sublimbata*. described from the Bismarck Archipelago, is generally larger and more strongly dusted with grey than *chlora*, but I doubt whether it is always distinguishable. On an average perhaps more sharply marked. I refer here all the forms from New Guinea, the Trobriands, D'Entrecasteaux and Louisiades. — **candidaria** *Warr.*, from *candidaria*. Queensland, is also closely like *chlora*, but with the borders on the upperside generally faint, those on the underside a little less broad than in *chlora*. — The larva of the form *crenaria*, according to MOORE, is rather stout, olive-green, with purple-brown oblique subdorsal lines and a pale spiracular line. The pupa is pale purplish brown, marked with blackish. If, as I suppose, *leucostigmata* *Nietner* is the same species, the larva has been found feeding on the coffee-tree in Ceylon.

**P. dispensata** *Walk.* (8 b). A stunted species (or possibly an extreme „dry“ form of the preceding), *dispensata*. expanding only 32—40 mm, rather weakly marked, though with the grey shading of the distal area fairly well developed, the borders beneath black, but much narrowed, generally more or less interrupted. South and Central India and some low elevations in Bengal. — **celata** *Walk.* scarcely differs from *dispensata* except that *celata*. the borders beneath are still more reduced, being generally confined to the apex of the forewing and two small patches on the hindwing. WALKER's type is said to be from Tondano, Celebes, but the series before me is from Timor and Tenimber.

**P. pseudoterpnaria** *Guen.* is similar to *chlora* (5 f), generally smaller, almost always more dusted with grey. *pseudoterpnaria*. The wings of the ♂ are relatively a little broader. The postmedian line has the outward teeth on the veins more noticeably thickened into dots, somewhat recalling that of *lariaria*. But the best distinction lies in the broadened cell-mark of the forewing, especially beneath, and the presence of a (smaller) cell-mark on the hind-

wing beneath, which is wanting in *chlora*. Face as in *chlora*. The Palaearctic race has been figured in Vol. 4, pl. 1 f. — **tephrosiaria** *Guen.* (5 e), from North India, is a little less dark and has the submarginal bands beneath narrower. — **gracilis** *Prout.* from Assam, is still lighter, thus more similar to *chlora*, but recognizable by the postmedian line, the cell-spots beneath and by the ♂ genitalia. Forms from the Shan States and perhaps Tibet, seem to agree with those from Assam.

*multispurcata.* **P. multispurcata** *Prout.* Smaller and darker than *pseudoterpnaria*, the face broadly black above, narrowly white below, the antemedian line much less curved, the postmedian less deeply dentate, the tufts of raised scales of the hindwing rudimentary. Perhaps rather near to *lahayei* *Oberth.* (Vol. 4, pl. 1 g). Founded on a ♀ from Rawal Pindi and one from Campbellpur, which remain the only known specimens.

*cinerea.* **P. cinerea** *Warr.* (= *singularis* *Kershaw*, *unda-scripta* *T. P. Luc.*), the type of the superfluous genus *Skorpisthes* *T. P. Luc.*, differs from *chlora candidaria* in the shorter palpus, the unicolorous face, densely irrorated wings, very slender lines, with the antemedian of the forewing twice deeply curved outwards, etc. It is further remarkable for the resting posture. The moth sits on the stems of *Melaleuca*, with the forewings drawn forward so as nearly to meet in front of the head, the hindwings directed backwards so as to touch the abdomen. Queensland and Victoria.

*blanda.* **P. blanda** *Pagenst.* (= *acutangula* *Warr.*) (5 f). Distinct from all the other species in the excessively long teeth of the antemedian line, the open cell-mark and the shape of the dark border of the forewing. Bismarek Archipelago. Also from New Guinea, the D'Entrecasteaux, Louisiades, Nissen Island (Solomons) and North Australia.

## 12. Genus: **Hypodoxa** *Prout.*

An offshoot — according to TURNER merely a section — of *Pingasa*. Hindwing less elongate at abdominal margin, with the cell rather less short; raised scales present on the fore- as well as the hindwing; forewing with the 1st subcostal anastomosing with the costal and with the 2nd subcostal (in *Pingasa* generally free). Coloration less pale, often very bright, especially beneath. Aedoeagus „pistillate“, at least in the *emiliaria* group (BURROWS), in this differing from all the *Pingasa* genitalia yet examined. The only known larva is also distinctive, its protective resemblance being to the lichens among which it rests. The genus belongs almost exclusively to Australia, New Guinea and the islands eastward thereof, but I refer here one Malayan species.

*myriosticta.* **H. myriosticta** *Turn.* Unknown to me, but probably belonging to this genus. ♂ unknown. ♀ palpus rather short. Wings green-whitish, with scattered dark scales. Forewing with cell-mark linear above, oval beneath; a broad dark band proximally to the antemedian line, containing some reddish scales; a similar, but interrupted band between the (incomplete) postmedian and the dentate white subterminal; fringe white. Hindwing without the bands; the raised tuft white proximally, black distally. Underside washed with reddish; a broad terminal black band. Queensland and New South Wales.

*erebusata.* **H. erebusata** *Walk.* (= *erebata* *Meyr.*) (5 h). A rather large grey species, with the cell-spots large, especially beneath, on the upperside grey, with angular deep black marks on the discoellulars. Raised scales rather ill-developed. Underside rather striking; the forewing white around the deep-black cell-spot and with a curved, incomplete postmedian line, the hindwing white as far as the dark border; both wings with broad fuscous border, bearing white subterminal spots between the veins. Queensland and North Australia.

*deteriorata.* **H. deteriorata** *Walk.* (= *nigraria* *Feld.*) (8 a). One of the smallest and darkest *Hypodoxa*. Cell-mark of forewing broad, though not quite so large as in *erebusata*. Underside somewhat as in *erebusata* but with much less large cell-spot on hindwing; both wings with the border (except at costa and hindmargin) much darker proximally to the subterminal spots than distally. — ab. **horridata** *Walk.* has the central area whiter above. — *H. deteriorata* is only known from New South Wales, perhaps confined to the neighbourhood of Sydney.

*cetraria.* **H. cetraria** *Feld.* (8 h) has been regarded, perhaps rightly, as a grey form of the following species, but the wings do not look so broad, the cell-mark of the forewing beneath is broader than in most *muscosaria* and the palpus is perhaps rather shorter. FELDER's type was from Morcton Bay, but I have seen the same form from New South Wales.

*muscosaria.* **H. muscosaria** *Guen.* (= *squamata* *Feld.*) (8 b). Larger and broader winged than *deteriorata*, the palpus longer, the ground-colour moss-green; forewing with cell-mark narrower, especially on upperside, dark bands more conspicuous; distal bands beneath more uniformly darkened almost to the termen, with the sub-

terminal spots of the forewing smaller, the ground-colour of this wing projecting sharply into the border in the middle. — Larva red, lichen-like, found on fences. Queensland to Victoria. FELDER's type of *squamata* was said to be from Tasmania.

**H. multidentata** Prout (8 c). Colouring of upperside nearly as in *emiliaria* (8 d), but with the raised scaling of hindwing more reddish. Very distinct in the highly dentate antemedian line and in the underside, which more resembles that of the preceding group, being greyish, with large cell-marks and broad dark distal bands which almost reach the termen; no distinct pale spots in the distal band, excepting one at the costal margin of the forewing. Malay Peninsula. Also known from Borneo. *multidentata*.

**H. corrosa** Warr. (4 b) is nearly related to *leprosa*, but much redder in the central area of the forewing especially in the ♂, the antemedian line less strongly (in the ♀ not) sinuous. On the underside the base of the forewing and an extended proximal area of the hindwing — in the ♂ reaching to the broad black border — are bright orange-yellow. Owen Stanley Range (type) and the mountains of Dutch New Guinea. *corrosa*.

**H. leprosa** has been separated into two races. — **leprosa** Warr. (8 c), from the Owen Stanley Range, British New Guinea, is predominantly green, though variegated, the ♀ strongly marked, with the tufts of the hindwing black, the central area of that wing anteriorly pinkish. — **incarnata** Prout, from the mountains of Dutch New Guinea, has a larger admixture of pink, the ♀, indeed, entirely losing the green colouring. In both races the underside has broad blackish distal bands (not sharply defined distally), the proximal part of forewing more or less suffused with pink, that of hindwing with orange; but the pink admixture is brighter in *incarnata*. In the Weyland Mountains some examples approximate closely to *l. leprosa*. *leprosa*. *incarnata*.

**H. lichenosa** Warr. (8 c) is similar above to *leprosa*, though with less dark dusting, the ♀ with the central area of the forewing much mixed with white. Beneath, both wings are dull white, distally greenish; base and abdominal margin of hindwing yellow. A submarginal black band and on the forewing a black cell-spot, much as in *leprosa*. British New Guinea and the north coastal ranges of Dutch New Guinea. — **rufomixta** Prout, founded on a pair from Mount Goliath, will perhaps prove a mere aberration. Both wings more mixed with red above; hindwing beneath without the yellow. *lichenosa*. *rufomixta*.

**H. ruptilinea** Prout (8 c). Recognizable by its more elongate forewing, differently shaped post-medial line, more strongly developed and characteristically broken subterminal, long and regular tuft of raised scales on hindwing, etc. ♂ predominantly green, ♀ much more variegated. Underside proximally orange-yellow, the broad black border of the forewing not traversed by whitish spots. Third joint of palpus rather shorter than in most of the species. Snow Mountains, Dutch New Guinea. *ruptilinea*.

**H. viridicoma** Warr. (♀ = *interrupta* Warr.) (8 c) has longer 3rd joint of the palpus, longer hindwing, more *emiliaria*-like underside, etc., and has a green central area in the ♀. WARREN's ♂ type was from Tulagi Island (off Ysabel, wrongly printed „Tugela“) and his ♀ — formerly supposed to be a separate race — from Florida Island. *viridicoma*.

**H. multicolor** Warr. (♀ = *circumsepta* Prout) (8 e). Similar to *viridicoma* but paler, slightly shorter-winged, with the lines finer, in general more sharply expressed, at least anteriorly. On the underside the black cell-spot of the hindwing is very slight, generally altogether wanting, whereas in *viridicoma* it is strongly developed on both wings. Louisiades. The form from New Guinea, which I named *circumsepta*, may prove a separable race. *multicolor*.

**H. emiliaria** is an extremely variable species and the variation seems to be, at least in part, geographical, but it has never yet been taken in long series. The wing-margins are slightly more crenulate than in the two preceding species, unless perhaps in the form *purpurissata*, which may prove a separate species. Both lines are rather sharply developed, black or dark-grey, and the postmedian takes a different course from that of *multicolor*. — **fulgurea** Prout (4 b) is rather large, especially in the ♀, and is heavily shaded with black, chiefly in the distal area, in consequence with the deeply dentate subterminal line showing very clearly. Hindwing beneath without cell-spot. Snow Mountains and the northern ranges of Dutch New Guinea and again in the Hydrographer Mountains of British New Guinea. — **basinigra** Warr. has the basal area darker, or dark-banded, the median area paler. Hindwing beneath with cell-spot. Owen Stanley Range. — **emiliaria** Guen. (= *aurantiaeca* T. P. Luc., *assidens* T. P. Luc.) (8 d) is rather smaller than *basinigra*. Upperside similar, but mixed with green; hindwing beneath without cell-spot. Queensland and probably New South Wales. — **purpurissata** T. P. Luc. is predominantly purplish, the hindwing in posterior half shaded with black-grey, beneath with a cellspot. The series before one is from Cedar Bay, N. Queensland. — **subleprosa** Prout, from Rossel Island, is perhaps not separable from some very strongly variegated aberrations of *emiliaria*; upperside recalling *leprosa*, ♀ (but not ♂) with a black cell-dot on hindwing beneath. — In **aignanensis** Prout, from St. Aignan and Sudest, the green is largely replaced by reddish and the ♂♂ have the median area largely black. — **purpurifera** Warr. (= ? *talagi Swinh.*), from Tulagi and Ysabel, has the ♂ more greenish, the ♀ more variegated with purplish, the hindwing beneath with a large black cell-spot. *fulgurea*. *basinigra*. *emiliaria*. *purpurissata*. *subleprosa*. *aignanensis*. *purpurifera*.

*subornata*. **H. subornata** Warr., only known in two ♀♀ from Cedar Bay, is possibly a pale form of *emiliaria* (8 d), but quite different from *purpurissata*. Distinct from all the *emiliaria* forms in having the median area of the forewing little narrower at hindmargin than at costa, the postmedian line being nearly parallel with the distal margin. Pale flesh-colour, proximally and distally shaded with grey. Hindwing beneath without cell-spot.

*regina*. **H. regina** is distinguished chiefly from *emiliaria* by having the antemedian line oblique outward, so that the median area is fully three times as wide at costa as at hindmargin; the entire basal area of the forewing, excepting a small patch at costa, is filled in with liver-brown and black and the hindwing has a more or less broad band of this colouring posteriorly. — **regina** Prout (8 e), from Rook Island, has a large black cell-mark on the hindwing beneath. — **pallida** Joicey & Talb. lacks this cell-mark and is generally rather paler in the distal area and on the underside. The type, from the Wandammen Mountains, has the dark abdominal area of the hindwing rather less developed, but examples from the Hydrographers agree with race *regina* in this respect. *v. pallida* has been taken also in the Weyland Mountains.

## 12. Genus: **Aeolochroma** Prout.

Often rather similarly coloured to *Hypodoxa* but distinguishable at a glance by the absence of the raised tufts of the hindwing. Forewing generally more elongate anteriorly. Distinguishable from *Terpna* by having the frons scarcely protuberant, the femora less hairy. In the forewing, the 1st subeostal vein is nearly always free. The genus is almost confined to New Guinea and Australia.

A. Antenna of ♂ pectinate in proximal part.

*subrubella*. **Ae. subrubella** Warr. (8 d). Forewing in anterior half scarcely oblique, its cell-mark not ocellated, as in all the rest of the section. Coloration of upperside rather dark, varied with greenish and brown, the median area of the forewing suggesting a dark band. Both wings beneath red, with blackish markings. British and Dutch New Guinea.

*metarhodata*. **Ae. metarhodata** Walk. (8 d). A small species, with very characteristic lines, a black longitudinal streak on the 2nd submedian vein and a pink flush on the hindwing except towards the abdominal margin. Brisbane to Victoria.

*quadrilinea*. **Ae. quadrilinea** T. P. Luc. (= *oehrea* Warr.) (8 d). Paler than *metarhodata*, the palpus longer, the postmedian line of forewing less strong, much less bent outward, both wings with indications of a dark band outside the postmedian, strongest on the underside. No longitudinal streak on the submedian vein; underside, however, with a characteristic one — either red or fuscous — between median and submedian. Dr. TURNER suspects that this colour difference may be seasonal. Queensland; also from New South Wales.

*subrubescens*. **Ae. subrubescens** Warr. (8 d). Palpus as in *metarhodata*. Coloration more as in *quadrilinea*, though with blacker markings above. Above very similar to *hypochromaria*, the lines more angular. Underside with the red border of the forewing broader than in *quadrilinea*, the black postmedian line more sinuous; the longitudinal streak of forewing always red. North Queensland.

*hypochromaria*. **Ae. hypochromaria** Guen. (= *bryophanes* Turn.) (8 d). Differs from all the preceding in the greener colouring of both wings, the shape of the markings and especially in the ♂ antenna, which bears rather longer pectinations and a rather strong basal tuft on the upperside of the shaft. Underside paler, the cell-spot of the forewing black, the lines fairly strong, both wings with more or less broad dark submarginal band. North Queensland to New South Wales.

*viridicata*. **Ae. viridicata** T. P. Luc. Unknown to me. Distinguished from *hypochromaria* by having the submarginal band beneath reddish; hindwing beneath with a reddish discal mark. Queensland.

*unitaria*. **Ae. unitaria** Walk. (8 d) differs from *hypochromaria* in having the palpus shorter, the ♂ antenna without tuft at base, the ♂ hindtibia not dilated, the wings irrorated and strigulated with blackish, the antemedian line more angled anteriorly, postmedian less outbent in the middle. There are two forms, the distinction partly, but not entirely, sexual. WALKER's form, chiefly ♀, has the underside weakly marked, rather strongly dark-irrorated. — ab. **acanthina** Meyr., chiefly ♂, has the underside clear proximally, well marked with black-grey lines and subterminal band. WALKER's type was from „Tasmania“, but the species is best known from Queensland.

*saturataria*. **Ae. saturataria** Walk. (= *perfulvata* Warr.) (8 e) is much larger than *hypochromaria*, with the markings similar, but the postmedian more deeply dentate, very oblique outward to the 1st radial. Underside with the ground-colour orange in the ♂, usually purplish in the ♀. The coloration of the upperside varies; the name-type is more or less green in both sexes. — ♂-ab. **perviridata** Warr. is paler green, with all the darker

green mottlings and most of the black lines and shades wanting; the corresponding ♀ is generally still paler. — ♀-ab. *caesia* Warr. (8 e) is purple-grey or slate-grey above, only slightly sprinkled with green. WALKER's type *caesia* of *saturataria* was from Mysol. The range extends across New Guinea to the Bismarek and Louisiade Islands and a ♀ in the British Museum is labelled „N. Australia“. „W. Australia“ (SWINHÖE, Lep. Hct. Oxf. Mus. II, p. 384) is probably an error (TURNER).

**Ae. languida** Warr. (♂ = *rufivaria* Warr.) (4 a) is a strongly dimorphic species in colouring: the *languida*. ♂ above green with red markings, beneath orange, the hindwing brightest, with a black border; the ♀ delicate violet-grey above and beneath, the underside only at base orange. British and Dutch New Guinea and Goode-nough Island.

**Ae. purpurissa** Warr. (8 e) Larger than *languida*, more heavily marked with black, including a curved *purpurissa*. mark across the thorax. ♂ much mixed with whitish, ♀ more recalling purple forms of *saturataria* but with a pale apex. Underside deep purple, forewing with white apex, hindwing with whitish postmedian band and orange abdominal margin. British New Guinea and the Weyland Mountains.

**Ae. chioneschatia** Prout (8 e). Near *purpurissa* but recognizable at a glance by the pure white apical *chionescha-* patch of the forewing above as well as beneath. Underside deep purple, the hindwing also with a large white *tia*. patch from costa to 2nd radial. ♀ larger, more purple, with the underside becoming black distally, the upperside also with some increase of the black. Weyland Mountains (Dutch New Guinea).

#### B. Antenna of ♂ simple (*Aeolochroma sens. str.*)

**Ae. amethystina** Warr. (4 a). Very distinct from all known species in its erenulate margins, the pale *amethysti-* green shades accompanying the lines, variegated red and pale grey underside, etc. The ♀ is larger than the *na*. ♂, less deep purple, with the green admixture increased, the white discal spots less developed. Described from the Owen Stanley Range, subsequently found in the mountains of Dutch New Guinea.

**Ae. modesta** Warr. Above similar to a very small, weakly marked *viridimedia*, but with the distal *modesta*. margin of the forewing more bent. Beneath devoid of the bright colouring of the rest of the group, grey, with dark irroration, the hindwing in its distal half nearly as in the allies, but with the postmedian line and the border less deep black. Upper Aroa River, British New Guinea.

**Ae. intima** Prout (4 a). Rather longer-winged than *prasina* and *viridimedia*, the ♀ larger. Both sexes *intima*. above more strongly marked, the ♂ green, with blackish, red-mixed band in proximal half of median area and a patch of the same colouring in the outward bend of the postmedian (which is stronger than that of *prasina*), the ♀ more largely reddish, the forewing anteriorly pale-green, on both wings with interrupted pale-green band outside the postmedian line. Both sexes usually with some white admixture; beneath without the black markings of *prasina* and *viridimedia*, remaining red in these positions. Dutch New Guinea.

**Ae. viridimedia** Prout. Very near *prasina* (8 e), but with the median area of the forewing broader from *viridimedia*. the costa to 3rd radial, then more suddenly narrowing, concolorous with the rest of the wing, only with quite narrow red and black shading close to the antemedian line; cell-spot generally smaller. ♀ more mixed with red-brown than that of *prasina*. Underside in both sexes less strongly marked than in *prasina*. Biagi, Mambare River, British New Guinea. Also from Dutch New Guinea.

**Ae. bakeri** Prout. Smaller than *prasina* (34 mm). Forewing with margin slightly more crenulate, *bakeri*. more bent at the 3rd radial; median area broadened anteriorly, bounded at the costa by black spots, only darkened posteriorly and at its margins; the pale mid-terminal spot very conspicuous. Hindwing with a whitish spot outside the cell-spot, nearly as in *amethystina*. Underside similar to that of *intima* (4 a). Dinawa, British New Guinea.

**Ae. turneri** T. P. Luc. (8 i) Closely like a small *viridimedia* with large cell-spot on forewing above and *turneri*. beneath. A rather conspicuous black mark on the 2nd discocellular of the forewing and (especially in the ♂) a blue-white admixture in hind part of postmedian area. Base of hindwing in both sexes somewhat irrorated with reddish. Forewing beneath with a more extended white patch outside the cell-spot than in the allies. Queensland.

**Ae. venia** Prout. Close to *prasina* (8 e), but smaller (41—42 mm). Forewing more vivid, more yellowish *venia*. green; basal patch less darkened; median area less narrowed posteriorly, its anterior part green. Hindwing slightly more rounded than in *prasina*, as far as the postmedian line predominantly flesh-colour. Underside without the dark proximal suffusions of *prasina*; forewing with the blackish subterminal shade less extended; hindwing with the postmedian line straight or nearly so. Nomnagihé, Dutch New Guinea.

- prasina*. **Ae. prasina** Warr. (8 e). ♂ less variegated above than in most of the group, the forewing, however, with the basal patch and median area filled in with brown. Hindwing beneath with the postmedian line angled or bent outward at the 3rd radial. ♀ rather larger, with costal edge reddish, median area not darkened, the reddish subterminal shading strengthened, sometimes extended. New Guinea and the adjacent islands, the *spadicocampa*-type from Fergusson. — **spadicocampa** Prout, from Biak, is smaller, with larger cell-spots, postmedian line thickened in the middle, the red markings amplified. — **angustifascia** Prout, from Dampier Island, has the median band of the forewing narrowed. — **defasciata** Prout, from Rook Island, New Britain, (loc. typ.), New Ireland and New Hanover, has the median band broadened, especially posteriorly, and remaining predominantly green, the band beyond it amplified, though less brightly coloured than in *spadicocampa*. Superficially this race recalls *viridimedia*. — **louisa** *subsp. n.*, from St. Aignan, is in both sexes rather weakly marked above, the median area rather narrow, making a transition in this respect towards *angustifascia*, while in the increase of the green ground-colour in this area it more approaches *defasciata*. Type in Mus. Tring.
- albifusaria*. **Ae. albifusaria** Walk. (8 e, f). The ♂ differs from all the allies in the prevalence of purple coloration on both wings above. The underside is similar to that of *prasina*, but with the blackish markings broader and more intense; on the hindwing the postmedian line and the distal band are confluent posteriorly, the intermediate white band consequently incomplete. The typical ♀ is recognizable at a glance by the white patches on the upperside and is prevalent on Mysol (the type locality), in W. and N. New Guinea and perhaps at higher altitudes in British New Guinea. — **discolor** Warr., from Korrido, is possibly a ♂ aberration, but I believe merely a discoloured example. — **suffusa** Warr. (8 f) is scarcely distinguishable in the ♂ from the form *albifusaria*, but its ♀ lacks the white patches. It differs from that of *prasina* in its rather smaller size, differently shaped median area, absence of reddish costal shade etc. WARREN mistook a slightly suffused ab. of *prasina* for the ♀ to *suffusa*. D'Entreesteaux Islands (loc. typ.) and from coastal regions in British New Guinea.

#### 14. Genus: **Metallolophia** Warr.

This genus is in a measure intermediate between *Aeolochroma* and *Terpna* and I am now doubtful whether it should not be made another section of the latter. Face not protuberant. Antenna of ♂ not pectinate. The type species (*vitticosta*) is well distinguishable in having the abdominal crests metallic and the wings of the ♂ narrowed, but the other species which I have associated with it are transitional. Evidently Indo-Malayan in its origin, though one species has straggled into Central China.

- vitticosta*. **M. vitticosta** Walk. (8 f). Unmistakable in the generic characters given above and in the broad pale subcostal streak of the forewing. Described from Sarawak, also known from the Malay Peninsula and Sumatra.
- subradiata*. **M. subradiata** Warr. has the same large, obliquely placed, somewhat reniform cell-spots as the allies, but has the base of both wings dark-clouded and a somewhat *Pingasa*-like underside, with yellow base and broad purple submarginal band, somewhat broken by pale veins, the cell-spot large on the forewing, obsolete on the hindwing. Penang (type) and Borneo, very rare.
- opalina*. **M. opalina** Warr. (8 f), from Sikkim, is similar to *arenaria* (vol 4, pl. 1 e), but with the ♂ antenna simple, the coloration rather darker, but with whitish admixture on the forewing anteriorly, the lines strongly dentate. Underside yellow at base, otherwise pale purple with darker cell-rings and on the forewing a longitudinal streak in the cell.
- ocellata*. **M. ocellata** Warr. (8 f). Similar to the preceding and following species. Upperside with ill-defined green bands, but without blackish lines. Forewing beneath white with the cell-spots and bands deep purple, much as in *arenaria*, but with the long purple streak behind the median and its second branch reduced to a small spot behind the cell. Khasis.
- arenaria*. **M. arenaria** Leech (= *danielaria* Oberth.) has been described and figured in Vol. 4, p. 12, pl. 1 e, but is now known also, and in better specimens, from Burma and Tibet. The antenna of the ♂ is subpectinate. The maculation of the underside is purple, as in the allies.

#### 15. Genus: **Terpna** H.-Sch.

Face more or less protuberant (except in *pictaria* and perhaps *neonoma*). Antenna of ♂ nearly always, of ♀ sometimes pectinate. Pectus densely hairy. Abdominal crests well developed. Forewing rarely with distal margin very oblique. Hindwing generally with abdominal margin elongate.

A somewhat heterogeneous assemblage of Indo-Australian species of robust build which do not fall naturally into either of the other recognized genera.

A. Antenna of ♂ simple. Cells very short, hindwing with 2nd subcostal stalked (*Calleremites* Warr., gen. div.?)

**T. subornata** Warr. Expanse 66 mm. The blend of olive-green and grey colouring somewhat recalls *subornata*. *M. subradiata* or *ocellata* (8 f) and the cell-spots are similar, but rather weak above, black beneath. Markings peculiar, a narrow green median band being concavely bounded very little beyond the cell-spot. Underside mixed with yellow proximally, both wings with an extremely broad, but ill-defined blackish submarginal band—Sikkim, only the type known.

B. Antenna of ♂ simple. Cells normal, hindwing with 2nd subcostal separate (*Psilotagma* Warr.).

**T. decorata** Warr. (= *dorsocristata* Pouj.) has been described and figured in Vol. 4, p. 12, pl. 3 c, *decorata*. but belongs also to the Indian fauna, as WARREN'S type was from Bhutan.

C. Antenna of ♂ with extremely short pectinations. Cells rather short. (*Absala* Swinh.)

**T. pictaria** Moore. Markings much as in *decorata*, (Vol. 4, pl. 3 c) but stronger, the cell-mark of the *pictaria*. forewing black and angulated, the subterminal markings also mixed with black, the subapical one very large, the one between the medians of the forewing obsolete. Apex less rounded. Khasis.

**T. dorcada** Swinh. (5 c). Rounder-winged, quite distinct from any other species. White, irrorated *dorcada*. with olive-grey or green, the markings of the underside showing through in grey. Underside at base yellow, than clean white, with rounded black spots and subconfluent apical markings. Khasis.

D. Antenna of ♂ shortly to moderately pectinate. Cells very short. Wings ample, spotted beneath (*Terpna* H.-Sch.).

**T. haemataria** H.-Sch. (= *almaria* Guen.) (9 a). A large and robust species, with the underside *haemataria*. yellow at base, then heavily spotted with black: on the forewing a longitudinal mark behind the cell, interrupted postmedian and terminal bands, the latter forming a large apical patch; on the hindwing a large spot in the cell and crossing the discocellulars, two costal spots and some elongate subterminal ones. N. India, not rare.

**T. subtrita** Prout is closely similar to *haemataria*, especially above. The antennal pectinations appear *subtrita*. somewhat shorter, but the difference is very slight. Both wings beneath less yellow at base, the postmedian series of spots obsolete, etc. Formosa, the type from Kosempo; 4 ♂♂ from Kanshirei in coll. WILEMAN.

**T. ornataria** Moore (5 c). Less large than *haemataria*. Pectinations less short. Forewing above *ornataria*. with more extended redbrown strigulation proximally and costally; hindwing with an additional black postmedian streak between the 2nd and 3rd radials, reappearing as a rounded spot beneath. Underside with more strigulation and maculation anteriorly and basally than in *haemataria*, but with the postmedian and subterminal spots obsolete or much reduced. Darjiling (type) and Cherrapunji.

**T. pratti** sp. nov. (5 c). Coloration nearly as in the preceding group. Wings less broad, recalling *pratti*. those of the subgenus *Lophophelma*. Forewing marked much as in *ornataria* but rather more heavily, the cell-mark expanded, though not sharply defined, the postmedian band of the underside suggested by a broad blue-grey anterior half-band. Hindwing with stronger cell-streak and broader subterminal spot between the median veins than in the allies. Forewing beneath with the yellow at base less extended along the costa; cell-spot large; cell not darkened proximally (as in *ornataria*) nor with dark streak behind it (as in *haemataria*); postmedian band not or scarcely interrupted, except at abdominal margin. Hindwing beneath with three large spots representing the postmedian band and four representing the subterminal. S.W. Sumatra: Barisan Range, 2500 feet, October—November 1921, 7 ♂♂ in coll. JOICEY, collected by C., F. and J. PRATT. Also from Bukit Kutu, Selangor.

**T. leucomelanaria** Pouj. occurs on the borders of the Palaearctic Region and has been dealt with in *leucomelanaria*. Vol. 4, p. 12 pl. 1 e. It seems to connect *ornataria* and *pratti* with the Palaearctic species *amplificata* Walk.

(Subgenus E, *Pachista* Prout, contains only the Palaearctic species *superans* Bllr. and a close ally which I have recently described from E. China.)

F. Antenna in ♂ and rarely (*neonoma*) in ♀ pectinate. Wings rarely very broad, distal margins more or less crenulate, cell of forewing not shortened, underside with dark distal band (*Lophophelma* Prout).

- luteipes*. **T. luteipes** *Feld.* ( $\delta = \text{similis Moore}$ ) (5 e, d  $\delta$ , 8 f  $\delta$ ) differs from the rest of the group in being whitish, almost as in the subgenus *Terpna*, the costal region of the forewing interruptedly red-brown. Thorax beneath, with base of wings, yellowish, the forewing usually with a pink flush behind the cell, the dark submarginal band usually well developed. — ab. **subalba** *ab. nov.* lacks the submarginal band beneath and may, I suspect, be a seasonal form. Type from the Khasis, in my collection. *FELDER*'s type of *luteipes*, a  $\delta$ , is the only specimen from Cochin China yet known to me and the species has generally been known as *similis Moore*, N. India and Malay Peninsula. — **ruficosta** *Hmps.* is more brownish, at least in the  $\delta$ , the underside with the yellow more extended, the dark borders on an average broader, the forewing beneath with the cell-spot broader, the hindwing also with a large cell-spot beneath. South and Central India. Examples from Ceylon, however, revert towards the N. Indian form. — **enthusiastes** *subsp. nov.* has a complete red-brown subapical line on the forewing from costa to the terminal spot at the 2nd radial; underside with the pink on the forewing and the yellow on the hindwing still more extended than in *ruficosta*, the borders still broader, that of the forewing much mixed with red-brown anteriorly, the cell-spot remaining as in *luteipes* or reduced. Barisan Range, S.W. Sumatra, at 2500 feet, type in coll. *JOICEY*. On Mount Korintji, in the same district, at 5000 feet, and on Mount Gedeh (Java) at 4000 feet, a less extreme form occurs, while at high altitudes on Korintji (7300 feet) the species reverts to the form *luteipes* or may even incline to ab. *subalba*.
- costistrigaria*. **T. costistrigaria** *Moore* (5 d). Larger, pale green, with brown strigulation, costal markings less red, more irregular, cell-spots larger above, a bluegrey band-like shade outside the postmedian of the forewing. Sikkim.
- neonoma*. **T. neonoma** *Hmps.*  $\delta$  antenna peetinate. Further differs from *erionoma* in being lighter brown, subapical patch less white, first line firm, underside not white, distally not sharply dark-banded. Ceylon.
- erionoma*. **T. erionoma** *Swinh.* (5 c). Crown of head and front of thorax quite pale, the upperside otherwise rather dark, with terminal patch near apex and subterminal spots between the veins more sharply white than in most of the species. Forewing with a narrow shade outside the postmedian line, anteriorly green- or blue-grey, posteriorly marked with white. The white ground-colour beneath not pure, the subterminal bands rather variable in development. Described from the Khasis, but extending to N.W. India and reappearing on Ceylon. — **subnubigosa** *subsp. nov.* is a rather larger, darker form from W. China, both wings beneath (especially the forewing) with the pale parts much more suffused with grey. Omei-shan, type  $\delta$  in Mus. Tring; Kwanhsien district, 16 August 1925, paratype in Hill Museum. — **albicomitata** *subsp. nov.* (8 g) has more extended white maculation outside the postmedian of the forewing posteriorly, little of the dark irroration remaining except a narrow subterminal band between the 2nd median and the hindmargin. Underside with the subterminal bands sometimes narrowed. S.W. Sumatra: Korintji, 2  $\delta\delta$  in coll. *JOICEY*, the type at 5000 feet altitude. Also a few examples from Selangor.
- calaurops*. **T. calaurops** *Prout* (8 g). Brownier than *erionoma*, without the characteristic shades outside the postmedian line; terminal spot near apex less sharply white; subbasal and antemedian lines well separated. Postmedian line of hindwing with an angle outward on the 2nd subcostal vein. Distal bands beneath broad. Hongkong.
- taiwana*. **T. taiwana** *Wileman* (8 g). Larger than *erionoma*, perhaps broader winged. Less dark, with less white markings, the first two lines of forewing about as in *calaurops*, the antemedian sometimes almost straight, the postmedian of the hindwing intermediate between those of *erionoma* and *calaurops*. Underside rather more suffused than in *erionoma*, the distal bands less sharply defined, brown rather than blackish, that of the forewing curved (in *erionoma* almost straight-edged proximally). Formosa.
- funebrosa*. **T. funebrosa** *Warr.* (5 d). Rather larger than *erionoma* and with the distal margin of the forewing appreciably crenulate; still darker and more uniform, except for the subbasal band and subapical spot; subterminal white dots minute. Distal bands beneath very broad. Khasis. — **tenuilinea** *Warr.* combines the coloration of *erionoma* with the markings and underside of typical *funebrosa*, but has the white subapical spot less sharp and shows a tendency on the forewing beneath to develop a longitudinal pink shade behind the cell and the 2nd median, which is only faint in *funebrosa*. Sumbawa (type), Borneo, Sumatra, etc.
- vigens*. **T. vigens** *Btlr.* (8 g). This species and the following are nearly related, but *vigens* has a sharply defined subbasal line, followed immediately by a whitish band, lacks the two deep outward curves of the antemedian line, has the cell-mark sharply black and linear and the white terminal spot near the apex well developed. Both have the submarginal bands beneath narrower than in the allies. Typical *vigens* is from Darjiling, also from the Khasis. — **ruficoloraria** *Warr.* represents *vigens* on Borneo and is of a more reddish colour, generally rather larger and has the dark borders beneath broader. It is known also from Penang and Sumatra.

**T. varicoloraria** Moore (8 g). More varied with greenish than *vigens*, the cell-spot of the forewing rather broad and diffuse, the blackish lines generally accompanied by pale ones on their reverse sides. For further distinctions, see above. North India (type), Perak and Sumatra. *varicoloraria*.

**T. rubroviridata** Warr. (8 g). Smaller than *varicoloraria*, redder, the lines thicker, the postmedian more zigzag, the body with blacker crests, the wings beneath more yellowish, with broader submarginal bands. Described from Penang, also known from Selangor and Borneo. *rubroviridata*.

**T. differens** Warr. has somewhat the aspect of *Dindica virescens* Btlr. (Vol. 4, pl. 1 g), having a pinkish tinge in the pale parts. Antemedian line of forewing extremely oblique, dentate, postmedian acutely angled outward on middle, then incurved and dentate; a pinkish subapical patch. Hindwing paler than forewing. Subterminal band beneath reduced to a line. Kulu. *differens*.

**T. thyatiraria** Oberth. (8 g) is a pretty species, evidently related to *differens* but with extended pink subterminal patch, the coloration recalling — as OBERTHÜR says — the well-known *Thyatira batis*. Antemedian line curved, not oblique outward. Chinese Tibet. *thyatiraria*.

**T. paroptila** Turn. is unknown to me, but perhaps belongs here. 46 mm. Brownwhitish, with sparse blackish strigulae on costa and veins; lines reddish brown; antemedian of forewing nearly straight, oblique outward, postmedian straight anteriorly, incurved and dentate on the veins posteriorly; lines of hindwing less defined. Underside in part washed with dull reddish, leaving a white postmedian costal area on forewing and a larger, less defined area on hindwing; cell-spot of forewing large, of hindwing smaller; submarginal bands broad. Atherton, N. Queensland. *paroptila*.

**T. apicalis** Moore (5 d) provides a transition to the group *Dindicodes*, but the abdominal crests are not quite so large and the wing-shape and scheme of markings associate it with *Lophophelma*. Very distinct in the bright golden-yellow underside, which only becomes white in a small subcostal patch beyond the cell-spot of the forewing. Cell-spot of both wings beneath large, black borders broad, enclosing some white spots at distal margin. ♀ larger. Darjiling (type) and the Khasis. *apicalis*.

G. Antenna in ♂ very shortly pectinate. Thorax and abdomen strongly erected. Hindwing and underside yellow, spotted; hindwing with costal margin rarely shortened, its apex rarely rounded off (*Dindicodes* Prout).

**T. crocina** Btlr. (8 h) approaches the preceding group in the shape of the hindwing, but is otherwise similar to *leopardinata*. Forewing beneath with a white half-band outside the cell-spot, followed posteriorly by a large black spot which is confluent with a black distal band. Hindwing above and beneath with a characteristic black subterminal mark from apex to radial fold. Sikkim. *crocina*.

**T. mölleri** Warr. (Vol. 4, pl. 1 g, as *leopardinata*) (5 c). Close to *leopardinata*, rather larger and darker, the postmedian line of the forewing rather more distally placed, the whitish subterminal spots in part obsolete; hindwing with the first two submarginal spots well separated, the cell-spot on an average rounder, the smoky suffusions of abdominal margin generally weaker. Both wings beneath less mixed with white in terminal area. Sikkim. Also from Assam and Upper Burma. *mölleri*.

**T. davidaria** Pouj. (Vol. 4, p. 13, pl. 3 c), from Mou-pin, is still unknown to me, but is very probably a race of *mölleri*, with smaller black spots and clearer distal margin to the hindwing. The white subterminal spots of the forewing seem as well developed as in *leopardinata*. Forewing beneath not (as in *mölleri* and *leopardinata*) blackened behind the cell. *davidaria*.

**T. leopardinata** Moore. Forewing with a scarcely interrupted reddish band proximally to the subterminal. Hindwing with the first two submarginal spots confluent. Further distinctions are given under *mölleri*. N. India: Sikkim and Bhutan. Also from Yatung, Tibet, erroneously introduced into Vol. 4. *leopardinata*.

**T. euclidiaria** Oberth. (8 g) is perhaps a race of *leopardinata*. Forewing above very similar. Hindwing and underside clearer yellow, with the dark subterminal band less broad, interrupted. Chinese Tibet: Tse-kou, only known to me from OBERTHÜR's figure. *euclidiaria*.

**T. vigil** Prout. Underside nearly as in *euclidiaria*, both wings dark-mixed at distal margin, the hindwing more broadly whitish at abdominal margin. Forewing above with the ground-colour of *euclidiaria* but without red markings; the shade around the cell-spot large, roundish, grey, with a black dash in front of it; the lines marked by dots on the veins, the antemedian with a black spot at costa and curved mark at hindmargin. Hindwing broadly white at abdominal margin; the subterminal band anteriorly as in *euclidiaria*, posteriorly forming a large spot between the median veins. Upper Burma: Hpimaw Fort. *vigil*.

## 16. Genus: **Dindica** Moore.

Differs from *Terpna*, subgenus *Dindicodes*, in the tufted face, posteriorly tufted thorax and exaggerated abdominal crests.

- polyphaenaria*. **D. polyphaenaria** Guen. (= *basiflavata* Moore) (8 h). Thoracic crest enormously developed. The dark border of the orange-yellow hindwing and of both wings beneath is rather broad. Underside yellow proximally, the forewing with a large cell-spot, which is separated from the border by a white patch; borders enclosing large white midterminal patches, which extend, though narrowly, to the hind angle. N. India. Also from Perak, Sumatra, Java and Borneo.
- para*. **D. para** Swinh. (8 h) is possibly a seasonal form of *polyphaenaria*, though very distinct in the white-mixed (sometimes wholly white) hindwing and underside and the much narrower, more or less incomplete, dark borders. Common in the Khasis.
- taiwana*. **D. taiwana** Wileman. (8 g). Wings of the ♂ rather broader than those of *polyphaenaria*, recalling those of the Japanese *virescens* Btlr. (vol. 4, pl. 1g), the yellow suffusions of the hindwing and of the underside very much weakened, the dark borders as broad as in *polyphaenaria*, less constricted in the middle, but much less solid, more broadly and continuously displaced by the ground-colour distally. Formosa.
- marginata*. **D. marginata** Warr. (9 a) Very near *polyphaenaria*. Hindwing with distal margin more rounded, brighter orange, with the border black, but much narrower, more uniform in width throughout. Underside (with venter) brighter orange, the black borders not enclosing white terminal patches; border of forewing twice as broad as that of hindwing. S. Celebes. Perhaps also from Borneo.
- wilemani*. **D. wilemani** sp. nov. Allied to *polyphaenaria*. Forewing more densely irrorated with black; basal black streaks stronger, one on the 2nd submedian longer; postmedian line at least as strongly produced as in *wytsmani* (8 h), but not zigzag posteriorly, the pale spots beyond it ampler, shaded with a delicate pink, slightly recalling *Terpna differens* or *thyatiraria*; apical patch, above and especially beneath, sharply pale; black subterminal streaks in cellules 2, 3, 4 and 5 developed, as in occasional aberrations of *polyphaenaria*. Hindwing shaped nearly as in *polyphaenaria*, only with the projection at the 3rd radial and 1st median slightly less noticeable; rather paler than in that species; the dark border filled-in with grey proximally (where *polyphaenaria* shows the concavity) and terminally, so as to appear almost solid. Underside very much like some broad-banded *polyphaenaria*, the hindwing with the white margin nowhere very broad, but anteriorly reaching the 2nd subcostal. Formosa: Kanshrei, 1000 feet, 2 September 1908 (A. E. WILEMAN), only the type known.
- subrosea*. **D. subrosea** Warr. (= *subsimilis* Warr.). Forewing with costal margin shouldered at base, then straight (genus *Perissolophia* Warr.); much more weakly marked than the preceding group, the cell-mark linear. Hindwing above and forewing beneath pink, with olive-grey irroration, the latter with a dark line shortly beyond the cell-mark, angled at radial fold and not reaching the costa; hindwing beneath paler, except distally. Sikkim, very rare, only WARREN'S two types known to me. The following species has since 1895 been misidentified for it.
- purpurata*. **D. purpurata** is less weakly marked than *subrosea*, the cell-mark broader, the lines more zigzag, a red-brown subapical patch developed on costa of forewing, the angled line just outside the cell-spot beneath wanting. Hindwing and underside pale, marked with pink at the distal margins. — **purpurata** Bastellb. (8 h)
- wytsmani*. is smaller than *subrosea*, darker and duller, not very variegated. Formosa. — **wytsmani** subsp. nov. (8 h), erroneously figured in WYTSMAN'S „Genera Insectorum“ as *subrosea*, is larger, lighter, more sharply marked, underside with the cellspot mixed with black and the postmedian line fairly well expressed, the pinkish distal shades rather weakly developed. Sikkim (the type in my collection) and Bhutan.

### 17. Genus: **Hypobapta** Prout.

Differs from *Terpna* in having the face less protuberant, the antennal pectinations of the ♂ longer, the forewing elongate, with distal margin strongly oblique, cell fully  $\frac{1}{2}$ , produced at its apex. Hindwing rather narrow, abdominal margin elongate, distal margin markedly crenulate. Thorax robust, with slight crests. Abdomen with short crests. Exclusively Australian. The early stages of the type species have been fully described by RAINBOW.

- diffundens*. **H. diffundens** T. P. Luc. is possibly a small variety of the following species, but differs markedly in its much smaller size, paler grey colour, less crenulate and much more distally placed postmedian line, which moreover, on the forewing, is almost as remote from the antemedian anteriorly as posteriorly, and the close approximation of the subterminal band beneath to the distal margin; forewing beneath black in base of cell. The hindlegs are lost in the unique type. Coomoo, Dawson River, type ♂ in coll. Tring Mus.
- percomptaria*. **H. percomptaria** Guen. (8 i). The white ground-colour above is shaded with reddish and grey, somewhat as in *Pingasa*, but the distal area is almost concolorous. The black lines stand out sharply. The angled cell-mark is reproduced on both wings beneath, followed by a weak postmedian line, which is bent in front of the 3rd radial; blackish subterminal bands are present, but that of the forewing does not reach the

costa and terminates before the 2nd median vein. Widely distributed in Australia. TURNER gives Queensland to Victoria, also Albany, W. A. The larva feeds on *Eucalyptus piperita* Sm. and resembles a folded leaf; it tapers equally at both extremities, which look very much alike, both the head and anal segment being elongate, wedge-shaped, chitinized, the head furrowed down the middle, above and beneath, the anal end bifurcate. Body sage-green, with small black spots, narrow yellow lateral and ventral stripes and small red spots below the spiracles. The pupa is attached by its tail and a central girth, as in *Cosymbia* or many butterflies.

### 18. Genus: **Cyneoterpna** Prout.

Probably related to *Hypobapta*, but with the face tufted and differing from all the related genera in having a dense hood projecting over the face. Forewing with the 1st subcostal anastomosing with both the neighbouring veins, the 1st discocellular long, as also the 4th. Only one species known.

**C. wilsoni** Feld. (8 i). Forewing white, mixed with grey, the lines exceedingly dentate, the post-*wilsoni*. median blackest on the outward teeth. Hindwing white in proximal half, then grey. Underside similar to that of *H. percomptaria*, the cell-marks less angular, the submarginal bands broader. FELDER's type was from South Australia, but the range extends from North Queensland to Tasmania.

### 19. Genus: **Sphagnodela** Warr.

Although this genus offers but few salient characters, it differs rather widely in shape and facies from all the others. Build not very robust. Wings elongate, the distal margin of the forewing relatively short, the costal margin of the hindwing long, with apex rather pronounced. Forewing with 1st subcostal vein anastomosing with costal. Hindwing with costal approximated to subcostal at least to the middle of the cell. Both wings with 1st median remote at origin from 3rd radial. Abdominal crests moderate. Antenna of ♂ with rather short, clavate pectinations to near apex. The only species is Indian.

**S. lucida** Warr. (8 i). Recognizable by its moss-green, thickly irrorated forewing, with black spots *lucida*. proximally to the white subterminal dots, and its almost unmarked hindwing and underside. Sikkim and the adjacent part of Tibet.

### 20. Genus: **Crypsiphona** Meyr.

Distinguished from all the other Indo-Australian genera of its group by having only one pair of spurs on the hindtibia. Face smoothly scaled. Pectus and femora densely hairy. Palpus moderate. Abdominal crests wanting. Antenna in the ♂ pectinate. Hindwing with abdominal margin long.

Contains a few Australian species, which differ a little in some details of structure. Only *ocultaria* is common and well-known.

**C. ocultaria** Don. (8 i). The cryptic grey upperside recalls a *Pingasa*, but the underside is unique, *ocultaria*. the bright red proximal part of the terminal band of the hindwing being particularly striking against the pure white ground-colour. Normally, this red band is almost as broad as the blackish one outside it, but I have seen aberrations in which it is reduced to a thread and according to Meyrick, it can be absent. The larva feeds on Eucalyptus and is said to be similar to that of *Hypobapta percomptaria*, with acuminate head and tail. Distributed throughout Australia except the tropical region.

**C. melanosema** Meyr. is unknown to me. Generally smaller than *ocultaria*, the face not (as in that *melanose-* species) black, the forewing less broad, with a short black basal mark, the lines black, tolerably strong, the *ma*. antemedian unevenly curved outward, the postmedian dentate, sinuate inward behind middle; cell-mark black, linear, very oblique, its hinder end terminating in an ill-defined whitish spot, which interrupts the postmedian line; subterminal line strongly dentate, accompanied by dark shades. Hindwing with distal margin crenate; grey-whitish, rather weakly marked. Forewing beneath grey, outside the cell and at hindmargin paler, apex white; discal mark oblique. Hindwing beneath whitish, with an oval blackish postmedian blotch, which does not reach the margins. Founded on 5 specimens which were taken on fences at Albany, W. A.

**C. amaura** Meyr. Scarcely larger than *melanosema*. Face with an indistinct dark transverse bar. *amaura*. Thorax (as also in *melanosema* but not in *ocultaria*) with a slight anterior crest. Forewing very pale whitish-ochreous, with a slight reddish tinge; without the black markings of *melanosema*; the oblique cell-mark indistinct,

grey; a faint dentate whitish subterminal line; termen with black-grey dots between the veins. Hindwing similarly coloured and marked, paler towards base; a faint postmedian line traceable. Underside whitish, the forewing partly suffused with pale reddish; cell-spots small, black; a rather larger subterminal spot on forewing before middle; a blackish postmedian blotch on hindwing, much as in *melanosema* but surrounded by a pale reddish suffusion. Albany, with the preceding species.

*eremnopis*. **C. (?) eremnopis** *Turn.* was founded on a pair which have lost the hindlegs, but the total absence of abdominal crests suggests that the species belongs here. 32 mm. Forewing with termen crenulate; 1st subcostal anastomosing with costal; brown-whitish, suffused with fuscous; markings fuscous; cell-mark linear, dark, surrounded by some brownish suffusion; antemedian line transverse, subdentate; a narrow outer band, ill-defined proximally, sharply defined by whitish distally, anteriorly bent outward and very sharply dentate, behind the middle abruptly bent inward, at hindmargin linear; subterminal line whitish, dentate, with sharp fuscous teeth proximally. Hindwing rather dark grey, with a darker, dentate postmedian line. Underside whitish, suffused with fuscous, both wings with obscure dark postmedian line. West Australia: Cunderlin and Mt. Barker. I have abridged TURNER'S very careful description.

*xenomorphia*. **C. (?) xenomorpha** *Lower* is said to be probably nearest to *ocultaria*, but with underside weakly marked, similar to upperside, except for the presence of a broad, light fuscous, somewhat suffused terminal band on hindwing. Expanse 36 mm. Pale whitish grey, with dark irroration: lines of forewing band-like, oblique; a sharply white streak from costa at five-sixths extending nearly halfway across the wing. Hindwing with only an outer band. Pinaroo, South Australia. 1 ♀.

## 21. Genus: **Apodasmia** *Turn.*

This genus and the following are slenderly built, with the pectus only slightly hairy and the abdomen not crested, but on account of their brown coloration I have regarded them as specialised members of the preceding group rather than as associated with the green, leaf-mimicking groups which follow *Dysphania*. *Apodasmia* has the ♂ antenna dentate, the hindtibia with all the spurs developed, the hindwing with the humeral angle expanded, yet conserving a frenulum in both sexes. Forewing with the 1st subcostal anastomosing with the adjacent veins. Only one species is known.

*rufonigraria*. **A. rufonigraria** *Walk.* (8 a). An insignificant-looking species, yet not liable to be confused with any other. The red irroration which is scattered over the forewing becomes more conspicuous on the discocellulars; a dusky postmedian line is also traceable, but very weak. Underside of forewing anteriorly with an incomplete dark subterminal band. Described from Sydney but rather widely distributed in Australia, reaching Brisbane, Tasmania and Bridgetown.

## 22. Genus: **Gnophosema** *Prout.*

♀ unknown. ♂ with humeral angle and frenulum conditioned nearly as in *Apodasmia*. Antenna with longish pectinations. Hindtibia with terminal spurs only. Forewing with 1st subcostal sometimes anastomosing with costal, 2nd subcostal stalked to beyond the 5th. Hindwing with abdominal margin about as long as in *Apodasmia*, distal margin somewhat less fully rounded. Another apparently isolated genus of one species.

*isometra*. **G. isometra** *Warr.* Slightly smaller than *A. rufonigraria*, equally inconspicuous, the irroration fuscous, not red, the cellspot annular, present (though small) on both wings. Underside uniform whitish. Only known from WARREN'S original type and paratype from N. W. India, the former from Akhor, the latter labelled Kashmir.

## 23. Genus: **Dysphania** *Prout.*

An extremely handsome and unmistakable genus, more distinct in shape and pattern from the preceding group than in essential structure, but with a well-developed fovea present in the forewing in both sexes. Antenna in both sexes pectinate to the apex. Hindtibia of ♂ nearly always with a hair-pencil. Forewing narrow, especially in the ♂, with distal margin long and extremely oblique. Frenulum fully developed. Both wings in part diaphanous. Larva cylindrical, smooth, segmentation well marked, head rather small, anal flap somewhat pointed; rests

stiffly outstretched, with head and anterior segments bent downward. Pupa obtuse anteriorly, cremaster with a cluster of hooks; brown; span between leaves, as with most of the subfamily. Moths diurnal, sometimes entering into mimetic association with certain Chalcosiids and large Epiplemid. See further, p. 3 of this volume.

**D. numana**, together with a large assemblage of races or representative species, covers a great part of the Indo-Australian Region from the Moluccas eastward, and can be considered together. — **albipunctulata** *Bastelb.* differs from name-typical *numana* in having the large, confluent spots between the central and subapical bands of the forewing more or less strongly reduced, generally well isolated. Morty, Gilolo and Batjan, the type from Batjan. — ab. **leucophorata** *Bastelb.* (6 a), from Batjan, is an extreme form, with the median band of the forewing white, not yellow. — **peregrina** *Bastelb.* (6 a), from Obi, has also the proximal mark of the forewing and a great part of the pale area of the hindwing white. Also known from Pulo Besa, N. of Obi. — **buruensis** *Prout* has the yellow patches white, as in *peregrina*, but the postdiscal and subapical of the forewing are not reduced. The yellow submarginal spots of the hindwing are fully developed. Buru. — **numana** *Cram.* (= *numenia* *Hb.*, *flavata* *Walk.*) (6 a) has the yellow markings ample, nearly always including one on the middle of the hindmargin of the forewing, which is only developed in ♀♀ of the preceding races. Ceram and Amboina. — ab. **arcuata** *Bastelb.* (6 a) is a ♂ with the yellow submarginal spots of the hindwing produced into long curved markings, especially posteriorly, whereas in typical ♂♂ they are smaller than in our figured ♀ of *numana*. Amboina, rare. — ab. **helenetta** *Walk.* is a ♀ with the yellow areas extended. Ceram. — **goramensis** *Bastelb.* (6 b) has the forewing similar to that of *numana*, but the postdiscal spots reduced as in *albipunctulata* or *peregrina*, the hindwing with an ample gold-yellow distal margin, recalling *snelleni*. Founded on 1 ♂ from Goram. — **snelleni** *Pagenst.* (= *latiflava* *Warr.*) (6 b) is recognizable at a glance by the shape of the distal markings of the forewing and especially by the very broad yellow border of the hindwing, which is occasionally even freer from black marking than in our figure, but often, on the contrary, has some irregular submarginal spots between the veins. Only known from the Kei Islands and Teoor; „New Guinea“, given for WARREN'S *latiflava*, is certainly an error in labelling. — **flavimargo** *Warr.* (6 b) is on an average rather smaller than *snelleni*, the white markings commonly more tringed with bluish, the yellow border of the hindwing less broad, generally more marked with black. Tenimber Islands. — **imperialis** *Warr.* (6 c) is a very remarkable form, with the wings wholly purple except for the broad orange band of the hindwing. Mefor Island, possibly a distinct species. — **schoutensis** *Joicey & Talb.*, from Biak, differs from *tentans* ab. *velata* (6 c) in having the white markings still further reduced: on the forewing only the central band is fully developed, though reduced subapical spots generally remain and sometimes vestiges of the intermediate ones: on the hindwing the white patch does not reach much, if at all, beyond the cell. — **tentans** *Walk.* is similar to *splendida* (6 b), but with a white central patch on the hindwing. Common on the Aru Islands, Mysol (the type locality), Waigeu, Ron Island, throughout New Guinea and on the D'Entrecasteaux. The yellow submarginal spots of the hindwing vary sexually and individually. In the ♂ they are sometimes entirely suppressed — ab. **velata** *Bastelb.* (6 c). The larva of *tentans* is bright ochreous-brown, with a pair of large black subdorsal spots on each segment anteriorly, much smaller ones behind them and black, white-centred lateral spots. — **subalbata** *Warr.* (6 d), from the Trobriand Islands, has the white markings in general more extended than in *tentans*, especially the subapical. — **translucida** *Montrz.*, from Woodlark, is dimorphic. The typical form differs very little from *subalbata*, but has the postdiscal spots generally ampler, the submarginal spots of the forewing commonly with some yellow admixture distally. — ab. **xanthora** *Prout* has all the normally white parts yellow, a remarkable throw-back towards *numana numana*: in the ♀ of this form, the yellow submarginal markings of both wings are often much broadened. — **combinata** *subsp. nov.* has the forewing still more like that of *subalbata*, in that the postdiscal spots are again reduced: all the white parts have a slight bluish tinge. The hindwing in both sexes has a yellow border, rather broader and brighter than that of *flavimargo*, with a broader black apical patch than in *snelleni* (6 b), the other subterminal black spots variable, but rarely obsolete. Louisiades, the type from Sudest. Ab. *xanthora* occurs together with the type form on St. Aignan. — **tyrianthina** *Bltr.* (= *thyriantina* *Pagenst.*) (6 c) from Duke of York Island, together with nearly all the forms from the Bismarcks and Solomons, has the front of the thorax much mixed with black, a peculiarity which otherwise is found only on *schoutensis* and sometimes on extreme forms of *tentans* ab. *velata*. *tyrianthina* differs from *schoutensis* in wanting the large black spot behind the cell of the hindwing. Occurs also on New Britain and Rook Island and specimens from the Admiralty Islands scarcely differ. — **fulvilauta** *Warr.* (6 d) has the white patch of the hindwing predominantly or entirely yellow, its orange subterminal spots generally much broadened. New Hanover. — **niepelti** *Strand* differs little from *fulvilauta*, but the orange subterminal spots form a still broader, less interrupted band: the central patch may be either white or yellow. New Ireland. — **semifulva** *Warr.* has the orange subterminal spots more normal, the central patch white anteriorly, yellow posteriorly, the blackish spot behind the cell (as in the *tentans* group) reappearing, especially in the ♂♂. Bougainville. — **turbatrix** *Prout* is a much darker form, intermediate between *tyrianthina* and *schoutensis*: the black spot behind the cell of the hindwing is developed. Choiseul. Similar forms occur

*floridensis*. on Vella Lavella. — **floridensis** Prout, founded on the only example from Florida Island yet known to me, is probably a mere aberration of the preceding; it lacks the spot behind the cell of the hindwing. The only specimen *splendida*. from Kulambangra (Mus. Tring) is similar. — **splendida** Bastell. (6 b) is easily recognizable from the figure, *magnifica*. and is confined to N. Queensland. — **magnifica** Swinh. (6 b) differs from *splendida* in the ampler orange spots of the hindwing and has the white spots mostly clearer, less suffused with blue. The Tring Museum has it from *fenestrata*. Mackay, „Brisbane district“ and Mount Dryander. — **fenestrata** Swains. (= *velitaris* Guen.) looks so different from the other Australian forms that I suspect it may be a separate species. On both wings the whitish patches proximally and distally to the cell-spot are much extended, behind the cell broadly confluent; the subterminal *chalybeata*. spots are narrow, rather differently placed. North Australia: Eureka, Port Darwin, etc. — **chalybeata** Btlr. (6 b) from Cape York, is a slight modification of *fenestrata*, with the pale patches not quite so extended, the cell-mark of the hindwing small, its orange subterminal band reduced.

*hyperedys*. **D. hyperedys** Prout represents the preceding group on S. Christoval but is very distinct. Thorax above mostly black; abdomen yellow, not dark-belted; the white spot at middle of hindmargin of forewing and the white patch of hindwing as ample as in *cyane* (6 c), the subterminal spots confluent into a sinuous band from the 1st subcostal to the hindmargin.

*endoleuca*. **D. endoleuca** Prout. Smaller than *cyane* (6 c), the thorax in front yellow, as in *tentans*. Forewing with the costal margin rather more rounded than in *cyane*, the pale markings somewhat as in *leucophorata* (6 a) but all white, the proximal streak rather broad. Hindwing nearly as in *cyane*, but with the orange markings nearer to the margin. Snow Mountains, Dutch New Guinea also from Waigeu; only the ♀ known.

*cyane*. **D. cyane** Cram. (= *spectabilis* Walk.) (6 c) is one of the largest species and cannot be mistaken for any other. I only know it from the South Moluccas, and suspect that other records are based on error.

**D. pilosa** was named from the rough orange hair on the ♂ abdomen and is the only *Dysphania* which *pilosa*. can compete with *cyane* in point of size. — **pilosa** Btlr. (6 e) has the pale markings almost entirely suppressed *flavicornis*. in the ♂ and often even in the ♀. Shortlands (type) and Bougainville. — **flavicornis** Warr. Abdomen generally less blackened above. Both sexes with broader orange markings on the hindwing, the ♀ also on both wings with distinct whitish markings, approximately corresponding to those of *cyane*, but more variable, generally *gloriosa*. more restricted or interrupted. Choiseul. — **gloriosa** Prout is a very large and extremely handsome form, or closely related species, both sexes with a clear white band (broadest on the ♀) in and behind the end of the cell and the orange markings of the hindwing still further developed. Abdomen as in *pilosa*. Vella Lavella. *regnatix*. — **regnatix** Warr. has also white central bands, at least in the ♀, but much narrower than those of *gloriosa*, the *imperatrix*. orange markings not more developed than in *pilosa*. Kulambangra (type ♀) and Ranonga (1 ♀). — **imperatrix** Warr., founded on a ♀ from Ysabel, is probably a mere aberration of *flavicornis*, intermediate between the *submutata*. normal forms and *regnatix*. — **submutata** subsp. nov., from Guadalcanar, reverts to a form very similar to name-typical *pilosa*, but has fragmentary white markings even in the ♂ (at least a spot in the end of each cell) and commonly develops an orange spot in the abdominal area of the hindwing 2 or 3 mm proximal to the submarginal band. Abdomen on an average with more extended orange, pectus often with some orange admixture 5 ♂♂ and 5 ♀♀ in Mus. Tring.

**D. poeyii** is a very variable species, especially in the ♀, and is somewhat difficult to arrange satisfactorily, inasmuch as the variation is partly individual and partly racial. The body is similar to that of *pilosa* and the wings have also the same deep purple colour. The ♂♂ and some ♀ forms have merely a white or yellow band on the forewing, proximal to the middle. The ♀♀ have commonly much more extended white and yellow markings. It is chiefly an island species but has also been taken in some numbers in Dutch New Guinea. — *cyanoptera*. **cyanoptera** Pagenst. (7 f, as *remota*) is the correct name for the race from the North Moluccas, with the band white, generally very narrow, often interrupted at the median vein, though the type specimen, from Batjan, *confluens*. was not at all extreme. — **confluens** Warr., from Obi, has the band broader, nearly always white, but in one example in the Tring Museum yellow. The ♀, as also that of *cyanoptera*, has often an incomplete orange band *binotata*. on the hindwing. — **binotata** Walk. (= *auristriga* Warr.) (7 f), from Ceram, has the band moderate, nearly always *luteopicta*. yellow. In WALKER'S type (a ♀) it is slightly interrupted, in WARREN'S (a ♂) continuous. — ♀-ab. **luteopicta** Walk., also from Ceram, has the yellow considerably increased, including a distal band on the hindwing. — *kühni*. **kühni** Pagenst., from Aru, was founded on the ♀, which (so far as my experience goes) differs almost constantly from f. *bicolor* in having the yellow outer band of the hindwing interrupted or much weakened in cellule 3. Forms without this band — similar to the ♂ — do also occur. Aru ♂♂ are quite similar to *confluens*; the white *decoloratula*. band, however is more often prolonged posteriorly. — ab. **decoloratula** Strand, given as doubtfully from *remota*. Key, but probably from Aru, is like *kühni* with an additional dirty-white spot present near the base of the *remota*. forewing. — **remota** Walk. is another race with the band in the ♂ narrow (though not so extreme as in *cyan-* *bicolor*. *optera*), white, occasionally yellow. — **bicolor** Warr. (7 f, as *kühni*) is the ♀ to *remota* and is recognizable by the extension of the white markings and the presence on the hindwing of a white or yellow spot in the *poeyii*. cell and an uninterrupted yellow distal band. — **poeyii** Guer., from Waigeu, is very variable in both sexes.

The name-typical ♂ is a rare form, with the markings creamy whitish, the band of the forewing irregularly broadened, a small white spot present in the cell of the hindwing and 3 very small, isolated outer spots representing the band. — ab. **mars** *Bsd.* is said to have the „forewing with a point and some bands white, hindwing base with a white spot, a more or less obsolete luteous outer band“. — ♂-ab. **albimacula** *Th.-Mieg* differs from typical *poeyii* in lacking the 3 outer spots of the hindwing. Thus it resembles ab. *bernsteinii* except in colour. — ab. **auctata** *Th.-Mieg* (7 f) is in the ♂ almost identical with broad-banded *confluens* ♂♂. Occasional ♀♀ which THIERRY-MIEG refers here have in addition 3 very vague white spots 11 mm from the apex (vestiges of the half-band of *bicolor* and *kühnii*). — ♂-ab. **bernsteinii** *Feld.* has the band of the forewing yellow, often continued behind the 2nd submedian, the outer spots usually present, the hindwing with a yellow spot in the cell. A remnant of the outer band of the hindwing persists on the underside only. — ab. **auriplena** *Th.-Mieg* has the markings yellow, as in *bernsteinii*, but more extended, especially in the ♀, which may be likened to a yellow-marked *bicolor*. In the ♂ the outer band of the hindwing is narrower, more or less interrupted at the veins. — ♀-ab. **agorius** *Bsd.* (6 c) is a rare form, with the yellow markings so greatly extended and confluent as to give the impression of a distinct species. — All the above forms were described from Waigeu, but the similar New Guinea forms do not require separate names. As the specimen standing in BASTELBERGER'S collection as *poeyii* (6 e) does not correspond to any of them, I name it **bastelbergeri** *ab. nov.* (6 e, as *poeyi*) Transitional between the more simply marked forms and *bicolor*, the band of the forewing being small and white, the yellow band of the hindwing present, but short and narrow. — ab. **flavifrons** *Strand* has the white central band of the forewing continued (bent proximad) behind the submedian vein, the yellow band of the hindwing represented by 3 isolated spots. I have seen a ♀ from Humboldt Bay.

**D. centralis** *Rothsch.* is related to *poeyii*, but has on the forewing only a short, bluish-white spot in the end of the cell and generally a more distally placed dot or spot (variable), detached from it, in cellule 3. The hindwing is very distinct in having a large, irregularly-shaped central orange patch, containing the narrow black cell-spot. British New Guinea (type) and Sariba Island.

**D. andamana** *Moore* (7 a) is recognized at once by the broad yellow proximal band of the forewing. — ab. **quadriplagiata** *Bastelb.* forms the transition to the following aberration, the yellow half-band of the latter being indicated by 2 isolated yellow spots. — ab. **transgressa** *Bastelb.* (7 a). Hindwing with the subcostal yellow marking above and beneath extended and distally running out, irregularly bandwise, into the middle of the wing. This species is confined to the Andamans.

**D. bellona** *Walk.* (= *ludifica* *Swinh.*) (6 f) is the first of a group of species with the *militaris* type of proximal markings and of coloration. It is characterized by the very broad and scarcely interrupted blackish border of the hindwing. Burma. — ab. **lunulata** *Btlr.* has the border of the hindwing more interrupted with yellow spots near its proximal margin. — **roepstorffi** *Moore* (= *caeruleoplaga* *Bastelb.*) (7 e) is a rather smaller race from the Andamans, generally rather deeper orange. Hindwing with a row of subconfluent blue-grey spots on the proximal part of the blackish border.

**D. andersonii** *Moore.* also from Burma (Mergui), is a very scarce species, differing from *bellona* in having the proximal markings reduced to isolated spots, in part obsolete, the cell-spot of the hindwing small, the white subapical band of the forewing wanting, etc.

**D. militaris** *L.* (= *abrupta* *Walk.*) (6 d). This well-known species is best distinguished from its nearest allies by its larger size, its large, roundish cell-spots, that of the hindwing not confluent with the one behind it, and by having the oblique antemedian half band of the forewing more macular and terminating in a rounded spot behind the base of the 2nd median vein. The moth flies slowly by day and is evidently distasteful to birds. The larva is yellow (not described in detail), the pupa pale brown, with conspicuous black, eye-like spots on the head. LINNE'S type was probably from S. China, but I do not think the forms from N. India (*abrupta* *Walk.*), need be separated. Forms from the Shan States, Siam and even N. Borneo, Java and Bali also agree well. — ab. **scyllea** *Swinh.* resembles the Hainan race, having no dark band on the thorax nor proximal band on either wing. „India“. — ab. **nigromarginata** *Bastelb.* (7 e) has the black terminal spots of the hindwing confluent from the apex nearly to the anal angle. — ab. **siamensis** *Bastelb.* (7 a) has also a rather well bordered hindwing, but has the band proximal to it nearly obsolete and the forewing almost as in the following. — **abnegata** *Prout* has the proximal markings slender, the abdomen not, or scarcely dark-belted. In particular the oblique streak from near the base of the hindmargin of the forewing is obsolete or vestigial. Hainan. — **selangora** *Swinh.* (7 a) has the proximal markings much further reduced, the cell-spot of the hindwing very small, or even absent. Malay Peninsula. Should perhaps be merged with the following. — **sagana** *Druce*, from Cochin China and Cambodia, has the proximal markings obsolete, cell-spot of hindwing extremely small, its apical and subterminal dark markings also reduced. — **isolata** *Warr.* (= *adempta* *Bastelb.*)

- is intermediate between *selangora* and typical *militaris*, the black markings being mostly present, but small.
- jessica*. It was described from Perak, but is commonest on Sumatra and is also recorded from Borneo. — *jessica* Swinh., described from the Nicobars but apparently also common on the Andamans, is possibly a separate species, as it is not only smaller but has also a slightly narrower forewing, etc. Proximal costal half-band of forewing less oblique, the rounded spot behind base of 2nd median wanting or punctiform, the mark near base of hindmargin enlarged.
- porphyroides*. **D. porphyroides** Prout, founded on a single ♂ from the Andamans, is a puzzling form, possibly an extraordinary aberration of the following species, but with the antemedian band narrower, more as in *subrepleta*, the terminal band of the hindwing macular throughout. Suffused all over with purple, showing only a couple of yellow dashes at the base of the forewing; the dark markings shadowy; 5 white outer spots of forewing clear, arranged almost as the first 5 of *alloïdes*, but with the last (in cellule 2) small.
- alloïdes*. **D. alloïdes** Prout (9 a). About the size of *jessica* and likewise rather narrow winged. Proximal markings broader than in either *militaris* or *subrepleta*, the anterior half-band more curved, ending in a knob behind the base of the 2nd median, as in *militaris*. White outer band characteristically formed, especially the narrow, very sinuous mark behind the 2nd median. Hindwing with cell-spot confluent with a posterior patch, as in *subrepleta*. As the genitalia are closely similar to those of *militaris*, it is just possible that this, and not *jessica*, represents that species on the Andamans. — ab. **lutescens** ab. nov. has the purple-black colouring entirely suppressed, the dark markings mostly only indicated in rather deeper orange, on the apical half of the forewing in olive-grey. 2 ♂♂ in Mus. Tring.
- subrepleta*. **D. subrepleta** is distinguishable from *militaris* by the shape of the proximal markings of the forewing and the band-like extension of the cell-spot of the hindwing. — **excubitor** Moore (6 e), described from Upper Tenasserim, but distributed from Sikkim to Siam, the Andamans and even Perak, Java and Bali, probably only in the mountains, is yellow rather than orange and has the black markings rather slender, the antemedian bands not meeting behind the 2nd median. — ab. **sodalis** Moore is a rare modification, with the black markings less slender, etc., but still with the antemedian band broken behind the 2nd median vein. — **semifracta** Prout *nias*. differs from *excubitor* in having the abdominal-marginal black spot of the hindwing reduced, not confluent with the cell-spot. Hainan. Some specimens from Siam are transitional. — **nias** Prout has the ground-colour yellow, not orange as in *subrepleta*. Nias and W. Sumatra. (Fort de Kock). Also, according to SEMPER, on the Philippines. — **subrepleta** Walk. (6 e), in its typical, deeply coloured forms, seems to be almost confined to Borneo and the Malayan Coast. On Sumatra there is some tendency to develop transitions towards the race *nias*, but I do not separate the Sumatran, considered in the aggregate, from the name-type.
- cancellata*. **D. cancellata** Bastelb. (6 f) is probably related to *prunicolor*, but has no yellow on the forewing, the proximal part of the hindwing scarcely yellowish, the fine lunulate yellow submarginal line conspicuous. N. Borneo: Kina Balu.
- prunicolor*. **D. prunicolor** Moore is rather smaller than *subrepleta*, the forewing in the ♂ narrowed, the hindwing in both sexes with the distal margin rather straight between the 2nd subcostal and the 3rd radial. The dark parts are less black, more purplish, than in *subrepleta*, the white and yellow parts much reduced, especially the yellow basal streaks of the forewing, which in the name-type are almost obsolete; the spot in the cell is white, not yellow. — ab. **bellissima** Moore has the white and yellow markings less extremely reduced. Ceylon. Larva green, with yellow lateral stripe; spiracles black-ringed; legs red-speckled. On Carallia. Pupa purple-brown.
- plena*. **D. plena** Walk. (= *manillaria* Guen., *balistaria* Guen.) has the ♂ hindwing nearly as strongly elongate and bent at the 3rd radial as in *longimacula* (6 f). Certainly related to that species, but somewhat intermediate towards *subrepleta* in that the proximal markings of the forewing are yellow, the black bands of the hindwing broad. Philippines, chiefly on Luzon, but reaching Mindoro. Larva green, with darker dorsal stripe, abdomen with a light greenish yellow lateral line on the abdomen; single blue dots between this and the dorsal stripe; spiracles dark-blue; legs brownish. Pupa brown.
- longimacula*. **D. longimacula** Semp. (6 f). Recognizable at once by the more extreme shape, reduction of the dark markings, absence of yellow from the forewing, etc. Palawan.
- latiplaga*. **D. latiplaga** Warr., from Celebes, somewhat resembles the two preceding, but has much broader black markings, including a complete border to the hindwing. The name-type has the spots on the forewing, and often on the proximal part of the hindwing, bluish white. — ab. **chrysostathes** Prout has the spots almost entirely bright yellow.
- contraria*. **D. contraria** Walk. (7 e), from Central and S. Celebes, differs from *latiplaga* in the arrangement of the markings. — **melleata** Warr. (7 d) is perhaps a yellow form of *contraria*. Chiefly from N. Celebes and Palos

Bay, but Dr. MARTIN took it in the Central Mountains with *contraria*.

**D. auroguttata** Warr. (6 d) rather recalls *translucida*, but the very narrow forewing and bent (at the 3rd radial) hindwing associate it with the present group. Markings white, excepting the submarginal spots of the hindwing; forewing with the spot in and behind the cell generally large, the others small; hindwing with a large proximal patch, often almost as in *discalis* (7 c). Sula Islands.

**D. discalis** Walk. (7 c) is scarcely variable and cannot be confused with any other species. Known from the Malay Peninsula, Sumatra and Borneo, the type only recorded as from the „East Indies“.

**D. minervaria** Guen. is a large and round-winged species with the forewing predominantly light blue-grey, the hindwing bright yellow. The locality of GUENÉE's type was unknown, but his description fits to specimens from Burma and Siam. — **pugnataria** Guen. (= *horsfieldi* Moore) (7 b), from Java, has in addition a yellow posterior and distal patch on the forewing. — **patula** Walk. (= *latigrisea* Prout) is smaller than the other forms and has the anterior part of the hindwing grey (concolorous with the forewing), this shade bounded by the median vein as far as the cell-spot, then by the 2nd radial and finally by the 2nd subcostal and containing beyond the postmedian spots a single yellow spot. WALKER's type was from Cambodia, mine from Penang, and as the form has been taken with *minervaria* in Siam (see TAMS, Journ. Nat. Hist. Soc. Siam, vol. 6, p. 275) it must be rather a species or a constant aberration.

**D. malayanus** Guér. is the first of a group of blue-grey species in which the yellow markings are still further restricted or altogether wanting. In the present species the ground-colour of the forewing cuts the black border at the veins. GUÉRIN's type, from Malacca is a rare form with a long, but narrow, yellow streak along the abdominal margin of the hindwing, but specimens from the Malay Peninsula in general have a more or less developed yellow patch on this margin near the anal angle and the same forms inhabit the Battak Mountains of N. E. Sumatra and occur as rare aberrations elsewhere: ab. **luteomaculata** Grünb. (7 b, as *recessa*). — **recessa** Walk. (= *proba* Btlr.) is the commoner form, entirely without yellow marking. Borneo (type), Palawan, parts of Sumatra and as an occasional aberration in the Malay Peninsula. BUTLER's ♀ allotype was said to be from Darjiling, but this requires confirmation. — ab. **supergressa** Warr. said to be from Borneo, (unless the locality be erroneous) unique for that country in that the yellow patch of the hindwing is as highly developed as in extreme examples from the Peninsula.

**D. palmyra** Stoll (= *transversa* Wall.) (7 b) not only lacks the yellow on the hindwing, but also on the anal end of the abdomen. The black border of the forewing is solid. STOLL's type was from Tranquebar, WALKER's from Ceylon, the best-known locality. Flies very slowly by day and is very tenacious of life. Larva yellow, the thorax black-spotted, the abdomen with bluish, black-dotted dorsal and lateral band. On *Carallia integerrima*. Pupa of within a rolled leaf; reddish, with 2 large black eye-spots in front, which show at the entry of the roll and present the terrifying appearance of the eyes of a small reptile.

**D. percota** Swinh. (7 b) differs from *palmyra* in the large black apical patch of the forewing. Distributed in western India from Bombay to Trevandrum. At Matheran it is abundant in cold weather, flying by day; very rare in the summer. LONGSTAFF („Butterfly Hunting“, p. 391) apparently regards it as a race of *palmyra* and this may well be correct.

**D. nelera** Swinh. Less large and broad than the two preceding and generally with a row of small yellow terminal spots (sometimes confluent) on the posterior part of the hindwing. Forewing relieved with whitish between the subterminal and terminal black bands; antemedian costal streak straight and not definitely macular. Local, but swarming on the tops of the mountains of Matheran and Khandalla for about a week every cold season. It flies by day and by night.

**D. azurea** Bastelb. (7 c), from the mountains of North Borneo, is said to differ from the following species in the more angled hindwing, less confluent antemedian bands of forewing, absence of spot of hindwing posteriorly to the discocellulars and reduction of the yellow spot. The description and figure also point to a bend in the anterior antemedian band which is not present in any specimen of *transducta* which I have seen.

**D. transducta** Walk. (= *doubledayi* Snell., *malayanus* Walk. nec Guér., *malayaria* Guen.) (6 f) is a variable species, less round-winged than *malayanus*, generally more bluish, the black border of the forewing generally narrower, never sharply cut by the ground-colour. WEYMER and BASTELBERGER separate *transducta* and *doubledayi* (both from Borneo, the former certainly and the latter probably from Sarawak), WEYMER stating that *transducta* is smaller and broader-winged. I am, however, unable to draw a line in the very ample series before me. More or less typical forms are found on Nias, the Batu and Mentawai Islands, Sumatra, Natuna Islands and Borneo. The yellow posterior patch on the hindwing is generally well developed, especially in

- the ♀. where it usually reappears as a small spot at the apex and is very commonly developed as a more or less continuous band, at least on the underside. — ♀-ab. **affluens** *Bastelb.* has this yellow band developed on the upperside also. Particularly prevalent on Nias, but occurs also on Sumatra, etc. — ♂-ab. **chrysocraspedata** *Warr.*, founded on a ♂ from N.S. Sumatra, is the corresponding; but much rarer, male form. — ♀-ab. **albescens** *Prout*, from Borneo, has the ground-colour much mixed with white. Hindwing border as in *affluens*. — ab. **nigrostriata** *Bastelb.* (7 e) is an extremely darkened aberration with the veins in part thickly blackened. Kina Balu. 1500 m, 1 ♂ (J. WATERSTRADT). Tring Museum has intermediates from the same collection. Examples from the mountains of North Borneo are in general deeply coloured and with the yellow spot reduced, especially in the ♂, but I have not named them separately, believing that *azurea* *Bastelb.* (described above) will prove available for them. — **auriplaga** *Warr.* has the yellow anal patch extended, often crossing in front of the outer black line, sometimes running narrowly along a great part of the abdominal margin. Perak, also from Langkavi and Mergui. Like the corresponding race *malayanus malayanus*, it is not quite constant. — **aurilimbata** *Moore* has the yellow on the hindwing still more extended, forming a broad distal border. Tenasserim, quite local. — **deflevata**. **deflavata** *Warr.* (= *paupera* *Th.-Mieg*, *sericata* *Bastelb.*) (6 f), from W. Sumatra, shows the opposite extreme, the yellow spot being entirely obsolete. WARREN and BASTELBERGER regard it as a separate species.
- D. interrupta** *Bastelb.* (7 d) and the three species which follow are distinguished by their red ground-colour, at least in the middle of the wings. *interrupta* is the reddest species. BASTELBERGER's type, from the Battak Mountains, N.E. Sumatra, lacks the central black submedian streak which generally characterizes the genus. — ab. **sumatrensis** *Fawcett* is the normal form, with this streak developed. Confined to the mountains of Sumatra.
- D. cuprina** *Feld.* (7 d, as *palestraria*). Less deep red, proximally becoming yellow, the maculation somewhat different, the white subterminal spots larger. Mountains of Java.
- D. palestraria** *Guen.* (9 b) has hitherto been supposed to represent a faded example of *cuprina*, with erroneous locality. Having, however, recently seen the type ♀, I observe some slight differences and give a figure of it in the hope that it may really represent a lost species from Timor, the reputed habitat. Rather less red than *cuprina*, much more uniform than *fruhstorferi*. Markings on the whole less zigzag, the antemedian of the forewing forming a streak rather than spot at its end behind the 2nd median, the streak in front of the 2nd submedian enlarged, the outer row of white spots less out of alignment, their distal extremity forming an almost regular curve. The distal margins of this unique specimen have been broken and patched up, and cannot be relied upon.
- D. fruhstorferi** *Röb.* (7 d). Proximal region still more extended yellow than in *cuprina*, especially the abdominal part of the hindwing, Black markings much broadened. W. and S. Java, in the mountains.
- D. flavidiscalis** *Warr.* is a rare species, or possibly an extreme form of *glaucescens* (7 c), though the hindwing appears still more elongate. Patagia yellower, wings mixed with white, the yellow part of the hindwing paler and much extended, reaching the 2nd radial and approaching the base of the wing. „Burma.“
- D. glaucescens** *Walk.* (= *regalis* *Btlr.*) (7 c) varies little, except in the depth of the colouring, and is recognizable by its shape and by the form of the cadmium-yellow patch. On the less hairy abdomen and less dilated hindtibia of the ♂, THIERRY-MIEG founded an unnecessary genus *Pareuschema*. Borneo (type), Perak, Malacca and Sumatra.
- D. ares** *Weym.* (= *lyra* *Druce*, *semiflava* *Warr.*) (7 c). Spots of forewing whiter, hindwing with cell-spot much extended, the yellow colour spread over a great part of the wing. Nias.
- D. electra** *Weym.* (= *antianira* *Druce*, *fannitta* *Swinh.*) (7 c). Hindwing throughout, forewing in proximal half, with the ground-colour entirely yellow. Nias, possibly an extraordinarily constant dimorph of the preceding.
- D. bivexillata** *Prout.* As small as *flavifusa*, rather narrower, similarly coloured or a little lighter, the forewing more definitely yellow proximally and distally to the cell-mark, the hindwing clearer yellow, with cell-spot rather less small, outer spots reduced, especially in cellules 3 and 4. Sumatra. Also from Perak.
- D. flavifusa** *Hmps.* Recognizable by the relatively short forewing and rounded hindwing, the blurred markings, small cell-dot of the hindwing, etc. Beneath with the yellow brighter, in the forewing considerably more extended than above.
- D. vilis** *Walk.* (= *limbata* *Moore*). Rather larger than *flavifusa*, forewing deeper purple, with the markings white, hindwing brighter yellow with a broad purple border, which is scarcely marked with yellow. Abdomen yellow in the ♂ densely clothed ventrally and laterally. Ceylon.

24. Genus: **Agoschema** Prout.

An apparently isolated genus, of uncertain affinities, evidently mimetic of some of the black-and-white *Craspe dosis* (*ovalis*-group). As it is certainly a day-flier, we have followed WARREN in placing it next to *Dysphania*, but it has little in common. Fovea wanting. Antenna in ♀ not pectinate. Frenulum in the ♀ apparently weak or wanting. Hindwing bluntly angled at the 3rd radial, 2nd subcostal stalked with 1st radial. Only one species.

**A. goniata** Warr. (9 b). Forewing blue-black, the white patch or band outside the cell variable *goniata*. in development. Hindwing less variable, the black border always moderately broad. Described from Dutch New Guinea, known also from Waigeu and British New Guinea.

25. Genus: **Oenochlora** Warr. (= *Euaestus* T. P. Luc.).

This and the following genera are nearly all more or less bright green in colouring, resembling leaves, in many cases with dead-leaf coloured markings. The genera from *Oenochlora* to *Ochrognesia*, with frenulum developed in both sexes, may be distinguished from the *Pingasa* group by the colouring, generally less robust build and smoother scaling, abdominal crests rarely developed, hindwing with 2nd subcostal often stalked with 1st radial. *Oenochlora* is unmistakable in shape and habitus, antenna long, in ♂ pectinate, hindtibia in ♂ with hair-pencil, forewing with the 1st subcostal anastomosing with the costal and rather strongly with the 2nd subcostal, hindwing with the 2nd subcostal not stalked.

**O. imperialis** Warr. (= *nobilitans* T. P. Luc.) (9 b). Very variable. The type form has few distinct *imperialis*. markings except the small cell-dots and the reddish or buff costal margin of the hindwing. Underside yellowish, with a red-purple submarginal band and narrowly whitish termen. — ab. **patrocinatus** T. P. Luc., which seems *patrocina-* to be commonest in the ♀, has a yellow, redringed spot between the 3rd radial and 1st median of the forewing *tus*. near their base, sometimes also a 2nd yellow spot and a large reddish blotch behind it. Queensland, from Cooktown to the Brisbane district; also from British New Guinea. — **majestica** Prout, from the Snow Mountains, *majestica*. Dutch New Guinea, has the costal border of the hindwing rather broad and bright, followed by a strong median line which thickens into a bright red spot anteriorly; forewing with the oblique red, black-mixed antemedian costal line stronger than in the other forms.

26. Genus: **Agathia** Guen.

A very beautiful genus, bright green with very characteristic shape and pattern. Palpus in the ♀ with 3rd joint strongly elongate. Antenna in both sexes simple. Hindtibia of ♂ generally dilated with hair-pencil. Abdomen slightly crested or smooth. Venation normal, 1st subcostal of forewing nearly always free, 2nd subcostal of hindwing not stalked. The ♂♂ of many species have on the forewing beneath a flap of long scales projecting forward from the median vein, partly covering a sort of fovea in the cell. The genus is chiefly Indo-Australian, reaching Fiji, but a few small species straggle into Africa.

**A. lycaenaria** was one of the first described species and shows some geographical variation. Forewing with the cell-flap rudimentary; the last red spot of postmedian series, except in *impar* ♂, placed on hindmargin well proximal to the hind angle; central blotches (postmedian on forewing, terminal on hindwing) generally large. — **impar** Prout, from Belgaum, has the markings slender in the ♂, but broad and confluent into bands *impar*. in the ♀, recalling the *asterias* group. We have not separated the examples from the Malay Peninsula. — **lycaenaria** *lycaenaria*. Koll. (= *albiangularia* H.-Sch., *discriminata* Walk.) (vol. 4, pl. 1 h), from N. India, is pretty constant, except that the markings of the ♀ are slightly broader and more confluent. From Upper Burma, Hainan, Hong Kong and Formosa come ♀♀ with the spots slightly further enlarged. — **luzonensis** Prout. Markings in both sexes broken *luzonensis*. into spots, the central postmedian spot of the forewing reduced, bipartite. Philippines. — **par** Prout. Sexes *par*. alike, ♂ with the costal margin more broadly flesh-colour than in the other ♂♂; spots rather small, the postmedian placed nearer to the distal margin than in the other forms. Celebes. Possibly a separate species. — **hedra** Prout. Forewing in ♂ nearly as in *impar*, the central postmedian spot rarely quite so small, that at hind- *hedra*. margin less abnormally placed, the triangular terminal marks at the 2nd et 3rd radials reduced, the former almost or quite wanting; hindwing nearly as in *impar*. ♀ near that of *luzonensis*, or intermediate towards *lycaenaria*. Queensland. Forms from Java and the lesser Sunda Islands can also be referred here, though westward the ♀♀ begin more to approach typical *lycaenaria*. Some Queensland larvae in the Tring Museum (F. P. DODD)

are of moderate thickness, almost uniformly cylindrical, the head bilobed, the prothorax projecting slightly over it and bearing on each side a small and not very sharp triangular prominence anteriorly; yellow-brown, mottled or streaked with reddish, appearing to the naked eye uniform in colour.

- intercissa.* **A. intercissa** *Walk.*, (9 e) from Ceylon, is the smallest Indian species and further differs from the forms of *lycaenaria* with narrow or macular markings in the more regular postmedian band of the forewing (not enlarged in the middle), the feeble white mark before the tail of the hindwing and other details. Structure similar. Known also from Travancore.
- distributa.* **A. distributa** *T. P. Luc.* (= *diseonneeta* *Warr.*) (9 c) also agrees in structure with *lycaenaria* and it may possibly be, as TURNER believes, that we have to do with a single polymorphic species. Differs chiefly from *hedra* in the reduction of the postmedian line to short streaks or pairs of dots, the green ground-colour being, consequently interposed between the weak white spot which bounds the tail of the hindwing and the dash at the 3rd radial and 1st median. Abdomen dorsally green to behind middle. Queensland. — **papuensis** *subsp. nov.* has the spots on an average slightly less small and seems to differ constantly in that the postmedian dot on the abdominal margin of the hindwing is placed nearer to the anal angle, being 2 mm distant in *papuensis*, 3 mm in *distributa*. British New Guinea, from the coast up to 2500 feet in the Hydrographer Mountains; also from St. Aignan. The type is in the Tring Museum, ♂ from Milne Bay. — **aquilonis** *subsp. nov.* Spots again a little larger, especially in the ♀, where they are much redder than in the ♂; underside sharply marked. Manus, Admiralty Islands, 4 pairs in Tring Museum.
- sinuifascia.* **A. sinuifascia** *sp. nov.* Expanse 36—38 mm. Closely similar to *distributa*, perhaps another subspecies, in spite of the different postmedian line. Markings red in both sexes, though somewhat brighter in the ♀, quite narrow (especially in the ♂) but confluent into slender sinuous bands, the postmedian of the forewing running in an outwardly convex curve from a spot in cellule 3 to the extremity of the 2nd median, the postmedian of the hindwing joined to termen by a streak along the 3rd radial, the terminal spot between this streak and the broader one at the 1st median green proximally and white distally. New Hanover, February-March 1923, 2 pairs in Tring Museum.
- asterias.* **A. asterias** is geographically as well as sexually variable. Structure about as in *lycaenaria* and *distributa*. Markings more extended than in *distributa*, subapical band of forewing not or scarcely interrupted, running to the distal, not to the hind margin. Abdominal margin of hindwing reddened. Abdomen dorsally predominantly red-brown. Markings in the ♂ much darker than in the ♀, in most forms narrower. — **asterias** *Meyr.* Expanse 32—38 mm, very rarely attaining the latter measurement. Bands on an average narrow, especially in the ♂, rarely very strongly swollen into spots. Queensland. — **diversilinea** *Warr.* (9 b) Generally much larger (42—48 mm) but very variable in size. ♂ otherwise similar to *asterias*, ♀ with the markings much broader, alternately swollen and constricted. Described from Fergusson Island, but distributed in British New Guinea, the *ampla*. D'Entrecasteaux, Louisiades and Trobriands. — **ampla** *Prout.* As large as the preceding, or still larger; markings further broadened, especially in the ♂, the subapical and terminal bands of the forewing connected or almost connected along the 3rd radial, enclosing a large round green spot between this and the 1st median. Dutch New Guinea: Arfak Mountains, Wandammens, etc.; Ceram. In the Snow Mountains transitional towards *diversilinea*. — **irregularis** *Prout.* 39—42 mm. Both sexes with abdomen partly green, the mediodorsal stripe remaining reddish. Central band of forewing moderately broad, its swellings strong; subapical band threadlike between the 2nd and 3rd radials, then suddenly widened into a blotch which is broadly confluent with the narrow, irregular terminal band. Hindwing with the narrow marginal band swollen into a conspicuous spot near the anal angle. Key Islands. — **pisina** *Btlr.* (9 e) represents *asterias* on the Solomons, but may possibly be a separate species. The 3rd joint of the ♀ palpus is perhaps slightly longer. Spots generally enlarged, but in the ♂ not, in the ♀ scarcely, consolidated into bands as in *a. ampla*, the yellow at their edges more developed. White spot at tail of hindwing oval or roundish rather than linear. Both sexes on an average rather less dark.
- dimota.* — **dimota** *Prout*, from Fiji, is only known from a single ♀, similar to *pisina*; possibly further material will prove it synonymous. Forewing with basal patch broadening anteriorly, central band broken into 3 large, well separated spots, the central one prolonged distad, the posterior one trilobed; subapical band interrupted between the 2nd and 3rd radials.
- albicurvatura.* **A. albicurvatura** *Prout* is a rather small species, with the thorax predominantly green, the abdomen predominantly reddish, the bands reddish, very narrow, especially on the forewing, where the inner is pretty straight, attenuated or interrupted at both folds, the postmedian gently curved, in its posterior half confluent with the termen, a slender and gently curved white line bounding it proximally. On the hindwing a corresponding white line bounds the postmedian band but is straightish, in its posterior half crenulate. ♂ hindtibia with dense light-brown pencil of hair. Celebes: Dongala, S. of Palos Bay.
- furtiva.* **A. furtiva** *Prout.* Similar to *albicurvatura*, on an average rather less small. Bands of forewing more interrupted, broadening between the interruptions, the postmedian joining the terminal more steeply, so that

there in no regular curve of the whitish line. Band of hindwing slightly narrower than in *albicurvatura*, a larger hooked mark on abdominal margin 3 or 4 mm from anal angle. Dammer Island (loc. typ.) and Tenimber, also a race (?) from Java.

**A. eromena** Prout. Larger (42—44 mm), closer to *asterias*, of which it may even prove a race. Abdomen *eromena*. above with less green admixture than in that species, the crests better developed, blackish. Forewing with the costal margin purplish to nearer the base, median band very narrow, sometimes evanescent, postmedian not edged with yellow proximally. S. Celebes. — **cara** Prout (? = *carissima* Semp., nec Btlr.) (9 d) is rather smaller *cara*. and is still nearer to *asterias*, in that the borders are yellow-edged proximally, the green subapical patch of forewing crosses the 3rd radial, which is not the case in *eromena*. ♀ closely like a small *asterias diversilinea*. Philippines.

**A. maculimargo** Prout. Larger than *distributa* (9 b), the postmedian spot, especially of the hindwing, *maculimargo*. further from the termen, the red spot on the tail of the hindwing not accompanied proximally by white. Structure as in *lycaenidia*, of which it may be an extreme race. ♀ with the spots much larger, redder, connected into irregular bands. Amboina (type) and Little Key; Ceram.

**A. lycaenidia** Bastelb. (9 a). Cell-flap beneath forewing beginning to develop. Colour-dimorphism *lycaenidia*. as in *distributa*. Spots more as in *lycaenaria*, the costal ones in the ♂ larger, more triangular. As in *distributa* and *asterias*, the last postmedian spot of the forewing is placed at the tornus, not at the hindmargin. Bismarek Archipelago. Unless the slight distinction in the cell-flap be tenable, this may well be a race of *asterias* with the outer spots more isolated, the central one of the forewing in the ♂, on the other hand relatively broadened, the ♂ abdomen predominantly green above. A single ♂ from Misol is virtually identical with a Vulcan Island aberration of *lycaenidia* in which the central outer spot is narrowed. On New Hanover, *lycaenidia* and *sinuifascia* were collected together, entirely without transitions. — **batjanensis** *subsp. nov.* Postmedian of hindwing *batjanensis*. more proximally placed, leaving room for an extended green area between it and an enlarged tailspot which runs inward on the 3rd radial. Batjan, 1 ♂, from the OBERTHÜR collection.

**A. subcarnea** Warr. (= *pisina* part. Swinh., Prout olim, nec Btlr.) (9 a). ♂ with the borders deep *subcarnea*. red, rather broad and even, forewing beneath with some reddish suffusion. Hindtibia with hair-pencil and terminal process. ♀ similar to an overgrown *asterias*, with broad borders and little-swollen band. Trobriands (loc. typ.), New Guinea, D'Entrecasteaux, Vulcan and Dampier Islands.

**A. conjunctiva** Warr. is known in the ♀ only and will almost certainly prove to be a ♀-dimorph of *conjunctiva*. some known species, probably *asterias diversilinea* (9 b) or *prasinaspis* (9 e). Markings very broad, central band more oblique than in the allied forms, coalescing with the terminal band behind — or even in front of — the submedian vein. Upper Aroa River, British New Guinea. Also from other New Guinea localities as far as Mount Goliath, and from Fergusson Island.

**A. prasinaspis** Meyr. (= *vencranda* Swinh.) (9 e) is a fine large species, in the ♂ closely like the following *prasinaspis*. except in size, the two being unique in *Agathia* in having lost the 1st band. — ♀ very much like that of *asterias* but larger, the markings rather broader and more regular, the green subapical spot ending at the 3rd radial, only followed by an isolated dot in cellule 3. Founded on a ♂ from Port Moresby. Distributed throughout New Guinea, Fergusson, Rossel and Sudest Islands, N. Australia and Queensland, the Australian forms being smaller than the New Guinea. — **albipunctulata** Bastelb. (9 c), founded on a ♀, is distinguished in that sex *albipunctulata*. by having more jagged markings and on the hindwing an additional (small) white spot in cellule 2. ♂ quite like that of *prasinaspis* in its large New Guinea forms except that the proximal edge of the subapical half-band is nearly always crenulate, not smooth. Bismarek Archipelago.

**A. laetata** F. (= *catenaria* Walk.) was described as from the „East Indies“ without further detail, *laetata*. but according to AURIVILLIUS (Ent. Tidskr. Vol. 18, p. 165) belongs to the species which has been generally known by that name and doubtless represents the southern race (Bombay to S. India and Ceylon); *zonaria* Donovan seems to be a further synonym, but was reputed to come from „China“. The ♂ has the borders rather narrow and purple, while in the ♀ they become materially broader, lighter and more reddish. The larva and pupa have been described and figured from Ceylon. Larva green, with dorsal prominences on the prothorax and 8th (?) abdominal somite. On Nerium oleander. Pupa yellowish green above, green below, the abdomen black-speckled. — **isogyna** Prout (9 c). Border still deeper purple, its proximal edge on the forewing less curved *isogyna*. or bent. Both sexes nearly like *prasinaspis* ♂, the subapical green spot differently shaped. Khasis; rather common. Also from Malay Peninsula, Java, Sumatra and Formosa. — **andamanensis** *subsp. nov.* has the border *andamanensis*. somewhat broadened, on hindwing more deeply indented proximally, the proximal costal spot of the forewing broadened. Type: a ♂ ex coll. SWINHÖE.

- gemma*. **A. gemma** Swinh. (9 c) cannot be mistaken for any other species excepting *magnifica* Moore, to which HAMPSON has sunk it! Hindtibia of ♂ not dilated. The ♀ has the markings much ampler, redder, margined with bright yellow. Best known from the Khasis, but has also been taken in the Nagas and perhaps at Darjiling (coll. LIDDERDALE).
- magnifica*. **A. magnifica** Moore, (9 c) from Ceylon, is a rather large species, similar to *gemma* (9 c), but has the ♂ hindtibia strongly dilated, with hair-pencil and short terminal process. Cell-flap, as also in *gemma*, well developed. Lines of forewing more sinuous. The markings of the ♀ are shaped as in the ♂ but much broader; dull purplish, not reddish as in *gemma*.
- succedanea*. **A. succedanea** Warr. (9 d) is somewhat larger than *magnifica*, the hair-pencil dense, partly dark-coloured. Markings more nearly as in *gemma*, but less slender, the subterminal band of forewing confluent in posterior half with a narrow terminal one. Sexual dimorphism much as in *gemma*. Common on Mount Kinabalu, the type locality. Also known from Gunong Ijau, Perak; Korintji, S.W. Sumatra (PRATT brothers).
- angustilimes*. **A. angustilimes** Prout (9 d). Distinguishable from the 3 following by the narrower markings, rather less oblique central band, etc. Hindtibia of ♂ slender, without pencil. The figured ♀ was bred at Pusa (Bihar) from leaves of Karanda, and is undersized but otherwise typical. The species also occurs in the Nilgiris.
- antitheta*. **A. antitheta** sp. n. (9 d). Exceedingly similar to *quinaria* (9 d), rather less vividly coloured, the dark borders a little narrower and more unicolorous, that of the forewing nearly always (in *quinaria* very rarely) containing a green spot in cellule 3, the proximal edge of this border less sinuous. Abdomen without the green spot. Structure as in *angustilimes*, the hindtibia being undilated. Sikkim, 1300—2000 feet, 10 ♂♂ in the Tring Museum; also from the Khasis.
- carissima*. **A. carissima** Btlr. (= *lacunaria* Hedem.) belongs chiefly to the Palaearctic Region and has been dealt with in Vol. 4 and figured on Pl. 1 h of that volume. It reaches, however, to the borders of the Indo-Australian Region in West China and possibly enters Tibet. The hindtibia of the ♂ is not dilated. The cell-flap is developed, though not quite so strongly as in the following group. — **prasina** Swinh., not *hilarata* (to which *prasina* was formerly sunk in error) is the Khasi race of *carissima*, differing in the more deeply coloured borders, that of the hindwing containing much more minute green spots towards the anal angle.
- hilarata*. **A. hilarata** Guen. (9 d) was founded on a damaged ♂ of uncertain origin (merely given as from „Central India?“) and it is impossible to say with complete certitude which race it represents, or even whether it is the species which I have named *antitheta*. But I am fairly confident, from OBERTHÜR'S figure of the type, that it represents the N. W. Indian forms of the species whereof I have hitherto regarded *hainanensis* and *latilimes* as races. The hindtibia of the ♂ is moderately dilated, with a hair-pencil but without pronounced terminal process. Hindwing rarely with the green spot near anal angle which is developed in *angustilimes*. Smaller than *antitheta*, without subterminal green spot in cellule 3, the slender central band less extremely oblique posteriorly. — **hainanensis** Prout is more like *angustilimes* in the narrowed markings of the ♂ and the posteriorly less oblique central band, but has the leg-structure of *hilarata*. ♀ little different from that of *hilarata*, the markings perhaps lighter, brighter reddish. Abdomen in both sexes predominantly green above.
- latilimes*. Hainan and Hong Kong. — **latilimes** Prout. Borders broader than in *hilarata*, at least 1 mm wide at the narrowest point on each side of the subapical green patch of the forewing and at hindmargin, at least 2 mm wide proximally to the green patch of hindwing. Forewing without subterminal white spot in cellule 3. The hindtibial hair-pencil may be a little stronger. Described from Java, but now known also from Sumatra, the
- largita*. Malay Peninsula and Borneo. — ab. (?) **largita** ab. nov. has the borders about twice as broad. Kinabalu, 2 ♂♂ from the OBERTHÜR collection, taken with 2 of normal *latilimes*. Possibly a separate species.
- quinaria*. **A. quinaria** Moore (9 e) is possibly another race of *hilarata*, larger, with the borders nearly as broad as in *latilimes* but more variegated, that of the forewing having a light brown admixture behind the middle and being moreover more sinuous at its proximal edge. Central band markedly sinuous, and with a characteristic widening anteriorly. Abdomen with a green spot on the 2nd tergite. Sikkim and Assam. Korintji, S. W. Sumatra (PRATT brothers). — **siren** subsp. nov. (9 e) may be regarded provisionally as a race of *quinaria* as it agrees in the hindleg structure. Superficially almost exactly like an overgrown ♀ *carissima*, though the central band conserves the anterior widening of *quinaria*. Tibet: Vriantong, type and another ♂ in my collection; Tse-kou, 2 ♂♂ in the OBERTHÜR collection, now in the British Museum.
- diplochorda*. **A. diplochorda** Prout. Cell-flap and tibial pencil well developed. First band reduced to a line, slightly bent outward in middle. Submarginal band of forewing reddish, bordered with yellow, nowhere touching the distal margin, anteriorly forming a single, sinuous line, from the 3rd radial hindwards divaricating, continuing double also throughout the greater part of the hindwing. N. Borneo: Kinabalu.
- tetraplochorda*. **A. tetraplochorda** sp. n. (9 e). Close to *diplochorda*. Forewing with central band double, as in *gemma*, but less slender, the pale dividing-line broader; postmedian double throughout; a posterior yellow shade between

this and the terminal line, which is complete, with slight projections. Hindwing with subterminal double throughout, the proximal one broad; a rather large white spot before the tail. S. W. Sumatra: N. Korintji Valley, 5000 feet (C. F. & J. PRATT), 2 ♂♂ in coll. JOICEY.

**A. arcuata** Moore (9 e). Cell-flap and tibial pencil developed. Borders always very broad, the slender proximal band of forewing confluent therewith from the fold. Assam, Ceylon, Shan States, Siam, Hainan, Java and Borneo, varying very little. *arcuata.*

**A. visenda** Btlr. (9 e). Structure of preceding. Larger than *hemithearia* (9 e) the distal borders pretty similar, the central band of forewing strongly oblique outward posteriorly and with a short prong on the anterior part of the 3rd discocellular. Darjeeling, only the type ♂ known to me. — **gaudens** subsp. nov. Borders less dark, with the green ground-colour protruding rather more deeply before the middle (though not as in *hemithearia*), central band less expanded near costa, submarginal white-green spot between the median branches wanting. Khasis, 3 ♂♂ in the Tring Museum. *visenda.* *gaudens.*

**A. rubrilineata** Warr. (9 e) differs from *gaudens* in its straighter central band, absence of deep outward projection of the green ground-colour into the purple-red border, white (not yellow) edging to the border and dots on it, etc. Borneo (type), Java and Sumatra. — The ♀, described from Java by SWINH OE as a separate species, **aequisecta** Swinh., differs little from the ♂, though its borders are — as usual in this sex — rather broad and mixed with orange-red. *rubri-* *tineata.* *aequisecta.*

**A. ithearia** Swinh., founded on 1 ♀ from Sarawak (erroneously described as ♂) is highly probably a unique aberration of *rubrilineata* (9 e), but as the respect in which it chiefly deviates (the evenly curved, not dentate, proximal edge of the band of the hindwing) is not one in which individual variation is usual, we leave it provisionally as a species. The reddish outer band of the underside is well separated from the distal margin almost throughout. *ithearia.*

**A. hemithearia** Guen. (9 e) most nearly resembles a smaller *visenda* Btlr. and shows similar ♂ characters, but is easily recognizable from our figure. Thorax and abdomen above spotted with green. India (type), Ceylon, Hainan and Formosa. *hemithe-* *ria.*

**A. beata** Btlr. (9 f) differs from all the preceding in having the green ground-colour irrorated with purple-brown, as well as in the shape of the borders. ♂ hindtibial pencil slender. Cell-flap well developed. North India and Ceylon. *beata.*

**A. kühni** Warr. (9 f) was described from the ♂, which has the cell-flap rather small, the hindtibia with pencil and terminal process, the tail at the 3rd radial of the hindwing rather long, the broad and very irregular purple-grey borders distinctive. — **brabanti** Th.-Mieg (9 f) is the normal ♀-form, with the green ground-colour reduced to a few small patches and spots, the purplish parts lighter than in the ♂. — ♀-ab. **defecta** Prout has the green on the forewing still further reduced, the patch just outside the cell being absent, while the proximal one is narrowed anteriorly. — *kühni* was described from the Key Islands, but is known also from New Guinea. *kühni.* *brabanti.* *defecta.*

**A. obnubilata** is of a paler green than any of the preceding, with the markings more olive-grey, recalling the coloration of *Helicopage*. Cell-flap rudimentary, hindtibia of ♂ with strong pencil and terminal process. There seem to be at least four races. — **obnubilata** Warr. (9 f), from British and Dutch New Guinea, the type from the Upper Aroa River, has the central band of the forewing confluent with the broad distal dark area behind the submedian vein. — **libera** Prout, from New Hanover, has the dark markings rather less tinged with brown, the border nearly as ample as in *obnubilata* but with the green postdiscal band continuing narrowly to the hindmargin. — **olivacea** Warr., from Choiseul and Vella Lavella, has this green area more extended than in *libera* and the borders less blackish. — **ochrofusa** Turn., from N. Queensland (Herberton and Kuranda), has the dark markings strongly mixed with ochreous, still further reduced, forming 2 irregular bands, which are separated by a green space of about twice their average width. *obnubilata.* *libera.* *olivacea.* *ochrofusa.*

**A. obsoleta** Warr. (9 f). Similarly coloured to the preceding, also agreeing in essential structure. Distinguished by the obsolescence of the central band, etc. Java (type); also from Sumatra and Borneo; Mindanao. *obsoleta.*

**A. codina** Swinh. (9 f). Ground-colour a little brighter than in the 2 preceding species, similarly irrorated. Very distinct in shape. Fairly common in the Khasis. — **australis** Prout, from the Malay Peninsula, Sumatra and Borneo (the type from Penang), differs little, but is appreciably smaller, the dark parts more purplish, in the distal area beneath broadened, the postmedian line of the hindwing more acutely angled. *codina.* *australis.*

**A. diversiformis** Warr. (9 f). Much like *obnubilata* in markings, the ♀ especially so, but very distinct in shape, the central tail of the hindwing being reduced to a small tooth. The dark parts in the ♂ more brown. Basal patch of forewing shaped as in *codina*, in the ♂ blackish, in the ♀ more brown. Hindwing with distal margin much darkened from the 1st radial to the anal angle and with a brown spot on abdominal margin midway between *diversi-* *formis.*

the basal patch and the very broad brown outer band. Darjeeling (loc. typ.), Assam, Hainan and Formosa; rare.

- gigantea*. **A. gigantea** Bthr. (= *discisticta* Prout). ♀ closely similar to *diversiformis* (9 f) but with the tail at the 3rd radial of the hindwing slightly better developed, the markings ochreous-brown, not grey-brown, the distal bands not quite so extended, not (as in *diversiformis*) confluent with central band at hindmargin of forewing. Basal patch of forewing in both sexes smaller, less oblique-edged. The ♂, which I described as a separate species, is very dissimilar, recalling a large, very darkly marked *laqueifera* (9 h), but with a concise dark cell-dot on each wing. — ab. **solaria** Swinh. has the markings rather brighter reddish and narrower, the cell-dots minute and weak. The species is known from Java (type), Sumatra, Sarawak, Singapore and Assam.
- punctata*. **A. punctata** Warr. Only the type is known, a ♀ from Dammer Island, its taxonomic position uncertain. Size of a small *lycaenaria*, colour similar, with a similar apical spot. Forewing with termen regularly rounded, hindwing with the tail quite short, bearing a small red spot. Otherwise the markings consist only of very small red-brown or purple-brown spots, the antemedian and postmedian series very oblique outward from the costa, bent respectively at posterior corner of cell and at 2nd and 3rd radials, the terminal rather darker, more punctiform.
- exquisita*. **A. exquisita** Warr. Also only known from a single ♀. Like *laqueifera* (9 f) but considerably larger, the abdomen apparently without the crests, predominantly pink or violet dorsally, with central green spots. Markings more sharply expressed than in that species, an elegant blend of different shades of red-brown, pale violet and grey. Obi.
- laqueifera*. **A. laqueifera** Prout (9 h). A small species, with well-developed crests, though not so strong as in the two following. Hindtibia of ♂ dilated, with strong hair-pencil and short terminal process. — ab. **vernifera** ab. nov. has the distal three-fifths of the hindwing green, marked with zigzag lines in place of the continuous dark cloud of the type-form. The type was from Digboi, Upper Assam, but most of the known examples come from the Andamans, Malaya, Java, Borneo or Hainan.
- crisifera*. **A. crisifera** Walk. (9 g), on account of its very highly-developed abdominal crests, was made the type of a separate genus, *Lophochlora* Warr. The thorax also shows a posterior crest. Further distinguishable from *laqueifera* by the blackish and rather more elongate hindwing, etc. Sarawak and Selangor.
- vicina*. **A. vicina** Bastelb. (9 g). Rather larger than *crisifera*, the wings not quite so markedly angled, the black-brown markings much extended on the forewing, etc. Founded on a ♂ from S. E. Sumatra.

## 27. Genus: **Camptolophia** Warr.

Perhaps another highly crested section of *Agathia*, differing chiefly in the more obliquely protuberant face, the (very shortly) pectinate ♂ antenna and in the coloration and markings. Hindtibia not or scarcely dilated. Only one species is known and this is extremely rare.

- marmorata*. **C. marmorata** Warr. (9 g). Unmistakable through its grey-green ground-colour and marbled outer area. Underside whitish, the forewing with two blackish subterminal spots, the hindwing with a broad subterminal band. Khasis.

## 28. Genus: **Helicopage** Warr.

Body and legs more slender than in the preceding genera. Palpus long, with the terminal joint, even in the ♂, strongly elongate. Antenna of the ♂ shortly pectinate, with the apex simple. Wings somewhat more thinly veined than in *Agathia*, the ♂ retinaculum a long, tough spiral, attached only close to the base. Another single-species genus.

- hirundinalis*. **H. hirundinalis** Warr. (9 g). Very constant and not to be confused with any other species. The ♂ is fairly common in the Khasis, rare in Sikkim.

## 29. Genus: **Alloeopage** Prout.

Distinct from all the other genera of the group in having the 2nd subcostal of the forewing stalked with the 1st instead of with the 3rd—5th. Further differs from *Helicopage* in having the ♂ retinaculum more normal, the distal margins much more weakly crenulate, and other details of structure. The single species has a moderately wide distribution in the Papuan subregion and shows, in addition to the wide sexual dimorphism, some interesting geographical variation.

**A. cinerea** in the ♂ somewhat resembles *H. hirundinalis* but is smaller, of different shape, with the antemedian line much closer to the cell-spot, the postmedian of the hindwing thickened and darkened in its posterior half. The ♀ is much more clouded with purplish brown. — **cinerea** Warr. (4 b), founded on a ♀ from Fergusson Island, denotes the race which, with very little variation, inhabits the mainland of New Guinea and is distinguished by the very extended grey (♂) or purple-brown (♀) cloudings of the hindwing. Examples from Rossel Island and North Queensland are rather smaller but otherwise similar, though the only ♂ known to me (Rossel) approaches the following race. — **velata** Warr. is in both sexes small and weakly marked. Woodlark. — **auri** Prout is similar in the ♀ to *velata* but the ♂ almost entirely lacks the clouding of posterior-distal part of the hindwing. Sudest Island. — **virescens** Prout is as large as the name-type; the ♀ is very similar to that, but with the markings rather more greyish and with an additional green patch between the postmedian and the subterminal line, reaching from the costa to the 2nd radial; the ♂ has the subbasal band of the forewing broken into 3 spots, the one in the cell mixed with black, and has the grey markings of the hindwing almost as restricted as in *auri*, but much more sharply expressed. Bismarck Archipelago: Rook Island (loc. typ.) and New Ireland. — A small ♂ from Mefor Island probably represents another race, but awaits further material.

### 30. Genus: **Dooabia** Warr.

Essential characters nearly as in *Agathia*, but very distinct in shape, coloration and scheme of markings. Forewing with distal margin more or less excavated between apex and 3rd radial, here angled, thence strongly oblique. Hindwing with the tail at 3rd radial rather long, but with no tooth at 1st radial. Abdomen not robust, not crested. Consists only of 3 Indian and Malayan species.

**D. viridata** Moore (9 h) is generally the largest species, with the broadest tornal spot on the forewing (though aberrations occur in which this is absent) and with a distinct line between the cell-spot and the postmedian, running into the latter a little before reaching the hindmargin. Underside similar, though paler, especially on the hindwing. ♀ considerably larger than ♂. Sikkim, Assam and Upper Burma.

**D. lunifera** Moore (9 h). Further distinctions from *viridata* are that the subterminal dark spot in cellule 3 is minute or absent, the hindwing has the cell-spot more ocellated and the markings beneath almost obsolete. ♀ little larger than ♂. Khasis, apparently commoner than *viridata*; occurs also in Tonkin and on Formosa. — **plana** Prout, from Kinabalu, is perhaps a separate species, as the forewing is less deeply excavated between the apex and the 3rd radial. First line almost obsolete, postmedian also weak, except as vein-dots, posterior terminal blotch of forewing and terminal markings of hindwing wanting.

**D. puncticostata** Prout. Wings rather narrower than in the two preceding species, posterior part of termen of forewing still more oblique. Costa of forewing with larger, more conspicuous dark dots; 1st line angulated behind middle; postmedian rather more proximal, deeply crenulate; cell-spot with larger white pupil; terminal line expanding into a shallow blotch between the radial veins; tornal blotch with an anterior proximal projection. Hindwing with thick dark terminal line, which expands between the veins. Selangor: Bukit Kutu. Also known from Kinabalu, North Borneo. — **quantula** Prout is a small form from Siberut (Mentawai Is.) with the blotch at tornus of forewing shortened, not continued in front of the 1st median. — **myopa** *subsp. nov.* is at least as large as *puncticostata*, but differs from both that and *quantula* in having the terminal markings less broad, that of the apex of the hindwing wanting, and in particular in having a black dot in place of the discal ocellus of the hindwing. Perhaps a separate species. S. W. Sumatra: slopes of Korintji, 7300 feet, August-September 1921, one ♂ in coll. JOICEY.

**D. (?) argomma** *sp. n.* (9 h). Expanse 35 mm. Face green. Palpus nearly 2½, whitish, dark-mixed above, 3rd joint blackish, at least half as long as 2nd joint. Abdomen robust. Forewing with termen rather more rounded in middle than in the genotype, very strongly oblique behind; 1st median nearly connate; green, with costal margin yellowish; cell-spot large, white, partly edged with black-grey; lines wanting, except the dark terminal, which is thickened between the veins; fringe dark brown. Hindwing rather narrow; the white cell-mark quite narrow, strongly black-edged proximally and distally; a small blackish postmedian dash in cellule 7. S. Java, 1922 (G. OVERDIJKINK), one ♀ in coll. JOICEY. Frenulum almost wanting (? gen. nov.).

### 31. Genus: **Euxena** Warr.

Facies of *Chlorodontopera*, though with broader forewing and with more evenly dentate distal margins, not excavated between the radials. Antenna of ♂ simple. Cells short, hindwing with 2nd subcostal stalked with 1st radial and 3rd radial with 1st median. Only one species is known.

**E. albiguttata** Warr. (♂ = *crypsichroma* Warr.) (10 a). The sexes are nearly alike above but differ considerably beneath in that the ♂ is orange, with only the distal borders and on the forewing the postmedian

line and a patch behind the cell dark-grey, whereas the ♀ is almost entirely smoky; in both sexes the hind-margin of the forewing remains white, the subterminal spots pale (in the ♂ yellowish, in the ♀ white). The type ♀ of *albiguttata* was from Padang Rengas, Malay Peninsula, but a series of both sexes from N. Borneo and Sarawak has established the identity of *crypsichroma* therewith.

### 32. Genus: **Chlorodontopera** Warr.

Antenna in ♂ pectinate, with apical  $\frac{1}{5}$  simple; or merely lamellate. Body and legs nearly as in the preceding genera; abdominal crests slight or wanting. Wing-shape characteristic; both wings excavated between the radials, the forewing also (though more shallowly) between the 1st radial and the apex; distal margin of forewing oblique as in *Dooabia*. Sexes alike. Range: N. India to Formosa.

A. ♂ antenna pectinate.

*discospilata.*

**C. discospilata** Moore (= *diseospilota Swinh.*) (9 h). Above extremely similar to *chalybeata*, except in its larger size. Beneath bright ochreous-brown, both wings with a black-grey postmedian line, that of the forewing more oblique than the distal margin and widening posteriorly. Sikkim, the Khasis, Burma and Formosa.

*chalybeata.*

**C. chalybeata** Moore (10 b). Antennal pectinations of the ♂ a little shorter than in *discospilata*. Under-side drab-grey, with the postmedian line only a little darker, on the forewing nearly parallel with the distal margin, very slightly sinuous. N. India, Tonkin, Malacca and Sarawak.

B. ♂ antenna merely lamellate.

*mandarinata.*

**C. mandarinata** Leech (Suppl. 4, pl. 1 a). Very similar to *chalybeata* except in the antennal character. Hindwing, especially in the ♀, more strongly toothed at 2nd subcostal than at 1st radial. Dark anterior shading of hindwing stronger than in any other known *Chlorodontopera*. Described from a Kiukiang ♀, the ♂ since received from Szechuan.

*taiwana.*

**C. taiwana** Wileman (10 a). Perhaps a larger race of *mandarinata*, but the ♀ palpus seems rather longer; cell-spots rather less large; distal margins less strongly dentate. Formosa.

### 33. Genus: **Aracima** Btlr.

Palpus in both sexes short, with the terminal joint quite small. Antennal pectinations of the ♂ short, somewhat thickened towards their tips. Both wings with the distal margin dentate, but rather more regularly than in *Chlorodontopera*. The type species is Palaearctic and has been described and figured in Vol. 4, p. 15, pl. 1 h. A smaller relative has since been described from Saghalien by MATSUMURA. The only other yet known is the following.

*serrata.*

**A. serrata** Wileman. Markings much simpler than in *muscosa*, the cell-spots reduced to large dots, the only other conspicuous purple-grey marking being a slightly sinuous and subpunctiform postmedian line, which on the hindwing is more proximal and (especially anteriorly) thicker; forewing with a small and weak spot behind the base of M<sup>2</sup>. Formosa.

### 34. Genus: **Xenozancla** Warr.

We have placed here this little-known species on account of its fully-developed frenulum, anteriorly excavated termen of forewing, toothed hindwing at the 2nd radial and some other characters. Face rounded, slightly prominent, smooth-scaled. Palpus in ♂ moderate, in ♀ very long, shortly scaled. Antenna of ♂ simple. Both wings with the anterior subcostal anastomosing with the costal, on the hindwing at a point only; hindwing with the 1st radial not stalked. The sole species was described from the Naga Hills, but is possibly of Palaearctic origin, as it has subsequently been taken near Peking.

*versicolor.*

**X. versicolor** Warr. (Suppl. 4, pl. 1 a). A small species and unlike any other known, the usual green coloration of the subfamily largely replaced by violet-grey, with blackish transverse strigulation, only proximally and apically remaining dull olive-green. ♀ rather larger.

### 35. Genus: **Hipparchus** Leuch.

The type of this handsome genus (*papilionaria* L.) is Palaearctic, together with several other species, which belong chiefly to E. Siberia and Japan. These have been dealt with in Vol. 4, where we have diagnosed the genus as follows: "Palpus moderate to long, antenna in ♂ bipeetinate, hindtibia in ♂ usually with hair-

pencil, always with all spurs, abdomen not erected, wings ample, forewing with apex usually acute, 1st subcostal free or anastomosing with costal, hindwing usually with a bend or small tail at the end of 3rd radial, sometimes erenulate throughout, 2nd subcostal arising near end of cell."

In the Indo-Australian Region the genus has only a limited range, being almost confined to the Himalayas and the mountains of Tibet and W. China.

*Section A. Hindwing with distal margin smooth, rounded (Loxochila Btlr.).*

**H. sinoisaria** Oberth. (Suppl. 4, pl. 1 a). Resembles in markings a strongly-marked form of *papilionaria* L., *sinoisaria*, but has the shape of *smaragdus*. Underside very feebly marked with dark green. W. China: Tsekou and Ta-t sien-lu.

**H. smaragdus** Btlr. (10 b). Postmedian line more direct than in *sinoisaria*, accompanied proximally *smaragdus* by linear dark-green shading. Underside paler green, with the green cell-mark and postmedian line visible. N. India, especially about Darjiling.

**H. fragilis** Oberth. (= *ovalis* Sterneck) (Suppl. 4, pl. 1 a). More slenderly built; hindwing with distal *fragilis* margin more ventriose in its anterior part; more or less broadly whitened anteriorly. Antennal pectinations well developed. The forewing has some white, often weak, subterminal dots which are not shown in the figure. Tse-kou, Chinese Tibet.

**H. flavifrontaria** Guen. (= *mutans* Btlr.) (Suppl. 4, pl. 1 b) is also less robust than *smaragdus*. Differs *flavifrontaria* from both the preceding in being of a less bright, more greyish green with the principal lines slender, white, almost straight. Underside paler, very feebly marked. N. W. India.

**H. sigaria** Oberth., from Tse-kou, is near *flavifrontaria* but has the antennal pectinations slighter, both *sigaria* wings with a dark line on the fringe, underside partly white, with green shading and bands, recalling *glaucaria* Ménétr. rather than *flavifrontaria*.

**H. eurygyia** Prout is a large species (60 mm), of a brighter green (more as in the Palaearctic *eurygyia* *glaucaria* or *albovenaria*), with the lines broadened into nearly straight white bands, the subterminal as well developed as the postmedian, the first two bands of the forewing and the only two of the hindwing somewhat convergent posteriorly; veins white, as in *albovenaria*. Tali, Yunnan, only the type known.

*Section B. Hindwing with distal margin crenulate. Antenna pectinate to its apex (Hipparchus Leach).*

**H. symaria** Oberth. (Suppl. 4, pl. 1 b). I have not seen this fine moth, but suppose it to have the same *symaria* structure as *papilionaria*, from which it differs in its more strongly erenulate margins, broader white markings, dark-green shading in central area and banded underside. Founded on 1 ♂ from the eastern frontier of Tibet, apparently still unique.

**H. rana** Oberth. (Suppl. 4, pl. 1 b). Antennal pectinations very short. Only the postmedian white line *rana* (or row of spots) indicated, the hind spot of the forewing often enlarged. Very distinct in the brown fringes. Tse-kou (type); also known from Yunnan.

*Section C. Hindwing toothed or tailed. Antenna with apical segments not pectinate (Megatochlora Meyr.)*

**H. albovenaria** Brem. has been described and figured in Vol. 4. — **latirigua** *subsp. nov.* is of a rather *latirigua* more uniform green, with the white postmedian stripe appreciably broadened, this and the antemedian not edged with yellow-green in the median area, the subterminal line decidedly nearer to the distal margin than to the postmedian; Kunkala-Shan, Szechwan, 4 ♂♂ and 1 ♀ in Mus. Tring.

**H. glaucaria** Ménétr. (= *usitata* Btlr.). This very distinct species, described and figured in Vol. 4, *glaucaria* p. 17, pl. 1 h, has hitherto been recorded only as Palaearctic, inhabiting Amurland and Japan, but the OBERTHÜR collection contains 1 ♂ from the vicinity of Wei-hsi, Yunnan. It possibly represents a separate race, but is unfortunately in very poor condition.

**H. vallata** Btlr. (Vol. 4, pl. 1 h). Exemplifies a sub-group in which the tail of the hindwing bears a *vallata* dark spot, the white lines are usually edged with olive-brown and the hindwing beneath is mixed with white. *vallata* is the only widely-distributed species and is known from Kulu, Sikkim, Assam and W. China as well as from the type locality Japan. Two near allies were first made known by OBERTHÜR in 1916.

**H. vervactoraria** Oberth. (Suppl. 4, pl. 1 a) nearly agrees with the following species in size and shape *vervactoraria* (though the apex of the forewing may be rather more acute), but with *vallata* in coloration. Forewing beneath with more definite white lines than in *vallata*. W. China.

**H. verjucodumnaria** Oberth. (Suppl. 4, pl. 1 a). Larger than *vallata*, the tail of the hindwing shorter and *verjucodumnaria* blunter, with the dark spot double, the ground-colour paler, much less bright, more glaucous, here and there with minute brownish dots or striae. Tse-kou.

*Section D. Forewing with apex less pointed, distal margin generally more prominent at 1st radial, hind angle sharp. Hindwing broad, with tail or strong angle at 3rd radial. Markings purple-brown (Chloroglyphica Warr.).*

*variegata.* **H. variegata** Btlr. (10 a). A pretty species, the bands well defined, narrowing anteriorly, somewhat mixed with white. Antennal pectinations short. Described from Dharmasala, known also from Sabathu, Murree, etc., and from the Khasis.

*glaucocrista.* **H. glaucocrista** Prout (Suppl. 4, pl. 1 a). Rather larger, the basal patch wanting, the bands narrowed to dentate, white-edged lines. Antennal pectinations still shorter. Tibet: Vriantong. — **grearia** Oberth. Subterminal spots better developed, hindwing beneath whiter, with a narrower, well-defined green border. Tsekou; also from Yunnan.

*hypoleuca.* **H. hypoleuca** Hmps. (= *flaminiaria* Oberth.) (Suppl. 4, pl. 1 c). Distal margin of forewing at 1st radial less prominent than in the two preceding, the purple-brown markings broad and irregular, macular. Hindwing beneath white with a minute cell-dot and with a border anteriorly purple-brown, posteriorly green. Founded on a ♀ from Hsipaw, Upper Burma, but OBERTHÜR'S ♂♂ from Tsekou show no sign of racial difference. Antennal pectinations about as in *glaucocrista*.

*xeromeris.* **H. xeromeris** sp. n. (10 a). Forewing similarly shaped to that of *hypoleuca*, distal margin more curved; dark marking on anterior part of fringe reduced; a conspicuous brown, black-mixed cell-spot, with a minute whitish pupil near its proximal side; maculation much as in *hypoleuca* or more ample subterminally (probably rather variable); traces of irregularly zigzag ante- and postmedian whitish lines, the latter developing a distinct white lunule at the fold. Hindwing rather broader than in *hypoleuca*, the tail rather blunt, the markings similar. Forewing beneath nearly as above, but rather more blurred; hindwing nearly as in *hypoleuca* but not quite so white. S. W. Sumatra: N. Korintji Valley, 5000 feet, September to October 1921 (PRATT brothers), type in coll. JOICEY. Malay Peninsula: Kedah Peak.

*maculata.* **H. maculata** Warr. (10 a) is a large species, with the dark cloudings weak, formed of purple-grey dusting, the lines broad and white, almost straight. Underside whitish green, with deeper green borders, that of the forewing marked with the dark clouding, that of the hindwing clear but narrow. Khasis.

### 36. Genus: **Tanaorhinus** Btlr.

As already pointed out in Vol. 4, p. 16, where the principal characters are given, this is scarcely more than a subgenus of *Hipparchus*, with more or less strongly falcate apex; Sect. C and *H. smaragdus* and *sinoï-saria* are to some extent intermediate. India to China and Japan and to New Guinea.

*Section A. Large, opaque dark green, distal margins smooth, apex sometimes strongly produced (Tanaorhinus).*

*reciprocata.* **T. reciprocata** Walk. (= *dimissa* Walk.) (10 b) is at least as large as *unipuncta*, in shape and markings above more like *kina* but lighter, more bice-green, the underside simple, green, with brown cell-dot and outer line, on the hindwing also some slight (in rare aberrations strong) outer maculation. N. India and S. China. The Palearctic form *confuciaris* Walk., scarcely differentiable, has been described and figured in Vol. 4.

*kina.* **T. kina** Swinh. (10 b). Apex of forewing slightly more produced than in *reciprocata*, anal angle of hindwing showing beginnings of the lobe which develops in *rafflesi* and *unipuncta*. Underside lighter green, on hindwing mixed with yellow, forewing with a dark-brown cell-spot, both wings with an irregular subterminal series of spots. The sexes are similar. Only known from the Khasis and Burma.

**T. rafflesi** is a geographically and sexually variable species. Both sexes are of nearly the same deep green above as *kina*, but with much more strongly falcate apex and very different markings, the ♀ often much larger than the ♂. Beneath, the ♀♀ have much more extended reddish colouring than the ♂♂, leaving little of the green colouring excepting a narrow postmedian band. — **viridiluteata** Walk. (10 b). ♂ generally rather large, forewing beneath with the costal violet suffusion ample, reddish blotch at hind angle large, border of hindwing broad and solid. ♀ beneath with the postmedian band pale yellow-green. Sikkim, Assam, Upper Burma and Hainan. — **rafflesi** Moore (= *luteoviridata* Walk., *subignata* Walk., *basaliata* Walk.). ♂ not or scarcely larger than *kina*, forewing beneath with the costal violet shade and the reddish ternal blotch reduced, the latter sometimes wanting, hindwing with the subterminal band much reduced, macular or at least in the middle strongly constricted. ♀ beneath with the postmedian band more inclining to glaucous grey. The type of *rafflesi* was from Sumatra, but the form is general also in the Malay Peninsula, Java and Borneo and single specimens which I have seen from Kiukiang, Formosa and Luzon do not seem to differ. — **ab. imperialis** ab. nov. is a local aberration from Kinabalu, with the border of the hindwing beneath as in *viridiluteata* or darker, ternal blotch of forewing strong, dark purple, a purple-grey subterminal line developed anteriorly to it, the costal violet shade extended posteriorly and distally, reaching the postmedian line. — **dohertyi** subsp. nov. ♂ not darker green than in *viridiluteata*, size as in *rafflesi*, costal violet beneath reduced to irroration, ternal blotch strong, postmedian line of forewing strong, dark-red (in the other races more brown or olivaceous),

hindwing beneath about as in *rafflesi*. Macassar (DOHERTY), type ♂ in Mus. Brit.; "N. Celebes", 1 ♂, May-June 1899, in Mus. Tring.

**T. waterstradti** *sp. n.* (10 b). Rather bluer green than *rafflesi*, apical falcation scarcely so long, *waterstradti*. lobe at anal angle of hindwing scarcely more developed than in *kina*. Median area of forewing scarcely paler than the rest (only a little more blue). Underside bright orange-yellow, except on parts of the forewing, subterminal band of hindwing much interrupted, postmedian line of both wings, on the contrary, strongly red proximally. Mindanao (J. WATERSTRADT), type in Mus. Brit., ex coll. OBERTHÜR.

**T. unipuncta** replaces *rafflesi* in the Moluccas and New Guinea. Generally larger, with apical falcation still more produced, sexual dimorphism still stronger, hindwing with a dark cell-spot, followed by a zigzag white line, underside more strongly marked. — **zoomesta** Prout, from Ceram, differs little in the ♂ from rare *zoomesta*. aberrations of the New Guinea race with the median area of the forewing narrowed, but has a deep-green ♀, only a little darker and duller than the ♂. — **meforensis** Prout, from Mefor, is smaller than the other races, *meforensis*. the median area of the forewing almost as green as the rest of the wing, the postmedian line of the hindwing obsolete anteriorly, rather thick and ill-defined posteriorly. In some respects intermediate towards *rafflesi*. — **unipuncta** Warr. (10 e) from New Guinea, is large, especially in the ♀, the apical hook of the forewing very *unipuncta*. strongly developed, the ♀ purple-brown, with only small patches and suffusions of green remaining.

*Section B. Medium-sized, less densely scaled, yellower green, apices moderately produced (Mixochlora Warr., indese.).*

**T. vittata** Moore (10 c) is the type of the group. It was described from N. India and has already been *vittata*. discussed in Vol. 4 and a closely similar Japanese race (*prasinus* Btlr.) figured under this name. *vittata* has the ground-colour slightly more yellowish, the bands more sharply expressed (more whitish), the ante- and postmedian generally less closely approximated posteriorly, the subterminal perhaps more sinuous. — **sumatrensis** *subsp. nov.* is on an average larger, with both wings slightly more produced apically, and is still *sumatrensis*. more sharply marked, with the postmedian band rather more proximally placed, the whitish costal area of the hindwing extended. Slopes of Mt. Korintji, S.W. Sumatra, 7300 feet, a long series collected by the PRATT brothers, the type in coll. JOICEY. Specimens from lower altitudes on Sumatra, as well as from Malaya, are in some measure intermediate and perhaps better referred provisionally to the Indian race. — **alternata** Warr., *alternata*. from the Philippines, has the bands almost parallel.

**T. argentifusa** Walk. has conspicuous whitish streaks between the veins outside the postmedian line *argentifusa*. and has the subterminal more arcuate and the underside greener (less ochreous) than in *vittata*. Sarawak (type), Perak and Celebes, always rare. Differs from the New Guinea race in having the postmedian more distally placed, especially at abdominal margin of hindwing, the subterminal of the forewing more bent in the middle, that of the hindwing thick in anterior half, obsolete posteriorly. — **radiata** Warr. (10 e), from Dutch New *radiata*. Guinea, is the only form yet known from the Papuan subregion.

*Section C. Hindwing strongly angled at 3rd radial; colouring not green (? gen. div.).*

**T. discolor** Warr. (10 e). Recognizable at once by the shape, coloration and characteristic pattern, *discolor*. which is in all essentials reproduced on the underside. Khasis, not common. 2 ♂♂ from Arizan, Formosa (WILEMAN) perhaps represent a race, with the olive shading rather more extended, the whitish spots of forewing between M<sup>1</sup> and SM<sup>2</sup> narrowed.

**T. energes** *sp. n.* (10 c). Smaller than *discolor*, antemedian line rather more direct, paler-edged proximally, distal blotch larger. Hindwing with distal margin less bent at 1st radial; perhaps a little paler in its distal part. S. W. Sumatra: Barisan Range, western slope, 2500 feet, October to November 1921 (type and 1 paratype); North Korintji Valley, 5000 feet, September to October 1921 (1 ♂); in Mus. JOICEY. *energes*.

### 37. Genus: **Chlorozancla** Prout

Distinct from *Tanaorhinus*, with which HAMPSON united it, in the minute palpus, short tongue, more regularly arched costal margin of forewing and more rounded hindwing. Antenna of the ♂ pectinate to the apex. Forewing with 1st subcostal anastomosing with costal. Hindwing with 2nd subcostal arising from end of cell. Only one species known.

**C. falcatus** Hampsn. Quite distinct from any *Tanaorhinus* in its small size (28—31 mm) and grey-green *falcatus*. ground-colour, variegated (especially in apical-costal region of forewing) with olive-yellow, the lines whitish, the extracellular of the hindwing broadened into a band. Sikkim (type), Bombay and Travancore.

### 38. Genus: **Iotaphora** Warr.

This beautiful genus differs chiefly from *Hipparchus* in the shape, the iridescent scaling and the highly specialised scheme of markings. See Vol. 4, p. 18, where the sole Palaearctic species, *admirabilis* Oberth., has been differentiated from the genotype, which we now figure.

*iridicolor.* **I. iridicolor** *Btlr.* (10 f), from Sikkim (type) and Assam, is entirely unlike any other Indian species. Besides the distinctions from *admirabilis* already given, it may be noted that the median area is more variegated but the lines which bound it are much less pure white.

### 39. Genus: **Chlororithra** *Warr.*

Texture and coloration of wings somewhat as in *Iotaphora*, the wings broader, forewing with less rounded apex, hindwing appreciably bent at 3rd radial, distal area much broader, with the markings macular, not linear. Hindtibia of ♂ with a strong hair-pencil, which is wanting in *Iotaphora*.

*fea.* **C. fea** *Btlr.* (Vol. 4, pl. 1 g) was described from the Punjab but also inhabits the Khasis and has more recently been made known from Tse-kou, as subsp. *missioniaria*. OBERTHÜR, who did not possess Indian examples, supposed the Tibetan to be less grey, more yellow, but this is not borne out in his series of the latter. — There is, however, at Tse-kou a recurrent form (more than 50 per cent) in which the blackish apical patch of the hindwing beneath is wanting and this may be known as ab. *missioniaria* *Oberth.* The variation is possibly seasonal.

### 40. Genus: **Dioscore** *Warr.*

This genus, first published by WARREN under the preoccupied name of *Halterophora*, differs from all the other genera in that the ♂ frenulum terminates in a club. Otherwise it shows most of the characters of *Hipparchus* but is more specialised in venation, the 1st and the 3rd radial of the hindwing being shortly stalked with the adjacent veins. ♂ antenna only pectinate in the proximal part. All the species are Papuan.

#### *Section A. Hindwing not angled at 3rd radial.*

*thalassias.* **D. thalassias** *Warr.* Similar to *neréis* (4 c) but much less sharply contrasted, the white parts being less pure and less extended, the green mostly less deep, more bluish. The oblique white line from apex of forewing is scarcely at all sinuous, and the green shade proximal to it is less dark, more yellow-green, much reduced, forming merely a thick line. Dutch New Guinea. Also from Aru.

*neréis.* **D. neréis** *Warr.* (4 c). The ♀ is well represented in our figure and as the sexes are marked alike it needs no further elucidation. Described from the Arfak Mountains, known also from other ranges in Dutch and British New Guinea.

*ancylla.* **D. ancylla** *Prout* (10 f). A rather smaller species, with much less rounded hindwing and with simpler markings. The curved white line from the apex of the forewing is quite distinctive. Described from the Weyland Mountains, Dutch New Guinea. A ♂ from Tavararé, Owen Stanley Range, is in coll. L. B. PROUT.

*melanom-*  
*ma.* **D. melanomma** *Warr.* (10 f) differs from all the other species in the large and elongate black-brown cell-spots. British and Dutch New Guinea, the type from Biagi.

*fulgurata.* **D. fulgurata** *Warr.* (= *mceeki* *Warr.*) (10 f) and the following species are distinguished by the zigzag and punctiform white lines and the very sharply white-spotted brown fringes. In *fulgurata* the hindwing approaches the peculiar shape of that of *ancylla*. British and Dutch New Guinea.

*homoeotes.* **D. homoeotes** *Prout.* Extremely like *fulgurata* (10 f), but with the distal margin of both wings more rounded, the antennal pectinations of the ♂ much shorter, ceasing at about the 24th joint (in *fulgurata* continued to about the 36th). Dutch New Guinea, the type from the Arfak Mountains.

#### *Section B. Hindwing angled at 3rd radial.*

*bicolor.* **D. bicolor** *Warr.* (4 b). Apart from the wing-form and the less zigzag lines, different from *fulgurata* in the enlarged cell-dots and the browner (not cream-whitish) crest at the base of the abdomen. Fergusson Island (loc. typ.), British and Dutch New Guinea.

*punctifim-*  
*bria.* **D. punctifimbria** *Warr.* (= *mistifimbria* *Prout*) (4 b). More slenderly built than *bicolor*, tail of hindwing shorter, colour bluer green, cell-spots not brown (some blackish scales making them appear dark-green), fringes less chequered, on forewing almost plain green. British New Guinea (type from Upper Aroa River) and Dutch New Guinea.

### 41 Genus: **Ornithospila** *Warr.*

Palpus long. Antenna many-jointed, in the ♂ with slender pectinations. Hindtibia not dilated. Abdomen not crested. Forewing with distal margin not angled; all the subcostals stalked, the 5th arising before the 2nd. Hindwing with discocellulars strongly angled. Colouring very vivid green, generally with red cell-

marks and nearly always with red terminal line. The species belong chiefly to the Malayan and Moluccan subregions, but a few species reach India and one straggles into British New Guinea and some of its satellite islands.

*Section A. Hindwing not or scarcely bent at 3rd radial (Ornithospila).*

**O. avicularia** *Guen.* (= *pemisignata* *Walk.*) (10 g). The only Indian species of the Section. Antennal *avicularia*. pectinations moderate, ceasing about segment 50. Side of palpus red-brown. Costa of forewing whitish. Fringes red. Lines crenulate. Cell-mark on forewing a colon, on hindwing angular. N. India. — **insularis** *insularis*. *Prout*, from Sumatra, is smaller, slightly deeper green, costal edge more strongly dark-dotted, fringes deeper brown-red, more approaching those of *cineta* (10 g). I have also seen this race from Borneo.

**O. bipunctata** *Prout* (= *submonstrans* ♂ *Walk.*, in err.) (10 g). Pectinations rather long, at least reach- *bipunctata*. ing segment 50. Fringes white. Lines scarcely crenulate. Both cell-marks punctiform. Malaya, Natuna Islands (type), Borneo, Luzon and Celebes.

**O. submonstrans** *Walk.* (= *circumflexaria* *Snell.*) (10 g). Pectinations about 56, long. Side of palpus *submons-* green-banded. Lines somewhat crenulate. Cellmark on forewing punctiform, on hindwing angular. Fringes *trans.* white, with reddish spots. Costa whitish, well dotted. Siam, Penang, Sumatra, Borneo (type) and Celebes. — **moluccensis** *Prout*. Costa less dotted, spots on fringe weak, lines rather approximated, scarcely so crenu- *moluccen-* late as in the name type. Distinguished from *bipunctata* by the ♂ antenna and by the large, angular cell-mark *sis.* of the hindwing. Obi (type) and Batjan.

**O. odontogramma** *Prout* (10 g). Palpus red-brown on side. Pectinations about 56, long. Cell-marks *odonto-* as in *avicularia*, that of hindwing strong. Costa whitish, well dotted. Fringes pinkish white. Lines strongly *gramma.* crenulate, the postmedian boldly excurved. Rather common in the Moluecas (Batjan, Obi, Buru, Ceram, Amboina), the type from Obi.

**O. cineta** *Walk.* (10 g). Antenna long, with a long apical part simple; pectinations about 56, shorter *cineta*. than in *avicularia*. Palpus whitish, mixed with red-brown, sometimes much infuscated. Costa and fringes red. Cell-marks obsolete (green). Lines not crenulate. Borneo (type), Malaya and Sumatra.

**O. succincta** *Prout* (10 g). Antenna long, as in *cineta*, pectinations about 60, short. Most characters *succincta*. as in *cineta*, but the fringes are white, spotted with reddish, or at most (on the forewing) with the effect of a dark line traversing the middle. Outside of palpus with a green streak above. Malay. Peninsula, Penang (type), Borneo and Luzon.

**O. psittacina** *Feld.* (10 g). Pectinations 48—50, shortish-moderate. Side of palpus green-banded. *psittacina*. Costa whitish, tinged with pink and heavily dotted. Fringes white. Cell-marks as in *submonstrans*. Lines not crenulate. FELDER'S type was from the "Moluccas" and I have seen the species from Laiwui (Obi). Also from Waigeu, Dutch New Guinea and rarely from British New Guinea, Goodenough and Sudest Islands.

**O. viridimargo** *Prout* differs from all the other species in the absence of the red terminal line, which *viridi-* is only visible with a strong lens as a series of exceedingly fine, well separated dashes. Palpus green. Antenna *margo.* with a short apical part simple, pectinations about 56, long. Costa narrowly whitish, with green and red-brown dots. Fringes green. Cell-mark on forewing punctiform, on hindwing angular, irregular. Postmedian line deeply crenulate. Only known from Buru.

*Section B. Hindwing angled at 3rd radial (Urospila Warr.).*

**O. lineata** *Moore* (10 h). A large species, with the lines straight and yellowish, both cell-marks angular, *lineata*. a rather large spot at tail of hindwing. Sikkim. Also from the Khasis and Ceylon.

**O. esmeralda** *Hmps.* (10 h). Also large, the lines whiter and differently placed, the fringes not red, *esmeralda*. except against a small apical patch, the cell-spot of the hindwing large, the tail slight, without a red spot. Described from Tenasserim. distributed from N. India to Malaya, the Andamans, Java, Sumatra and Luzon.

## 42. Genus: **Aporandria** *Warr.*

In size, shape and coloration somewhat analogous to Sect. B of *Ornithospila*, but differing in several characters. Antenna of the ♀ strongly pectinate, as in the ♂. Both wings with the 1st and the 3rd radial stalked with the adjacent veins. Hindwing rather thickly scaled near base, here differently coloured, recalling that of the South American genus *Rhodochlora* *Warr.* (Vol. 8, pl. 3a). Only one species is known.

**A. specularia** *Guen.* (10 h). Easily recognizable by the structural characters and by the very peculiar *specularia*. cell-mark and proximal markings of the hindwing. India (loc. typ.), Ceylon, Malay Peninsula, Siam, Tonkin,

*haplograp-  
ta.* Greater Suñda Islands, Mindanao, Sulu Archipelago and Celebes. — **haplograpta** *Prout* is a form from Saigon (Cochin China), with the olive-grey lines wanting, the cell-mark of the hindwing much reduced, scarcely larger than that of *O. lineata* *Moore*. Only the type ♀ is yet known, its actual status not yet ascertained.

#### 43. Genus: **Felicia** *Th.-Mieg.*

„Wings delicate, in part transparent, rather strongly scalloped on the distal margin; on the hindwing a deeper scallop between veins 4 and 6. This genus differs from *Anisozyga* in that the discocellular of the forewing meets vein 4 at a millimeter from the point where that vein forks with 3, consequently between this furcation and the distal margin. In *Anisozyga*, the discocellular is decidedly nearer to the furcation. On the hindwing, vein 4 arises from the angle of the cell. Hindleg with 2 pairs of spurs.” Founded on the following species.

*caledonica.* **F. caledonica** *Th.-Mieg.* ♀, 25 mm (measured from tip to tip in the set specimen). Thinly scaled, grey-green, in part transparent; a white mark, shaped like a circumflex accent, on the green part of the wing, its apex on vein 6 about 2 mm from the distal margin; a light brown border, about 1 mm broad along costa continuing along the termen to behind vein 3, widening about veins 7—5 and still further in cellule 4, where it measures 2—5 mm; a subquadrate spot, about 2 mm in diameter, at anal angle. Hindwing with a similar terminal border. All the brown parts irregularly dark-speckled. Underside whitish-green, with the terminal markings in part blackish. (Abridged from the original description.) New Caledonia, 1 ♀.

#### 44. Genus: **Eucyelodes** *Warr.*

Probably near the following genus, but with the terminal joint of the palpus in both sexes short, the wing-tegulae not bearing the long hair-pencil, the scaling of the wings dense. Early stages apparently unknown. The only species in Australian.

*buprestaria.* **E. buprestaria** *Guen.* (10 h). Bright green, not irrorated, elegantly bordered and marked with brown, purple-blackish and white, somewhat recalling a *Comibaena*. Hindwing with termen almost evenly rounded, Underside paler, with similar distal borders. Tasmania (loc. typ.), Victoria and New South Wales.

#### 45. Genus: **Anisozyga** *Prout*

Palpus moderate to long, the terminal joint more or less elongate, especially in the ♀. Antenna of ♂ pectinate on its proximal part. Breast densely hairy; a long pencil of hair from the end of the wing-tegula beneath; femora also hairy. Hindtibia of ♂ with a hair-pencil and usually a strong terminal process; all spurs present. Hindwing with cell very short, 3rd discocellular very strongly oblique, 1st median vein more or less long-stalked with 3rd radial. Both wings are always more or less thinly scaled, in part semitransparent, the scaling in part hair-like. The shape varies a little, but the distal margins, especially that of the hindwing, are nearly always rather irregularly subdentate or dentate. Most of the species exhibit strong — often, indeed, astonishing — sexual dimorphism.

The larvae of a few of the Australian species are known. They are furnished with large, flattened subdorsal projections on each segment.

An extensive genus, chiefly characteristic of New Guinea and the adjacent islands. One species reaches the Philippines and one or two belong to Bornco, India, etc. One is recorded from Fiji.

*metaspila.* **A. metaspila** *Walk.* (= *eucalypti* *T. P. Luc.*) (10 h). Sexes nearly alike. Distinguished from *speciosa* by the less deeply dentate hindwing, red terminal line and fringe, abdomen only green in anterior part, etc. Larva on ferns, bearing a protective likeness to the fronds. Queensland.

*saturataria.* **A. saturataria** *Walk.* is probably nothing more than a remarkable aberration of the preceding with a general increase of the red markings, the face red, a red cell-mark and suffusion behind it. Founded on a single ♀, probably from Brisbane.

*viridissima.* **A. viridissima** *Warr.* Smaller than *metaspila* (10 h), deeper green, abdomen above and fringes green, the former with minute white dots. Palpus slender, green. Both wings with traces of a cloudy red-grey central band and of a fine, dentate whitish postmedian line, which is chiefly indicated at the veins and, on the forewing, by a white dash from SM<sup>2</sup> to the hindmargin. Hindwing with R<sup>2</sup> and M<sup>1</sup> arising from a point. British New Guinea: Angabunga River. Only the type ♀ is known.

*flavilinea.* **A. flavilinea** *Warr.* (10 f). Here begins a difficult group of very closely allied species with elongate, strongly dentate hindwing and very similar colour and markings. *flavilinea* is the only one with continuous (or nearly continuous) transverse lines. Sexes alike. Angabunga River.

**A. taminata** *Prout* (4 d). Recognizable by the very extended purple-grey cloudings on the wings and *taminata*. dark maculation on the abdomen. Possibly a form of *albinata*, but the hindtibial process of the ♂ appears longer, nearly reaching the end of the 1st tarsal joint. In any case not a local race, as I originally supposed; for both occur together in the Snow Mountains, Dutch New Guinea, the only known habitat of *taminata*. We figure the allotype ♀.

**A. albinata** *Warr.* Purple-grey central band narrower than in *taminata*, apical cloud of hindwing very *albinata*. small, abdomen predominantly green. The white postmedian spot is on both wings differently shaped, sometimes almost V-shaped, in any case with its proximal side deeply indented in the middle. Hindtibial process in the ♂ about half as long as 1st tarsal joint. Described from the Owen Stanley Range, but extending to the mountains of Dutch New Guinea.

**A. speciosa** *T. P. Luc.* (10 h). ♀ without the white spots of the three preceding forms, the purple-grey *speciosa*. cloudings also obsolete, or only in the median area feebly indicated. — **chionoplaca** *Lower* (= *albinata* *Warr.*, *chionopta-* *ca.* *sideralis* *T. P. Luc.*) is the ♂ form, differing from the ♀ in having on the hindwing a composite white spot much like that of *albinata*, on the forewing a much smaller spot. Queensland. A ♀ from Mt. Riu, Sudest Island, is quite similar to that of *speciosa*, but may prove to belong to the following or another race. — **lepto-** *leptocosma*. **cosma** *subsp. nov.* ♀ not essentially different from that of *speciosa*. ♂: forewing with the white spot at the 3rd radial only a little larger than the rest of the white dots, but accompanied by a small white dash in front; the row of small white subterminal dots between the veins rather well developed; beneath with the costal commencement of a green postmedian line. Hindwing without the large white spot of *speciosa* ♂. New Ireland, December 1923—January 1924, types in Mus. Tring.

**A. rufipunctata** *Warr.* (10 i). ♂ very similar to the ♀ of *speciosa* but with the abdomen differently *rufipunc-* *tata*. belted. ♀ very distinct in the red-spotted fringes, red shading to the white terminal spots and especially in the development of a narrow red apical patch on the hindwing. New Guinea and Goodenough Island, the type from the Upper Aroa River.

**A. goniota** *Lower* (= *curvigutta* *Warr.*) (10 g). Very distinct in the ♀ on account of the peculiarly shaped *goniota*. pale terminal patches between the costal margin and the 1st median. — **dorsimaculata** *Prout* (4 d) is, as I now *dorsimacu-* *tata*. believe, the ♂ of the same species and may be distinguished from that of *speciosa* by the blotch on the abdomen and the reduced white subterminal maculation of the hindwing. *goniota* and *curvigutta* were described from Queensland, *dorsimacula* from Dutch New Guinea; the species is also known to me from British New Guinea, Dampier and Admiralty Islands.

**A. textilis** *Btlr.* (10 i) is the only Indian species belonging to this group of *Anisozyga*. The midterminal *textilis*. blotches recall those of some of the preceding group, but the addition of an apical one on the hindwing and especially of two central (discocellular and hindmarginal on); the forewing distinguish it immediately. Darjiling and the Chittagong Hills, rare.

**A. lithocrossa** is of a rather brighter and more opaque green, especially in the ♀. There are several forms, or close allies, which are not yet thoroughly understood. All agree in having irregularly dentate, often slightly interrupted, white lines in the ♂ and more ornamental borders in the ♀. **lithocrossa** *Meyr.* (10 f) *lithocrossa*. has the distal borders of the ♀ rather narrow but dark, expanding slightly at the apices and on the forewing at the anal angle. Described from Dinner Island, British New Guinea; it frequents the coastal regions of New Guinea and reaches an altitude of 2500 feet. Similar forms, not yet differentiated, occur on Ron Island, the D'Entrecasteaux and Trobriand Islands, Woodlark, St. Aignan, Vulcan and Dampier Islands and even Guadalcanar. — **hilaris** *Warr.* is a race from the Owen Stanley Range with the white markings somewhat expanded *hilaris*. in the ♂ and the borders broadened in the ♀. — **moniliata** *Warr.*, from Queensland differs from the name-type *moniliata*. in exactly the opposite directions. The postmedian line of the forewing does not (as in both the previous races) expand into a spot on the hindmargin. Similar forms occur on Rossel and Sudest Islands. — **expansa** *expansa*. *subsp. nov.* is a large race (♂ 32—34 mm, ♀ 36 to 38 mm) with the white markings in the ♂ even more expanded than in *hilaris*, the postmedian, as well as the subterminal, developing into a spot in cellule 3. ♀ with the borders not broad, but broadening at tornus of forewing and apex of hindwing, the spots thus formed containing each a dark dash or short streak. New Hanover (loc. typ.) and New Britain, the latter in a less extreme development as regards the ♂. Type in Mus. Tring.

**A. subfasciata** *Warr.* Costal margin of forewing whiter than in *lithocrossa*, antemedian line more *subfasciata*. oblique from costa to fold. ♂ otherwise very similar. ♀ broad-bordered above, the underside having a complete brown submarginal band and on the forewing an extended lighter brown suffusion from costal margin to behind the cell. Western Solomons: New Georgia, Kulambangra and Rendova.

**A. albifimbria** *Warr.* ♂ scarcely distinguishable from that of *subfasciata*, the white markings on the whole *albifimbria*. more sharply expressed, especially the subterminal dots, the ante- and postmedian lines not quite so strongly divergent anteriorly. ♀ beneath not banded, above much more like its ♂ than in the two preceding species,

- only with the lines a little thicker and with a narrow white terminal band and red-brown terminal lunules. *viridimargo*. Solomons: Bougainville to Florida Island. A single ♂ from S. Christoval is similar. — *viridimargo* Prout has the subterminal spots less strong, the white terminal band of the ♀ wanting, the lunules deep green. Vella Lavella.
- longidentata*. **A. longidentata** Prout (4 e). Unmistakable on account of the white hindwing; its green lines are much more zigzag than they appear in our figure. Hindwing beneath ochreous, with white lines. ♀ unknown. Dutch New Guinea: Mt. Goliath.
- viridistrigata*. **A. viridistriga** Warr. (4 e). Equally distinct in the dark admixture of the hindwing. Both wings beneath white with large cell-spot and two bands outside it, all ferruginous on the forewing, black on the hindwing. ♀ unknown. Snow Mountains, Dutch New Guinea.
- sublaturata*. **A. sublaturata** Warr. ♂ larger than *viridistriga*, with green, white-banded hindwing and with the bands beneath coloured nearly alike on both wings. ♀ darker and more opaque green proximally; beyond the white band (which is narrowed on the hindwing) white, with smoky and fleshy-brown cloudings, only anteriorly with some green spots. Forewing beneath suffused almost to the base. British New Guinea: Milne Bay. — **subobsoleta** Prout (4 e, as *sublaturata*) is a mountain form, with the underside much lighter, the bands being narrowed and the base not, or scarcely, suffused. Arfak Mountains (type), Snow Mountains and Owen Stanley Range.
- lenis*. **A. lenis** Prout. Smaller than *sublaturata*, upperside closely similar, rather more greenish, the markings less deep green, the postmedian line with less deep excavations, underside with the bands still more reduced than in *subobsoleta*, the postmedian linear, dentate, not continuing behind R<sup>3</sup>, the subterminal not (as in *sublaturata*) emitting proximal projections in cellule 4. British New Guinea: Dinawa, 4000 feet, only the type ♂ known.
- subvenusta*. **A. subvenusta** Warr. (10 i) is again smaller, the white outer bands broken into spots, the forewing beneath with the dark markings incomplete, the subterminal band of the hindwing beneath reduced to a streak from costa to R<sup>1</sup> and a slight spot on R<sup>2</sup>. British and Dutch New Guinea and Mysol. — **diargema** Prout, from Ceram, is much larger (36 mm) rather more vivid green, the white markings more extended, only the white spot in the end of the cell reduced, hindwing without dark subapical spot. Subterminal line beneath with its posterior end on forewing thickened. Hindwing beneath with dark subapical spot much reduced, but with traces of a band as in *sublaturata*, though much weaker. Perhaps a separate species.
- subnigrata*. **A. subnigrata** Warr. Larger than *subvenusta* (10 i) rather broader-winged, the ♂ yellowish green, with the white bands irrorated with green, the ♀ with a green terminal band (on the hindwing almost complete, on the forewing reaching from apex to R<sup>3</sup>). Biagi, British New Guinea.
- muscosa*. **A. muscosa** Warr. (4 e). Still more yellowish green, with characteristic brown markings, the sexes alike. Underside white, the forewing with a cell-spot and costal beginnings of lines. Fergusson Island (the type) and New Guinea.
- bifuscata*. **A. bifuscata** Prout (4 d). ♀ unknown, ♂ recognizable at once by the almost unrelieved dark blotches near the apex. Mount Goliath, Dutch New Guinea.
- decorata*. **A. decorata** Warr. differs from *bifuscata* (4 d) in having white costal markings on the forewing, the first one antemedian, the second just proximal to the dark blotch. The ♀ has the dark markings reddish brown and more extended, reappearing at the anal angle of both wings. Owen Stanley Range. — **goliathensis** Prout (4 d), from Mount Goliath, has the dark apical spots reduced, especially on the forewing.
- valescens*. **A. valescens** Prout (10 d). Perhaps nearest to *decorata* ♀, but larger, the 3rd joint of palpus less elongate, abdomen without green patch at base, wings less bluish green, apical patches with dark edgings, that of the forewing without green spots. Cyclops Mtns., Dutch New Guinea, 1 ♀.
- delectabilis*. **A. delectabilis** Prout (4 e) is distinguished from *goliathensis* by the development of the white lines, white apical dot and dark antemedian mark at hindmargin of forewing. Mount Goliath. A ♀ from the same place, and perhaps belonging to it, has the white lines broader, the postmedian more proximally placed, on both wings with a strong outward projection in the middle, the antemedian spot of the forewing extended and light reddish, the distal area of both wings predominantly of the same light reddish, traversed by white or pale lines.
- gracililinea*. **A. gracililinea** Warr. ♂. Close to the preceding (which may well be a race of it), but with the postmedian line on both wings more uniformly slender and quite regularly excurved between the two folds. Biagi, British New Guinea.
- bicolor*. **A. bicolor** Rothschild. Only the type ♀ known, and this unfortunately somewhat rubbed. The green ground-colour is confined to the central area, on the hindwing complete, on the forewing quadrate, from the

hindmargin to just across M and R<sup>3</sup>; the rest vinaceous mixed with brown, an elongate discal lunule (on the forewing) and a sinuous postmedian line discernible. Underside whitish with broad fuscous costal and subterminal bands. Oetakwa River, Dutch New Guinea.

**A. desolata** Warr. (4 d). Differs from all the foregoing ♂♂ in having the apical patch of the hindwing *desolata*. red (not blackish) and increased in size. The white markings are discernible, but less definite than in *delectabilis* (4 e). ♀ unknown. Biagi (type) and Snow Mountains (Upper Setekwa River). We figure the latter.

**A. eranna** Prout (4 d, as *errana*) has the red spot smaller and lighter than in *desolata*, both wings with *eranna*. a central white subterminal spot. ♀ unknown. Mount Goliath.

**A. veniplaga**. Coloration of ♂ as in *eranna* (4 d), or scarcely so bright. Apical patch of hindwing still larger and broader than in *desolata* (4 d); a small semicircular patch of the same colour at hindmargin of forewing distally; a triangular whitish costal mark at end of cell of forewing. ♀ with similar costal spot, both wings with broad terminal band, mixed with purple-brown, becoming narrow in the middle, widening again slightly behind. — **veniplaga** Warr., from the Owen Stanley Range, has in the ♂ a small whitish subapical spot on the *veniplaga*. forewing, connected with the termen by dashes along the veins. — In **plena** Joicey & Talb., from the Arfak *plena*. Mountains, this spot is enlarged, apical.

**A. beatrix** Prout (4 e) differs from all the preceding in the much paler colour of the apical patch of the *beatrix*. hindwing; that of the forewing is nearly as in *plena*, but does not quite reach the termen. ♀ unknown. Mount Goliath (loc. typ.) and Weyland Mountains, Dutch New Guinea.

**A. extravagans** Prout. ♂. Pale patches coloured as in *beatrix* (4 e), but very much larger, that of the *extravagans*. hindwing nearly reaching the base and abdominal margin. Forewing with additional pale spots, placed as in *veniplaga*. Weyland Mountains.

**A. sexmaculata** Warr., founded on 2 ♀♀ from Biagi, has the pale apical spots larger than in *beatrix* (4 e), *sexmacu-* almost as large on fore- as on hindwing; additional spots at base of forewing and anal angle of each wing. *lata*. All the spots strongly edged with dark brown.

**A. orbimaculata** Warr. ♂. Combines the reddish-brown apical (hindwing) spot of the *bifuscata*-group *orbimacu-* with an intricate pattern of punctiform white lines which more recalls that of the *flavilinea* group. Owen Stanley *lata*. Range and Wandammen Mountains. — **magnificata** Prout (4 d, as *orbimaculata*), from Mount Goliath, has, *magnifica-* in addition, a well-developed white central subterminal patch. *ta*.

**A. nigrimaculata** Warr. (4 d). Larger than *orbimaculata*, the markings extended. Easily recognized by *nigrimacu-* the white markings at basal half of hindwing posteriorly. Mountains of New Guinea. The ♀ of this rather com- *lata*. mon species, as well as those of the preceding and following, is unrecognized and probably totally dissimilar to the ♂.

**A. commaculata** Warr. (= *bijugata* Warr.) (4 e) ♀. Smaller than *nigrimaculata*, rather duller green, *commacu-* the white spot more equally distributed, mostly fairly large, the red-brown apical spot of the hindwing minute *lata*. (lost in our figure). Owen Stanley Range. Also from Mount Goliath.

**A. stellata** Warr. A little smaller than *stellifera* (4 c), the forewing with the white dots in the centre more *stellata*. minute, on the contrary with a conspicuous white subcostal spot at the end of the cell and one at mid-termen. ♀ similar above, both wings beneath with irregular blackish-fuscous subapical band. Biagi, British New Guinea.

**A. stellifera** Prout (4 c, as *stelligera*). ♀ unknown, probably similar to than of *stellata*, which see for *stellifera*. the differentiation of the ♂♂. Underside similar to upper, though paler. Mount Goliath.

**A. pagenstecheri** Semper (10 i) is unknown to me but appears, from the figure and description, to have *pagenste-* the forewing similar to that of *stellifera*, only without enlarged subapical white spot, the hindwing with the *cheri*. apical spot of *ionias* or *absona*, perhaps a little more solid. Founded on a single ♂ from Luzon.

**A. mimicaria** Prout. Smaller than *absona* (28 mm), costal edge of forewing less darkened, all the white *mimicaria*. markings extended, the median (behind the large cell-spot) and postmedian of forewing band-like; apical spot of hindwing much reduced, about as in *stellifera* (4 c). Dutch New Guinea: Mimika River. A ♀ from Mount Goliath shows the sexes to be similar.

**A. ionias** sp. n. (10 d) ♂, 33 and 38 mm. Near *absona*, the antennal pectinations shorter, the teeth of *ionias*. the wing-margins rather less long, the green hair-like scaling denser. All the white markings smaller, the cell-spot of the forewing narrow (type) or almost obsolete, not fused with the antemedian costal dash; a slight purple-grey admixture in this spot, a stronger purple-grey suffusion between the postmedian and subterminal costal spots. Hindwing with the apical spot more purplish than in *absona*. Vulcan Island, November 1913—January 1914, 2 ♂♂ in coll. Tring Mus.

- absona*. **A. absona** Warr. (10 d). ♂ rather variable, especially in the size of the apical spot of the hindwing. ♀ polymorphic, unless the ♀♀ of some other species are at present confused with it; the markings pretty constant in shape, but rather variable in width. Unfortunately I have not seen any ♀ from the D'Entrecasteaux, whence came WARREN's type (Fergusson Island), though a ♂ has since been received from Goodenough Island; hence I abstain from naming the forms. On the Louisiades several colour-forms occur, the markings either pale (as in *beatrice*, 4 e) or light orange-rufous, or red-brown or dark purple-fuscous. The first 3 forms are more or less general, the last is only known to me from the Louisiades and (1 example) from New Ireland, but 3 specimens from Rook Island are also like it except for the absence of the mark at abdominal margin. — ab. **exalbata** Warr., 1 ♂ from the Arfak Mountains, has the white markings greatly extended, somewhat creamy, strongly recalling *polyleucotes* (4 c). The species is distributed from Mysol to the Bismarcks.
- polyleucotes*. **A. polyleucotes** Prout (4 c). ♂. Rather larger than *absona*, the hindwing slightly broader, the markings not quite so creamy, even more extended than in *exalbata*, especially on the hindwing, where the green of the median area has almost vanished; apical spot of hindwing shadowy above, blackish beneath. Snow Mountains.
- adornata*. **A. adornata** Prout. ♂. Still purer white than *polyleucotes*, not larger than *absona* (10 d), both wings with a clean white basal patch, hindwing with the green anterior spot larger and less broken than in *polyleucotes* (4 c), a reddish subapical dash, larger and longer than that of *stellifera* (4 c). Snow Mountains and Fak-Fak, Dutch New Guinea.
- fascinans*. **A. fascinans** T. P. Luc. (♀ = *dentata* Warr.). ♂ rather brighter green than *ionias* (10 d); forewing with the large cell-spot of *absona* (10 d); hindwing with the subapical patch white, containing a narrow (perhaps variable) dark streak; both wings with the subterminal white markings strong between the 3rd radial and 2nd median (here shaped as in *commaculata*, 4 c), elsewhere slight, except at costal margin of forewing. ♀ like that of *absona* (10 d), except that the dark mark at abdominal margin is wanting. Queensland.
- piroides*. **A. piroides** Walk. (= *calcinata* Feld., ♀ = *scitissimaria* Walk.) (10 d). The type of the genus and an easily recognized species, at least in the ♀; the ♂ shows similar colour variations to that of the allied *absona*. The larvae are found in gardens on roses and it was the breeding of this species which first established positively the extraordinary sexual dimorphism of the group. — ab. (?) **dentifera** Strand, founded on a ♀ without locality, has the wing-tegulae and the entire proximal area of the forewing mixed with reddish, the cell-spot reddish without white admixture. — *piroides* is widely distributed in Queensland and FELDERS type of *calcinata* was from Clarence River. — **pacifica** Feld. is based on a ♀ said to be from Fiji. As it looks exactly like a rather broad-winged *piroides* with pale markings I suspect an error of locality, but it is still possible that it represents a race.
- insperata*. **A. insperata** Walk. (10 e) is a pretty species, of a brighter and more opaque green than *piroides*. ♂ with a broad, nearly straight white postmedian line, which broadens posteriorly. ♀ with the borders pale, narrower and more deeply excavated than those of *piroides*, the forewing with a slender antemedian line. Larva rough, brown, the lateral processes oblique, sometimes green, a white spot on side of 8th abdominal segment. On *Exocarpus cupressiformis*. Queensland to Victoria and Tasmania.
- erotyla*. **A. erotyla** Turn. differs from *insperata* ♂ in having the postmedian line very slender and curved, bifurcating towards hindmargin. Brisbane, 1 ♂. The Tring Museum also possesses a ♂, Dawson district, Queensland.
- polyglena*. **A. polyglena** Prout (12 a). A beautiful and somewhat isolated species, with large purple-black, white-bordered distal spots. Dutch New Guinea: Weyland Mountains, only 2 ♂♂ known.
- charma*. **A. charma** Prout (10 e) is the smallest of the group and the only one yet known from Borneo. The ♂ has the white distal spots placed somewhat as in *aphrias*, but the hindwing posteriorly is quite different. A ♀ from Mt. Harriet, Andamans, is larger, with the terminal white patches of the hindwing joined into one large patch, the underside with some dark subterminal markings which the ♂ lacks.
- isogamia*. **A. isogamia** Prout (4 c). Sexes alike, very like the ♂ of *aphrias* (10 e) but somewhat more translucent, veins strongly white-dotted, white costal edge narrower, much more strongly dark-speckled, cell-spot of forewing reduced. The venation differs, *isogamia* having the 3rd discocellular acutely angled inward, almost as in the genus *Oxychora*. Mount Goliath.
- erymnodes*. **A. erymnodes** Turn. In structure similar to *aphrias*, sex-dimorphism similar but rather less extreme. ♂ with the markings rather more reduced than in *isogamia* and *aphrias*, much more mixed with red-brown; veins dotted as in *isogamia*; no white on abdominal margin. Queensland: Cedar Bay, Kuranda and Mackay.
- aphrias*. **A. aphrias** Meyr. (= *fragmentata* Warr.) (10 e). On the ♂, see our notes under *isogamia*, the 2nd and 3rd discocellulars here form a continuous and moderate curve. The ♀ has the markings mixed with reddish brown, the cell-mark narrow, the terminal markings more or less confluent along the distal margin. British and Dutch New Guinea and Goodenough Island.

**A. albilauta** Warr. (= fragmentata ab. major Warr., absona ♀ Warr., nec ♂). ♂ Exceedingly like *aphrias albilauta*. (10e) ♂ but larger, the hindwing with the 1st median generally more shortly (or scarcely) stalked, the white marking on the abdominal margin of the hindwing stronger. ♀ also like *aphrias* ♀ but larger, the terminal markings generally ampler, nearly always more strongly pale-mixed. — ab (?) **niviplena** Prout has all the white markings considerably extended, the cellspot of the forewing not dark-pupilled, a white cell-spot present on the hindwing also. Snow Mountains: Upper Setekwa River (♂). — *albilauta* is distributed in British and Dutch New Guinea and reaches Mefor and the Trobriand Islands. *niviplena*.

**A. albiguttata** Warr. ♂ antennal pectinations very short, only about as long as the diameter of the shaft. Size of a large *callisticta* (11 e), the green ground-colour brighter, but almost covered with white spots; these are partly confluent, but in the distal area form two more regular rows, separated by the veins; terminal white dots on the veins. Snow Mountains, near Oetakwa River, only the type known. *albiguttata*.

**A. callisticta** Turn. (11 e). ♂ pectinations fully twice as long as in *albiguttata*, the white spots smaller. ♀ with the white markings slight, some dark purple-grey markings developed, the most conspicuous being a subterminal between the 1st radial and 1st median of the forewing, a large apical blotch on the hindwing (as in *desolata*, [4 d], or slightly broader) and a small one at anal angle of each wing. N. Queensland (type) and N. E. British New Guinea, Kumusi River, at a low elevation. Our figured ♂ is from the latter source. *callisticta*.

**A. albifinita** Prout, founded on a ♂ from Mount Goliath, has the size, shape and nearly the structure of *longiuscula* (4 c, as *iridescens*), but has dark purplegrey markings at base, along the hindmargin, near the termen (except between the median veins), at the termen (in the form of interneural streaks) and on the inward angle on the discocellulars, and is further characterized by having conspicuous white ante- and postmedian spots on the hindmargin of the forewing, the former terminating a thick, curved whitish line. *albifinita*.

**A. diazeuxis** Prout (= semilineata Warr.) (11 e). Easily distinguished from *callisticta* (11 e) by the bright green colour and the further reduction of the white spots, as well as by the structure. In *albiguttata* and *callisticta* R<sup>3</sup> and M<sup>1</sup> of the hindwing are stalked; in *diazeuxis* the 3rd discocellular is much more oblique, with the result that these veins are well separate at their origin. Arfak Mountains (type) and Hydrographer Mountains. *diazeuxis*.

**A. diversifimbria** Prout. Brighter green than *griseonotata* (11 e), the fringes with strong red-brown spots at the vein-ends, the abdomen with rather larger white spots; perhaps a race from lower altitudes. Hydrographer Mountains, 2500 feet. *diversi-fimbria*.

**A. griseonotata** Warr. (11 e). Venation of hindwing as in *diazeuxis*. Sexes alike. The white markings are slight and indefinite; the faint purple-grey lines, from which WARREN named the species, are commonly obsolete. Owen Stanley Range, 5000 feet and upward. *griseonotata*.

**A. albifusa** Warr. differs from *iridescens* and its form *longiuscula* (3 c) in having extensive white irroration in the median area anteriorly, the median area bounded by white bands and the subterminal white spots enlarged. Wings broad, as in typical *iridescens*. Owen Stanley Range. *albifusa*.

**A. iridescens**. Discocellulars of forewing acutely angled inward, as in *Oxychora*, of hindwing extremely oblique posteriorly, but with M<sup>1</sup> less widely separate than in *diazeuxis*, sometimes connate with R<sup>3</sup>. — **reducta** Prout is a small form from the Arfak Mountains, the ♂ with ill-defined white subterminal markings somewhat as in *taminata* (4 d), the ♀ with the borders darker and more purplish than in the other races. — **longiuscula** Prout (4 c, as *iridescens*) is rather larger and relatively longer-winged than the name-type, otherwise similar. Mount Goliath. — **iridescens** Warr. (♀ = *innuba* Warr.) (4 d, ♀ as *innuba*) is the race from the Owen Stanley Range. The ♀, with its characteristic borders, was not at first recognized as belonging to the same species. — **hydrographa** *subsp. nov.* Similar to *reducta*, the ♂ in addition with an ill-defined antemedian band on the forewing, recalling that of *albifusa*, the ♀ with the borders slightly more uniformly darkened than in *reducta*. Hydrographer Mountains, British New Guinea, 2500 feet, January, March, April and May 1918 (EICHORN brothers), 2 ♂♂ and 5 ♀♀ in Mus. Tring. *hydrographa*.

**A. gavissima** Walk. (11 e). A strikingly distinct species on account of the bright and varied coloration. The discocellulars of the hindwing are scarcely oblique and M<sup>1</sup> is very long-stalked with R<sup>3</sup>. The hindtibia of the ♂ is not dilated. Perhaps generically separable, or a pectinated section of *Chloromachia*. Described from Borneo but apparently commoner in Sikkim and Assam, known also from Ceylon and Selangor. — **aphrodite** *subsp. nov.* (Suppl. 4, pl. 1 c) is a heavily marked race from Szechuan (type) and Chinese Tibet; type in coll. PROUT, from Kwanhsien. *gavissima*. *aphrodite*.

#### 45. Genus: **Chloromachia** Warr.

Close to *Anisozyga* but with non-pectinate ♂ antenna and less oblique discocellulars of the hindwing. The few species known are all Indo-Australian and are not very homogeneous in appearance. The genotype (*divapala*) shows a similar sexual dimorphism to that of *Anisozyga*.

- divapala*. **C. divapala** Walk. (= *albisparsa* Walk) (11 e). In the nametypical race, the ♂ has the hindwing predominantly white, except distally, where the green preponderates and there is a small brown mark (sometimes larger on the underside) near the apex. The ♀ superficially resembles *Ochrognesia difficta* Walk. (Vol. 4, pl. 2 b) but has the borders brighter red-brown. Both sexes beneath are whiter, with the apical spot of the hindwing as in the ♂ upperside and with the addition of a brown cell-spot on the forewing. — **rufimargo** Warr. is a ♀-form from Borneo with the borders considerably broader and rather deeper reddish. If this indicates a subspecies, it should be called *albisparsa* Walk., as that name was based on a ♂ (not „♀“) from Sarawak, while the type of *divapala* was from Ceylon. From want of adequate material, I have not yet been able satisfactorily to separate the forms from India, Malaya, Hainan and even Sambawa. — **albiceps** Feld. (= *eoneinnata* Pagenst.) (10 i). ♂ less mixed with white, especially on the hindwing proximally; no brown apical spot on hindwing. The ♀, according to PAGENSTECHEER, has the borders broadened as in *rufimargo*, but more mixed with white, as is also the costal margin of the forewing; hindwing, as in the ♂, without distinct apical spot beneath. Amboina.
- aureofulva*. **C. aureofulva** Warr. (10 i) differs from *divapala* ♂ in the very large brown, yellowmixed anterior patch on the forewing from the cell to the apex. The ♂ type, from the Khasis, remains unique and it is possible that it is only a remarkable aberration of *divapala*; the antennae, which are simply ciliated in *divapala*, are unfortunately lost in *aureofulva*.
- augustaria*. **C. augustaria** Oberth. (Suppl. 4, pl. 1 c) from Chinese Tibet (Tse-kou) is unknown to me in nature, but apparently differs from the two preceding in the more sharply defined green median band of the forewing and the brown (costal) and white (posterior) patches beyond it.
- pulchella*. **C. pulchella** Warr. Antenna in both sexes with long teeth (rudimentary pectinations) which bear fascicles of cilia. The species was founded on a ♀ from Ron Island, larger and greener than the usual New Guinea form and with the white subterminal line on the forewing a little farther from the margin, but perhaps merely an aberration. The underside in this species has a rather large cell-spot on the forewing, as in *divapala*, but green, not brown. — **pallida** Warr. (11 c), from the mountains of New Guinea and Goodenough Island, is recognizable at once from our figure.

#### 46. Genus: **Lophomachia** Prout.

Differs from *Chloromachia* in having the abdomen erected. Antenna of ♂ dentate, but without fascicles of cilia.

- discipennata*. **L. discipennata** Walk. (10 e) is a searee species from Borneo, Selangor and E. Java, with much of the forewing brown, a green posterior patch remaining; the green proximal area of the hindwing separated by white from the brown distal.
- picturata*. **L. picturata** Hmps. differs from *semialba* (11 a) in having the brown area of the forewing narrower, leaving the hindmargin white proximally, the green basal area of hindwing indefinite, much mixed with white, etc. Ceylon and Bombay.
- semialba*. **L. semialba** Walk. (11 a) was described from Borneo, but similar forms occur in Sumatra, the Malay Peninsula, Burma and the Khasis. — **viridior** Prout, from Ceylon, has the brown area of the forewing narrowed, as in *picturata*, the postmedian line without central projection, predominantly green. The larva is short and stout, with subdorsal protuberances; olive-green, the anterior and posterior segments purple-brown. On Myrtus. Pupa green, speckled with purplish.
- albiradiata*. **L. albiradiata** Warr. (10 e). Wings differently shaped from the preceding, the hindwing broader. Distribution of colours quite different. WARREN'S type ♂ was from the Naga Hills and remained unique until Capt. SWANN sent me a ♂ from the Kachin Hills, Upper Burma, which is here figured.
- mombegaria*. **L. mombegaria** Oberth. (Suppl. 4, pl. 1 c). Evidently close to *albiradiata*, perhaps a race. Larger, the boundary of the green area of the hindwing rounded not angled, the forewing distally whiter behind the green apical patch, beneath with less developed dark spots. Chinese Tibet: Tien-tsuen.

#### 47. Genus: **Chlorodes** Guen.

Perhaps related to *Eucyclodes*, with similar (or still shorter) terminal joint of the palpus. ♂ with antenna pectinate to near apex, hindtibia not dilated. Hindwing different in shape from those of *Eucyclodes* and *Anisozygia* (produced at anal angle), above not concolorous with forewing, its 2nd subcostal longer stalked, the 1st median separate. Only one species is known.

- boisduvalaria*. **C. boisduvalaria** Le Guill. (= *mirandaria* Guen.) (11 a). A beautiful species, quite unlike any other. Sexes alike. Larva with paired dorsal processes, analogous to those of the preceding genera. Tasmania (type), Victoria and New South Wales.

48. Genus: **Opisthotia** Warr.

Another one-species genus, agreeing nearly with *Chlorodes* in ♂ palpus, antenna, shape and venation of hindwing and a few other characters, but essentially different in that the 2nd subcostal arises far distally to the 5th; thus its true affinities are perhaps with the *Rhomborista* group. Abdomen crested. Hindtibia of ♂ dilated.

**O. tumidilinea** Moore (11 a). Quite distinct in the markings as well as in its structural characters. *tumidilinea*. Only known from Sikkim, the ♀ apparently not yet discovered.

49. Genus: **Osteosema** Warr.

Here are grouped together a few not very closely related species in which the antennae in both sexes are rather short and pectinated. Palpus rather slender, the 3rd joint short in both sexes or moderately elongate in the ♀ only. Abdomen not crested. Hindtibia of ♂ not dilated. Forewing (except in Section C) with the venation normal. Hindwing with the anal angle pronounced, sometimes (*pastor*) slightly produced, recalling that of the preceding genera; 2nd subcostal and 1st median both stalked. The species, excepting the anomalous Section C, are N. Indian.

A. Pectinations short; ♀ palpus with 3rd joint short (*Osteosema*).

**O. pastor** Btlr. (11 a). Distinguishable from *sanguilineata* (11 a) by its more *Chlorodes*-like shape, *pastor*. which misled BUTLER into placing it in that genus. It was described from Darjiling, but is found also in the Khasis.

**O. sanguilineata** Moore (11 a). Hindwing with distal margin scarcely bent in the middle, the broad purple submarginal line more regularly curved, the green postmedian one not forming a broad patch between the radials. Found in the same localities as *pastor*, also in Nepal. *sanguilineata*.

B. Pectinations in both sexes longer; ♀ palpus with 3rd joint relatively long (*Chlorostrota* Warr.).

**O. albovidis** Moore (= *albiviridis* Hmps., ♂ = *praeampla* Warr.) (10 e). Hindwing bent at 3rd radial. Forewing with costal margin much more mixed with red-brown than in the two preceding; both wings with the white postmedian line much less bent, subterminal of forewing green, of hindwing far from distal margin, almost obsolete, leaving an extended whitish area beyond. „N. E. Bengal“ — Sylhet and the Khasis, very rare. *albovidis*.

C. Forewing with 1st subcostal anastomosing with costal, 2nd subcostal arising beyond 5th (gen. div. ?).

**O. discata** Warr. (10 i). Hindwing more angled than in sect. A, but sect. B is intermediate. Maculation more *Anisozyga*-like. The ♂ has the 3rd joint of the palpus rather short, the pectinations moderate. N. Borneo and Sarawak. — **benguensis** *subsp. nov.* Forewing with cell-spot slenderer, patch at hind end of postmedian larger, almost entirely without dark shading distally; hindwing beneath without dark apical spot, which is well developed in the type race. Luzon, subprovince Benguet: Klondyke, 800 feet (type ♂ and a smaller ab. with less angled hindwing); Palali, 2000 feet, 1 ♀; — province Rizal: Montalban, 1 ♀. Collected by WILEMAN. *discata*. *benguensis*.

50. Genus: **Hemichloreis** Turn.

Face smooth. Tongue well-developed. Palpi moderate, porrect; basal and 2nd joints shortly rough-haired beneath; terminal joint short, obtuse. Antennae in ♂ bipectinated, apices simple. Thorax not crested, beneath not hairy. Abdomen not crested. Femora not hairy. Posterior tibiae in ♂ not dilated. Hindwings without costal expansion at base; frenulum and retinaculum in ♂ well-developed. Forewing with 1st subcostal from cell, running into costal, 2nd subcostal out of 3rd, 5th short-stalked with 1st radial, 3rd radial and 1st median short-stalked. Hindwing with costal approximated to cell near base, rapidly diverging, 2nd subcostal short-stalked, 3rd radial and 1st median connate (according to GOLDFINCH stalked).

**H. exoterica** Meyr (♂ = *theata* Turn.). ♂ 19 mm, ♀ 29 mm. Face reddish-brown, upper and lower edge snow-white. Forewing with costa straight to near apex, apex pointed, termen sinuate, oblique; bright green, with an ochreous-brown subcostal streak; markings dark reddish-brown; cell-mark ocellated; a short, erect mark from middle of hindmargin; a broad, straight-edged terminal band, containing a green subapical blotch. Hindwing rounded; cell-mark similar; terminal band without subapical blotch. New South Wales. Unknown to me. *exoterica*.

51. Genus: **Xenochlaena** Lower.

Face smooth, projecting somewhat. Palpus twice diameter of eye, terminal joint in ♂  $\frac{1}{3}$  of second joint. Antenna of ♂ bipectinate to about  $\frac{4}{5}$ . Thorax and abdomen not crested; thorax hairy beneath. Hind-tibia of ♂ without median spurs. Hindwing without rounded costal expansion at base, frenulum well developed in ♂. Forewing with discocellulars strongly incurved, strongly oblique posteriorly; 1st subcostal from cell, free, 2nd—5th stalked, 1st radial shortly stalked with them, 1st median separate. Hindwing with costal approximated to cell near base, gradually diverging, 1st radial long-stalked with subcostal, 1st median separate. These particulars are given in a recent revision by GOLDFINCH; I have never seen the only known species, *porphyropa*.

*porphy-*  
*ropa.*

**X. porphyropa** Lower (= *porphyropis* Lower). "Pectinations about  $1\frac{1}{2}$ . Forewing pale lilac mixed with purple; a broad ferruginous-red fascia, edged on both sides throughout by a line of ochreous; proximal edge nearly straight, from  $\frac{2}{5}$  costa to middle of inner margin; distal edge from beyond  $\frac{3}{5}$  costa to beyond middle of inner margin, angulated outwards in middle; ground-colour on either side of the fascia darker; a fuscous lunate discal spot; fringes deep purplish, terminal third sharply whitish. Hindwing rounded; lighter towards base; a faint darker lilac median fascia. Forewing beneath pale lilac, becoming ferruginous towards apex. Hindwing as forewing but median fascia becoming ochreous-ferruginous on costal half." Broken Hill, New South Wales.

52. Genus: **Uliocnemis** Warr.

This beautiful genus, the parent of the well-known *Comibaena*, resembles it in shape, coloration and pattern, in the structure of the palpus and the ♂ antenna, the hairy breast and femora, tufted tibiae, etc. Differs in the better developed ♀ frenulum, crested metathorax and abdomen and sometimes in the absence of the proximal spurs of the hindtibia, which, moreover, is not dilated in the ♂. Antenna of the ♀ pectinated, which is only rarely the case in *Comibaena*. Larval habits as in *Comibaena* and *Euchloris*. Distributed through a great part of the Indo-Australian Region, but not rich in species.

## A. Hindtibia with 4 spurs.

*biplagiata.*

**U. biplagiata** Moore. Except in the tibial armature remarkably close to *castalaria* Oberth. (Suppl. 4, Taf. 1 c), with which it was formerly united. Hindwing with postmedian slender and slightly incurved between the 3rd radial and 2nd median (in *castalaria* here thick and quite straight), apical spot of hindwing brighter, predominantly reddish or orange. Ceylon (type), the Greater Sunda Islands and Celebes. — **subornataria** Rothsch. (= *ceramicaria* Oberth.) is a larger form from Ceram. — **elegans** Warr. (11 b). Generally not larger than *biplagiata*; antemedian line of forewing less acutely angled; apical patch of hindwing often reduced and coloured more nearly as in *castalaria*. New Guinea, Louisiades and N. Queensland. — **unidentata** Prout (= *rookaria* Oberth., *cassidara* Pagenst., nec Guen.) differs from *elegans* in having the blotches generally larger, the postmedian line of the hindwing with a pronounced tooth outward on the 2nd median. Described from Rook Island, but distributed in the Bismarck Archipelago. — **negligens** Prout, from St. Matthias Island, has all the white markings extremely slender, the subterminal in particular almost obsolete. Hindwing with the apical patch slightly shortened. — The larva of *biplagiata* has been found in Ceylon feeding after the manner of *Comibaena pustulata*; it is yellowish drab, rather stout, the segments provided with paired fleshy processes, to which it attaches small pieces of withered leaves and flowers; it rests with the body much bent.

*suborna-*  
*taria.*  
*elegans.*

*unidentata.*

*negligens.*

## B. Hindtibia with 2 spurs.

*castalaria.*

**U. castalaria** Oberth. (= *cassidara* auctt., nec Guen.) (Suppl. 4, pl. 1 c). This well-known Khasi species was long misidentified as *cassidara*, notwithstanding its disagreement with GUENEE'S description in several particulars; see *Comibaena*. Besides N. India, *castalaria* is known from the Malay Peninsula, Tonkin and W. China.

*woodfordi.*

**U. woodfordi** Warr. Very similar to *castalaria* (Suppl. 4, Taf. 1 c), forewing with the postmedian line straighter and the blotch at anal angle wanting. Solomon Islands.

*partita.*

**U. partita** Walk. (= *felicitata* Walk., *concisiplaga* Walk., *calliptera* Meyr., *doddaria* Oberth.) (11 b). Distinguishable from all other *Uliocnemis* by its angled hindwing, with large white patch at anal angle. Variable and widely distributed — Ceylon, India, Tonkin, Malaysia, Sambawa, Philippines, Buru, Queensland, New Guinea, etc. If races prove separable, the name *partita* will apply to the Indian, *concisiplaga* to the Malayan, *felicitata* (= *doddaria*) to the Australian and *calliptera* to the New Guinea.

53. Genus: **Agathiopsis** Warr.

Probably a Papuan section of the following genus, differing chiefly in the undeveloped crests of the abdomen. The species are considerably larger and have the hindwing generally more strongly angled at the 3rd radial. All show rather strong sexual dimorphism.

**A. maculata** is brighter, less translucent green than the other species and has always a sharply defined green patch (long in the ♂, shorter in the ♀) at the distal margin of the hindwing; ♀ without white spots on the abdomen. — **unanymis** Warr., from the Arfak Mountains, Dutch New Guinea, has the border of the forewing *unanymis*. broad, not much narrower or darker than that of the ♀. — **maculata** Warr. (11 b). Border of forewing moderate *maculata*. and dark in the ♂. British New Guinea, D'Extrecaesteaux and Louisiades, Vulcan and Dampier Islands and North Queensland, the type from Fergusson Island. — **occidentis** *subsp. nov.* 41—42 mm. Similar to *maculata*, *occidentis*. but with the midterminal green spot of the forewing longer. Central Buru: Kako Tagalago, 2700 feet, May 1922 (C., F. and J. PRATT), 2 ♂♂, 2 ♀♀, in coll. JOICEY. — **benedicta** Pagenst. Borders in the ♂ more purple, *benedicta*. on an average slightly narrower, on the hindwing apically generally less palemixed. Bismarck Archipelago the type from New Britain. — **angustifascia** Warr. Border of forewing in the ♂ narrow and dark. Solomon *angusti-* Islands, the type from Bougainville. *fascia*.

**A. subflavata** Warr. Intermediate in shape and colouring between *maculata* (11 b) and *basipuncta* (21 b). *subflavata*. White spots on abdomen small. Forewing without basal patch, both wings with the dark border much broken, showing vestiges about the radials, also on hindwing at apex and near anal angle and on forewing a large patch from anal angle to the 1st median. Choiseul, the type ♂ only. A ♀ from Rendova which probably belongs to it is much like *basipuncta* ♀ (12b), with broad, dull purple-grey borders, but without white spots on the abdomen and with an ill-defined green spot at middle of distal margin of forewing.

**A. basipuncta** Warr. (= *amphibola* Turn.) (12 b ♂ and ♀). Not generally very variable, except sexually. *basipuncta*. Both sexes with white abdominal spots, though they are sometimes reduced in the ♀. The borders of the ♀ vary between purple-grey and reddish. Buru, Ceram, N. Queensland, New Guinea and its islands, the type from Fergusson Island. On the Bismarck Archipelago the variability apparently increases somewhat, culminating in — **talaseensis** *subsp. n.* ♂ with the border of the hindwing vestigial except at its proximal side, the dark spot *talaseensis*. on the fold of the forewing near the anal angle wanting. ♀ similar to that of *subflavata* (which may therefore prove to be another race of *basipuncta*), but with small white abdominal spots. New Britain: Talasea, January-April 1925 (A. F. EICHHORN) 2 ♂♂ and 1 ♀ coll. Tring Mus. — **leptocosma** Prout, from N. Celebes, only known *leptocosma*. in the ♂, is distinguishable by its smaller size, as well as reduced markings, the basal patch and the subapical spot, however, rather strongly darkened.

54. Genus: **Chloromianta** Warr.

Frenulum developed in the ♂, probably (as in *Agathiopsis*) wanting or vestigial in the ♀. Antenna of ♂ pectinate. Hindtibia of ♂ slightly dilated, with slender hair-pencil, all spurs present. Abdomen with 4 dorsal crests. Forewing with the 2nd subcostal stalked beyond the 5th. Hindwing slightly toothed at the extremity of the 1st and of the 3rd radial. Only the type species has hitherto been referred to this genus, but it could probably be extended so as to include *Agathiopsis* and *Rhomborista*, which agree with it in the characteristic subcostal venation and several other characters.

**C. ferruginata** Warr. (12 c). Unlike any other known species, although the maculation bears some *ferruginata*. general resemblance to that of the following. Khasis, apparently extremely rare; also 1 ♂ from Selangor.

55. Genus: **Rhomborista** Warr.

Distinguished from *Chloromianta* (see above) by the reduction of the crests and the development of a dorsal pattern of paired white spots. 2nd discocellular of the forewing generally strongly curved inward. Differs from *Agathiopsis* in the smaller size, the different pattern and the complete atrophy of the ♀ frenulum. The range is from India to Dutch New Guinea. Three sections may be recognized, according to the armature of the hindtibia; but as the distinctions are partly sexual and all the other characters agree so well, I do not now regard them as generic.

Section A (*Rhomborista*). Hindtibia in ♂ and ♀ with 4 spurs.

**R. devexata** Walk. (= *seutuligera* Btlr., *seutuligera* Swinh.) (11 c). Teeth of hindwing more developed *devexata*. than in the other species, characteristic white terminal spots developed in the red borders. Distal patch of forewing bright, in the ♀ large, in the ♂ often reduced, in which case an isolated spot between the 2nd and 3rd radials remains to represent its vanished anterior lobe. N. W. India to the Khasis, not rare.

*semipurpurea*. **R. semipurpurea** Warr. has the distal patch still larger, more violet in colour, its proximal side without the deep excavation, reaching the costal margin, though enclosing a large green apical spot. Distal margins without the white spots. Assam and Malay Peninsula, very rare.

*monostieta*. **R. monostieta** Wehrli (Suppl. 4, pl. 1 d). ♀ unknown, ♂ closely similar to the ♀ forms of *megaspilaria*, but without apical spot on the hindwing, the patch on the forewing black-brown in its inner half, light red-brown in its outer. The 4 spurs of the hindtibia short; in one example (out of 11) the proximal pair is wanting. E. China.

*mianta*. **R. mianta** West (12 c) also has the forewing much like *megaspilaria*-♀, but with somewhat less ill-developed antemedian line; hindwing with a rather large apical blotch. Luzon, only the ♂ known.

Section B (*Spaniocentra* Prout). Hindtibia in ♂ with 2, in ♀ with 4 spurs.

*agathoides*. **R. agathoides** Prout (12 b). The irregular markings recall a small *Agathia* more than any other known *Rhomborista*. Founded on a ♂ from Mindanao. A larger ♀ from the same locality, which may belong with it, or to some unknown ♂, has similar borders to the hindwing, also to the forewing anteriorly, but has the cell-dot minute, the transverse markings wanting, an extremely large purplish blotch on forewing, intermediate between those of *megaspilaria*-♀ and *semipurpurea*.

*megaspilaria*. **R. megaspilaria** Guen. (= *uniplaga* Walk.) (11 c). Founded on a ♀ from Sarawak. In that sex the patch at tornus of forewing is rather large, reaching to or across the 3rd radial, intermediate in colour between those of *devezata* (11 c) and *semipurpurea*; in the ♂ it is small and encloses a moderate white spot. Malay Peninsula, Java, Sumatra and Borneo. — **pannosa** Moore, from Ceylon, and reaching Central India, is rather less small in the ♂, with the tornal spot more extended; the ♀ differs little from that of *megaspilaria*, but both sexes show a somewhat larger mark at the apex of the hindwing. — Larva slender, green, twiglike, with the prothorax bifid in front, much as in the *Hemithea* group; on Loranthus. Pupa green. — **lyra** Swinh. (Vol. 4, pl. 2 b, as *pannosa*) is a rather large, rather variable form, with the tornal patch somewhat reduced in the ♀, that of the ♂ generally about as large as in *megaspilaria*-♂, but darker and enclosing a smaller white spot or dot, which may even be wanting altogether; sometimes the patch itself is greatly reduced. Khasis (common) and reaching Nepal westward, Hainan and Formosa eastward. — **incomptaria** Leech (Vol. 4, p. 19), from W. China, is rather bluer green, markings reduced, antemedian of forewing obsolete.

*intermediata*. **R. intermediata** Prout. Between *megaspilaria* and *undiferata* in shape. ♂ hindtibia strongly dilated, as in the latter. Tornal patch at least as dark as in *gibbosa* (4 e) and almost as large. S. Celebes.

*apatella*. **R. apatella** West. "Forewing asphodel green, costa dark greyish brown, edge white; a narrow border of dark greyish brown on termen, increased in width from vein 3 to tornus, forming a patch; a white spot at apex, a larger one in patch at tornus; termen slightly angled at vein 4. Hindwing border enlarged at apex to a small patch with white centre; inner margin dark greyish brown." Luzon, 1 ♂. Probably an ab. of the following, with purpler, paler-centred terminal blotch than the type.

*undiferata*. **R. undiferata** Walk. (= *unduliferata* Oberth.) (12 b). ♀ much like those of some *megaspilaria* forms. But in both sexes the red terminal line broadens at the apex of the forewing, more than in any other *Rhomborista*, and the hindwing often shows more extended bordering. The ♂ further differs in the shape of the forewing and of its tornal patch. Borneo (?), Celebes (type), Buru and Ceram.

*stictoschema*. **R. stictoschema** Prout (12 b). Possibly a race of *gibbosa*, but scarcely so eccentric in shape. Cell-spots larger, distal margins with triangular spots on the veins, etc. Ceram.

*gibbosa*. **R. gibbosa** Prout (4 e) is the only *Rhomborista* yet known from New Guinea and is characterized by the peculiar shape of the ♂ forewing. ♂ hindtibia dilated, as also in *undiferata*. Dutch New Guinea (loc. typ.) and Waigeu.

Section C. Hindtibia in ♂ and ♀ with 2 spurs.

*isospania*. **R. isospania** Prout (12 b). Very similar to *megaspilaria* except in the tibial armature of the ♀. Tornal blotch a little duller, terminal line developing small triangular spots somewhat as in *stictoschema*. Bombay and Ceylon.

## 56. Genus: **Argyrocosma** Turn.

Nearly related to those *Comibaena* in which the subcostal venation is specialised, SC<sup>1</sup> being stalked with the others and SC<sup>2</sup> arising after SC<sup>5</sup>. Palpus less long-scaled. Discocellulars very oblique, angled outward at the origin of the 2nd radial. Both wings with fine whitish strigulation. Founded on *argosticta*, to which *phrixopa* is very close, if not indeed a race.

**A. phrixopa** *Meyr.* (= *albipunctata* *Warr.*) Strigulation mostly rather elongate, partly confluent, *phrixopa*. cell-dots generally moderately large, forewing with a noticeable dark dash at apex. — Larva brown, rugose, clothed with fragments of leaf as in *Comibaena*. No other markings. Sambawa (type), Sumba, Java and Adenara. Perhaps also on Buru.

**A. argosticta** *Turn.* (12 d). On an average smaller, with the abdominal margin of the hindwing relatively *argosticta*. less elongate, the strigulation shorter, in part punctiform; apical dash less developed. Queensland.

### 57. Genus: **Hercoloxia** *Prout.*

Like *Comibaena* but without proximal spurs, hair-pencil or terminal process on the hindtibia. On the analogy of *Rhomborista* — *Spaniocentra*, it might be treated as a section of *Comibaena*.

**H. chlorochromodes** *Prout.* Extremely like a large ♂ of *Comibaena tenera* (11 d). Costal margin of forewing *chlorochromodes*. less white. Lines equally weak, but the postmedian less punctiform, on the forewing forming a deep inward curve between the 2nd median and the hindmargin. Dradjad, Preanger, W. Java.

### 58. Genus: **Comibaena** *Hb.*

This well-known genus has already been discussed in Vol. 4, p. 19. The most outstanding characters are the long pectinations of the ♂ antenna, the longhaired 2nd joint of the palpus, dilated hindtibia of the ♂, with hair-pencil and more or less long terminal process and generally the bright green coloration, often with red terminal markings. Distributed in the Old-World regions, reaching Western Europe, Japan, the Cape of Good Hope and Fiji.

**C. tenera** *Warr.* (11 d). Paler green and more thinly veined than the more typical *Comibaena*, the *tenera*. discocellulars somewhat suggesting those of *Argyrocosma*; in all respects transitional towards *Hercoloxia*. Described from the Khasis, its best-known habitat, but it has also been taken at Darjiling.

**C. subhyalina** *Warr.* (= *inductaria* *auctt.*, n. *Guen.*) (11 d). The largest species of the group with *subhyalina*. spotted (white, red-ringed) markings and structurally distinct from the others in that the 3rd discocellular is highly oblique, resulting in a wide separation of the 1st median from the 3rd radial. N. India, from the Punjab to the Nagas.

**C. albicatena** *Warr.* (12 d). Rather more opaque-winged than *subhyalina*, the central spots smaller, *albicatena*. but more numerous. Both wings with the 1st median arising from the hind angle of the cell, or even stalked with the 3rd radial. Khasis. Recently received from Selangor.

**C. dialitha** *West.* (11 d) differs from *albicatena* in having all the markings reduced, especially those *dialitha*. of the costal and distal margins and of the abdomen; the white terminal spots of the hindwing show no expansion at the 3rd radial and at anal angle. Philippines: Mindanao and Luzon.

**C. inductaria** *Guen.* (= *smaragdus* *Hmps.*) (12 d). Again smaller, combining the structure of *albicatena* *inductaria*. with more nearly the markings of *subhyalina* but differing from both in that the 1st subcostal of the forewing is stalked with the others. Described from Sarawak, but very generally distributed from India and Ceylon to Formosa and to Tenimber. — **consobrina** *Warr.*, from Queensland, has the dark terminal line obsolete, except *consobrina*. from the costa to the 1st radial, and some other slight differences in the relative sizes of the markings. The forms from British New Guinea, Goodenough and Rossel Islands and the Bismarek Archipelago stand at present with the Queensland.

**C. cheramota** *Meyr.* has about the size and colouring of *albicatena* (12 d) but lacks the transverse series of *cheramota*. red-and-white spots. Both wings with blackish cell-dot, the white, red-edged terminal marks small, excepting one at tornus of forewing and one at apex of hindwing. Forewing with traces of white ante- and postmedian lines. Fiji, very variable.

**C. viridifimbria** *Warr.* (11 d). Size of large *consobrina*. Rather paler, more irrorated with whitish; *viridifimbria*. distal margins merely with small white vein-dots, fringes also plain green. British New Guinea: Angabunga River. Also from Mount Goliath, Central Dutch New Guinea.

**C. rhodonia** *Prout.* Texture and colour of *viridifimbria*, possibly its ♀. The white terminal dots are *rhodonia*. surrounded with crimson, which extends on to the proximal part of the fringe; and the forewing has blotches of the same colour about the postmedian white spots of the forewing, the blotches in cellules 5 and 1 b large. Mount Goliath, 1 ♀.

**C. castaneata** *Warr.* (= *agathia* *Warr.*) (11 e). A somewhat anomalous species, the ♂ lacking the *castaneata*. hindtibial pencil and process, the ♀ (as in some African *Comibaena*) having the antenna strongly pectinate. In markings unlike any other species. British and Dutch New Guinea.

- pictipennis*. **C. pictipennis** *Btlr.* (11 b) is another unmistakable species. The red markings are more extended than in even the most heavily marked examples of *ornataria* *Leech* (Vol. 4, pl. 2 c) and include an additional one at midtermen of hindwing. N. India, from Kashmir to the Khasis; also from Formosa. — **superornataria** *Oberth.* (Suppl. 4, pl. 1 d), from Chinese Tibet, is a slight modification of *pictipennis*, with some green maculation enclosed by the distal red (and orange-brown) markings of the hindwing.
- ornataria*. **C. ornataria** *Leech* has been described and figured in Vol. 4, p. 21, pl. 2 c. It is now known to me from several localities in W. China and has sometimes the posterior red mark of the forewing a good deal larger than in the specimen figured.
- delineata*. **C. delineata** *Warr.* (12 e) has been briefly described in Vol. 4 (p. 20), but belongs essentially to the Indian Region, from the Nepal frontier through Sikkim to Bhutan. Except at the distal margin of the hindwing there is scarcely any red marking, but the postmedian line of both wings, after forming an acuter angle than in *ornataria* becomes thick and yellow posteriorly, sometimes with very faint proximal red edging.
- apicipicta*. **C. apicipicta** *Prout* (Vol. 4, p. 20, pl. 3 c), from Indian Tibet, is more simply marked than *delineata*, but has a characteristic pink spot at the apex of the hindwing, accompanied by a blackening of the terminal line.
- striataria*. **C. striataria** *Leech* (Vol. 4, p. 20, pl. 2 c) is the most modest species of the group, wanting even the terminal markings of *apicipicta*. W. China.
- chalybeata*. **C. chalybeata** *Moore* (11 c). Hindwing with distal margin straighter and anal angle more produced than in any of the preceding. Further characterized by the white cell-marks, the nearly straight white lines, which are rather thick and parallel, the white admixture, especially in the hindwing, and the small red and white spot at the anal angle of the latter. Sikkim and Bhutan.
- dubernardi*. **C. dubernardi** *Oberth.* (Suppl. 4, pl. 1 d). Wings more rounded, with less white admixture, the cell-dots small and dark, the anal spot of the hindwing larger, more orange, the fringe of the hindwing spotted with red. Founded on 3 ♂♂ from Tse-kou. — **rectilineata** *Sterneck*, founded on a single ♀ from Sumpanting, W. China, should, according to the description, deviate from typical *dubernardi* in having the postmedian of the forewing parallel with the distal margin and becoming thicker and yellower posteriorly; perhaps also in the "rose-red" fringe of the hindwing. Probably an aberration or (as WEHRLI assumes) the normal ♀. OBERTHÜR'S figure was doubtless unknown to STERNECK.
- latilinea*. **C. latilinea** *Prout* (= *theodoraria* *Oberth.*) (Suppl. 4, pl. 1 d). Not appreciably strigulated with white and further distinct from *dubernardi* in having a dark red terminal line, no spot at anal angle of hindwing, etc. W. China.
- swanni*. **C. swanni** *Prout* (12 a) differs from *latilinea* in having the veins finely whitened, the antemedian line not quite so straight, the terminal line white, with minute brown dots, fringe with the brown spots weakened on hindwing. Kachin Hills, Upper Burma.
- cenocraspis*. **C. cenocraspis** *Prout* (12 d). Extremely like *swanni*. Palpus apparently a trifle shorter. Hindtibial process rudimentary. Antemedian line of forewing straighter, postmedian not quite so straight. Termen and fringe not spotted. Kachin Hills; also found in W. China.
- hypolampes*. **C. hypolampes** *Prout*. Lines broader than in *cenocraspis*, more as in *latilinea*, but with the postmedian somewhat curved near costa. Fringe of forewing white, as in *cenocraspis*. Hindwing with a very fine white line close to distal margin, as in *Euchloris smaragdaria* or *chlorophyllaria*. Underside in this and the two preceding species with the postmedian line well developed, whereas in *latilinea* it is obsolete. Tibet: Vriantong.
- cassidara*. **C. cassidara** *Guen.* (= *detenta* *Walk.*, *discessa* *Walk.*, *dentata* *Moore*) (12 e). Nearest to the African species of the *leucospilata* group (Vol. 16, p. 14, pl. 2 e), but without definite white spots on the fringe. The less sinuous postmedian line and the reduced markings at the distal margin distinguish it from the species which follow. Local in Central and North India; JOANNIS has recently recorded it from Tonkin. The larva, according to MOORE, has been found on *Zizyphus* and *Ixora*.
- quadrinotata*. **C. quadrinotata** *Btlr.* inhabits the Punjab and Kashmir and has been discussed and figured in Vol. 4, p. 21, pl. 5 a. — **fuscidorsata** *Prout* (= *integranota* *Swinh.* nec *Hnpsn.*) (11 b), from the N. E. Himalayas and Ceylon, differs chiefly in having dark blotches on the abdomen above. — **pallidicincta** *Warr.*, founded on a single ♀ from Mount Gedeh, Java, seems to differ from *quadrinotata* in being somewhat larger and paler, with the spots on the wings more reddish, the very slender white postmedian line of the forewing more distally placed than in *fuscidorsata*. — **meyricki** *subsp. nov.* (= *quadrinotata* *Meyr.* nec *Btlr.*) has the spots on the wings minute, still more red than in *pallidicincta*, the postmedian line still nearer to the distal margin. Talaut, the type and another ♂ in the Tring Museum, a further paratype in the British Museum.

**C. subprocumbaria** Oberth. (Suppl. 4, pl. 1 d) differs from *procumbaria* (Vol. 4, pl. 2 b) in the larger spots, the one at the apex of the hindwing more sharply cut by brown streaks along the veins. Siao-lou, Chinese Tibet. *subprocumbaria.*

**C. albipunctata** Warr. is also similar to *procumbaria* (Vol. 4, pl. 2 b) but has a row of conspicuous white dorsal spots on the abdomen and a red line along the abdominal margin of the hindwing. Moreover, the centre of the spots on the wings is not white, but only a little paler than their circumference. Dawson district, Queensland. TURNER regards this as an aberration of *mariae*. *albipunctata.*

**C. mariae** T. P. Luc. (= *connata* Warr.) (11 c). Distinct from all the preceding by the extension and the shape of the tornal spot of the forewing. In the ♂ both spots are filled-in with pale or whitish colouring, in the ♀ they are still larger and are nearly unicolorous throughout. Queensland. — **syndyas** Prout, from New Guinea, has the spots in both sexes coloured like those of *mariae*-♀, or even darker and more uniform, that of the forewing usually a little shorter, the celldot of the hindwing weak or obsolete. — **aporia** Prout has the spot of the forewing elongate (reaching the 2nd radial) and filled-in with lighter reddish. Founded on 4 ♂♂ from the Arfak Mountains, taken together with 4 typical ♂♂ of *syndyas*. *mariae.* *syndyas.* *aporia.*

**C. biplaga** Walk. is a rather rare species from Borneo and Sumatra, superficially similar to the ♂ of *mariae*, but with the spot of the forewing smaller, structurally distinct in that the 1st subcostal of the forewing is stalked with the other subcostals. Possibly a form of the following, in which case it will provide the oldest name for the collective species. *biplaga.*

**C. integranota** Hmps. (11 b). Structurally similar to *biplaga*, superficially much like *mariae* *syndyas* but with the spot of the hindwing longer, often filled-in with paler colouring, more as in ab. *aporia* or *mariae* *mariae*. Described from Ceylon, but generally distributed in India. — ab. **discussa** ab. nov. lacks both the dark spots, thus closely resembling a small *cassidara* except in the venation. Not rare on Ceylon, with the type form. — **attenuata** Warr. is generally smaller and has on the forewing an additional subterminal spot in cellule 4; in the typical form this spot is narrowly connected with the tornal spot, but in — ab. **isolata** ab. nov. it is well separated, cellule 3 remaining wholly green. *attenuata* represents *integanota* in Borneo (loc. typ.) the Malay Peninsula, the Philippines and Java; single larger ♀♀ from S. Celebes and Adenara, similar to ab. *isolata*, perhaps represent other races but must await better material. — **multigruma** Prout, founded on a ♀ from the Hydrographer Mountains, British New Guinea, is also larger than *attenuata*, the markings larger, dark purple-grey, including additional small spots near base of forewing (behind the cell) and at anal angle of hindwing. *integanota.* *discussa.* *attenuata.* *isolata.* *multi-gruma.*

**C. nigromacularia** Leech (= *eurynomaria* Ob.) (Vol. 4, pl. 3 b). In arranging the Hemitheinae of the Tring Museum 18 years ago, I discovered that this W. Chinese species was distinct, at least racially, from its Japanese representative *delicatior* Warr., the latter having a reddish apical spot of the hindwing, whereas in true *nigromacularia* it is purple-blackish. Subsequently OBERTHÜR (Et. Lep. Comp. Vol. 12, pp. 107—109) called attention to the distinction; and it is a curious commentary on his unbounded faith in figures as against descriptions, that he misidentified our “bonne figure”, while quite correctly interpreting the descriptions. The Palearctic *delicatior* Warr. (= *nigromacularia* Ob. nec Leech) is shown at fig. 3273 of the cited volume of the “Études”. *nigromacularia.*

**C. albimarginata** Warr. (11 c). This very beautiful species differs from *nigromacularia* in the larger spots of the hindwing, extended white wash of the forewing, more proximally placed postmedian line, extended cell-dot of hindwing, etc. Sikkim (type) and the Khasis. *albimarginata.*

**C. argentataria** Leech (= ? *argentaria* Ob.) (Vol. 4, pl. 2 b) is easy to recognize from our figure and description. To the geographical range given in Vol. 4 is to be added Formosa. OBERTHÜR has figured a large form from Ta-t sien-lu. *argentataria.*

**C. signifera** Warr. (12 e). Agrees with *argentataria* in that the ♀ antenna is pectinate. Differs in the longer cell-mark of the hindwing and its narrow, nondentate border, also in the long white proximal prong from the border of the forewing. The unique type, from Momeit, Upper Burma, is not in perfect condition but appears to have little green on the forewing except in the central area. — **subargentaria** Ob., from Chinese Tibet, has the forewing predominantly green, as in *argentataria*, from which it differs in having the hindwing of *signifera* and a strong fuscous antemedian streak on the hindmargin of the forewing. *signifera.* *subargentaria.*

## 59. Genus: **Gelasma** Warr.

Palpus moderate or shortish, the terminal joint in the ♀ occasionally (but rarely) elongate. Antenna in the ♂ pectinate, with more or less long branches. Hindtibia of ♂ usually dilated, with hair-pencil. Abdomen not crested. Forewing with 1st subcostal usually free; 1st median not stalked. Hindwing angled or tailed at 3rd radial, 2nd subcostal stalked, 1st median stalked.

An Indo-Australian genus, represented in Africa by *Antharmostes*, which differs chiefly in the more or less crested abdomen. The few Chinese and Japanese *Gelasma* have been given in Vol. 4, p. 22, but those which inhabit the borderland between the Palaearctic and Indian Regions are also mentioned here.

Section A (*Chrysochloroma* Warr.). Hindtibia of ♂ not dilated, palpus of ♀ with 3rd joint much elongate, wings bright or deep green, spotted with red the hindwing (especially in the ♀) crenulate and only weakly angled.

*electrica*. **G. electrica** Warr. (♀ = *rubritincta* Warr.) (11 f). Sexual dimorphism strong, the ♂ deep blue-green, with only a little red shading on the cell-marks, the ♀ bright green with the red increased, especially on the hindwing, which develops an ill-defined apical cloud. Ron Island and the coastal regions of New Guinea, the type from Humboldt Bay. ♀♀ from Dampier Island seem to agree, but I have not seen a ♂ from that locality. — **saturata** Warr. (♀ = *fuscimargo* Warr.) (4 g, ♀, as *rubritincta*), from the Snow Mountains, sometimes (as in the specimen figured) differs little in the ♀, but the typical pair have an almost complete, broad border on the hindwing, in the ♀ reddish, in the ♂ more brown. — **herbida** Prout. ♂ much less deep green than in the two preceding forms, ♀ without the apical clouding of the hindwing, the sexes consequently much less dissimilar. St. Matthias Island. — **vulcanica** subsp. nov. Markings nearly as in *herbida*, coloration darker and duller, in the ♂ intermediate between that race and *electrica*. Vulcan Island, November 1913—January 1914 (MEEK'S expedition), 8 ♂♂, 1 ♀ in Mus. Tring. In all the ♂ forms of this species the underside is blue-green.

**G. meeki** differs from *electrica* (11 f) in having the ♂ hindwing beneath bright orange-ochreous. The upper-side has not in any of the races the blue-green colour of name-typical *electrica*. The ♀ is unknown, except in the case of *m. malthaca*. Typical **meeki** Warr., from the Trobriand Islands, is the largest form and is of a beautiful deep but bright green colour. The orange colouring of the hindwing beneath extends on to a considerable portion of the forewing. — **bismarckensis** subsp. nov. (11 f) differs little from the preceding but is rather smaller, with a more conspicuous pale line at the base of the fringe and with the orange on the forewing beneath generally more restricted. Distributed in the Bismarck Archipelago, the type from Feni Island, E. of New Ireland, where EICHHORN obtained for the Tring Museum a good series in June 1924. — **malthaca** Prout is on an average a little smaller than *bismarckensis*, typically of a lighter, more yellowish green, the underside almost as in that form. Louisiades, the type from St. Aignan, whence comes also the only known ♀ of the collective species; this is extremely like a small ♀ *megaloptera* (11 f), except for appreciably more crenulate distal margins.

*megaloptera*. **G. megaloptera** Lower (= *subalbida* Warr. = *hypoleucus* Lower) (11 f). Although LOWER took the ♀ to be a separate species and re-named it *hypoleucus*, the sexes really differ very little, though the ♂ has the distal margins slightly less rounded and the cell-spot of the hindwing generally smaller. The larva has been found in numbers by Mr. F. P. DODD, inhabiting the nests of the green tree-ant. Only definitely known from N. Queensland; a ♂ and a ♀ from the Key Islands seems, however, to agree with it.

Section B. Hindtibia of ♂ nearly always dilated, palpus of ♀ with 3rd joint moderate, wings rarely bright green, not spotted with red, hindwing generally sharp-angled or tailed.

*nubecula*. **G. nubecula** Warr. resembles the subgenus *Chrysochloroma* in size and shape, but has the ♀ palpus much shorter, the ♂ hindtibia dilated, with a short terminal process, the wings less bright, more greyish green. Cell-dots small, black; terminal line red-brown; characteristic is a brown irroration on the central area of both wings, a slighter subterminal irroration also discernible. British New Guinea, the original specimens coming from Sariba Island.

*prasina*. **G. prasina** Warr. This species and the group which follows form the genus *Thalerura* Swinh., characterized by the sharply tailed hindwing, but *prasina* is in a measure transitional. It is of a comparatively bright bluish green, yet not so bright as the *Chrysochloroma* group. Expanse 40 mm; distal margin of forewing gently convex, except just behind the slightly produced apex; a dark purple-grey terminal line; fringe cream-buff, strongly marked with dark purple-grey. Bhutan, only the type ♂ known.

*panterpna*. **G. panterpna** West (11 f) has also strongly spotted fringes, but is exceedingly distinct on the underside, which is honey-yellow as far as a narrow whitish postmedian band, to which succeeds a dark grey subterminal one, while the borders are pale green. Luzon.

*inaptaria*. **G. inaptaria** Walk. (= *urapteraria* Walk.) (12 e). Distal margin of forewing very straight in the ♂, in the ♀ shaped more nearly as in *prasina*. Fringes unspotted. A very heavy blackish marginal band on the underside shows through faintly on the upper. Antennal pectinations of ♂ long (6 times diameter of shaft). Assam.

*submacularia*. **G. submacularia** Leech has been briefly described in Vol. 4, p. 22. Compared with *inaptaria* (12 e), it differs in having the ♂ antennal pectinations less long, the wings somewhat darker (greyer), the dark marginal bands reduced, developed only as blotches at tornus of forewing and apex of hindwing. W. China. — **adaptaria** form. nov. (? sp. nov.) has hitherto been mixed among *inaptaria*, which it greatly resembles in colour and in the rather distinct white lines of the upperside, whereas those of *submacularia* are faint; but the shorter an-

tenal pectinations show that it cannot belong to *inaptaria*. Underside nearly as in *submacularia*, sometimes with the blotches still more reduced (variable). The slightly less broad wings, as compared with the last-named suggest that it may be a third species. Khasis, the type in my collection; also from Sikkim.

**G. korintjiensis** *sp. n.* (12 e). Closely like an overgrown *adaptaria*, antennal pectinations longer (nearer *korintjiensis* to those of *inaptaria*). Forewing apex more acutely produced, ground-colour deeper green, costal edge and fringe deeper buff, lines almost obsolete except on the veins and at hindmargin, the more olive-green bands which accompany them in the central area more noticeable. Hindwing with the tail rather elongate; markings corresponding to those of forewing. Underside as in *adaptaria*. North Korintji Valley, S. W. Sumatra, 5000 feet. September-October 1921, 2 ♂♂ in coll. JOICEY.

**G. subtaminata** *sp. n.* 34—35 mm. Smaller than *submacularia*, of which I at first supposed it a sub-species, with the blotches beneath small. Apex of forewing and tail of hindwing less produced (shape about as in *dissimulata*, size scarcely larger, terminal line and fringes nearly as in *inaptaria* and *submacularia*, but with the fringe of the forewing suffused with grey. Hainan: Youboi, June 1904 (type ♂) and Porten, July 1904 (paratype ♂), both in Mus. Tring.

**G. dissimulata** *Walk.* (= *marginata* *Warr.*). A rather small species, easy to distinguish from the four preceding by the absence of dark terminal line above and of dark blotches beneath and by the grey (not buff) fringes. Antennal pectinations about as in *adaptaria*; tail of hindwing not quite so long. Moulmein (type), Bhutan (type of *marginata*) and Sikkim, scarce. — Larva, according to MOORE, on *Terminalia catappa*. — **nigrifrons** *Hmps.* is apparently only a dark form of *dissimulata* from Ceylon. The typical Ceylon form is, in addition, smaller, but I have seen a few Ceylon specimens, besides one from Merkara which I refer to the same race, which agree with *dissimulata* in size.

**G. insignipecten** *Prout* (11 f). Less dark grey-green than *inaptaria*, *dissimulata*, etc., the distal margin of the forewing in the ♂ slightly more curved. Fringe and underside nearly as in *marginata*, from which it is easily distinguished by the much longer antennal pectinations of the ♂, which are fully as long as those of *inaptaria*. Similar, except in the longer pectinations, to the Japanese *illitirata* (Vol. 4, p. 22, Taf. 2 d), but rather lighter and smoother-looking, with darker fringes. Fairly common in the Khasis.

**G. versicauda** *Prout* (11 g). Grey-green, as dark as *inaptaria*, but more uniform, without the darker borders. Antennal pectinations long, but not so extreme as in *insignipecten*; tail of hindwing long, the distal margin between this and the anal angle straighter (less concave) than in the allies. Formosa.

**G. auspicata** *Prout*. ♀ unknown. ♂ near that of *veninotata*, less narrow-winged, distal margin of forewing faintly convex, hindwing with the tail less long; terminal line dark red (in the allies black), fringe strongly spotted with red. Dark borders beneath incomplete (about as in *submacularia*), but tinged with reddish. Khasis (type) and Sikkim.

**G. nigrifrons** *Hmps.* (12 e). Smaller than the two following, the shape not quite so extreme. Further distinguished from *acutissima* (the only Ceylon species with which it could be confused) by its less dark colouring and in particular by its fringes, which are suffused with greyish or fuscous. Ceylon.

**G. veninotata** *Warr.* (11 f). This species and the following, to which HAMPSON has sunk it, seem to be quite distinct; indeed I believe there are still other species waiting to be separated in this difficult group. In *veninotata* ♂ the distal margin of the forewing is still more oblique than in *acutissima*, a fine blackish terminal line (or dashes) always well developed, the white lines are waved, and more or less broken into vein-spots, the dark markings beneath vary, but are never very strong, usually very small, in a few Khasi specimens entirely wanting. Distributed in N. India.

**G. acutissima** *Walk.* (12 e). Somewhat larger and less narrow-winged than *veninotata*, deeper green, the antennal pectinations slightly longer, the terminal line white, not black, the fringe brighter yellow; underside immaculate, except for a small blackish dot in apex of forewing. Ceylon.

**G. goniaria** *Feld.* (= *aculeata* *Hmps.*) (12 c), which is widely distributed in India, differs from the two preceding in having the fine white postmedian line equally developed throughout, on the hindwing nearly straight, the face redder, the fringe at apex of forewing and at tail of hindwing mixed with reddish; underside as in *acutissima*. Pectinations about as in *acutissima*. — **perplexata** *form. nov.* (? *sp. n.*) has the white lines finer and fainter, but not broken, nor with the postmedian of the forewing accentuated at its hinder end as in *veninotata* and *acutissima*; and combines nearly the colouring and strong terminal line of *veninotata* with shape and immaculate underside of *goniaria*. Hainan: Cheng-Mai, July 1902, type ♂ and 2 ♀♀; Mt. Wuchi, May 1903, 1 ♀; all in the Tring Museum.

**G. subannulata** *Prout*. Larger than the *acutissima* group (38 mm), apex of forewing not produced, tail of hindwing moderate; lighter and more translucent green, in some lights a little iridescent; cell-marks enlarged

(elongate, but vaguely pale-centred), lines crenulate, indicated in darker green, edged with white; terminal line blackish, very slender, interrupted; fringe pale green, with small dark dots. N. Celebes. Hindtibia of ♂ strongly dilated, with the spurs very short.

- waterstradti*. **G. waterstradti** *sp. n.* (12 f) has about the size and a good deal the aspect of *subannulata*; pectinations not quite so long, the inner series considerably shorter than the outer; wings rather longer and narrower, of not quite so pale a green, cell-marks narrower; face, as in *subannulata*, dull red-brown (in the *acutissima* group generally blackish). N. Borneo: Mt. Kinabalu (J. WATERSTRADT), type ♂ in coll. Brit. Mus. The hindlegs are lost, but a spinose area on sternite 3 (as in the allies) shows that the tibia must be dilated.
- insulsata*. **G. insulsata** Warr. (11 g) is a very distinct species. Hindwing less elongate than in the *Thalerura* group, the tail moderate, slight supplementary teeth developed at the ends of the other veins. Rather large (about 46 mm); yellowish green with copious darker irroration; cell-dots blackish; pale edging of the lines indistinct. Luzon.
- chromatocrossa*. **G. chromatocrossa** Prout. (12 f), 31–32 mm. Wings moderately broad, tail of hindwing moderate. Cell-dots dark green, less small than in the allies; best distinguished by having the costal edge of the forewing narrowly red and the fringes pinkish; an interrupted terminal line. Upper Burma.
- albistrigata*. **G. albistrigata** Warr. (= *flagellaria* Pouj.) (Vol. 4, pl. 3 a, as *flagellata*) is often almost as large as *insulsata*, rounder-winged, postmedian of forewing excurved and less oblique, cell-marks elongate, weak. Described from Japan, but reaches West China. More opaque and greener than *glaucaria*.
- stuhlmanni*. **G. stuhlmanni** *sp. n.* ♂, 22 mm. Face dark olive, Palpus blackish olive, whitish beneath. Antenna rather short, pectinations long, continued to  $\frac{3}{4}$ . Hindtibia not dilated. Forewing with apex moderate, termen smooth, rather strongly curved; 1st subcostal anastomosing rather strongly with costal and 2nd subcostal; glossy greyish olive; markings white; cell-dot small; lines punctiform except at hindmargin, anteriorly almost obsolete; ante-median anteriorly oblique; postmedian bent inward between 2nd median and 2nd submedian. Hindwing with angle at 3rd radial rather weak; as forewing, but wanting 1st line. Underside rather paler, unmarked. Fiji (C. A. STUHLMANN), type in Zool. Mus. Hamburg.
- habra*. **G. habra** *sp. n.* (12 f). Near *hemitheoides*, rather more slenderly built, hindwing not quite so narrow. Face and outside of palpus blackish. Hindtibia with rather strong pencil. Forewing with 1st subcostal anastomosing with costal; less greyish green, than *hemitheoides*, lines more slender, postmedian not thickened at fold, terminal white dots scarcely indicated. Szechuan: Kwanhsien, 11 July 1930 (M. FRANCK), type in coll. PROUT.
- hemitheoides*. **G. hemitheoides** Prout (11 g) is characterized by its rather strong, lunulate-dentate white lines and its white terminal dots at the vein-ends and superficially resembles a *Hemithea* or a well-coloured *Iodis*. Khasis and Sikkim. — **marculenta** *subsp. nov.* is of a more greyish olive (more approaching the colour of *griseoviridis*), the postmedian rather thicker, the fringes beneath less strongly darkened. N. Borneo: Mt. Kinabalu (J. WATERSTRADT), type ♂ in coll. Brit. Mus.
- melancholica*. **G. melancholica** Prout. Smaller and relatively broader winged than *hemitheoides*, the hindwing right-angled rather than tailed at the 3rd radial, the colouring much darker, the hindwing beneath sometimes with a faint brown apical suffusion. Borneo (loc. typ.), Sumatra, Perak and Singapore.
- griseoviridis*. **G. griseoviridis** Warr. is intermediate in shape between the two preceding, greyer, the lines very fine and only slightly dentate, the postmedian not thickening posteriorly, the white terminal dots obsolete, excepting sometimes a minute one in the tail of the hindwing. Nagas and Khasis.
- dysgenes*. **G. dysgenes** Prout (12 f). Near the two following, but with more pronounced tail to the hindwing and very different in colour. Vriantong, Tibet, several ♂♂, not at all variable.
- glaucaria*. **G. glaucaria** Walk. (Vol. 4, pl. 2 c) is distinguished by its pale colour (grey-green, with small but copious white strigulae) and its relatively broad wings, the tail of the hindwing short. Palpus in both sexes short, with the 3rd joint in both sexes quite small. N. India (Sikkim and Bhutan) and Tibet. STERNECK has recently recorded it from Szechuan.
- fuscifimbria*. **G. fuscifimbria** Prout. Very near the preceding but rather larger; darker, the white strigulation reduced to slight irroration, the face blacker (in *glaucaria* more reddish), the fringes strongly darkened in proximal part; postmedian line more incurved at fold. Khasis, where it apparently replaces *glaucaria*; also in Upper Burma.
- convallata*. **G. convallata** Warr. (11 g) can scarcely be retained in this genus. Palpus still shorter than in *glaucaria*, hindwing scarcely angled at 3rd radial, hindtibia of ♂ with only one of the proximal spurs well developed. The straight postmedian line is also distinctive. The smooth scaling and the open cell-mark of the forewing recall *subannulata*. Khasis,

**G. albitaenia** *Prout* (4 f). Here begins a group in which the ground-colour may be regarded as white, *albitaenia*, the green colouring being laid on in more or less dense irroration, the lines green. The presence of a strong white subterminal line, in this and the following species, is a rare character in the Hemitheinae. Snow Mountains (type), Weyland Mountains, Hydrographer Mountains and Goodenough Island.

**G. spumata** *Warr.* is very near *albitaenia* (4 f) but rather broader-winged and with some slight differences *spumata*, in the shape of the markings. Most easily distinguished, however, by the presence of a strong blackish cell-dot on each wing. Dutch and British New Guinea, the type from the Owen Stanley Range.

**G. mutatilinea** *Prout*. Iridescent bluish-white, the elongate cell-marks and the bands yellow-green, *mutatilinea*, much like some Indian *Iodis*, but with a frenulum. Palpus longer than in *thetydaria*, antennal pectinations ceasing shortly beyond the middle of the shaft, wings narrower, the bands less broad, the postmedian receding from the distal margin anteriorly. Khasis.

**G. thetydaria** *Guen.* (11 h). Distributed from S. India to W. China and recorded by SEMPER from the *thetydaria*, Philippines. Palpus in both sexes rather short ( $1\frac{1}{4}$  times as long as diameter of eye). Antenna of ♂ pectinate to two-thirds, the branches rather long.

**G. bifasciata** *Walk.* Rather larger than *thetydaria*, the ♂ antenna pectinate to about the middle. The *bifasciata*, green bands broader, more deeply coloured, the postmedian less bent, particularly on the hindwing. Assam (type) and Sikkin, much rarer than *thetydaria*.

**G. atrapophanes** *Prout* and the two following species have the bands still broader than in *bifasciata*. *atrapo-*  
*phanes*. The antemedian of the forewing reaches to the base and that of the hindwing runs along the abdominal margin. The ♂ of *atrapophanes* is unknown; the ♀ has an expanse of 34—38 mm, the hindwing scarcely more angled than in *convallata*, the fine white line on the basal band of the forewing not incurved behind the median vein, the postmedian band of this wing rather straight, traversed close to its distal edge by a fine white line. British and Dutch New Guinea.

**G. eumixis** *Prout* (11 h). ♂ sometimes difficult to distinguish from that of *orthodesma*, though nearly *eumixis*, always larger. Terminal joint of palpus a little smaller. In the ♀ this distinction becomes remarkably pregnant, the terminal joint being quite short in *eumixis*, strongly elongate in *orthodesma*. Dutch and British New Guinea. A ♀ from New Britain probably represents a separable race.

**G. orthodesma** *Lower* (12 f). The name-typical race has the green bands on an average somewhat less *orthodesma*, broad than in the New Guinea forms and *eumixis*, the distal edge of the postmedian band of the forewing straighter. It never attains the large size of some New Guinea examples. North Queensland (loc. typ.) and the Louisiades and (?) Buru. — **albifusa** *Warr.* closely resembles *eumixis* except in the palpal structure (see above). *albifusa*, New Guinea, Mysol, the D'Entrecasteaux Islands, New Ireland and New Britain, the type from Fergussen Island.

**G. balteata** *Warr.* (4 f, as *bathrata*) has the colouring of the preceding group but the green bands quite *balteata*, differently placed. Shape nearly as in *atrapophanes*, palpus slender, with the 3rd joint in both sexes relatively long (in *atrapophanes* short). Biagi (British New Guinea), the type ♂; Mount Goliath (Dutch New Guinea), 2 ♀♀, one of which we figure; Weyland Mountains, 1 ♀.

**G. viridaurea** *Warr.* (= *costipicta* *Warr.*) (11 d) is the first of a group of species, mostly of small size, *viridaurea*, which evidently intergrade with *Prasinocyma*; we have retained provisionally here those which have the angled hindwing and general habitus of *Gelasma*. *viridaurea* shows stronger colour contrast than the species which follow, in that the ground-colour is suffused with blue, while the markings are yellow-green. Palpus nearly as in *balteata*. Ron Island (the type of *viridaurea* with the bands discoloured to yellowish), New Guinea and the D'Entrecasteaux Islands.

**G. bicolor** *Warr.* (11 d). Paler green than *viridaurea*, the bands narrower, the diffuse green cell-spots *bicolor*, replaced by sharp black dots. Palpus with 3rd joint considerably longer. Hindwing less elongate, with distal margin slightly crenulate. Owen Stanley Range. — **privata** *Prout* is a form, or very closely allied species, from *privata*, Mount Goliath, with the bands still slenderer, more clearly white-edged, the hindwing with the tail rather weaker and the postmedian line less strongly bent. Also from near Oetakwa River, Snow Mountains.

**G. cyanoconias** *sp. n.* ♂, 25 mm. Structure about as in *bicolor* (11 d), palpus scarcely so long; hindwing with the crenulations and tail still slighter than in *privata*, forewing with apex slightly less acute, termen slightly less oblique. Colouring similar, but with more copious metallic-blue irroration, thus intermediate towards the colour of *viridaurea*; cell-dots small, yellow-green, accompanied by some slight green suffusion; bands about as wide as in *viridaurea*, but accompanied by distinct dentate whitish lines; postmedian of forewing much less sinuous than in those species, but with a fairly deep inward tooth in cellule 4 and a moderate inward curve at fold. Talasea, New Britain, March-April 1925 (A. F. EICHHORN), type in Mus. Tring.

- commixta*. **G. commixta** Warr. (= *epimitra* Turn.). Only the ♀ known. Palpus very long and slender (somewhat over 3 times diameter of eye). Shape of *cyanoconias* but with the hindwing somewhat more crenulate. Whitish blue-green, with darker blue-green irroration and bands, the coloration much less contrasted than in the 3 preceding; the few scattered metallic scales more silvery than blue; cell-marks indistinct, slightly elongate; bands ill-defined, rather more irregular than in *cyanoconias* but less so than in *viridaurea*; distal margin with appreciable dark dots at vein-ends. Angabunga River, British New Guinea, also known from Queensland and New South Wales.
- submixta*. **G. submixta** Prout (12 f). Structure as in *commixta*, shape more closely as in *cyanoconias*; generally smaller than *commixta*, colour still more uniform (the ground-colour less mixed with white), cell-dots more sharply defined (though still green), terminal dots less so; postmedian band generally as narrow as in *bicolor* and similarly sinuous, though less extremely. Dutch and British New Guinea and Ceram.
- pervicax*. **G. pervicax** Prout. Larger than *submixta* (26 mm), palpus rather less long, cell-dots and lines more strongly developed, the whitish lines rather deeply dentate, with the tips of the teeth purer white. Manusela, Central Ceram.
- smaragdina*. **G. smaragdina** Prout. Shape nearly as in *privata*; larger (29 mm) and of a lighter, brighter blue-green; palpus moderate, with 2nd and 3rd joint not greatly elongate; forewing with cell shorter than in *privata*, cell-dot yellow-green, postmedian yellow-green line more proximal, accompanied distally by white spots on the veins; costal edge speckled with purple-grey; both wings with a dark brown terminal line and buff fringes. Mount Goliath (the type) and Weyland Mountains, only 2 ♀♀ known.
- lychnopasta*. **G. lychnopasta** Turn. is unknown to me. Nearest to *calaina*, the ♂ antennal pectinations twice as long (about 12 times the diameter of the shaft), hindwing with the angle at the 3rd radial weak. The bluish green ground-colour is marked with extremely fine pale strigulation and some scattered lustrous green-whitish scales; lines faintly indicated in darker green, the postmedian pale-bordered distally; cell-dots fuscous, on the hindwing minute. Ebor Scrub, New South Wales.
- calaina*. **G. calaina** Turn. Larger than *centrophylla* (11 d), the ♀ palpus longer, the cell-dots less black, the lines represented by white spots on the veins, the postmedian of the forewing straight. Queensland: Mount Tambourine. Subsequently recorded from Tasmania.
- centrophylla*. **G. centrophylla** Meyr. (= *angulata* T. P. Luc.) (11 d). Palpus in both sexes rather short, with moderate 3rd joint. Hindtibia of ♂ not dilated. Not in danger of being confused with any other known species. Distributed from Brisbane to Tasmania.
- unicolor*. **G. unicolor** Warr. (11 g), from S. Flores, is based on 2 ♂♂ and 1 ♀, all of them unfortunately entirely discoloured in relaxing; we figure one of the ♂♂ as it now appears. Structure nearly as in *centrophylla*, ♀ palpus a little longer; markings apparently similar but weaker, the cell-dot not blackened; the ochreous costal edge is in the ♂♂ strongly, in the ♀ much more slightly, mixed with black-brown, recalling some *Hemithea*. Hindlegs lost in both the ♂♂.
- coerulea*. **G. coerulea** Warr. (4 f). Palpus moderate, with moderate 3rd joint. Hindtibia of ♂ dilated. ♂♂ from the type locality (Upper Aroa River) are unknown, on which account I abstain from naming an apparent race from the Snow Mountains, of which the Tring Museum possesses 3 ♂ (one from near Oetakwa River figured) and 9 ♀♀. The name-typical ♀♀, together with one from Sattelberg, have the white outer line thickened between R<sup>2</sup> and M<sup>1</sup>) (recalling some *Anisozygga*) and the terminal spots at R<sup>3</sup> enlarged; those from the Snow Mountains are similar to the ♂, only with a larger white spot at the tail of the hindwing.
- imitans*. **G. imitans** Warr. (♂ = *invidens* Warr.). Larger than *coerulea* (4 f), apex of forewing rather more acute, tail of hindwing rather longer; costal edge of forewing more strongly dark-speckled. ♂ without white terminal dots; ♀ with the central white subterminal and terminal markings even larger than in that of *coerulea*. Angabunga River, British New Guinea.
- caudipunctata*. **G. caudipunctata** Warr. Perhaps merely a form of the preceding, almost agreeing in size and shape, though slightly transitional towards *coerulea* (4 f). ♀ scarcely distinguishable from that of *imitans*. ♂ with the terminal white dots of *coerulea* ♂, including the enlarged one at tail of hindwing. Biagi and Hydrographer Mountains, British New Guinea.
- sublustris*. **G. sublustris** Warr. Similar to *patara* (11 h). Hindwing with distal margin less crenulate and tail shorter. The shades which accompany the white lines weaker, less yellow. Underside shining slate-grey, only with the costal edge of the forewing bright ochreous. Ron Island, only the ♂ type known.

**G. patara** is an outstanding species, with black face, rather elongate black palpus and bright ochreous underside. It is distributed throughout the Solomons and shows very interesting local variability. Unfortunately

from the western group I know only 3 ♀♀ in poor condition and I cannot yet say wherein they differ from the S. Christoval form named below. **patara** Druce (11 h) has on the hindwing beneath a very small dark apical spot, which does not cross  $SC_2$ . — **maculifimbria** *subsp. n.* lacks this spot, but has the fringe of both wings heavily dark-spotted at the vein-ends. S. Christoval (type ♂); ? Vella Lavella and New Georgia. — **cynthia** Warr. has the spot at apex of hindwing nearly always enlarged and an additional spot developed at tornus of each wing. The type is said to be from Santa Anna, but this is the prevailing form from Bougainville to Florida Island.

**G. magnipuncta** Prout is scarcely a true *Gelasma*, as the 1st subcostal of the forewing is stalked with the others. 3rd joint of palpus in ♀ very long. Thus the species altogether resembles an *Iodis*, except in the presence of the ♂ frenulum. Tooth at 3rd radial of hindwing moderate. Expanse 23 mm. Dull grey-green, with the usual dentate whitish, dark-shaded lines. Characterized chiefly by the large dark cell-spots. Sarawak (type) and Singapore.

**G. (?) papuensis** Warr. (♀ = *subangulata* Warr.) (11 d). Remarkable for the unusual shape of the forewing in both sexes and for the strong sexual dimorphism. Face white. Palpus shortish, red. Underside whitish green, in places suffused with red and greyish. British and Dutch New Guinea.

### 60. Genus: **Mesurodes** Warr.

This genus was established by WARREN for MEYRICK'S *erichlora* and the ♂ characters remain unknown. The palpus is very small and slender. ♀ antenna not pectinate. Hindtibia with terminal spurs only. Abdomen not crested. Venation normal; 1st subcostal of forewing anastomosing with costal; 1st median of hindwing stalked with 3rd radial.

**M. erichlora** Meyr. (12 k) somewhat recalls a ♀ *Gelasma megaloptera* (11 f) with more weakly angled hindwing and reduced red cell-dots. Fiji.

### 61. Genus: **Pentheochlora** Prout.

Superficially similar to *Gelasma*, of which it may be a more specialised development. Distinguished by the minute palpus, absence of proximal spurs on the hindtibia, which is not dilated, and the wide separation of the 1st median on both wings from the 3rd radial. The last character, together with the shape and colouring, distinguishes it also from *Mesurodes*. Only the type species is known.

**P. uniformis** Hmps. (14 a). Darker bluish green than most *Gelasma*, with slightly darkened cell-marks and with the postmedian indistinctly indicated by white dots on the veins. A scarce species, only known from the Nilgiris.

### 62. Genus: **Thalassodes** Guen.

Palpus moderate to long, the terminal joint in the ♀ always distinct, more or less elongate. Antennal pectinations of the ♂ characteristic, long and lax, more or less appressed to the shaft. Hindtibia with all spurs. Abdomen not crested. Wings rather thinly scaled, rarely very bright, marked with scattered white strigulation; hindwing with abdominal margin long, distal margin angled at 3rd radial, discocellulars unusually oblique, so that the cell is much longer posteriorly than anteriorly.

A moderately large genus, distributed in Africa and throughout the greater part of the Indo-Australian Region. The species are for the most part closely similar and their differentiation requires great care. In the group with typical markings, attention to the ♂ hindtibia will be of the greatest assistance.

A. Markings typical. Hindtibia of ♂ not dilated.

**T. quadraria** Guen. (11 h). The ♂ type no longer exists in GUENEE'S collection (OBERTHÜR, in litt.) and its locality was unknown, but the name has been applied to the red-faced Indian species with moderately angled hindwing. Occurs also on Penang, Siam, Sumatra, Borneo, Celebes and Formosa.

**T. semihyalina** Walk. (= *viridicapus* Warr.) is generally smaller and has the hindwing only very feebly angled. Range similar, possibly not specifically distinct.

**T. rubellifrons** Warr. (12 g) apparently represents *quadraria* and *semihyalina* in Dutch New Guinea. Outer line very slender but rather distinct, rather more distal than in the other forms. — **grammonota** Prout, from Rook Island, has the angle of the hindwing rather sharper, the abdomen with always well-developed white dorsal line. Known from the Bismarcks and Solomons, perhaps with transitions in eastern New Guinea.

- clarifimbria*. **T. clarifimbria** Prout resembles *semihyalina* in shape, but is larger, the face more brownish, the fringes almost white (in the allies yellow). Ceylon.
- furvifimbria*. **T. furvifimbria** Prout, also from Ceylon, differs from all the preceding in the green face and dark grey fringes.
- veraria*. **T. veraria** Guen. (11 h). As with *quadraria*, the determination is conjectural, but we assume that the name applies to a widely distributed species closely similar to *quadraria* but with the face green. Java, Sumatra, Borneo, Banka I., the Moluccas, etc. — **aucta** Prout (12 g) seems to be a race from N. India, chiefly distinguished by its larger size. — **flavifimbria** Warr. is probably the Papuan race of this species, perhaps of a more bluish green, the hindwing on an average more sharply angled. New Guinea, Goodenough and Sudest Islands.
- falsaria*. **T. falsaria** Prout (11 i). Smaller than *veraria aucta*, terminal joint of palpus somewhat longer (almost  $\frac{1}{2}$  of second joint), angle of hindwing rather sharper, colouring rather deeper, genitalia different. North India, especially in the Khasis. I have also recorded it from Formosa.
- retusa*. **T. retusa** Prout (12 g). Moderately large, rather darker green, hindwing as obtusely angled as in *clarifimbria*, but the face green. Central Ceram.
- dorsilinea*. **T. dorsilinea** Warr. (11 i). Angle of hindwing rather weak. Easily recognized by its rather small size and white dorsal line from mesothorax along abdomen. Differs from *grammonota* in having the face green and in shape. Described from New Guinea, known also from Key Islands, Rook Island and N. Queensland.
- javensis*. **T. javensis** Prout differs from all other species of group A in having black terminal dots; face green; fringe tipped with grey. In shape somewhat approaches *immissaria*. Java; perhaps also in the Malay Peninsula.
- subviridis*. **T. subviridis** Warr. is a small species, of a much yellower green than any of the preceding. Christmas Island.
- B. Markings typical. Hindtibia of ♂ dilated, with hair-pencil and short terminal process.
- acutipennis*. **T. acutipennis** Prout. Only two poor specimens are yet known, but the species is quite distinct in the acute and somewhat produced apex of the forewing. More yellowish green than most of the species, less so than in *subviridis*. Caroline Islands.
- deloloma*. **T. deloloma** Prout. Hindtibia with the terminal process rudimentary. Aspect of *javensis*, but with a black terminal line, extremely fine yet not or scarcely interrupted. Antemedian line obsolete. Hindwing rather broader and less acutely angled than in *immissaria*. E. Sumatra, probably also Singapore.
- T. immissaria** is a common and widely distributed species with green face, rather elongate 3rd joint of palpus and well angled hindwing. Terminal black dots are commonly developed on the veins. Geographical variation not great. — **opalina** Butl. (11 i), from N. India to Hainan and Formosa, has the terminal dots generally minute, the outer line perhaps finer and straighter than in the following. — **immissaria** Walk. was described from Ceylon, but I cannot separate the form from the Malayan subregion. — **rhytiphorus** Lower is generally larger and of a somewhat bluer green, the abdomen often with a white dorsal line. N. Australia; also from New Guinea and eastward to the Solomons.
- chloropis*. **T. chloropis** Meyr. (= ? *veraria* B.-Bak., nec Guen.) (11 i). 2nd radial of forewing arising very near 1st, 1st median of forewing connate or just separable, not stalked. Similar in structure and colouring to the preceding, perhaps another race. I have not seen any very fresh specimens from Fiji, but the terminal dots are entirely wanting in the Friendly Islands specimens. Also reaches Samoa.
- timoclea*. **T. timoclea** Druce, also from Fiji, is smaller and has the palpus shorter. DRUCE'S ♀ type has an asymmetrical pale band across the wings, evidently due to injury, perhaps to the pupa.
- dissita*. **T. dissita** Walk. (11 i) resembles the following species but has no terminal dots, the abdomen scarcely spotted with white, fringes proximally greener, hindtibial process longer. S. India and Ceylon.
- depulsata*. **T. depulsata** Walk. (11 k) strongly recalls *immissaria* but has the face red, the outer line generally more wavy, rather proximally placed. The black terminal dots are sometimes more elongate. *depulsata* has a very wide range, embracing N. India, Burma, Tonkin, Siam, the Malayan subregion, the Philippines, Celebes (loc. typ.) and the Moluccas.
- byrsopis*. **T. byrsopis** Meyr. (= *implicata* T. P. Luc.), described from the Fly River, seems to represent *depulsata* (11 k) in New Guinea and its satellite islands and in Queensland. Colour perhaps darker; abdomen and fringe more as in *dissita*; terminal black dots present, though small; antenna reddish; hindtibial process even shorter than in *depulsata*.

**T. pilaria** *Guen.* (13 a). Also very near *depulsata* (11 k). Generally no terminal dots except a very small one *pilaria*. at tail of hindwing, and even this occasionally wanting; lines generally approximated; fringes green proximally, whitish distally. Discoloured specimens can still be distinguished from *chloropis* by the less long palpus and in the ♂ by the rather shorter hindtibial process, that of *chloropis* reaching to near the middle of the 1st tarsal joint; also by having the 2nd radial of the forewing rather less extreme and the 1st median just stalked. Society Islands (type), Samoa and Fiji. In the last-named locality, VEITCH and GREENWOOD have found the larvae on Rosa, Ricinus, Inocarpus edulis, Mangifera indica, and Eugonia indularis.

**T. halioscia** *Warr.* may be a race of *pilaria*, though with some superficial appearance of *curiosa*. Ab- *halioscia*. domen with white dorsal dots. Solomons.

**T. minor** *Warr.*, from British and Dutch New Guinea, differs from *dorsipunctata* in that the 3rd joint *minor*. of the ♂ palpus is longer, the discocellular of the hindwing not white. It might possibly be a form of *byrsopsis*, but I separate it by its white dorsal spots and more crenulate outer line. ♀ palpus shorter than in *halioscia*.

**T. zothalmia** *sp. n.* (11 k). 38—43 mm. Near *minor* and *dorsipunctata* in the red face and white ab- *zothalmia*. dominal dots, hindtibial process of the ♂ rather longer; terminal joint of ♀ palpus about as long as 2nd. More vivid and more opaque green than in the allies, the white strigulation very slender, the markings quite weak, but the black terminal dots nearly as strong as in *dorsipunctata*. Further characterized by an accession of bright yellow colouring on the legs and a part of the breast. New Ireland, 5 ♂♂ and 4 ♀♀, including the type ♂; New Britain, 2 ♂♂ and 3 ♀♀; all in Mus. Tring, collected by A. J. EICHHORN.

**T. dorsipunctata** *Warr.* A large species, similar to *byrsopsis*. Forewing with a white dot or small spot *dorsipunc-* on 3rd discocellular at its most proximal part; hindwing with more slender white dashes on 2nd and 3rd disco- *tata*. cellular. Described from Aroa River, British New Guinea, but distributed in New Guinea and Vulcan Island. Rook Island and New Britain produce a race or very close ally of which more material is awaited.

**T. tanymelea** *Prout* is extremely similar to *dorsipunctata* but differs in structure. Palpus in both sexes *tanymelea*. longer, 3rd joint in ♂ almost, in ♀ fully, as long as 2nd. Antennal pectinations of ♂ longer. Hindtibial process of ♂ longer. Forewing with the outer line weakened, by the suppression of white vein-dashes. Rook Island; subsequently received from N. E. New Guinea and New Hanover.

#### C. M a r k i n g s n o t t y p i c a l .

**T. curiosa** *Swinh.* (11 k). Face green. Hindtibia not dilated. Distinguished from the preceding groups *curiosa*. by having darker green discocellular and shading proximally to the outer white line, which line, however, is nearly obsolete, only suggested by some indistinct, crenulate pale marking. Assam, Penang, Selangor and Celebes. — **umbrimedia** *Warr.*, from New Guinea and the Bismarek Archipelago, seems to be a smaller race, *umbrime-* if not almost a synonym. *dia*.

**T. pantascia** *West* (11 k). Extremely similar to *curiosa*, perhaps a race; postmedian line of forewing *pantascia*. rather straight, of hindwing rather less strongly produced centrally than in the allied forms. Luzon.

**T. aptifimbria** *Prout*. Face and hindtibia as in *curiosa*. Lines punctiform, as in the two following, *aptifim-* the postmedian white spot on hindmargin of forewing conspicuous, but less large than in them. Fringes green, *bria*. at least in proximal half. Sikkim and the Khasi and Kachin Hills.

**T. hypocrites** *Prout* (11 k). Hindleg of ♂ simple, as in *aptifimbria*. Otherwise scarcely distinguishable *hypocrites*. from *leucospilota*. The type was from Singapore, but the species is distributed in India and known to me also from Penang and Sumatra. — **vidida** *Prout* is a brighter green race, with rather broader hindwing. Central *vidida*. Ceram: Manusela.

**T. leucospilota** *Moore* is characterized by having the upperside of the ♂ hindtibia fringed throughout *leucospilo-* with very long, light hair. Ceylon and Travancore. *ta*.

**T. leucoceraea** *Prout* (13 a). Rather near the three preceding species in size and habitus. The puncti- *leucoecraea*. form white lines obsolete. Hindwing with a conspicuous white spot on the 2nd discocellular. Fringes not so sharply spotted as in *hypocrites*. Hindleg simple. Malay Peninsula: Kedah Peak.

**T. floccosa** *Prout*. Upperside much as in *leucoceraea*, but with postmedian white dots on the veins. *floccosa*. Hindwing of ♂ beneath, from base to beyond middle, clothed with bright red-brown hair. Similarly coloured, long hair on hindleg and on base of abdomen beneath. Wellesley Province, Malay Peninsula. Several examples subsequently received from Mt. Gedeh, Java.

**T. charops** *Prout*. 53—54 mm. Face green. Abdomen with a whitish longitudinal line. Wings bright *charops*. green, with the postmedian line normal (rather proximal), but with a very characteristic white, red-ringed cell-spot on hindwing. Samoa.

- gigas.* **T. gigas** Warr. is a large species with the apex of the forewing minutely produced, the markings very weak, the outer line, however, forming a very narrow whitish-green band (about 1.5 mm wide). A very fine red-brown terminal line. Fringe white proximally, dark-grey distally. Hindtibia of ♂ dilated. Solomons: Tulagi (a small island off Ysabel) and Guizo.
- effata.* **T. effata** Prout. Almost as large as the preceding, similar in structure. The indistinct whitish post-median band is rather broader, rather more proximal, standing just beyond a minute dark cell-dot, and there is a second ill-defined band at the distal margin. Terminal line and fringe green. Batjan; also from Central Ceram. A specimen from the N. coast of New Guinea and one from Dampier Island perhaps differ racially.
- saturata.* **T. saturata** Snell., from Celebes, is unknown to me, but appears to be similar to the preceding though with the ♂ hindtibia not dilated, the hindwing less bent at the 3rd radial, the whitish bands obsolete, a darker green line indicated between their positions.
- interalbata.* **T. interalbata** Prout (13 a) has the white bands broader and clearer than in *effata* and differently placed, occupying on the forewing approximately the position of the green r bands of that species. Dutch New Guinea. Also an example from Sattelberg in the Tring Museum.
- viridifascia.* **T. viridifascia** Swinh. Another large species, with very broad white bands, on forewing 3, subbasal, median and subterminal, leaving 2 less broad bands and an apical patch green. N. Borneo.
- nivestrotata.* **T. nivestrotata** Warr. (13 a) is a beautiful and unmistakable species, the white bands of the forewing purer and more numerous than in any other, the abdomen broadly white dorsally. Distributed in New Guinea and more recently found in New Ireland.
- zebrata.* **T. zebrata** Warr. (4 f) is known by its duller grey-green colour, rounder hindwing and characteristic banded pattern. Its less long pectinations and less extremely oblique discocellulars show that it is transitional towards *Prasinocyma*, to which it should perhaps be transferred. New Guinea.

### 63. Genus: **Eretmopus** Turn.

Similar to *Thalassodes*. Hindtibia of ♂ thickened and without spurs, the tarsus abbreviated and densely rough-scaled; ♀ hindtibia with terminal spurs only. The known species are closely related. I have not seen the Port Darwin genotype (*marinaria* Turn., vix Guen.).

- retensa.* **E. retensa** Prout. Closely similar to *marinaria* (13 a). Face perhaps rather brighter red. Hindtibia of ♂ slightly longer and broader. Hindwing slightly less angled; beneath without a trace of the coarse buff scaling of *marinaria*-♂. Philippines.
- marinaria.* **E. marinaria** Guen. (♂ = *penicillata* Walk.) (13 a). Distinguishable from nearly all *Thalassodes*, apart from the structure, by the complete absence of markings. ♂ hindwing beneath with coarse buff (or somewhat cinnamon) scaling proximally. Both the types were from Borneo; known also from Tana Djampea, Celebes and the Moluccas.
- discissa.* **E. discissa** Walk. has the hindtarsus of the ♂ densely rough-scaled, which is not the case with the other species. Hindwing with a white cell-dot. Only definitely known from Lower Burma. A race, or close ally, from Dutch New Guinea has similar leg-structure.

### 64. Genus: **Prasinocyma** Warr.

A very extensive and not very homogeneous genus which is probably in need of further revision. Some of the species have nearly the facies of *Thalassodes*, from which they differ chiefly in the less oblique discocellulars of the hindwing. Some have the palpus almost as short as in the Australian genus *Chlorocoma* and perhaps intergrade therewith. A few rather thinly scaled species certainly intergrade with *Gelasma* (see above). The typical group, which is chiefly African, is perhaps only represented in the Indo-Australian Region by *albicosta*; but for the present we refer here all the species which show the general characters of the group and do not conform to the special distinctions of the outlying genera.

Antenna pectinate in the ♂ but not in the ♀. Palpus moderate to longish, terminal joint in ♀ more or less elongate. Hindtibia with all spurs. Abdomen not crested. Frenulum short in the ♂, wanting in the ♀. Scaling generally dense, coloration more or less bright green; hindwing rounded or with a short or moderate angle at 3rd radial, never strongly tailed; venation normal.

- peristicta.* **P. peristicta** West. Very slightly more bluish green than *albicosta*, rather more robust, without markings; hindwing with discocellulars somewhat approaching those of *Thalassodes*. Palawan.

**P. albicosta** Walk. (= *bicolora* T. P. Luc., *rufitineta* Warr., *flavieosta* Warr.) (12 a). Green with whitish *albicosta*. costal edge and very fine and copious whitish strigulation, much like a small *Thalassodes* with very faint or obsolete line (postmedian) and very weakly bent hindwing. N. and E. Australia, Key Islands, New Guinea and Loyalty Islands.

**P. iseres** Turn. is unknown to me. Very like *albicosta* (12 a), but with the palpus shorter (only as long *iseres*. as the diameter of the eye) and with the fringes green, whereas in *albicosta* they are white. Founded on a single ♂ from Darwin, Northern Territory, Australia.

**P. ocyptera** Meyr. (13 b) is recognizable by its delicate, bluer green colouring, more oblique distal *ocyptera*. margin of forewing, less bent distal margin of hindwing, etc. The white strigulation is faint, but discernible. Queensland and West Australia. The specimens recorded by WARREN from the Key Islands belong to *albicosta*.

**P. semicrocea** Walk. (= *intermixta* Walk., *deesissima* Walk., *subalpina* T. P. Luc.) (13 b). Brighter *semicrocea*. green, not strigulate, and with rose-coloured fringes, like some *Chlorocoma*; the white lines visible, though weak; dentate. Brisbane to Tasmania.

**P. vagilinea** Prout is similar to *exililinea* (4 f) but with the antemedian line of the forewing also zigzag, *vagilinea*. the abdominal margin of the hindwing with a small flesh-coloured streak which reaches the anal angle. Ground-colour slightly deeper green. New Guinea, Ceram and Buru.

**P. exililinea** Warr. (4 f). Palpus in both sexes — as also in the closely allied *vagilinea* — rather long *exililinea*. and slender, with long terminal joint. Neither species is at all variable. New Guinea.

**P. pratti** Prout (12 a) somewhat recalls a *Dioscore*. Easily known by its shape, the course of the post- *pratti*. median line and the sharply spotted fringes. Hindtibia of ♂ dilated, with slender hair-pencil. Weyland Mountains, Dutch New Guinea.

**P. absimilis** Warr. Of the name-typical form, from Etna Bay, only WARREN'S somewhat discoloured *absimilis*. type (♀) is known, but I provisionally unite with it a few examples from Ceram and Buru. The posterior white postmedian spot of the forewing is much larger than in — **semimacula** Prout (13 b) from New Ireland. *semimacula*. The species has a rather loosely-scaled face, moderate palpus and slender ♂ hindtibia.

**P. simplex** Warr. (= *reversa* Warr.) (4 b). Much larger than *absimilis* (46—48 mm), the white vein-dots *simplex*. larger, more or less elongate, without a stronger one at hindmargin; hindwing with a white discoellular spot at the base of the 2nd radial. ♂ unknown, ♀ palpus long. Dutch New Guinea and Ceram.

**P. dioscorodes** Prout (4 h). Slightly larger still and of a much darker and duller colour — greyish *dioscorodes*. blue-green. Both wings with blackish cell-dot; fringes tipped with whitish, proximally dark, blackest at the vein-ends, where *absimilis* and *simplex* show white spots. Mount Goliath, also 1 ♀ from the Weyland Mountains, Dutch New Guinea.

**P. marina** Warr. (13 b) and the 6 species which follow are all of medium size and of similar colouring, *marina*. with dark cell-dots, and require a little care for their discrimination. *marina* is the only one with large white hindmarginal spot on forewing. Owen Stanley Range, Mount Goliath and the Weyland Mountains.

**P. serratilinea** Warr. (4 h) differs from the rest of the group in the stronger and deeply dentate white *serratili-* lines; cell-dot of forewing rather larger than in *vestigiata* (4 h). Snow Mountains. — **ultima** Prout is generally *ultima*.<sup>neu.</sup> rather larger (35—39 mm), rather darker, with more definite dark shadings in the median area against the lines; cell-dots black; antemedian line of forewing less deeply dentate, postmedian with a still deeper indentation behind the 2nd median. Perhaps a separate species. Weyland Mountains.

**P. vestigiata** Warr. (4 h) has the lines also white, but only feebly dentate; distal margin with black *vestigiata*. vein-dots; fringes buff. Owen Stanley Range and Mt. Goliath.

**P. annexa** Prout is rather larger than *vestigiata* (4 h), with rather longer palpus, no white dots on *annexa*. the abdomen (lost in our figure of *vestigiata*, but always present in that species), lines broken into sharp white cell-dots. Weyland Mountains.

**P. sororcula** Warr. (4 g). Slightly less opaque green than *vestigiata*, the fringes predominantly green, *sororcula*. only at the extreme tips buff; cell-dots small but sharp. Hindwing slightly more angled than in most of the group. British and Dutch New Guinea.

**P. fraterna** Warr. Exceedingly similar to *sororcula* (4 g), on an average larger and slightly darker green, *fraterna*. chiefly distinguished by the more undulating and dentate postmedian line. The lines are weaker than in *serratilinea* (4 h), the antemedian not zigzag, the wings broader. Owen Stanley Range and Weyland Mountains.

- indistincta*. **P. indistincta** Warr. (4 h). Recognizable by the shape, the dark colour and the obsolescence of the lines. Terminal joint of palpus less elongate than in the 4 preceding species. British and Dutch New Guinea.
- obsoleta*. **P. obsoleta** Warr. Blue-green, less dark than in the preceding group, with the costal edge of the forewing more broadly cream-buff, the fringes also lighter and cleaner cream-buff than in *vestigiata*; lines as faint as in *indistincta*, cell-spots more so. The name-typical form, from Angabunga River (Owen Stanley Range) is very broad-winged, the distal margin of the forewings very straight. — **subobsoleta** Prout (4 g) is slightly less broad-winged, the colour a little less bluish green, the lines and on the forewing the cell-dot a little better expressed. Possibly a separate species. Mount Goliath.
- infirma*. **P. infirma** Prout, founded on a single ♀ from Mount Goliath, is smaller (34 mm), not quite so bluish as in *obsoleta*, more irrorated with white, the lines formed of white dots or dashes on the veins, the postmedian of the hindwing nearer to the distal margin than to the cell; terminal dots wanting; fringes green, tipped with white.
- delicata*. **P. delicata** Warr. (13 b) likewise has the postmedian line more or less punctiform, but is very different from *infirma* in having this line more proximally placed, as well as in its smoother green colouring, clean buff costal edge and fringes, more oblique distal margin of forewing and more produced anal angle of hindwing; black terminal dots present, though sometimes minute. Snow Mountains (type), Owen Stanley Range, Hydrographer Mountains and Mount Rossel (Rossel Island).
- dentatilineata*. **P. dentatilineata** Prout (4 g as *dentilineata*). Nearest to *punctulata*, but with the face green, the white lines broader. The ♀♀, on which the species was founded, are further distinguishable by having the cell-dots green, not blackish, and the terminal dots minute or absent, but a form which I suppose to be *dentatilineata* ♂ resembles *punctulata* in both these respects. Mount Goliath, also from the Aifak and Wandammen Mountains.
- tryphera*. **P. tryphera** Prout (12 h) is another green-faced relative of *punctulata*, rather small, with the pale lines almost obsolete, the cell-dot and terminal dots black, but minute; fringes whitish; the buff costal edge of the forewing is mixed with grey. Mount Kunupi, Weyland Mountains.
- punctulata*. **P. punctulata** Warr. (4 g). Face red, not (as in all the preceding species of the group) green. Palpus of ♀ very long. British and Dutch New Guinea. — **leucogramma** Prout, from Ceram and subsequently from Buru, differs chiefly in the presence of a conspicuous white dorsal line on the abdomen. Of both races, the ♀ is locally abundant, the ♂ extraordinarily scarce.
- glauca*. **P. glauca** Warr. differs from *delicata* (13 b) in its rather duller green colouring (though much brighter than in the *vestigiata* group) and in having the lines composed of white spots on the veins, the ones on the 2nd submedian, especially of the forewing, strongly enlarged. Biagi (type), Mount Goliath and Wandammen Mountains.
- philocala*. **P. philocala** Prout. 31 mm. Coloration about as in *coerulea* (4 g), abdomen with a white dorsal line as in *leucogramma*; lines formed of white vein-spots, differing from those of *glauca* in that the central ones (on base of M<sup>2</sup> and on middle of R<sup>3</sup> respectively) are as large as, or larger than, those on SM<sup>2</sup>. Mount Kunupi, Weyland Mountains.
- caeruleotincta*. **P. caeruleotincta** Prout. 27 mm. Blue, only in a little more greenish than in the genus *Derxena*. Face olive-fuscous. Forewing broad, with the cell-spot large, black, the lines formed of black-grey (not white) spots on the veins. Only the type known, collected by A. F. R. WOLLASTON on the Mimika River, Dutch New Guinea. A very distinct species.
- coerulea*. **P. coerulea** Warr. (4 g). Face red above, green below, becoming whitish at lower edge. This species and the following are distinguishable at a glance from all the others by the maculation of the abdomen; in *coerulea* the bright ochreous spot on the anterior part of the 2nd tergite is large. British and Dutch New Guinea; also Ceram and Buru.
- punctifimbria*. **P. punctifimbria** Warr. Close to *coerulea* (4 g), but of a yellower green, the green part of the face not becoming whitish below, the ochreous part of the spot on the 2nd tergite smaller, the fringe dotted with black-brown at the vein-ends. Upper Aroa River and Hydrographer Mountains, British New Guinea.
- phoenicogramma*. **P. phoenicogramma** Prout. A small species (22 mm), of a paler green colour than the preceding group, with somewhat shorter palpus, and very distinct in having the cell-dots and the lines (including a terminal one) reddish; postmedian on the forewing nearly parallel with distal margin, a little farther therefrom than from the cell-dot, on the hindwing very near the cell-dot, slightly bent outward at the base of the 3rd radial. Forewing beneath suffused with reddish except posteriorly. Mount Goliath, only the type ♀ known.
- phyllosa*. **P. (?) phyllosa** Pagenst. is unknown to me, but seems more likely to be a *Prasinocyma* than an *Oenospila*, as was formerly supposed. "22 mm." Bright sap-green, with dark cell-dot and ill-developed red

lines, the postmedian of the forewing from middle of hindmargin straight to 2nd median, then strongly projecting and running weakly dentate to costal margin; fringe half greenish, half grey-white. Aru, 1 ♀.

**P. syntyche** *Prout* (4 i). This species and those which follow form a distinct section, bright opaque *syntyche*. green in colour, with red cell-dot and rather closely the facies of the genus *Oenospila*, from which they differ little except in the ♂ hindleg. *syntyche* has the cell-dots rather large, the red terminal line broad, cut by white dots at the veins, the white costal margin underlined with red from the apex to the base of the 5th subcostal; fringe cream-colour, not reddish as suggested by our figure. Dutch and British New Guinea and the D'Entrecasteaux Islands. A race (?) or aberration from Biak.

**P. laticostata** *Warr.* is somewhat larger, the cell-dots small, the red terminal line extremely slender, *laticostata*. the white costal margin broader, in the ♂ only very narrowly, in the ♀ only close to the apex, underlined with red. Owen Stanley Range.

**P. floresaria** *Walk.* is generally as large as *laticostata*, sometimes larger, but has the red markings deve- *floresaria*. loped more nearly as in *syntyche* (4 i), yet not so broad as in that species. It seems to be further separable from *syntyche* by its slightly less long palpus. WALKER'S type, the only example yet known from Flores, is rather large and has the distal margin of the hindwing scarcely bent in the middle. Races from other localities can scarcely be satisfactorily differentiated until the typeform is better known; from Celebes I have seen a very similar form and a few examples from Borneo, Assam and Yunnan may also be mentioned here. — **oxycentra** *Meyr.* *oxycentra*. (13 c), named from North Queensland specimens, may be regarded as including those from Buru, Key Islands, New Guinea, the D'Entrecasteaux and Louisiades, etc., and seems to have the hindwing slightly more bent than in the name-typical form.

**P. rhodostigma** *Prout* (13 b), which represents the group on the Bismarck Archipelago, has consider- *rhodostig-* ably enlarged cell-spots. The type was from Rook Island. *ma*.

**P. ornatifimbria** *Warr.* also has the cell-spots enlarged, but is smaller than *rhodostigma*, without the *ornatifim-* white costal margin, etc. Ysabel Island (Solomons); only the type known. *bria*.

**P. votiva** *Prout* (4 i). Size of *laticostata* or very slightly larger, hindwing a little less bent, colour more *votiva*. yellowish green, fringes brighter yellow, red terminal line very slight and much interrupted. Forewing beneath with costal area rather broadly yellow-green, the rest of the underside whitish blue-green. Mt. Goliath.

**P. marginepunctata** *Warr.* (13 c). Larger than the rest of the *floresaria*-group, the terminal line only *margine-* indicated by red-brown dots between the veins; bluer green than *votiva*, fringes much paler than those of *punctata*. *votiva*; costal margin of forewing above, as in that species, white; costal region beneath little differentiated in colour. Abdomen above with white dots. British New Guinea; also one ♀ from New Britain.

**P. ruficollis** *Prout* (4 g) is a larger species with fairly broad (though indistinct) pale lines and re- *ruficollis*. cognizable by the red occiput and redish costal edge of forewing. 3rd joint of palpus in ♀ very long. Dutch New Guinea.

**P. pomonae** *Warr.* (= *strigicosta* *Warr.*) (4 g as *strigicosta*). More yellowish green than *ruficollis*, with *pomonae*. green occiput, hindwing bent in the middle; cell-dots weaker, on hindwing green; terminal dots minute; fringes pale. Arfak Mountains (type of *pomonae*) and Snow Mountains (*strigicosta*).

**P. geminipuncta** *Warr.* (13 c) has the face and (though more narrowly than in *ruficollis*) the occiput *gemi-* red. Discocellulars of forewing sinuous, marked to behind the middle with a red-brown cell-mark, outside which, *puncta*. at the hinder end, is a black dot. Owen Stanley Range and Mount Goliath.

**P. minutipuncta** *Warr.* (4 i). Darker and less yellowish green than the *floresaria* group and without *minuti-* red markings or white costa. Cell-dots and terminal dots very small, blackish; lines indicated in greyer *puncta*. green. Face green. In the name-typical race, from British New Guinea to the Snow Mountains, the fringes are green proximally and whitish distally. — In **allocraspeda** *Prout*, from N. W. New Guinea, the fringes *allocraspe-* are yellow. *da*.

**P. tenera** *Warr.* Slightly broader winged than *minutipuncta* (4 i), yellower green, the lines more olive- *tenera*. brownish, more widely separated, the terminal dots obsolete. Face red. Owen Stanley Range. The genus *Endemia* *Warr.*, based on this species, appears to be untenable.

**P. vagrans** *Prout*. Much smaller than *vagabunda* (4 h), the markings somewhat more heavily dotted *vagrans*. in places with rust-colour, the postmedian line right-angled on the 1st median vein. Hindtibia of ♂ less dilated. Mount Goliath.

**P. vagabunda** *Warr.* (4 h). Easily recognized by its colour, its yellow-brown lines and zigzag cell- *vagabunda*. marks. Owen Stanley Range and Weyland Mountains.

- periculosa*. **P. periculosa** Warr. (13 c). Ground-colour as in *vagabunda*, hindwing more angled, lines slighter, differently shaped, cell-marks red, complex, fringes pale buff. British and Dutch New Guinea.
- florediscata*. **P. florediscata** Warr. (4 i) may be known at a glance by the very large, irregularly shaped central marks, that of the hindwing bright red. Owen Stanley Range, Mount Goliath and Weyland Mountains.
- caniola*. **P. caniola** Warr. (= *phaeostigma* Turn.) (4 h as *carniola*). Rather thinly scaled, somewhat as in *periculosa*. Larger and more bluish, with the fringes concolorous, the cell-marks less red, differently shaped, containing proximally and distally a black dot or spot. British and Dutch New Guinea and N. Queensland.
- geometrica*. **P. geometrica** Prout is similarly coloured to *caniola* (4 h), but much smaller, the hindwing less angled, the black markings increased, forming 3 (not 2) marks on the cell-mark (the distal one angular), sharp terminal dots between the veins and some dusting on the lines. Mount Goliath, only the type known.
- signifera*. **P. signifera** Warr., from the Owen Stanley Range, has the cell-marks reddish, mixed with black and surrounded with white. — In *superba* Prout (4 h) that of the hindwing is enlarged and almost devoid of black admixture. Mt. Goliath and the Snow Mountains.
- inturbida*. **P. inturbida** Prout. Probably related to *tripuncta* (4 h), agreeing in having the palpus short, almost as in a *Chlorocoma*. Subtranslucent whitish green, closely irrorated with blue-green; cell-dots black, lines diffuse, greenish, lunulate-dentate, weakly pale-edged on their reverse sides; hindwing crenulate, with a stronger tooth at the 3rd radial. Expanse 26 mm. Weyland Mountains, 1 ♀.
- tripuncta*. **P. tripuncta** Prout (4 h) is slightly more translucent than is suggested by our figure and the postmedian line not quite so strong, blackest on the veins. Named from the presence, in addition to the two cell-dots, of a blackish dot on the median vein of the forewing, midway between base and discocellulars. Mount Goliath.
- bipuncta*. **P. bipuncta** Prout. Still paler (whitish green, with some blue-green irroration), the additional dot absent, the postmedian line more proximally placed, the distal margin with minute black vein-dots. Mount Goliath.
- seminivea*. **P. seminivea** Warr. (13 c). Not translucent; white, dotted and spotted with deep green and with the green lines broader than in the two preceding. Angabunga River, British New Guinea. — *respersa* Prout, from Mount Goliath, is rather larger, the green scaling more uniformly sprinkled, except in the median area of the forewing posteriorly, where the white spot remains tolerably conspicuous.
- albiseriata*. **P. albiseriata** Warr. (4 f) is generally smaller than *seminivea* and has the green and white parts more sharply differentiated, especially near the distal margin, where a definite though irregular row of white spots is formed, and on the hindwing, where a green basal area is succeeded by a white central band. Owen Stanley Range and Mount Goliath.
- scintillans*. **P. scintillans** Warr. Size, shape and colouring nearly as in *seminivea* (13 c) but with the white very much reduced, appearing only in scattered dots and spots, the largest being near the tornus of the forewing.
- isorrhopia*. Angabunga River. — **P. isorrhopia** Prout (4 f) is rather larger, the white dots of the cell-fold and distal area better developed. Mount Goliath.
- nictata*. **P. nictata** Prout differs from *scintillans* in having the white dots minute (chiefly subterminal and on the forewing antemedian), only the hindmost subterminal of the forewing somewhat enlarged, the cell-dots black, surrounded on the forewing by glittering whitish scales, on both wings by a small area of purplish-grey suffusion. Mount Goliath.
- iosticta*. **P. iosticta** Meyr. Larger than *nictata* (31—38 mm), the white markings similar, the outer row of dots running obliquely inward to R<sup>2</sup>, excurved between this and the fold, the enlarged hindmarginal one edged with red proximally and distally. New South Wales (loc. typ.) and Queensland.
- nivisparsa*. **P. nivisparsa** Btlr. (= *triseriata* Warr.) (13 c). Widely distributed and scarcely at all subject to variation. Nearest to *isorrhopia* (4 f) but without the white apical spot and tornal patch of the forewing, the white lines and rows of dots very regular in development throughout. Distributed from Buru and Obi to the Bismarck Archipelago; BUTLER'S type was from Duke of York Island.
- debilis*. **P. debilis** Prout (4 f) is one of the already-mentioned transitions to *Gelasma*; placed here on account of the shape, scaling and long ♀ palpus. Excepting the following (q. v.), I know of no species with which it is likely to be confused. Mount Goliath.
- fragilis*. **P. fragilis** Warr. (4 f). Rather smaller than *debilis*, the distal margin of the hindwing more bent in the middle (not shown in our figure), the cell-dots less dark, in the typical race edged distally with whitish, the postmedian row of dots fainter, less excurved; forewing beneath with a bright green median shade, which

is undeveloped in *debilis*. British and Dutch New Guinea. — *solida* Prout is brighter and more opaque green, *solida* with the markings still slighter. Rossel Island.

**P. limpida** Prout is considerably larger than the two preceding (34 mm), of a similar translucent blue *limpida*. green to *fragilis* but still paler, distinguished by having almost straight green bands on the forewing, the single band of the hindwing bent nearly as in *rudipunctata* (12 c), the cell-dot in both wings very small, dark-green. Founded on a single ♀ from Ceram.

**P. venata** Prout (4 h). This species and the following are distinguished by the dark green lines and *venata*. cell-marks; *venata* further by having the veins darkened. Mount Goliath.

**P. deviata** Prout. Considerably smaller than *venata*, the postmedian of the forewing rather less oblique *deviata*. but forming a slight inward curve, the cell-marks reduced to dots, etc. Taken with *venata*.

**P. convergens** Warr. (13 c). Entirely different in colour, in the acutely produced apex, the very oblique *convergens*. line, etc. Face white, palpus red, forewing with a very fine red terminal line anteriorly and posteriorly, at apex forming a more conspicuous spot. Biagi, British New Guinea.

**P. oxybeles** Prout (4 i). Much more yellow-green than *convergens*, without the oblique line, but with some *oxybeles*. red dots near base, an outer row of small vein-dots, some red spots on abdomen and a rosy suffusion over the underside except at its margins. Mount Goliath.

**P. rhodocosma** Meyr. (13 d). A pretty and very distinct species, the marginal markings recalling a *rhodocosma*. *Comibanena* or still more its American representative *Racheospila*. The red lines vary much in development, but are always present at the hindmargins. New South Wales, Queensland, North Territory and West Australia.

**P. bicolor** Warr. (4 l) is the only known species with the lines thus coloured (fuscous and ochreous). *bicolor*. British and Dutch New Guinea.

**P. latistriga** Warr. (4 k). Markings similar but whitish, the antemedian present on both wings, though *latistriga*. very slender, the postmedian less oblique than in *bicolor*. British and Dutch New Guinea.

**P. rudipunctata** Prout (12 c) differs from *latistriga* in the *Thalassodes*-like form of the postmedian of *rudipunctata*. the hindwing. The cell-marks are generally enlarged, slightly elongate. Mount Kunupi, Weyland Mountains, Dutch New Guinea.

**P. punctilligera** Warr. (13 d). Forewing with the margins more rounded, duller green, with the discocellulars dull reddish, marked with small blackish cell-dots, the lines scarcely discernible. Abdomen with *punctilligera*. a yellowish dorsal line. Owen Stanley Range.

**P. indentilinea** Warr. Similar in shape to *nonyma*, but much yellower green (brighter than *punctilligera*) *indentilinea*. (13 d). Abdomen similarly marked. A red stripe across crown of head. Cell-dots large, dark mixed with red-brown, and with slight red-brown extension along discocellulars anteriorly. Antemedian of forewing not dentate; postmedian much more distally placed anteriorly than posteriorly, running suddenly inward from M<sup>2</sup> to fold. Near Oetakwa River, Snow Mountains only the type known.

**P. nonyma** Prout (= *eichhorni* Prout, *nom. praeocc.*). In shape similar to a rather broad-winged *Thalassodes*. *nonyma*. Green, a little less bluish and a little less dense than in *latistriga*, the cell-dots obsolete, the white lines very fine, dentate, the postmedian of the hindwing outbent at the 3rd radial and 1st median; terminal line fine, red-brown; fringes cream-buff. Abdomen with a yellow dorsal line. New Ireland.

**P. discata** Warr. (4 i). Unmistakable on account of the ample, almost circular red-brown bordering of *discata*. the black cell-spots. British and Dutch New Guinea.

**P. angulilinea** Warr. Similar in shape and colour to *nonyma* or somewhat more vivid. Chiefly different in the lines, which are stronger and are not dentate; antemedian of forewing angled outward in middle, of hindwing slender, straight and oblique; postmedian of forewing straight, parallel with distal margin, of hindwing outbent at the same position as in *nonyma*. Near Oetakwa River, Snow Mountains.

**P. rufimargo** Warr (4 i) differs from *discata* in its bright yellow-green colour, bright red occiput, red *rufimargo*. costal streak, light red distal border (triangularly widening at the veins), rather broader and less dentate lines and red cell-dots; that of the hindwing is simple. Found with the preceding species.

**P. perpalluta** Prout (4 i, as *perpalluta*). Recognizable by the chocolate-coloured clouding in the median area of the forewing, though this varies greatly in extent. Dutch and British New Guinea. — *poeëssa* *poeëssa*. *subsp. nov.* is rather large (37 mm) much more vivid yellow-green, the yellow line of the abdomen broadened, the fringes brighter yellow, the lines of the forewing with very little dark edging; the cell-spots are nearly as

in *rufimargo* (4 i), but the paratype has some additional clouding posteriorly to that of the forewing and the median area may prove to be as variable as in *perpolluta*. New Britain: Talasea, March-April 1925 (A. F. EICHHORN). 2 ♀♀ in Mus. Tring.

- eichhorni*. **P. eichhorni** Prout. Close to *perpolluta* (4 i); costal and distal margins of forewing, slightly more rounded, narrowly marked with chocolate; the dentate lines chocolate, not white; the fringes also chocolate. Different from all the nearest allies in wanting the abdominal line. Hydrographer Mountains, British New Guinea.
- polluta*. **P. polluta** Warr. (= *bicornuta* Warr.) differs from *perpolluta* (4 i) in having the clouding of the median area slight, generally confined to the vicinity of the cell-dot, and especially in that the white lines are not dentate. Upper Aroa River (*polluta*) and the Snow Mountains (*bicornuta*).
- discoprivata*. **P. discoprivata** Prout (4 i) is larger than *polluta*, with distal margin more oblique, tone rather more bluish, the lines finely dentate but very faint, the cell-dot of the forewing only accompanied by a very small and faint chocolate mark. — ab. *semidiscata* Prout has a large blackish, somewhat heart-shaped cell-spot on the hindwing. Mount Goliath and the Weyland Mountains.
- flavilimes*. **P. flavilimes** Warr. (13 d). At least as large as *discoprivata*, distal margin of forewing equally straight but rather less oblique, cell-dots redder, lines more sharply expressed, not dentate, the postmedian of the forewing straight. Owen Stanley Range.
- approximata*. **P. intermedia** is known in two races. — **approximata** Prout (4 k) from Mount Goliath is of a rather more glaucous green, with the cell-dots enlarged. — **intermedia** Warr., from the Owen Stanley Range and the coastal ranges of Dutch New Guinea, is of a more vivid green, with the cell-dots smaller, the lines finer, sometimes extremely slender.
- rufistriga*. **P. rufistriga** Warr. (4 k) and the four species which follow have the white lines edged in the median area with red or orange. *rufistriga* resembles *consobrina* (13 d) in size, but has the antemedian line straighter, the red markings slighter, the fringes buff, not red, the discocellulars of the forewing marked with reddish. Buff abdominal line broad. Owen Stanley and Weyland Mountains.
- angiana*. **P. angiana** Joicey & Talb. (12 c) is much bluer than the rest of the group, the hindwing differently shaped, the lines more yellow. Otherwise nearest to *corolla*. Arfak Mountains, only the type ♀ known.
- corolla*. **P. corolla** Prout (13 e) recalls a small *ruficulmen* but has the antemedian line angled outward in the middle, the abdominal stripe buff, not reddish. Dutch New Guinea.
- ruficulmen*. **P. ruficulmen** Prout (13 e) is recognizable at once by its large size, sharply contrasted markings and red-brown abdominal stripe. Dutch New Guinea.
- consobrina*. **P. consobrina** Warr. (13 d) shares with *ruficulmen* the red fringes, but is smaller and less white-mixed, the costal edge more red, the abdominal line slender and buff, the antemedian line curved, the small black cell-dot of the forewing not accompanied by reddish on the discocellulars. Dutch New Guinea.
- ruficosta*. **P. ruficosta** Warr. Intermediate in colour between *consobrina* and *minor* (13 d), or nearer to the latter; cell-dot green, mixed with black; edging of the white lines slightly darker green than the ground-colour, hence indistinct; costal edge brighter red than in *consobrina*. Owen Stanley Range.
- minor*. **P. minor** Warr. (13 d). Was originally described as an aberration of *gigas* (13 e), but in addition to its small size and the straight line of the hindwing it differs in that the hindtibia of the ♂ has longer terminal spurs and retains vestiges of the proximal pair. Mountains of British New Guinea; also from those of Dutch New Guinea.
- flavimargo*. **P. flavimargo** Prout (13 d). Still closer to *gigas*, agreeing with it in hindleg structure and in the bent postmedian line of the hindwing and sometimes (though rarely) equalling it in size. I formerly supposed it a race, but I find the 3rd joint of the palpus is longer; compared with the 2nd joint its approximate proportions are: in *gigas*, ♂ not quite  $\frac{1}{2}$ , ♀ slightly over  $\frac{1}{2}$ ; in *flavimargo*, ♂ slightly over  $\frac{1}{2}$ , ♀ 1. Moreover, both occur together on the Upper Aroa River, the type locality of *gigas*. Typical *flavimargo* was from the Snow Mountains.
- gigas*. **P. gigas** Warr. (13 e) is the type of the genus, or better subgenus, *Gigantothea* Prout, distinguished by the shortened terminal spurs of the ♂ hindtibia and (in the type species, but see *minor*) the absence of the proximal ones. Cell-dots stronger than in *flavimargo*, lines less fine, the postmedian of the hindwing less sharply bent, fringes more tinged with red. British and Dutch New Guinea.

65. Genus: **Oenospila** Swinh.

An offshoot of *Prasinocyma*, with the inner proximal spur of the hindtibia much longer than the outer, the terminal spurs in the ♂ obsolete or vestigial, ♀ palpus very long. 2nd radial of hindwing arising very near 1st, costal of hindwing anastomosing very shortly with subcostal. Contains, as now restricted, only three species, all Indo-Australian.

**Oe. oleraria** Guen. is only known from the broken type ♀ from Borneo and 3 imperfect ♀♀ from *oleraria*. Selangor, but is clearly the species which was later described by WARREN as *lucifimbria*. It may, however, differ racially, as it is a little paler than the New Guinea form (but perhaps faded) and has the costal margin of the forewing white to near the base. — **lucifimbria** Warr. (13 f) has the costal edge of the forewing bright gold-yellow from the base to beyond the middle. A very distinct species, of a less bright, more bluish green than typical *Oenospila*, much more glossy, the lines not mixed with red. In structure transitional towards the preceding genus, the terminal spurs of the ♂ hindtibia not being absent, though extremely short. Described from the Solomon Islands (Tulagi), but specimens from the Louisiades, New Guinea, and even Ceram, seem almost identical. — **glaucilinea** Prout, from Rook Islands, New Ireland and New Hanover, has the whitish lines less extremely slender, more glaucous, the fringes brighter yellowish.

**Oe. flavifusata** Walk. (= *sinuata* Moore, *flavifusata* Swinh.) (13 e). A variable species, especially in Melanesia. The name-typical form, from Ceylon, is rather small, with the dentate red postmedian line moderately well developed. Similar forms occur in India, Malaya, Borneo, Java, Sambawa, Celebes, and even in the Moluccas. Larva, according to MOORE, on *Boswellia serratifolia*. — **rufinotata** Warr. is a larger form, prevalent in the Snow Mountains and Arfak Mountains, with the postmedian line often greyish, only or chiefly reddened on the veins. The forms from British New Guinea and its islands, however, are on an average less large and sometimes revert to very *flavifusata*-like forms. — ab. **stellata** Warr. has a blotch on the abdominal margin of the hindwing, similar to that of *strix* (13 f) but red, not blackish. So far as limited material allows of a judgment, this would seem the principal form on Fergusson Islands (loc. typ.), Sariba Island, and Dampier Island, the principal ♂ form on Squally Island and an aberration at Milne Bay (British New Guinea) and on St. Aignan. — **perlineata** Warr. is very much like *rufinotata* but without any red on the grey-green lines except at the hindmargins and with the cell-dots slightly enlarged. Tulagi, only the type ♀ known to me; probably a mere aberration, as similar ♀♀ from New Britain and New Ireland have the lines marked with red and a ♂ from Choiseul (also unique) is virtually a large ab. *stellata*, connected with normal ones by a ♂ from New Hanover. — **flavilinea** Warr., from N. Queensland, in its typical form is small, with the cell-dots minute, the red lines obsolete; but again further material will probably prove it inconstant. — **moniliata** Warr. is smaller than *perlineata*, appears slightly rounder-winged, has the cell-dot of the forewing still larger, the terminal white dots also somewhat enlarged, traces of brownish red reappearing on the lines. Rendova, 1 ♂.

**Oe. strix** Btlr. (13 f). Larger than the Indian forms of *flavifusata*, generally larger than any forms of that species. Lines always strong; white terminal dots wanting; a conspicuous dark dash between cell-dot of forewing and costa; the dark abdominal blotch of hindwing very characteristic. N. W. and N. E. Himalayas.

66. Genus: **Strepsichlora** Warr.

Differs little from *Prasinocyma* in structure, though the abdomen has very slight crests or raised spots. But as the species form a compact group by shape and maculation we keep them together as a genus, pending further anatomical and biological research. All inhabit New Guinea.

**S. acutilunata** Warr. (13 f). Very broad-winged, with distal margin of forewing nearly straight, apex and tornus nearly rectangular. Brown markings slighter than in the allies, none on termen or fringe. Biagi, Owen Stanley Range. — **dissimilis** Warr. has the markings somewhat increased, nearly as in the differently-shaped *inquinata* (13 e) except for their absence from termen and fringe. Upper Setekwa River, Snow Mountains, 1 ♂.

**S. remissa** Prout (4 k, as *acutilunata*). Nearest to *acutilunata* in shape, but considerably larger, less bluish green and quite different in markings. British and Dutch New Guinea.

**S. costipicta** Warr. (4 k) is the smallest *Strepsichlora*. Costal margin of forewing strongly spotted, cell-mark elongate, fringe green proximally, whitish distally. Snow Mountains.

**S. inquinata** Warr. (13 e). Nearest to *nubifera* (4 k) but smaller, antennal pectinations of the ♂ considerably shorter, the dark markings differently arranged, especially near the apex of the forewing. Upper Aroa River.

- nubifera*. **S. nubifera** Warr. (4 k) is the most widely distributed species of the genus and is easily recognizable from our figure. Dutch and British New Guinea, the type from the Snow Mountains.
- megaspila*. **S. megaspila** Warr. (4 k). More vivid green than the other species, the dark markings very strong anteriorly, both wings with a large midterminal spot, etc. Dutch New Guinea, the type from the Snow Mountains.

### 67. Genus: **Oxychora** Warr.

Most characters as in *Prasinocyma*, from which it differs essentially in the remarkable form of the discocellulars; the 3rd discocellular of the forewing is extremely acutely angulated inwards at the cell-fold and that of the hindwing is extraordinarily oblique outwards. Possibly a derivative of *Anisozygia*, which in a few species foreshadows this structure; scaling somewhat similar, a further point of contact observable in the well marked sexual dimorphism of the first species. All inhabit New Guinea, a few spreading into the islands westward and eastward.

#### Section A. Antenna of ♀ not pectinate (*Oxychora* Warr.).

- eusticta*. **O. batis** is very distinct from all the other species on account of its terminal blotches. In the ♂ these are red, in the ♀ larger and much paler. — **eusticta** Prout (41) is the larger form, with the lines *batis* in both sexes expressed by white vein-dots. Dutch New Guinea. — **batis** Warr. has the white dots scarcely noticeable in the ♀; in both sexes, the posterior blotches of both wings are generally less elongate than in *eusticta*. Owen Stanley Range.
- ruficincta*. **O. ruficincta** Warr., of which the unique type (a ♂) was taken at Biagi in February (3 ♂♂ of *batis* at the same place in April) may be a remarkable aberration of the preceding species with the terminal blotches narrowed almost to vanishing-point; a quite similar reddish, proximally dark-edged terminal line remains.
- spilota*. **O. spilota** Warr. (41). Larger and less brightly coloured, with characteristic, slightly angular dark cell-marks. Snow Mountains (loc. typ.) and on Sudest and Rossel Islands.
- dentilinea*. **O. dentilinea** Warr. Again larger and paler, the white lines much better developed, dentate, additional series of white dots indicated; cell-mark white, costal edge light brown, not reddish, terminal line green, fringe pale green. Snow Mountains.
- candidicosta*. **O. candidicosta** sp. n. (13 f). ♂ 17 mm; ♀ 20—25 mm. The smallest *Oxychora* and with slightly less rounded apex of the forewing and slightly less broad, more angled hindwing than the others. Greener (less blue-greyish). Further distinguished by its pure white costal edge and its relatively large white terminal dots, which extend on to the base of the fringe; the spot at angle of hindwing is enlarged as in *spilota* (41). Face brown, as in the following section (in the preceding section predominantly green). ♀ antenna lamellate. Vulcan Island, November 1913 — January 1914 (Meek's Expedition), type ♂ and 2 ♀♀ in Mus. Tring.

#### Section B. Antenna of ♀ strongly pectinate (*Oxychora* Warr.)

- tenuis*. **O. tenuis** Warr. (41). WARREN'S type ♂, from Kayeli, Buru, is in poor condition and may perhaps prove to be separable racially from Dutch New Guinea, Witu (= French Islands), New Britain and Bougainville. We figure in 13 f a ♂ from Witu. Wings more rounded than in *spilota*, cell-dots white, no enlarged terminal white spot at bend of hindwing, fringes green.
- assimilis*. **O. assimilis** Rothsch. (= *dentilinea* ♂ Warr. in err., nec ♀ typ.). Shaped and marked more as in *dentilinea* but with the structure of *tenuis*. Smaller and rather less pale and greyish than the former, with the white lines less broad and distinct, the face brown, not green. Snow Mountains, Dutch New Guinea.

### 68. Genus: **Maxates** Moore.

Palpus rather long. Antenna of ♂ strongly pectinate, with a rather long apical part simple. Hind-tibia with all spurs, the ♂ with a hair-pencil. Abdomen not crested. Wing-shape very characteristic, the distal margins strongly and irregularly dentate, on the hindwing a rather long tail at R<sup>3</sup>. Perhaps derived from the *Agathia* group, but with the frenulum slender in the ♂ and wanting in the ♀. The only 3 species known to me are Indo-Malayan, but TURNER has described a fourth from Queensland.

- coelataria*. **M. coelataria** Walk. (= *caelataria* Moore). Easily known by the distribution of the markings. The ♀ is rather broader-winged than the ♂. The underside has a rather variable blackish submarginal band, broader in the ♀. In the name-typical race from Ceylon the wings are not quite so narrow as in the follow-

ing race, the posterior terminal patches a little darker, the band beneath almost complete, markedly bent or curved opposite the tail of the hindwing. Also in S. India, from Travancore to Karwar. — *trychera* *trychera*, *subsp. nov.* (13 f), from N. India and perhaps Burma, is narrow-winged, with the excisions and projections of the distal margins more pronounced, the patches at the anal angles as pale as in *macariata*, the band beneath usually only reaching about from SC<sup>5</sup> of the forewing to M<sup>2</sup> of the hindwing. Especially common in the Khasis; type in Tring Museum. Malayan specimens (Singapore, Java, Borneo, etc.) perhaps represent a third race, approaching *trychera* in shape and *coelataria* in markings.

**M. macariata** *Walk.* (13 g) has the distal margin of the forewing not dentate posteriorly, the pale *macariata* colour not running along the costal margin of the forewing, on the other hand very broad and uninterrupted on both wings distally. Band of underside generally broader than in *coelataria*. N. India.

**M. dysides** *Prout* is similar to *macariata* (13 g), but rather broader-winged; termen of forewing rather *dysides* less oblique, not excavated between the radials, the distal edge of the green area less oblique than the termen, the band of the underside less broad, but continuing (though tapering) to the costal margin; tail of hindwing rather less long, central projection of green area much less produced, subterminal band less broad, proximally accompanied by elongate black marks before and behind the 3rd radial. Benkoelen, S. W. Sumatra, only the type ♀ known.

**M. tanygona** *Turn.* 26 mm. Face ochreous, upper edge more brownish. Forewing with distal margin *tanygona* slightly crenulate, not excavated between the radials; rather dull green; costal edge narrowly white, near base brownish-ochreous; cell-dot circular, fuscous; two similar dots on hindmargin, antemedian and median; fringe chequered, white and fuscous. Hindwing with cell-spot larger and only one posterior dot. Mount Tambourine, Queensland, one ♂.

#### 69. Genus: **Metallothea** *Prout.*

Characters of *Metallochloa*, but the ♂ antenna shortly pectinate, the wings shaped about as in *Eucrostes*, the distal margin of the forewings rather strongly oblique. Erected for the single species described below.

**M. eucrostes** *Prout.* 20 mm. Face reddish. Abdomen with 4 shining bronzy crests, the last (on *eucrostes* segment 6) small. Wings light green, with interrupted dark terminal line and rather dark fringes; forewing with 2 slightly curved silvery lines, the proximal one close to a minute dark cell-dot; hindwing with the post-median line only. Underside with a single line of fuscous irroration, more proximal than the outer line of upperside. Queensland: Salisbury Plains, N. of Bowen, 1 ♂.

#### 70. Genus: **Idiochloa** *Prout.*

Another offshoot (or section) of *Metallochloa*, without crests or metallic markings, the hindwing with the 2nd subcostal not or only very shortly stalked. Founded on an Indian species, with which may perhaps be associated „*Nemoria*“ *cinctata* *Saalm.* (Vol. 16, Pl. 5 a) from Madagascar.

**I. ophthalmicata** *Moore* (13 f) cannot be mistaken for any other species. The elongate, pale-centred *ophthalmi-* cell-mark of the hindwing is the most characteristic marking. N. India. *cata.*

#### 71. Genus: **Metallochloa** *Warr.*

Palpus of ♀ with 3rd joint elongate. Antenna of ♂ with fascicles of cilia. Hindtibia with all spurs; that of the ♂ with hair-pencil. Abdomen nearly always with metallic crests. Forewing with the 2nd subcostal sometimes arising beyond the 5th. Hindwing bent or tailed at the 3rd radial; 2nd subcostal well stalked, 1st median rather long-stalked. The species belong chiefly to Queensland, New Guinea and the islands eastward thereof but are connected with *Hemithea* by a few African species which have the general habitus of the latter combined with the tibial armature of *Metallochloa*.

*Section A. Hindwing with a rather long tail (Cosmogonia Warr.).*

**M. decorata** *Warr.* (13 g). Quite unlike any other *Metallochloa*. The red apical dot and white fringes *decorata* somewhat recall *Gelasma papuensis* (11 d), while the elongate cell-mark of the hindwing (though bright red and smaller) reminds of *Idiochloa*. Described from N. Queensland, but evidently of Papuan origin, being widely distributed in New Guinea and found also on Goodenough, Woodlark and Sudest Islands.

Section B. Hindwing with a hyaline patch at base, forewing with 2nd subcostal arising beyond 5th (*Chrysoptera* Warr.).

*venusta*. **M. venusta** Warr. (= *pubica* Pagenst.) (13 h). Also extremely distinct, grey-green with pale proximal patches, that of the forewing large, that of the hindwing small but more specialised. Described from N. Queensland, distributed in New Guinea and the Bismarck Archipelago, also known from Ceram.

Section C. Hindwing with tail short or obsolete, base not hyaline (*Metallochloa* Warr.).

*rubripuncta*. **M. rubripuncta** Warr. Similar to *venusta* (13 h) and with the same venation, but larger, unicolorous lightgreen, with small blackish cell-dots, a few additional red dots marking the beginning of the lines, a rather large red apical spot on hindwing beneath. Solomons: Ysabel (type), Bougainville and Florida.

*lineata*. **M. lineata** Warr. (13 h). This species indicates another sub-group, with the subcostal venation of *venusta* and *rubripuncta*, the silvery outer line of the species which follow and a distinctive hindwing shape, the termen being slightly bent at R<sup>1</sup> as well as at R<sup>3</sup>. Trobriand Islands (loc. typ.), New Guinea, Mysol, Key and Rook Island. Variable, especially in the length and strength of the arcuate silvery band behind the cell of the forewing and the development of a dark submarginal band on the underside. — **tetralopha** Lower (13 h) has the silvery markings, excepting the subterminal, weak, the dark band of the underside only developed at tornus of forewing (but here showing above also) and apex of hindwing. North Queensland. — Perhaps some other geographical races will prove distinguishable.

*exorista*. **M. exorista** Prout. Very near *meeki*; antennal teeth shorter; forewing with costal margin more arched distally, more broadly and brightly red, a minute black cell-dot present, some minute black dashes on 5th subcostal and 1st radial; hindwing with tail longer, submarginal silvery line more acutely bent; underside without discal band or apical spot. Upper Aroa River.

*tenuilinea*. **M. meeki** approaches *decorata* in shape, though less extreme. Characteristic is the silvery band near to, and parallel with, the distal margin. There are two recognized races. — **tenuilinea** Warr., from Dutch New Guinea and reaching Milne Bay, has the outer band of the forewing on the underside grey. — **meeki** Warr. from the D'Entrecasteaux, has the same band greenish, scarcely differentiated from the pale greenish ground-colour. Both races have a dark apical spot on the hindwing beneath.

*aurigera*. **M. aurigera** Pagenst. (13 h) is a lovely species, the metallic markings more yellow than the preceding and including on the forewing a curved and very oblique central line and an outer subcostal streak. Bismarck Archipelago, the type from New Britain.

*proximata*. **M. proximata** Warr. (13 h). Ground-colour as in *aurigera*, the lines not metallic, quite differently shaped. Tulagi Island, off Ysabel, Solomons, 1 ♂ and 7 ♀♀ at present known. — ab. **circumscripta** Warr., the only example yet known from Ysabel, is a weakly marked ♂, the subterminal green line chiefly indicated by the pale line beyond it.

*roseifimbria*. **M. roseifimbria** Prout is rather deeper green, the hindwing more angled, both cell-dots surrounded with red, the green lines faint, more proximally placed than in *proximata*, the fringes rosy, with whitish tips. Vella Lavella.

*sanguinipuncta*. **M. sanguinipuncta** Warr. is close to *militaris* (13 h) but has the abdominal crests reduced and not metallic, the cell-dots larger and redder (as in *roseifimbria*), the minute blackish terminal dots of *militaris* replaced by more reddish dashes which are separated by about their own length from the termen. Key Islands, only 2 examples known, both ♀.

*militaris*. **M. militaris** T. P. Luc. (= *dotata* Warr.) (13 h). Ground-colour as in *proximata*, the green bands, when developed, more olive-tinged, more sinuous and interrupted or macular; some blackish dots discernible at the outer edge of the postmedian band, the one at the 1st radial strong; a blackish dot at apex of forewing beneath always developed (as also in *roseifimbria*), reduced or obsolete above. — ab. **flavifimbria** Warr. is more weakly marked and has the abdominal crests also sometimes paler. Both these forms, with intermediates, inhabit Queensland. — **roseipuncta** subsp. nov. is closely similar, but has the postmedian dot at the 1st radial red, not blackish, the dots behind it obsolete, the transverse olive-green shades wanting or vestigial. Lonisiades: Sudest and Rossel, the type ♂ from Sudest in the Tring Museum. — **satisfacta** Prout, from Goodenough Island and British New Guinea, is a further development of *roseipuncta*, with the red cell-dots and that on the 1st radial of the forewing enlarged. — **apicalis** Prout has the terminal dashes more elongate than in *militaris*, the one at the apex extended into a conspicuous, proximally red-mixed spot; apical spot beneath also enlarged. Ceram.

*differens*. **M. differens** Warr. Possibly another race of *militaris* (13 h), but the apex appears scarcely so sharp, the angle of the hindwing weaker, intermediate towards the shape of *neomela*. The red cell-dots minute, the other markings obsolete; fringes paler than in *militaris*. Tenimber.

*ametalla*. **M. ametalla** Turn. is close to *militaris* (13 h) but with the antennal ciliation of the ♂ only half as long, the abdomen without crests, merely with an incomplete white line. Wings with the principal dots quite as

in *militaris*, in addition with traces of pale, dark-edged median and postmedian blotches. Port Darwin, N. Australia.

**M. albicinctaria** Walk., of which the type, a ♂ from Flores, remains unique, is very near *neomela* but apparently a separate species, with the postmedian line more eurved, anteriorly turning outward, the abdomen dorsally with white dots. *albicinctaria*.

**M. neomela** Meyr. (= *pisina* Warr., *albolineata* Pagenst.) (13 i). Colouring nearly as in *militaris* and *neomela*. *U. bipunctifera* (13 h) but entirely without dark dots, in wing-shape different from both; abdomen without crests or dots; the fine white lines recall those of *bipunctifera* but are differently placed, the postmedian on both wings straight. Distributed throughout New Guinea, also on Tenimber, the Bismarck Archipelago and N. and W. Australia.

## 72. Genus: **Urolitha** Meyr.

A development (or section) of *Metallochloa*, differing only in the euriously elongate hindwing, which is produced to a strong point at the tornus. Only one species is known.

**U. bipunctifera** Walk. (13 h) has the same vivid green ground-colour as the typical group of *Metallochloa* but differs, in addition to its state, in the red and black spot in the posterior angle of the hindwing. The abdomen often has dorsal crests, but these may also be entirely absent — an unexplained variation, but quite unsupported by any other evidence of specific distinctness. New South Wales (loc. typ.) and Queensland. *bipunctifera*.

## 73. Genus: **Mixolophia** Warr.

Only known to me from one male and one female of the type species, the former without hindlegs the latter with all spurs developed. May easily prove to be a section of *Metallochloa*, in which case the name will take priority; should the ♂ prove to have a similarly formed hindleg there will be little to separate it beyond details of shape and coloration. Palpus of ♀ similarly elongate; 1st median of forewing from quite near end of cell, but not connate or stalked as is usual in *Metallochloa*.

**M. ochrolauta** Warr. (12 g). Dull green, the hindwing with an oval white cell-spot; both wings with an irregular ochreous postmedian line, on the hindwing broad, and a large ochreous patch at tornus; hindwing also with a smaller one at apex. Bhotan, the type ♂; Nepal, 1 ♀. *ochrolauta*.

## 74. Genus: **Episothalma** Swinh.

This is another genus which may well prove superfluous, as it is distinguished chiefly by differences of shape from *Hemithea*, the distal margins generally more dentate, the forewing excised between the apex and 3rd radial, the hindwing between the 1st and the 3rd radial. — The type species, *robustaria* Guen., is in other respects a little less specialised than *Hemithea*, the build more robust, the terminal joint of the ♀ palpus rather less elongate, the costal of the hindwing less definitely anastomosed with the cell, the 1st median of the same sometimes arising before the end of the cell, the ♂ genitalia also showing some rather marked distinctions. But it is doubtful whether the associated species from New Guinea, with longer palpus, differ at all from *Hemithea* except in shape.

**E. cognataria** Swinh., founded on a ♀ from Siam, differs from *robustaria* (13 g) in its smoother wing-margins and in having the underside nearly white. *cognataria*.

**E. robustaria** Guen. (= *sisunaga* Walk., *macruraria* Walk., *fimbriaria* Walk., ? *indeterminata* Walk.) (13 g). Recognizable by the given generic characters, large size and conspicuous black cell-dots. The lines, which are generally weak and yellowish green on the upperside (though occasionally browner and more prominent) are often dark and conspicuous on the pale underside. Described from India, but also known from Burma, Tonkin and Hainan and even from Java. *robustaria*.

**E. ocellata** Swinh. is another large species, but with the apex more falcate and with ocellated cell-spots, both above and beneath. Khasis. *ocellata*.

**E. subaurata** Warr. Related to *obscurata* (13 g). Forewing with the excision deeper, the green ground-colour more yellowish, a stronger dark posterior cloud outside the postmedian line. Both wings beneath gold-yellowish, with cell-spots developed. Founded on a ♀ from Milne Bay, British New Guinea. *subaurata*.

**E. obscurata** Warr. (13 g). Not particularly variable, easily determinable from our figure. The sub-terminal band, only indicated as a greyish suffusion above, is strong and blackish-fuseous on the pale underside. Fergusson Island; also distributed in Dutch and British New Guinea, Trobriand Islands, New Ireland. *obscurata*.

*sequestrata*. **E. sequestrata** Prout. (13 i). Very similar to *obscurata* but with the 3rd joint of the ♀ palpus considerably shorter than the 2nd (in *obscurata* longer than the 2nd). Forewing less sinuate and less crenulate. Colour lighter grey-green; subterminal bands beneath more restricted. Milne Bay, together with the two preceding species; also from Goodenough Island.

### 75. Genus: **Hemithea** Dup.

Characters nearly as given under *Metallochloa*, but the ♂ without proximal spurs on the hindtibia. Abdominal crests present but not metallic. Wings generally of a duller or more bluish green, the pattern simple, generally consisting of two wavy or dentate white lines on the forewing and one on the hindwing. For a fuller account the reader is referred to Vol. 4, p. 23. The distribution is Palaearctic and Indo-Australian; the species belonging to the latter fauna are in part confusingly similar and very imperfectly known.

A. Antenna of ♂ ciliate.

*notospila*. **H. notospila** Prout (12 d) in its size, colour and the rather broad grey-green lines recalls *Episothalma* and it is even faintly intermediate in shape. Underside pale, with dark patches at tornus of forewing and apex of hindwing, closely as in *insularia* (13 i) and others of the smaller species. Named from the dark spot near base of abdomen. Borneo (loc. typ.), Perak and Selangor.

*subflavida*. **H. subflavida** is geographically variable. The range of the two New Guinea forms is peculiar and it is possible that more extensive material may show them to be merely aberrations or, on the contrary, separate species; but it is constant for all the specimens yet known to me. **subflavida** Warr. (13 i), named from the yellowish tinge of the underside of the forewing, has on the hindwing beneath (which is whiter) a dark apical blotch, but no submarginal band. Lower Aroa River, Kumusi River, Hydrographer Mountains, Goodenough I., Fergusson I. (loc. typ.), Rook I. and New Ireland. — **reducta** Warr. is similar above, but the hindwing beneath has a broad blackish submarginal band. The original ♀ was a dwarf, hence the misleading name of *reducta*. Ninay Valley, Humboldt Bay (loc. typ., erroneously published as "Cedar Bay"), Vulcan I., Dampier I. — **copiosa** Prout is a little broader winged than the other forms, intermediate in shape towards *Episothalma sequestrata* (13 i); underside with the dark borders rather broader than in *reducta* and with the postmedian line (or shade) present, on the forewing partly fuscous, on the hindwing olivaceous. Bougainville.

*melalopha*. **H. melalopha** Prout (12 g) is much smaller than *notospila* (12 d), 3rd joint of palpus not so short, terminal blotches beneath wanting; not quite so broad-winged as *quadripunctata* (12 h), the dark vein-dots wanting; abdominal black crest intenser than in either. Luzon.

*quadripunctata*. **H. quadripunctata** Warr. (12 h) is perhaps related to *subflavida*, but has the lines slight, expressed chiefly by vein-dots resp. dashes, the yellowish underside without dark marking. Abdomen with 2 pairs of black scale-tufts (embryo crests), the posterior pair confluent into a larger spot. Dutch Timor, only the type known.

*dorsiflavata*. **H. dorsiflavata** Prout (12 k) was named from the yellowish cloudings and crests of the abdomen. Crests strong. Lines and their vein-dots white or whitish. Central Ceram: Manusela, 6000 feet, only the ♀ known.

*undifera*. **H. undifera** Walk. (13 i) has the abdominal crests so strong that WARREN made it the type of a separate genus, *Lophocrita*, but it manifestly belongs here. Larger and more glossy than *insularia*, with more glaucous reflections, the fringes pale. Sarawak (the type) and S. Celebes.

*insularia*. **H. insularia** Guen. (13 i) is somewhat variable, or perhaps embraces more than one species. Being less small than the species of the *tritonaria* group, it is more comparable to the Palaearctic *aestivaria* Hb., from which, however, it differs particularly in the white terminal dots and on the underside in the presence of an apical dark blotch on the hindwing and generally a weaker one at the hind angle of the forewing. Face reddish. Founded on a bad ♀ from Borneo, but apparently widely distributed in the Malayan subregion. — **profecta** subsp. (? sp.) nov. (13 k) is a rather large form, relatively narrower winged, with the tail of the hindwing strong, the spots on the underside generally reduced, but sometimes fully as strong as in the type. Khasis, not rare, type in Mus. Tring; Sikkim, rarer. — **duplicata** Prout is shaped like the name-type, or perhaps very slightly less narrow; darker, terminal line rather more crenulate, fringes rather darker. Fergusson Island (type) and British New Guinea.

*antigrapha*. **H. antigrapha** Prout (12 h). Palpus with 3rd joint longer than in *insularia*, especially in the ♀; shape of *profecta*; colouring almost as dark as in *duplicata*. Darker than *tritonaria* (13 i), the face greener, the abdominal spots more black-mixed, the dark terminal blotches of the underside present, indeed strong. Assam (type) and the Malay Peninsula.

**H. wuka**. Generally smaller than *insularia*, the ♀ palpus longer. The dark reddish brown face, broader wings, absence of terminal dark line beneath (present in both *insularia* and *antigrapha*) and the coloration of

the abdomen of the ♂ separate it from *antigrapha*. ♀ with at least the 2nd—4th abdominal tergites mixed with reddish and often with white; ♂ abdomen nearly always green throughout, only with small white crests. Distributed from Teoor to Ysabel Island in a number of races, which, however, are not yet quite sharply differentiable. The following is the best summary that I can give. — **wuka** Pagenst. (13 k). Apical blotch of hindwing beneath small, occasionally wanting; dark terminal line of upperside very slender. Key Islands (type) and Teoor. — **iosoma** Meyr. Terminal line heavier, otherwise scarcely distinguishable from *wuka*; blotch of underside in the ♀ sometimes enlarged. New Guinea and the Louisiades. — **pictifimbria** Warr., from the D'Entrecasteaux, is probably synonymous with *iosoma*, but all the specimens before me show, in addition, a small (sometimes minute) spot at the hind angle of the forewing beneath. — **australis** subsp. nov. (= *insularia* Turn., nec Guen.) is interesting in that it is the only *wuka* form yet known in which the ♂, as well as the ♀, has distinct reddish suffusion on tergites 2—4. Otherwise very near *iosoma*. N. Queensland, the type ♂, from Kuranda, in my collection. — **vulcanensis** subsp. nov. is bluer green, only with yellow or more olive lines in the median area touching the white lines. Abdominal mark in the ♀ more fuscous, and even faintly indicated in the ♂. Underside of ♀ with spots or dashes at anal angle of each wing, in addition to the strong apical spot of hindwing. Vulcan Island, type in Mus. Tring. A series from Dampier Island is almost identical, fully as large, but with the lines somewhat more punctiform, the postmedian of the hindwing almost as in the following form. — **mapsaurica** subsp. nov. is a small form, slightly darker grey-green, with very dark face, the white lines punctiform, that of the hindwing strongly excurved in its central part; otherwise like *vulcanensis*. St. Matthias, Squally Island, New Ireland (loc. typ.), Feni Island, New Britain and Witu. — **isabella** Prout is a more extreme development, the blotches beneath more extended, almost band-like, and even suggested by greyish shading above. Solomon Islands: Ysabel.

**H. doddi** sp. n. (12 h). A somewhat puzzling species, hitherto confused with *wuka australis*; as no structural difference has yet been found, it cannot be positively asserted that it may not be a form thereof. Face dirty olive rather than reddish. ♂ abdomen without reddish suffusion. Forewing (and to a lesser degree hindwing) with postmedian line less sinuous; terminal dark line (proximal to the whitish dashes) wanting or vestigial; hindwing beneath in both sexes without apical blotch. Port Darwin and Townsville (apparently without *australis*); Kuranda (together with *australis*). All collected by F. P. DODD, the type ♂ from Townsville in coll. PROUT. WARREN referred this to *costipunctata* Moore (13 i), which it strongly resembles except in the variegated fringes and the absence of dark dorsal maculation in the ♂.

**H. tritonaria** Walk. (13 i). Palpus shorter than in *antigrapha* and *wuka*. Face of a nondescript dull olive-greenish, more or less overlaid with red-brown. The hindwing, at least in the ♂, is somewhat less long and narrow than in *antigrapha*, to which the reader is referred for further differentiation. Underside without dark blotches. Apart from the different palpus and slightly less angular wings, *wuka* and its races might have been regarded as races of *tritonaria*. Described from Hong Kong, *tritonaria* has an extended range from India to Formosa, perhaps also the Philippines. — ab. loc. **elaeopis** nov. (= *leucospilota* Hmps., nec Moore) is a dark form from Ceylon, especially Pundaloya, with clear dark olive-green face and darker palpus. Type ♂ (Pundaloya, June 1897) in the Tring Museum.

**H. costipunctata** Moore (= *graminea* Hmps.) (13 i) only differs essentially from *tritonaria* in lacking the dark terminal line. Face lighter, greener. The dotted costa of the forewing is common to both. Ceylon (type), India, Burma, the Andamans, Malay Peninsula and N. Borneo. — **simplex** Warr., from Java and Sambawa (and perhaps as far as Timor) may be distinguishable by showing a greener band, or edging, to the white postmedian line, which latter is fainter or almost obsolete.

**H. unicolor** Th.-Mieg. Unknown to me. "22 mm." Uniform green, including the fringes, costal margin of forewing narrowly whitish. Founded on a ♀ from Yunnan. Should be distinguishable from *costipunctata* by the non-dotted costa and green (not grey) fringes.

**H. pellucidula** Turn. (13 k). Perhaps paler green and more translucent than *simplex*, the lines rather more strongly sinuous, generally more broken into white vein-dots, the abdominal crests mixed with white (variable, however, in *costipunctata* and *simplex*). N. Queensland.

**H. marina** Btlr. (= *ussuriaria* Prout olim, nec Brem.) (Supp. 4, pl. 1 d). Much brighter green than the preceding group, which show the same deplorable tendency to fade as does the genotype *aestivaria* Hbn. Face red. The fine white lines have a very slender edging of olive-green in the median area; terminal line whitish, extremely fine, or only showing small white dots at the veins. Described from Japan, but occurs also in Szechwan. Misidentified in our text of Vol. 4 as *ussuriaria*, although I believe the figure (2 d) represents true *ussuriaria*.

**H. rubrifrons** Warr. (13 k). A rare species which was at one time confused with *distinctaria* but is easily distinguished by the red costal edge of the forewing, longer terminal joint of palpus, etc. Masuri, Bhotan (type) and the Khasis.

- distinctaria.* **H. distinctaria** Walk. (Vol. 4, pl. 2 d) is the commonest of the bright-green group of *Hemithea* and has been described in Vol. 4 because it reaches Tibet, but cannot properly be regarded as Palaearctic. Face red, costal edge ochreous, crests blackish, on a purple-mixed patch, postmedian line slender, on hindwing weakly bent. N. India, especially Sikkim, the type-locality. — **laeta** Prout (13 k) is a puzzling form, or extremely similar species, almost entirely without the dorsal ornamentation of the abdomen, thus remarkably like some forms of *Chlorissa pretiosaria* Stgr. (Vol. 4, pl. 2 c). Apparently replaces *distinctaria* in the Khasis.
- nigropunctata.* **H. nigropunctata** Warr. (Vol. 4, pl. 2 d). Near *distinctaria*, but with slightly more acute apex, black cell-dots and white terminal dots, besides some slight differences in the lines. Described from E. Pegu, known also from the Khasis and even from Japan (see Vol. 4, p. 23). A race (?) from Ceylon perhaps differs in the weaker cell-dots, but awaits confirmatory material.
- aquamarina.* **H. aquamarina** Hmps. (13 k). Smaller than *nigropunctata* and of a less vivid, more translucent green, the abdominal maculation much lighter (whitish mixed with light red), the lines more dentate or punctiform, the postmedian with dark dots edging the white ones proximally. N. India, from Dharmasala (loc. typ.) to the Khasis.
- rubripicta.* **H. rubripicta** Warr. (13 k). Easily distinguished from *nigropunctata* by the broadly red (black-dotted) costal edge of the forewing, the enlarged cell-dots, the red vein-dots which accompany the lines and the dark line on middle of abdominal margin of hindwing. Sikkim (type) and the Khasis.
- B. Antenna of ♂ pectinate.*
- prouti.* **H. prouti** Rothsch. (12 h). This species, described as a *Gelasma*, necessitates — on account of its hind-tibial armature and crested abdomen — the erection of a new section in *Hemithea*. Scaling at least as thin as in *aquamarina*, hindwing more crenulate, markings weaker, the white cell-dots accompanied by slightly less transparent green shades. S. W. Sumatra: Korintji, at an altitude of 7300 feet.
- apheles.* **H. apheles** sp. n. (12 h). In structure, scaling and coloration near *prouti*. Antennal pectinations of the outer series continuing to about the 32nd joint, those of the inner (as in both series in *prouti*) to about the 39th. Margin of hindwing much smoother than in *prouti*, scarcely waved, the tooth at 3rd radial small. Costal edge of forewing much less dark-speckled; other markings scarcely discernible, excepting a white mark on 2nd discocellular of hindwing, recalling *Thalassodes*; only with the lens minute whitish postmedian vein-dots can be made out, rather more distally placed than those of *prouti*. Tosari, Java, 5. Juli 1910 (E. A. COCKAYNE), type in coll. PROUT, not very fresh, but easily recognizable now that its affinities have been worked out.

#### 76. Genus: **Anoplosceles** Warr.

A derivative of *Hemithea*, differing in the scarcely ciliated antenna of the ♂ and the absence of spurs on its hindleg. ♀ unknown, but probably 4-spurred. Erected for one species, which remains very rare.

- nigripunctata.* **A. nigripunctata** Warr. (12 i). Facies of a strongly-tailed *Hemithea*, but not likely to be mistaken for any other known species. Described from W. Java, but has since been received from Borneo.

#### 77. Genus: **Chlorissa** Steph.

Although — as has been pointed out in our other volumes — this is scarcely more than a subgenus of *Hemithea* and intergrades with it in the Palaearctic and Indo-Australian Regions, it probably represents the phylogenetically older division, being found also in North America and Africa unaccompanied by true *Hemithea*; on the other hand, in the Indo-Australian Region it does not extend beyond India and Formosa. Abdominal crests slight or wanting; hindwing not or only weakly angled, never tailed.

- pretiosaria.* **Ch. pretiosaria** Stgr. (= *gelida* Btlr.) (Vol. 4, pl. 2 c) is probably Palaearctic more than Indian, but is by no means confined in India to Kashmir and the Punjab, being fairly common in parts of Sikkim. Smaller than *H. distinctaria*, without crests, the line on the hindwing almost straight. Wings more *Hemithea*-shaped than in most *Chlorissa*, probably a true link.
- discessa.* **Ch. discessa** Walk. (= *lataria* Walk., *frequens* Btlr., *solidaria* auctt. nec Guen.) (13 l). A small species, with rounded or scarcely bent hindwing, perhaps a pale form of the common African *albistrigulata* Warr. (Vol. 16, p. 28, pl. 2 k). Ceylon to N. India, also recorded by JOANNIS from Tonkin.
- punctifimbria.* **Ch. punctifimbria** Warr. (13 l). Similar to *discessa* but with the hindwing more angled, the fringes with dark dots opposite the veins. Face greenish (in the adjacent species reddish). Central and N. India, the type from Bombay.

**Ch. chlorissodes** *Prout* (13 l) is of a duller or darker green, not white strigulated, the hindwing still *chlorissodes*. more perfectly rounded and with its abdominal margin less elongate; but above all different in being the only *Chlorissa* with the ♂ antenna pectinate, so that it should, strictly speaking, be transferred to the North American genus *Chlorochlamys*. Tonkin, Hainan, Hong Kong (type) and Formosa.

### 78. Genus: **Diplodesma** *Warr.*

Another offshoot of *Hemithea* or *Chlorissa*. Antenna and (generally) leg-structure as in them. Abdomen not crested (except, slightly, in Section A). More specialized in that the 1st subcostal is stalked with the others and runs into the costal, and there are in some cases other modifications of the subcostal system. Moreover the ♀ of one species (*subexpressa*) has — like the African *Neromia* — lost the proximal spurs of the hindtibia. A small genus, almost entirely Indo-Australian.

*A. Section. Forewing with 2nd subcostal free or anastomosing slightly.*

**D. pudentifimbria** *Prout* (13 l). Paler green than *mundaria* (Vol. 4, pl. 2 e), the fringes still paler and *pudentifimbria*. with a characteristic pinkish flush. Terminal line weak or vestigial. Abdomen above, except at base, dull reddish mixed with white. Assam (type), Perak and Borneo; also perhaps in S. India.

**D. mundaria** *Leech* (Vol. 4, pl. 2 e) is possibly a form of *ussuriaria*, from which it differs chiefly in *mundaria*. having the lines straighter. See further Vol. 4, p. 24. Described from West China, but now known also from North India and Formosa.

**D. ussuriaria** *Brem.* (= *eluta* *Wileman*). (Vol. 4, pl. 2 d). On the former misidentification of this *ussuriaria*. species see under *Hemithea marina*, p. 115. The true *ussuriaria*, described from East Siberia, is chiefly Palaearctic, but occurs in several parts of China, including Ningpo and Szechwan.

*B. Section. Forewing with 2nd subcostal running into costal (Diplodesma).*

**D. planata** *Prout* (13 l). This species seems to furnish a link between Sections A and B, as the ♂ be- *planata*. longs here while the ♀, so far as known, conserves the venation of the *ussuriaria* group. Superficially scarcely distinguishable from some rather large *mundaria* with very weak antemedian line, the line of the hindwing still less bent. The name-typical form, from N. W. India, has no dark blotch on the abdomen. — **dorsinigrata** *dorsinigrata*. *Prout* has the costal edge more strongly dotted with black, the cell-marks appreciably darkened, a blackish patch on the 3rd and 4th tergites. Khasis.

**D. celataria** *Walk.* (13 l). Rounder-winged than *planata*, with more sinuous lines, underside with a *celataria*. blackish subterminal band, which shows through as a grey-green shade above. Described from the Sula Islands, but widely distributed from Celebes to Fergusson Island, including Teor and Key. — **thalassica** *Turn.*, *thalassica*. from Queensland, differs in having elongate blackish cell-marks, stronger on the hindwing.

*C. Section. Forewing with 2nd subcostal wanting (Acrorthis Warr.).*

**D. caudularia** *Guen.* (= *obnupta* *Swinh.*, *viata* *Moore*, *melica* *Swinh.*) (12 k). In shape nearer to *cela-* *caudularia*. *taria* than to *planata*, though slightly intermediate, in the straightish lines and unmarked underside more like a small *planata*. GUENÉE'S type, which was long misidentified, was from N. India, but the species is commoner from Central India to Ceylon; also known from Luzon.

**D. contracta** *Warr.* (13 l) may possibly be a form of *caudularia* but has a somewhat narrower hind- *contracta*. wing and shows on the underside a greyish subterminal band, less dark and less complete than that of *celataria*. Khasis and elsewhere in Assam.

*D. Section. Forewing with 2nd subcostal stalked to beyond 5th, not touching costal (Halophanes Warr.).*

**D. subtusumbrata** *Fuchs* (13 l). Closely like weakly marked *celataria*, except in the venation. Ter- *subtusum-* *brata*. minal joint of palpus in the ♀ perhaps somewhat less elongate. Sumatra (type), Malaya, Borneo and the Philippines.

**D. subexpressa** *Walk.* (= *olivata* *Warr.*) (13 l) might have been taken for a form of *subtusumbrata* *subexpres-* *sa*. with the band of the underside wanting, but differs in having lost the proximal spurs of the ♀ hindtibia. Postmedian line finely dark-edged proximally. Borneo (type), Malay Peninsula and Banka Island.

**D. xanthochlora** *Swinh.* (13 l) is very distinct in the more sinuate distal margins and in the broad *xanthochlo-* *ra*. dark bands, as strong above as beneath. The name-typical race, from the Khasis, is at least as large as any of the preceding, generally larger. — **timida** *Prout* is a dwarf form (15—16 mm), or closely allied species, with *timida*. the excisions in the distal margin slightly shallower and the dark markings narrower. Portuguese Timor.

**D. mystica** *Prout* (12 i), founded on a faded ♀ from S. Celebes, is not a true *Diplodesma*, as the 1st *mystica*. subcostal is not stalked, though arising very near the end of the cell, and the hindwing is rounded, but

it has otherwise the venation of *Diplodesma* section D and has — like *subexpressa* — lost the proximal spurs of the hindtibia. 3rd joint of palpus long.

### 79. Genus: **Rhanidopsis** West.

♂ unknown. ♀ palpus long, slender. Antenna lamellate. Pectus slightly hairy. Hindtibia with one pair of spurs. Abdomen not crested. Wings thickly scaled. Forewing veins 6, 7, 8, 9, 10 stalked, 10 from 9 before 8 (but after 7), 11 free. Hindwing cell short, discocellulars outwardly oblique, veins 3 and 4 from angle, 6 and 7 on long stalk, 8 anastomosing with cell near base". Only the type species known.

*neophantes*. **Rh. neophantes** West (12 i). Quite unlike any other known Indo-Australian Hemitheine, superficially resembling the American *Pyrochlora rhanis* (Vol. 8, pl. 4 l).

### 80. Genus: **Chlorocoma** Turn.

A derivative of *Prasinocyma*, distinguished chiefly by the shorter palpus, with the terminal joint minute in both sexes (see Vol. 16, p. 31). It was established entirely for Australian species and these are on the whole very homogeneous. Hindwing very rarely angled, 1st median less often stalked than in *Prasinocyma*; coloration generally bright green, without the white strigulae or irroration of typical *Prasinocyma*.

*rhodothrix*. **Ch. rhodothrix** Turn. is unknown to me, but differs from most *Chlorocoma* in that the ♂ hindtibia is not dilated. Deep green, the veins faintly and the termen narrowly crimson, the forewing with a brown costal streak, the extreme costal edge white to  $\frac{3}{4}$ , thence crimson, the hindwing with a crimson cell-dot; fringes deep crimson. Expanse 26 mm. Tasmania: Cradle Mountain, 3000—3500 feet, 1 ♂.

*cadmaria*. **Ch. cadmaria** Guen. (= *vulnerata* Btlr.) (12 i). A pretty little species, readily recognized by the conspicuous crimson cell-spot of the hindwing. Widely distributed in non-tropical Australia, with Tasmania.

*rhodocrossa*. **Ch. rhodocrossa** Turn. A rather small species (21 mm), ♂ with long pectinations. Head crimson between the antennae snow-white. Wings bright green, without lines, the fringes dark crimson with white tips; forewing with costal streak crimson at base and apex, white underlined with crimson between. Bridgetown, West Australia, 1 ♂.

*rhodoloma*. **Ch. rhodoloma** Turn. Crown of head crimson, as in the two preceding. Wings bluish green, without lines; costal margin of forewing and fringes crimson throughout, the latter above with indistinct dark dots opposite the veins, beneath with a strong dark-fuscous basal line. Expanse 24 mm. Founded on a ♀ from Waroona, West Australia.

*vertumnaria*. **Ch. vertumnaria** Guen. (= *congenita* Walk.) (12 i) is perhaps, as TURNER believes, merely a form of the following, generally larger and with the lines and cell-dots obsolete, but only differing constantly in the wholly rosy fringes. Larva on *Acacia hakeoides*. Not rare in Tasmania, known also from Victoria and New South Wales.

*dichloraria*. **Ch. dichloraria** Guen. (= *submissaria* Walk.) (12 i). Face and a line on crown crimson; thorax posteriorly and abdomen with a pale buff dorsal line. Cell-dots dark green, more or less mixed with blackish; lines fine, lunulate dentate; fringes light buff, distally suffused with crimson. Larva on *Acacia decurrens*. Tasmania to Queensland.

*ipomopsis*. **Ch. ipomopsis** Lower, founded on 5 ♀♀, mostly larger than *vertumnaria*, is said to be intermediate between that species and *dichloraria* but to differ from both in the green head and face and absence of the buff dorsal line; hindwing bent at 3rd radial. Cell-dots, lines and fringes about as in *dichloraria*. South Australia, apparently attached to *Acacia pycnantha*. A ♀ *Chlorocoma* from the BARNARD collection, unfortunately in poor condition and without locality-label, seems to conform perfectly to the above description, but the species still awaits further elucidation.

*carenaria*. **Ch. carenaria** Guen. (= *ochroneutrodes* Prout) (12 k) is very distinct in the postmedian line of the forewing, which is oblique and non-dentate, and in having the veins finely whitish-buff. Victoria and Tasmania.

*assimilis*. **Ch. assimilis** T. P. Luc. differs from *dichloraria* (12 i) in its larger size and in the absence of the dentate whitish lines. In the name-typical form the wings are altogether without markings. In — ab. **commoda** T. P. Luc. the postmedian line is present, straight. Queensland (loc. typ.) and West Australia.

*monocyma*. **Ch. monocyma** Meyr. has no red line on the green crown, no longitudinal pale line on the body, the wings pale yellowish green, with a faint irregular pale postmedian line from about  $\frac{3}{4}$  costa, on the hindwing angulated in the middle, the fringes whitish green, whiter at the tips. Hindwing with termen strongly rounded,

1st median stalked. Founded on a ♀ from Carnarvon, West Australia. Three faded ♂♂ from Roebourne seem to belong with it, but their wing-shape is nearly as indicated for the following species.

**Ch. halochlora** *Meyr.* Forewing with costal and distal margins almost straight, hindwing rather abruptly rounded at 1st radial, thence almost straight. Should differ from *monocyma* in being of a more whitish green, the costal edge not rosy-tinged, but with a red apical spot on the fringe, the postmedian line wanting. Quorn, South Australia, 1 ♂. *halochlora.*

**Ch. externa** *Walk.* (12 i) differs from *dichloraria* in the absence of the dorsal line, in the more bluish green colour, sharper cell-dots, etc. Tasmania and extending to New South Wales. *externa.*

**Ch. melocrossa** *Meyr.* (= *xuthocrania* *Turn.*) (12 h) differs from *dichloraria* in the yellow (not red) occiput, costal edge and fringes. Somewhat variable in the strength of the dentate lines, which can even be reduced to vein-dots. Tasmania and extending to Queensland. — **periphracta** *Turn.* is a race from Stradbroke Island, with ochreous cell-dots. Apparently attached to *Banksia serratifolia*. *melocrossa.* *periphracta.*

**Ch. tetraspila** *Lower.* Face green (in all the preceding species except *ipomopsis* red). Unique in the genus in having the hindwing angled, or almost tailed at the 3rd radial. Costal edge of forewing narrowly pale crimson; cell-dots blackish, edged with ferruginous; lines indicated only by minute whitish vein-dots. Tasmania (type) and Victoria. *tetraspila.*

**Ch. symbleta** *Turn.* Expanse 36 mm. Bluish green, with costal edge white, in distal  $\frac{1}{4}$  crimson; fringes pale crimson; a fine and very indistinct, dentate postmedian line; forewing with a dark-green cell-dot. New South Wales: Adaminaby, 3500 feet, in October, 1 ♂. *symbleta.*

**Ch. asemanta** *Meyr.* (12 k). Smaller than *symbleta*, with which it shares the green face and indistinct markings. Fringes green, not red. West Australia. *asemanta.*

**Ch. paraphylla** *Lower.* “♀, 20—24 mm. Head and thorax pale green. Tibia thickened. Forewing elongate-triangular, termen nearly straight, oblique; pale green, somewhat tinged with bluish; a narrow yellowish costal streak, leaving extreme costal edge crimson throughout; cilia green.” Derby, West Australia, in November. Unless the pectinations be slightly longer (“5”, against 4 for *asemanta*) this may well prove an aberration, with the markings obsolete. *paraphylla.*

**Ch. stereota** *Meyr.* (12 k). In colour and markings somewhat like an undersized *carenaria* (12 k), but with face and fringe green, dorsal line wanting, veins not pale, postmedian line not reaching costa. Victoria. *stereota.*

**Ch. neptunus** *Btlr.* (= *cissina* *Turn.*) (12 k). Distinct in its rather deep blue-green colour, postmedian line slightly wavy, but not dentate, placed rather far from the distal margin. Face, occiput and fringes (except at tips) concolorous. Queensland. *neptunus.*

**Ch. tachypora** *Turn.* is nearest to *neptunus* but with the palpus much shorter (scarcely over  $\frac{1}{2}$ ), the forewing with a broad white costal streak, the lines more dentate, but equally indistinct. Queensland: Stradbroke Island. *tachypora.*

### 81. Genus: **Heteresthes** *Warr.*

Face narrow. Palpus in both sexes short. Tongue short and weak. Antenna in both sexes pectinate, with long branches. Build robust. Thorax hairy beneath. Abdomen not crested. Hindtibia in ♂ not dilated, in both sexes with 4 spurs. Forewing with apex falcate, somewhat recalling *Tanaorhinus*. Hindwing with termen slightly rounded, not bent in the middle. A striking genus, containing only one species.

**H. subaureata** *Warr.* (13 g as *subrubra*). Variable in size, otherwise pretty constant. Opaque green, generally with faint traces of white postmedian vein-dots, which occasionally become quite distinct. Underside uniform orange, with coarse scaling. — **subrubra** *Warr.*, which was described as a separate species, is simply the normal ♀, considerably larger, otherwise exactly similar above; underside light reddish at margins, especially at base of costa of forewing, behind the median and its second branch on both wings, and between costal margin and subcostal vein on hindwing; the rest with dark smoky suffusion. Solomon Islands, hitherto known from Bougainville, Choiseul, Florida (WARREN'S type of *subaureata*), Vella Lavella, Guizo and New Georgia. *subaureata.* *subrubra.*

### 82. Genus **Microloxia** *Warr.*

Palpus moderate, with terminal joint in the ♀ long. Tongue present, sometimes weak. Antenna of ♂ pectinate, of ♀ more or less serrate. Hindtibia in both sexes with terminal spurs only. Abdomen not crested.

Wings normally shaped. A chiefly Mediterranean genus, which scarcely belongs to the Indo-Australian fauna; see Vol. 4, p. 26, Vol. 16, p. 36.

*indecretata*. **M. indecretata** Walk. (= *pruinosa* Btlr., *aperta* Swinh., *directa* Hmps. nec Walk.) (12 k) will almost certainly prove to be a form of *herbaria* Hbn., generally very small, rather pale, with the lines extremely slender, yellowish. "South Hindostan" (WALKER) and distributed in coastal districts to Karachi, also not rare in Ceylon.

*leprosa*. **M. leprosa** Hmps. (12 a). ♂ with palpus longer, pectinations shorter, hindtibia with a hair-pencil, thus scarcely a *Microloxia*. Very distinct in the broad pale costal border of the forewing, apical patch of hindwing and tornal patch of both wings. Ceylon, only known from two imperfect ♂♂ from Trincomali.

### 83. Genus: **Pamphlebia** Warr.

An offshoot of *Microloxia*, differing in the sharply angled hindwing and in having the 1st subcostal of the forewing stalked with the others. I only know one species and have some doubts as to the validity of the second.

*rubrolimbraria*. **P. rubrolimbraria** Guen. (= *diserta* Walk., *simpliciaris* Walk., *ruficinctaria* Snell., *rubrolimbataria* Moore, *rubrolimbaria* Meyr., *perigrapta* Turn.) (14 a). Recognizable at once by the shape and the very strong red terminal line. Very generally distributed from Ceylon (whence came GUENÉE's and both WALKER's types) and Assam to Formosa, the Philippines, New Guinea and N. Australia. — **interrupta** Bastelb. (14 a), from the Bismarek Archipelago, has the terminal line slighter and interrupted.

*zebrinata*. **P. zebrinata** Th.-Mieg, founded on a single ♂ from "New Guinea" in bad condition, is said to differ from *rubrolimbraria* in that both wings are traversed by several slightly darker green lines; those of the forewing are straight and number about 5. Possibly this appearance of lines is illusory, due to its condition, but I quote it provisionally as a separate species.

### 84. Genus: **Hemidromodes** Prout

Palpus slender, in ♂ rather short, in ♀ moderate. Tongue wanting. Antenna in both sexes pectinate. Hindtibia in ♂ greatly dilated, with the terminal spurs very short or obsolescent; in ♀ with terminal spurs well developed, proximal ones short or wanting. Wings smooth-margined, in aspect similar to *Microloxia*; forewing with 1st subcostal from cell, 1st median sometimes just stalked; hindwing with costal anastomosing with cell to near middle, 1st median well stalked. The type species and a close ally inhabit the Soudan and the Sahara, but an anomalous Indian species is referred here.

*sabulifera*. **H. sabulifera** Prout (12 k). Hindtibia of the ♀ with terminal spurs only. Forewing with both the 1st radial and the 1st median well stalked; hindwing with abdominal margin relatively a little longer than in the African species. Very distinct in its sandy irroration on a whitish ground, the postmedian line somewhat more distally placed than in the African species. Deesa (Disa), 1 ♀.

### 85. Genus: **Paramaxates** Warr.

Not very close to any known genus. Perhaps somewhat related to *Maxates*, more specialised in the loss of the ♂ frenulum, but less so in the venation; unlike nearly all other well-specialised *Hemitheinae*, it has even the 2nd subcostal of the hindwings not or barely stalked. Antenna in both sexes simple. Hindtibia with all spurs, in the ♂ dilated. Only two species are known.

*vagata*. **P. vagata** Walk. (= *polygrapharia* Hmps., nec Walk.) (14 a). Somewhat variable, but impossible to mistake for any other species except the following, which see for the differentiation. Underside much paler, the ground-colour of the hindwing (also of the forewing posteriorly) almost white, the markings strongly expressed though somewhat variable; forewing anteriorly in part greenish-yellow, but with extensive basal and costal suffusion dull fleshy or sometimes more greyish. — ab. **khasiana** Warr. has the outer band much narrowed, sometimes quite fragmentary, the distinction particularly noticeable on the hindwing beneath. *vagata* is common in N. E. India (Sikkim to Assam) and occasional in the Malay Peninsula, Tonkin, Sumatra, Java and Borneo.

*polygrapharia*. **P. polygrapharia** Walk. (15 a). Forewing with the teeth of the distal margin a little less produced, a rather conspicuous pale posterior spot outside the postmedian line; hindwing with some red suffusion at base. Underside variable, but always with some bright red suffusion, in particular with an anterior red half-band proximally to the dark subterminal of the forewing. Borneo (type), Sumatra and the Malay Peninsula. — *celebensis*. **celebensis** Warr., founded on a single imperfect ♀ from S. Celebes, cannot yet be definitely differentiated, but seems to have the underside less highly coloured, inclined to revert towards that of *vagata*, though with a very broad band on the hindwing, such as is found only in *polygrapharia*.

86. Genus: **Cacochloris** Prout

Build rather robust. Palpus strong. Tongue weak. Antenna rather short, in both sexes pectinate. Hindtibia with all spurs. Frenulum — as in all succeeding genera of the subfamily — wanting. Forewing with the 1st and 2nd subcostals coincident (type) or stalked (the African *ochrea*, Vol. 16, p. 39). Only the two species known.

**C. uvidula** Swinh. (14 a). Unmistakable on account of its generic characters, its colouring, firm lines *uvidula*, and large dark cell-marks. Described from Poona, but distributed in suitable localities from Ajmere to Ceylon.

87. Genus: **Aglossochloris** Prout

This beautiful genus seems to be exclusively Palaearctic (see Vol. 4, p. 28), but we notice here the one species which reaches India. Palpus as in *Cacochloris* or longer. Tongue wanting. Antenna in the ♀ not or scarcely pectinate. Tibial spurs short, the proximal pair commonly wanting, perhaps always so in the ♀. All veins present.

**A. radiata** Walk. (Suppl.-Vol. 4, pl. 6 a). Very similar to *crucigerata* (Vol. 4, pl. 2 g) but with the ante- *radiata*. median line very acutely angled outward on the median vein. N. W. India and W. China.

88. Genus: **Iulops** Prout

Like the preceding genus, this is clearly an offshoot of the Palaearctic *Euchloris* (Vol. 4, p. 27), from which it differs in the hairy face and the 2-spurred hindtibia. Antennal pectinations of ♂ long. Apart from the face, the presence of the tongue separates it from *Aglossochloris*.

**I. argocrana** Meyr. (= *amalopa* Turn.) (14 b). A simply-marked species, with somewhat the aspect *argocrana*. of a robust yellow-green *Euloxia*. The larva, according to T. P. LUCAS, adorns itself with fragments of the food-plant, flowers of aster. Tasmania to Brisbane, the type from Victoria.

89. Genus: **Thalera** Hbn.

Palpus minute. Antenna pectinate (in the ♀ shortly or minutely). Hindtibia with terminal spurs only. Hindwing (in the Indo-Japanese group forewing also) excavated between the radials. Another Palaearctic genus which has entered India (see Vol. 4, p. 30).

**Th. aeruginata** Warr. (14 b). Similar to *lacerataria* (Vol. 4, p. 30), wings a little narrower, the excision *aeruginata*. of the forewing a trifle deeper, the cell-spots above much weaker, the lines accompanied by white vein-spots, the postmedian less strongly sinuous, the hindwing beneath much paler inside the postmedian line than beyond it. Naga Hills.

**Th. suavis** Swinh. (14 b). Still nearer to *lacerataria*, except in shape, the cell-spots and terminal line *suavis*. even stronger than in that, the antennal pectinations a trifle shorter. Yunnan. A larger form (?), from Szechuan, has not yet been thoroughly investigated, but makes more approach to the shape of *lacerataria*.

90. Genus: **Chloroparda** Prout

Similar to *Thalera* but more extreme in shape and with very different venation, the 2nd subcostal of the forewing being stalked to much beyond the 5th, as in the *Rhomborista* group. Only one species known.

**Ch. palliplagiata** Walk. (14 b). Apart from shape and venation, this is abundantly distinguishable from *palli-* *Th. aeruginata* and *lacerataria* by the white tornal spot of the forewing, surrounded by some dark irroration, *plagiata* and by the dark-suffused underside. Lower Burma; also known from Tonkin.

91. Genus: **Dysdamartia** Prout

Forewing not dissimilar in shape to that of *Chloroparda*, hindwing smooth-margined. Palpus still more minute. Pectinations, even in the ♀, very long. Hindtibia 2-spurred. Forewing with 2nd subcostal long-stalked, but separating before the 5th. Hindwing discolorous. Sexual dimorphism strong. Only the type species known.

**D. quaesita** Prout (41, ♂). Rather variable; some ♂♂ have the pale-centred spot at hind angle of cell *quaesita*. larger than in the example figured; underside in this sex suffused with the same red-brown as the borders of the hindwing above. ♀ a little larger, with the underside dark grey except costa of forewing; hindwing above grey or dull purplish, the forewing with a narrow border of the same and an extremely large patch of the same from tornus to 1st radial, somewhat recalling that of *Rhomborista semipurpurea*. Mount Goliath, Central Dutch New Guinea.

92. Genus: **Omphacodes** Warr.

Palpus slender, but of moderate length. Antenna of ♂ pectinate, of ♀ subpectinate. Hindtibia with all spurs, that of the ♂ dilated. Wings smooth-margined; in the venation the outstanding feature is the anastomosis of the costal of the hindwing with the cell, to its middle or beyond. A rather loosely-knit African genus (see Vol. 16, p. 42) but with an Indian genotype.

*directa*. **O. directa** Walk. (= *gracilis* Btlr.) (14 b). The only Indian species with the facies of the *Syndromodes* group of Africa — vivid green with the white markings very weak, the fringes white. WALKER's type was, as usual, rather badly localised ("Hindostan"), BUTLER's was from Dharmasala; the species is not rare in Sikkim.

93. Genus: **Euloxia** Warr.

Palpus short, but with the 2nd joint rather strongly rough-scaled beneath, terminal joint minute. Antenna of ♂ with long pectinations. Hindtibia not dilated, in both sexes with 4 spurs. Abdomen not crested. Forewing with 1st subcostal arising from the cell, anastomosing slightly with the costal and very generally with the 2nd subcostal. Hindwing with costal closely approximated to cell near base, rather gradually diverging. An Australian genus, perhaps nearest to the section of *Hemistola* in which the palpus is short and the antenna of the ♀ non-pectinate. Most of the species are rare or local and in several cases we are only able to quote the published information regarding them.

*argocnemis*. **E. argocnemis** Meyr. "24 mm". Hindwing with termen slightly bent at 3rd radial. Both wings bluish green, without lines, fringes ochreous whitish, costal edge of forewing whitish ochreous, at base ferruginous. Face deep ferruginous, vertex pale, with a ferruginous line. Perth, W. Australia, only the type ♂ known.

*pyropa*. **E. pyropa** Meyr. Paler, with the hindwing "green-whitish", its distal margin unevenly rounded. Distinguishable from *argocnemis* by its orange head, discolorous hindwing and perhaps by its green forecoxa, that of *argocnemis* being silvery white. Perth; a race (?) from Victoria.

*beryllina*. **E. beryllina** Meyr. Head also orange, but with a green linear mark on each side of face and 2 green dots on the crown. Forewing brighter ("emerald green"); hindwing whitish green but — unlike that of *pyropa* — becoming white at costa proximally. Founded on 1 ♀ from Geraldton, W. Australia.

*ochthaula*. **E. ochthaula** Meyr. Rather smaller ("20—22 mm"), face brown, crown green, legs predominantly white. Forewing yellowish green, costal edge whitish buff except at base and towards apex; hindwing white, only faintly tinged with green. Carnarvon, W. Australia, among Eucalyptus.

*hypsihrona*. **E. hypsihrona** Meyr. (12 d). Unlike all the foregoing not only in its somewhat larger size and more blue-green forewing but especially in the presence of the two white lines, the postmedian also showing on the paler hindwing. Head green, between the antennae white. New South Wales: Mount Kosciusko, 5000 feet.

*leucochorda*. **E. leucochorda** Meyr. (14 b) differs from *hypsihrona* in the very acute angulation of the 1st line of the forewing and the somewhat irregular shape of the hindwing. Tasmania.

*isadelpha*. **E. isadelpha** Turn. "♂, 29 mm". Closely allied to *fugitivaria*, from which it differs in the shape of the line of the forewing. This is sinuate and finely dentate, arising near the costa at about  $\frac{3}{4}$  the wing-length. Hindwing pale bluish green, becoming whitish towards costa and base. Antennal pectinations about 5 times diameter of shaft. Founded on 1 ♂ from Waroona, W. Australia.

*fugitivaria*. **E. fugitivaria** Guen. (= *intacta* Walk., *obliquissima* Walk.) (14 b). Recognizable by the single, weak, oblique line of the forewing and the whitish-green hindwing, which only at its margins assumes the brighter green of the forewing. Tasmania (the type locality) to Queensland.

*meandraria*. **E. meandraria** Guen. (12 f). The commonest species and very distinct in its sharply white and markedly sinuous lines, the reddish-ochreous costal edge of the forewing, etc. Face bright red. Tasmania and Victoria.

94. Genus: **Mixochroa** Warr.

An offshoot of *Euloxia*, with rather small eye, stronger anastomoses of the subcostals of the forewing, longer approximation of the costal of the hindwing to the cell and some slight differences in shape and facies. Erected for the one species here given, which TURNER regards as a slightly aberrant *Euloxia*.

*gratiosata*. **M. gratiosata** Guen. (12 g) differs from all other Australian *Hemitheinae* in the orange-yellow hindwing. Tasmania (loc. typ.) and Victoria.

95. Genus: **Leucesthes** Warr.

Probably also related to *Euloxia*. Characters nearly as in *Mixochroa*, but the palpus more smoothly scaled, the forewing narrower and with a very strong pearly gloss. Only one species known.

**L. alba** Swinh. (= *margarita* Warr.) (14 c). Unmistakable through its white head, body and wings *alba*. and the strong gloss of the wings. West Australia.

96. Genus: **Hemistola** Warr.

An ill-defined genus, at present embracing most of the genera of *Hemitheinae* which have lost the frenulum in both sexes and possess none of the other specialisations of shape or structure which refer them definitely to other genera (see Vol. 4, p. 30, Vol. 16, p. 43). Antenna of ♂ and usually of ♀ pectinate. Hind-tibia with all spurs, the ♂ rarely with hair-pencil. Forewing with termen entire, 1st subcostal from cell, rarely with the anastomoses of *Euloxia*; hindwing usually angled at the 3rd radial, but seldom sharply so.

A. Hindwing not appreciably angled; antenna of ♀ not pectinate.

**H. efformata** Warr. (15 a). Formerly regarded as an aberration of the following, with the white cell-marks obsolete; but as the termen of the hindwing does not show even the faint bend which, on careful inspection, is discernible in that species and the line of the forewing is less fine, non-crenulate and more distally placed, it must be a separate species. Sikkim, only a few ♂♂ known to me. *efformata*.

**H. loxiaria** Guen. (= *dispartita* Walk.) (14 c). So far as can be made out from a few (and mostly imperfect) specimens, *loxiaria* (the type a ♂, of which GUENÉE did not know the patria) and *dispartita* (a ♀ — not “♂” as published — from “Hindustan”) are sexes of one and the same species, briefly described in Vol. 4, p. 31; in any case they are extremely close allies and belong to the Punjab and Kashmir. OBERTHÜR (fig. 3212) has already figured GUENÉE's type, but misses the characteristic white cell-spots and other details; we have therefore re-figured the same specimen. The antenna of the ♀ is noticeably serrate. — ab. **cymaria** Hmps., from *cymaria*. Simla, has the white cell-spots enlarged but is scarcely worthy of a name. *loxiaria*.

**H. fletcheri** sp. n. (14 c). Extremely similar to *dispartita*, of which I first supposed it a race, scarcely distinguishable except by its larger average size (28—35 mm against 25—31), the slightly more delicate texture of the wings, their more bluish green tone (closely like that of average *chrysoprasaria* Esp.) and the somewhat weaker or narrower cell-marks. Since, however, the joints of the ♀ antenna project quite markedly in *dispartita* and not at all so in *fletcheri*, it must certainly be a separate species. Kashmir: Gulmarg, 8500 feet (T. B. FLETCHER), a good series collected in July 1931, besides a few at the same season in 1923; type ♂ in Mus. Brit. — **subcaerulea** form. nov. is a small form (seasonal?), expanding only 22—27 mm, of a more bluish colour, apparently abundant about Srinagar, where Prof. FLETCHER obtained a very long series in August and September. A ♀ from the same locality, dated 8 June, unfortunately discoloured, is of about normal size but seems to share with *subcaerulea* the bluer coloration. *fletcheri*.

**H. malachitaria** Prout (14 c). Colour of *subcaerulea*, antennal pectinations shorter, hindtibia perhaps more slender, apex of forewing less pointed, the white line weaker. Kukli, N. W. India, only the type ♂ known. *malachitaria*.

**H. christinaria** Oberth. (Suppl. 4, pl. 1 e) is very distinct in the strongly angulated postmedian line, as well as in the presence of a distinct antemedian on both wings. Structural characters, kindly supplied by Dr. WEHRLI, refer it to the present genus. Chinese Tibet, 1 ♂. *christinaria*.

B. Hindwing well angled; antennae of ♀ simple.

**H. rectilinea** Warr. (14 a). Differs from *rubrimargo* in the shape of the hindwing (which is more sinuous before the angle), in the almost straight postmedian line and in the stronger dorsal maculation of the abdomen (red, with the white streaks almost as long as the segments). The white terminal line is on the wing, not (as in *rubrimargo*) on the base of the fringe. Khasis, only the type ♂ known. *rectilinea*.

**H. rubrimargo** Warr. (12 g). The commonest and best-known of the group. Not very variable, but the red spots at the hinder end of the lines can be almost entirely obsolete; that at the end of the postmedian seems never to be so large as in the type of *rectilinea*. Palpus of ♀ rather long. Sikkim (loc. typ.) to Assam and again in Szechuan and on Formosa. *rubrimargo*.

**H. fuscimargo** Prout (14 c). Larger, with stronger dark cell-dots, the fine terminal line brown, not red; usually there are slight indications of some red scaling at the proximal edge of the postmedian line, at least as minute vein-dots in its angles, but the red spots at the hinder end of the lines are not developed in any specimen known to me. Palpus of ♀ less elongate than in *rubrimargo*. Sikkim (loc. typ.) and Assam. *fuscimargo*.

- antigone*. **H. antigone** Prout. Cell-dots again larger, with pale circumscription; white lines much weaker; terminal brown line strong, fringe-spots large, grey-brown, absorbing or supplanting the red dots on a white line which ornament the bases of the fringes in the two preceding. In addition, the hindwing is appreciably longer and narrower, with slightly stronger tail. Khasis.
- rubricosta*. **H. rubricosta** Prout (14 c). Less bluish green than *rubrimargo*, angle of hindwing slighter, lines weak, the rosy costal edge of forewing and the white, rosy-tipped fringes characteristic. Tonglo, Sikkim, 10,000 feet. Also known from Bhutan and Indian Tibet.
- C. Antenna of ♀ pectinate.
- inconcin-  
naria*. **H. inconcin-  
naria** Leech (14 d). Near *rubrimargo* (12 g), the lines similarly dentate and posteriorly approximated, but without the red terminal line and fringe-spots, the fringes themselves less white. The green ground-colour moreover less bluish, but the sole *rubrimargo* (race?) yet known to me from W. China (Ta-tsien-lu) is also less bluish than the Indian form. Antenna of ♀ quite shortly pectinated. W. China.
- euethes*. **H. euethes** sp. n. (Suppl.-Vol. 4, pl. 1 e). Shorter and squarer-winged than *rubrimargo* (12 g) and of a less bluish green (not or scarcely bluer than the "deep lichen-green" of Ridgway), costal edge of forewing purer ochreous (less reddish), terminal line and fringe-spots brown rather than red. Structurally different in the shorter terminal joint of the palpus and probably the somewhat shorter pectinations, at least of the inner series, and the longer stalking of the 1st median of the hindwings. Kwanhsien, Szechuan (G. M. FRANCK), 17 July 1930, type ♂ in coll. PROUT. Poor specimens from the same locality, first half of July, were earlier sent to the late Mr. JOICEY.
- detracta*. **H. detracta** Walk. (= *unduligera* Btlr., *vestigiata* Swinh., *annuligera* Warr.) (Vol. 4, pl. 2 h). Very constant, notwithstanding the long synonymy; the white fringes and especially the white cell-rings (that of the hindwing large) are characteristic. N. W. India.
- parattel-  
aria*. **H. parallelaria** Leech (Vol. 4, pl. 2 h). Lighter and yellower green than the rest, ♀ pectinations rudimentary, hindwing with a more definite tail, which is rendered more conspicuous by a red-brown, black-mixed spot which occupies the fringe at this point. W. China.
- simplex*. **H. simplex** Warr. (14 d), only known from a faded ♀, resembles a smaller, less broad-winged *flavitineta* but has less long pectinations, redder terminal line and fringe-spots and some red and white abdominal maculation, recalling section B. Northern mountains of Formosa.
- flavitineta*. **H. flavitineta** Warr. (14 d). This species and the following are likewise only known from the type specimen, in both cases a ♀. Antenna strongly pectinate. *flavitineta* is of a bright green, with the markings very faint, excepting the postmedian spot at the hindmargin of the forewing. Khasis.
- titiana*. **H. liliana** Swinh. (15 a). Still larger than *flavitineta* and of a lighter and more bluish green (though the figure is too light), the postmedian line well developed. The palpus, which is normal (i. e., short) in *flavitineta*, is unusually elongate, with the terminal joint long, raising some doubt as to its retention in *Hemistola*. Khasis.

### 97. Genus: **Chloromma** Warr.

Perhaps an unnecessary genus, founded for the reception of a single species, which differs from the acute-winged members of *Gelasma* in the absence of the ♂ frenulum, from *Hemistola* in shape and colouration, from typical *Iodis* in that the 1st subcostal of the forewing arises from the cell, anastomosing with the costal; scaling opaque. The ♀ is unknown.

- mimica*. **Ch. mimica** Warr. (14 d). Easily known by its shape, colouration and the large black spot of the hindwing; this is present also beneath, though slightly less large. Only known from the Khasis.

### 98. Genus: **Iodis** Hbn.

A moderately extensive genus, but chiefly Palaearctic and Indian, only straggling into the Sunda Islands. It seems to be directly derived from the more widely distributed *Gelasma* by the loss of the ♂ frenulum. As there is no other absolutely constant distinction, so far as is yet known, the correct generic reference of ♀♀ is occasionally a matter of conjecture, but there are two further characters which are generally of great taxonomic value, the long terminal joint of the ♀ palpus (of quite rare occurrence in *Gelasma*) and the stalking of the 1st subcostal of the forewing with the others; in a few true *Iodis*, however (as judged by the frenulum) this vein arises from the cell, as is usual in *Gelasma*. On an average, the scaling is thinner than in *Gelasma*, the wings often appearing subhyaline or iridescent.

**I. pallescens** *Hmps.* (12 a) is a very distinct species on account of the sharp contrast between the green *pallescens* and the white areas. Ceylon.

**I. subtractata** *Walk.* (= *opalaria* *Auctt.*, nec *Guen.*) (14 d). White, irrorated with green, the white lines *subtractata* not, or scarcely, indicated, their position shown by narrow and ill-defined green bands which accompany them in the median area; terminal white dots minute, but distinct; cell-marks generally indicated in green. — *ab. spumifera* *Warr.* has the green irroration coarser, more confluent, particularly about the cell-spots. — The species *spumifera* is distributed from N. India to Hainan, the Philippines, Borneo and Java; WALKER's type came from Mouhncin.

**I. iridescens** *Warr.* (14 d). Still more iridescent, ♂ pectinations and ♀ palpus long, postmedian band *iridescens* less sinuous, accompanied distally by a more conspicuous, crenulate white line. Forewing with 1st subcostal arising proximally to 1st radial (in *subtractata* distally). Only known from the Khasis.

**I. rhabdota** *Prout* (14 e). Larger than *iridescens*, slightly broader-winged (more as an overgrown *sub-rhabdota*, *tractata*). Green bands broad, the postmedian white line nearly as in *iridescens*. Venation about as in that species, pectinations of ♂ antenna less long. Khasis (type) and Sikkim.

**I. coeruleata** *Warr.* (14 e). Ground-colour much greener than in *subtractata* and *iridescens*, slightly *coeruleata* greener than in *rhabdota*, which it resembles in size. The yellow-green bands narrower than in *rhabdota*, postmedian at least as sinuous as in *subtractata*. Pectinations long, but slightly more lax than in *iridescens*. Forewing with 1st subcostal connate or from close before end of cell. Assam.

**I. colpostrophia** *Prout* (14 d). Somewhat larger than *coeruleata*, a little rounder-winged, the tail of the *colpostrophia* hindwing short. Both the known examples are discoloured to yellowish, so that the colours cannot be compared, but it will possibly prove a race of *coeruleata*. The type ♂ is from S. Java, a ♀ from Selangor is evidently conspecific.

**I. rantaizanensis** *Wileman* (14 e). ♂ unknown. Probably near *coeruleata*, but apparently of a greyer *rantai-* green, the postmedian line scarcely at all sinuous. ♀ palpus moderately long, but by no means extreme. 1st *zanensis* subcostal of forewing just stalked, 1st radial stalked beyond it. Rantaizan, Formosa.

**I. xynia** *Prout* (14 e) recalls *iridescens* in its shape and strong iridescence, but is greener, the white postmedian more crenate, the ♂ pectinations not quite so long; 1st subcostal of forewing anastomosing with both the neighbouring veins, while in *coerulescens* it is free or (rarely) anastomoses with the costal only. The cell-marks (when distinct) are green, with a whitish spot on the posterior part of the 3rd discocellular. Khasis; a ♀ from Sikkim probably belongs with them.

**I. ctila** *Prout* (14 e). Rather broad-winged for an *Iodis*, the tail of the hindwing small. Near *rantai-* *ctila* *zanensis* in coloration and markings, as well as in structure, though the 1st subcostal of the forewing closely approaches or anastomoses with the costal. Postmedian line more proximally placed, especially on the hindwing, where, moreover, it is less crenulate. Upper Burma.

**I. lara** *Prout* (12 h). Somewhat smaller and more delicate-winged, forewing with 1st subcostal anastomosing with 2nd as well as with costal; hindwing with slightly sharper apex; face clearer green. Laukhaung, Upper Burma, only the type ♂ known.

**I. delicatula** *Warr.* (14 e). Very easily distinguished from *iridescens* and *xynia* by the black cell-dots. *delicatula* No green bands accompany the lines, which are almost as crenate as in *xynia*. Venation as in *iridescens* or rather — in that the 1st subcostal arises from the end of the cell — as in *coeruleata*. Terminal joint of palpus in ♀ very long. Khasis.

**I. argentilineata** *Wileman* (14 c). Rather more greyish green, the dentate and sinuous postmedian line *argenti-* strong, inclined to thicken behind 2nd median; cell-marks with white posterior spot. ♀ with 3rd joint of palpus long; ♂ pectinations moderate. Anastomoses of 1st subcostal variable. Formosa. *lineata*.

**I. argutaria** *Walk.* (14 h). Except that the 3rd joint of the ♀ palpus is less long, it is difficult to find *argutaria* definite characters whereby to distinguish this species decisively from *argentilineata*. The ground-colour seems more iridescent, the lunules of the postmedian line are more strongly developed or more sharply white, particularly the one behind the 2nd radial and that behind the 2nd median, these lunules being larger than the rest, with the white broadened; moreover very distinct deep-green lines border the white markings in the median area. North India (loc. typ.) and China. Rare in Japan and Formosa.

**I. inumbrata** *Warr.* (14 f) differs from *argutaria* in the olive-brownish cell-spots and in the broader and *inumbrata* more olive-yellow shades which accompany the white lines. 3rd joint of ♀ palpus long. Khasis.

**I. sinuosaria** *Leech* (Vol. 4, pl. 2 i). Probably a large pale form of *argutaria* (14 h), with the hindmost *sinuosaria* white postmedian spot enlarged, as in *albipuncta* (14 f). The two forms meet in W. China, but in most localities we have only recorded *argutaria*. LEECH's type came from Pu-tsu-fang.

- albipuncta*. **I. albipuncta** Warr. (14 f). Greener than most of the preceding, recognizable by the conspicuous white posterior lunule of the forewing, etc. Palpus of ♀ with 3rd joint very long. Forewing with 1st subcostal arising before 1st radial and anastomosing with costal. Khasis and perhaps Sikkim.
- irregularis*. **I. irregularis** Warr. (14 f). The greyest and one of the largest of the *Iodis* species, not at all translucent or iridescent, but rather resembling a well-tailed *Gelasma*. In this and all the succeeding species the 1st subcostal of the forewing is stalked beyond the 1st radial. N. India, the type from British Bhutan.
- undularia*. **I. undularia** Hmps. (= *caudularia* Hmps., nec *Guen.*) (14 f). This species was formerly misidentified as *caudularia* *Guen.* (see *Diplodesma*, p. 117). In shape and markings comparable to *dentifascia* Warr. or *putata orientalis* Wehrli of Japan; considerably smaller than the former and of a slightly more greyish green, decidedly greener than the latter, with the tail of the hindwing slightly sharper. Described from the Nilgiris, but widely distributed in India and reaching Ceylon and Hainan.
- nanda*. **I. nanda** Walk. (= *micra* Warr.) (14 f). Still smaller than most *undularia*, otherwise hard to distinguish; but as the ♀ palpus seems to be definitely shorter it must be regarded as a species. Hindwing perhaps a trifle squarer. Postmedian line (green proximally, white distally) extremely slender, on the forewing somewhat less outbent behind the middle than is usual in *undularia*. Ceylon, India, Malay Peninsula, Tonkin, Formosa, Banka I., Borneo, Celebes and Bali; WALKER's type was from Ceylon.
- niveovenata*. **I. (?) niveovenata** Oberth. (Suppl. 4, pl. 3 f), founded on a single ♀ from Siao-lou, Chinese Tibet, is quite doubtfully placed, but as Dr. WEHRLI tells me the palpus is short, as well as slender and weak, it cannot permanently remain here. Forewing with 1st subcostal connate, anastomosing shortly with costal and touching 2nd subcostal, both wings with 1st and 3rd radials stalked with the neighbouring veins. Should be very easy to recognize by the white veins and absence of all other markings.

#### 99. Genus: **Pseudiodis** *gen. nov.*

Differs from *Iodis* in that the terminal joint of the palpus is very short in the ♂, shortish in the ♀, hindtibia of ♂ without hair-pencil, 2nd subcostal of forewing stalked considerably beyond 5th. The discocellulars of both wings approximate to the shape which characterizes *Berta*; forewing with 1st subcostal stalked well beyond 1st radial; hindwing with costal anastomosing with cell at a point near the base, 1st median closely approximated to 3rd radial (*albidentula*) to shortly stalked (*unifascia*). Type of the genus: *unifascia* (Hmps., 1891, as *Thalera*). This is the Sect. II of *Iodis* according to WYTSMAN's "Genera Insectorum", but deviates in too many characters to be allowed to remain there.

- albidentula*. **P. albidentula** Hmps. (14 f). Very different from the genotype in shape — apex of forewing less produced, termen of hindwing scarcely at all bent at 3rd radial. Confined to Ceylon.
- unifascia*. **Ps. unifascia** Hmps. (14 f), from the Nilgiris and Palnis, is easily distinguished from all *Iodis* by the structural characters, from the *iridescens* group by the lack of iridescence, from *irregularis* (which it somewhat resembles in shape) by its much smaller size and much greener colour; moreover the antemedian line is weak on the forewing and wanting on the hind.

#### 100. Genus: **Berta** Walk.

An offshoot of *Iodis*, agreeing therewith in nearly all characters, but with a special formation of the discocellulars; the 2nd is curved (and in the hindwing strongly oblique), so that the 2nd radial appears to form its continuation, and the 3rd discocellular arises after the 2nd has turned outward; thus there is a pronounced angle at the base of the 2nd radial. Generally, also, the hindwing is more or less angled at the 1st radial, as well as at the 3rd, and most of the species have much more white admixture on the wings than in *Iodis*. May be considered an exclusively Indo-Australian genus, but see Vol. 16, p. 44.

- annulifera*. **B. annulifera** Warr. (14 g). Grey-green with white markings, almost as in *Iodis*, which it also simulates in shape; some additional white maculation outside the postmedian is the only superficial indication of its true generic position. Very widely distributed: Assam (loc. typ.); Malaysia and again in New Guinea, the Louisiades and Bismarcks. Probably several races will prove separable, but the liability of the species to fade is very unfavourable to any definite judgment.
- poppaea*. **B. poppaea** Prout (14 g). May be a race of *annulifera* but is olive-green rather than grey, has the postmedian, subterminal and terminal white marks considerably strengthened and presents a definite difference in the white cell-marks, which in *annulifera* tend to form a ring (though this is seldom complete), while in *poppaea* they consist of two spots, one in front of the other. Hainan.
- acte*. **B. acte** Swinh. (12 i) is also *Iodis*-shaped, but much larger than the two preceding and recognizable at a glance by the large white (anterior postmedian) patch of the hindwing. — ab. **diacte** *nov.* is a very frequent

form with a corresponding white patch on the forewing. The species is fairly common in the Khasis and known from Ceylon and Burma.

**B. angustimedia** *Prout*. Structure nearly as in *acte* (12 i), 3rd joint of ♀ palpus longer. Shape of *acte*, white markings much more extended, the fine, interrupted white line between basal and median area replaced by a partly double band of white lunules, median area narrowed, postmedian white line twice indented and posteriorly thickened, distal area largely white. Khasis. *angustimedia.*

**B. subrectistriga** *Prout* begins to develop the hindwing shape of typical *Berta*, though the projection at the 1st radial is short and blunt. Forewing shaped nearly as in *acte* (12 i) or slightly narrower (terminal slightly more oblique), the white cell-mark somewhat 8-shaped but less so than in most *chrysolineata* (the green filling being confluent); a characteristic white outer band, broader and less macular than in *acte* and *chrysolineata* and almost straight, its proximal edge deeply indented by the olive ground-colour. Hindwing with much white marking, including a moderate postmedian band. Mindoro, the unique type somewhat damaged. *subrectistriga.*

**B. chrysolineata** *Walk.* The white markings copious, mostly maculiform. Very easy to distinguish except from *zygophyxia* (which see). Numerous races, however, or perhaps in some cases closely allied species, seem to be differentiable, and probably others will be added, as forms which have hitherto been regarded as typical extend from Ceylon and India to Java, Borneo and through the Moluccas to New Guinea, the Bismarck and Solomon Islands. WALKER'S originals, from Ceylon and Canara, were discoloured and he regarded the olive ground-colour as a net-work of gold-coloured lines! — **philippina** *Prout* (14 g), founded on 3 ♂♂ from Palawan, is smaller and presents a very different appearance, all the white markings being greatly reduced, though the postmedian series of the hindwing is confluent, forming a zigzag line. — **hainanensis** *subsp. nov.* is as small as *philippina* (21 mm) otherwise much nearer to the name-typical race, though the largest white markings (or at least the spots just outside the cell of the hindwing) show some tendency towards reduction. Porten, Hainan, 2 ♂♂ in the Tring Museum. — **leucospilota** *Turn.* Similar to *ch. chrysolineata* but the forewing has a continuous white band, at least 1 mm in width (its edges jagged, especially the proximal), formed of the groups of irregular spots which lie between the postmedian and the subterminal. N. Queensland, N. W. Australia and the Islands of Timor and Alor. — **eccimena** *subsp. nov.* (14 g). Similar to rather larger *leucospilota*, but of a somewhat more greyish tone, the white spots at costa of forewing strong, more or less confluent, the row of spots which runs from the largest of these to the middle of the hindmargin well developed, pretty regular, especially as regards their distal end, so that the narrow olive stripe which separates these from the jagged outer band appears to have a more regular proximal edge than in any other form. Manus, Admiralty Islands (loc. typ.) and St. Matthias Island. As the excision in the margin of the hindwing is somewhat shallower than in the other races, this may possibly be a separate species. The forms from New Hanover and round the half-circle to Rook I. revert towards those of New Guinea (which I have not yet been able to separate decisively from the western ones), though the tendency to the whitened costa is observable, as also the ample white spots of the hindwing. The species is well worthy of more exhaustive study, when sufficiently ample material has been brought together. *chrysolineata.*

**B. zygophyxia** *Prout* (14 g). Difficult to distinguish from some forms of *chrysolineata*, except by the structure. Forewing with 1st subcostal not stalked (in *chrysolineata* long-stalked), hindtibia of ♂ less strongly dilated, the terminal process more vestigial. The name-typical race, from the Malay Peninsula and apparently reaching Bali, has generally less white marking in the median area of the forewing and never seems to develop the rudely 8-shaped white mark at the discocellulars but has some enlarged posterior white spots in the distal area of both wings and usually rather strong white maculation at the apex of the forewing. — **hemispona** *subsp. nov.* Forewing with 1st subcostal nearly always anastomosing shortly with costal, in any case closely approaching it at a point (in *z. zygophyxia*, so far as observed, always free); white markings in median area increased, two large oblong spots between the cell and the zigzag outer band as a rule particularly noticeable. Admiralty Islands (loc. typ.), New Hanover and New Ireland, taken together with *chrysolineata* and curiously parallel in that the specimens from the first-named locality are appreciably the whiter. *zygophyxia.*

**B. arfakensis** *Prout* (14 g). Wings more elongate, especially the hindwing at 3rd radial, both with predominantly white basal area and conspicuous white outer band. Forewing with 1st subcostal stalked, 2nd arising opposite or beyond 5th. Antennal pectinations of ♂ not continued to one-half length of shaft. Dutch and British New Guinea. *arfakensis.*

**B. copiosa** *Prout* (14 g). Venation of *hemispona*; very like a small specimen thereof, but with the white spots still ampler, the hindwing with sharper tail at the 3rd radial. Naga Hills, only the type ♂ known. It is just possible that it is another form of *zygophyxia*, though so unlike the Malayan. *copiosa.*

**B. fenestrata** *Prout* (14 g), from the Solomons, has the ♂ antenna pectinate to  $\frac{2}{3}$  or nearly, 1st subcostal of forewing stalked well beyond 1st radial, 2nd subcostal before 5th. Smaller and with much more extended white markings than *olivescens*. *fenestrata.*

- olivescens.* **B. olivescens** Warr. (14 h). Antennal structure of *fenestrata* (14 g). Hindwing with the tooth at 1st radial rather slight. In venation also similar to *fenestrata*, but with the 1st radial of the forewing scarcely stalked, the 2nd subcostal about opposite to the 5th, often anastomosing slightly with the 1st; costal further from subcostal than usual, so that the point-anastomosis of the two is sometimes produced to a very short bar. Described from Fergusson Island, not rare in British New Guinea and has been found on Aru und Sudest Islands.
- anteplaga.* **B. anteplaga** Prout (14 h). Pectination rather less long than in *chrysolineata*. Wings somewhat less irregular in shape; venation nearly as in *hemisponsa*, the anastomosis of the costal of the forewing stronger; characterized by the distribution of the white markings, which are mostly small, while one beyond the cell of the forewing is large, subquadrate. Founded on 3 ♂♂ from the Khasis.
- albiplaga.* **B. albiplaga** Warr. (= *discolor* Warr.) (15 a). In structure near *olivescens*, 2nd subcostal of forewing arising just before 5th. Readily known by the large white central spot of the forewing. Naga Hills (type) and Sikkim; I have not found any racial difference in the Malayan *discolor*.
- vaga.* **B. vaga** Walk. (15 a). Apparently a very rare species; I have seen no good specimens. By shape and structure a true *Berta*, but with more of the aspect of an *Iodis*. The type came from Sarawak, a second specimen (in coll. SWINHOE) from Sumatra.

### 101. Genus: **Comostolopsis** Warr.

A small genus, chiefly African, formed for the accommodation of those *Comostola* which have not the characteristic discocellulars of the latter (see Vol. 16, p. 44). On this basis, it has been necessary to attach a few of the Indian species to WARREN's genus; but as there exist also more or less intermediate forms, it might be better to re-unite *Comostolopsis* with *Comostola*.

- regina.* **C. regina** Th.-Mieg, founded on a defective ♀, without a head, is unknown to me. "15 mm. Pale rather bluish green, recalling the tone of *P. pyrrhogona* Walk. Distal margin of the 4 wings bounded by a fine red line, this bordering edged internally by a fine white line. Costa of forewing apparently white proximally, perhaps in the last (apical) third a little tinted with red. Underside pale white-greenish, with the fringe white, and without any trace of the red bordering. Abdomen above red from end to end, the sides bluish green." Christmas Island.
- dyakaria.* **C. dyakaria** Walk. (15 a). Hintibia of ♂ rather strongly dilated, all the spurs excepting the inner proximal one short. More yellowish green than most *Comostola*, the red cell-spots quite small (punctiform), the lines obsolete or only very faintly indicated. Borneo (the original locality), Selangor and Luzon, always rare.
- albifimbria.* **C. albifimbria** Warr. (15 a). Certainly very near *dyakaria*, perhaps a race. Structure the same; apex of forewing perhaps sharper; cell-spots, at least on hindwing, enlarged; the hindwing perhaps a trifle narrower. Hitherto only recorded from the Khasis, but the SEITZ collection contains an example from Nepal, here figured.
- variifrons.* **C. variifrons** Prout (= *acteana* West) (14 h). Named from the unusual frons — green, more or less varied with red and white. Hindtibia of ♂ strongly dilated, the spurs short. Larger than the two preceding, the red terminal line vestigial, etc. Only known from Luzon; my type, in the Tring Museum, was unfortunately labelled "Parana, Entre Rios", so that I was misled into supposing it an aberrant *Racheospila*. Probably it may be a race, or even a synonym, of the following imperfectly-known species.
- simplex.* **C. simplex** Warr. (14 a). Described as an *Oenospila*; its transference to *Comostolopsis* will, it is to be feared, necessitate re-naming the African *C. simplex* (Vol. 16, p. 41), but it will perhaps prove possible to refer these Indo-Australian species to *Chloëres*. To judge from the somewhat defective type (a ♀ from W. Java), it differs little from a small ♀ *variifrons* except in having a series of red terminal dashes; hindwing somewhat narrower.
- marginata.* **C. marginata** Warr. (14 h) probably belongs here, though the ♂ is still unknown. Near *dyakaria*, but without cell-spots. Hindwing more fully rounded than in most of the preceding. Both the inner spurs of the hindtibia considerably longer than the outer. Kei Islands, only the type ♀ known.
- maculata.* **C. maculata** Moore (= *subtiliaria* part. *Hmps.*, nec *Brem.*) (14 h) differs from the rest in the large cell-marks, whereby is completed the development of the typical *Comostola*-pattern. Distinguishable by its large size and bluish tone; the discocellulars also separate it from all true *Comostola*. Besides Bengal, the original locality, it has only been found in other parts of the Himalayas, extending from N. W. India to Assam; reported also from Szechuan.

102. Genus: **Comostola** *Meyr.*

As has been pointed out in Vol. 4, p. 32, this genus shares most of its characters with *Iodis*, but differs very materially in its denser scaling and bright colouring. The discocellulars, which were mentioned as a further distinction from *Iodis*, are formed as in *Berta*; thus it may be said that *Comostola* stands in the same relation to *Comostolopsis* as does *Berta* to *Iodis*.

*Comostola* is divisible into two sections, which are perhaps separable generically. The typical section has the margin of the forewing nearly straight, that of the hindwing slightly bent at the 3rd radial (though never tailed, as in *Berta*) and has the pattern as in *Comostolopsis*; the second (to which WARREN gave the pre-occupied name of *Leucodesmia*) is rounder-winged and with a very characteristic scheme of markings. Both sections are almost exclusively Indo-Australian; only *subtiliaria* and *nympha* have much claim to be regarded as Palaearctic.

**C. hypotyphla** *Prout* (14 i) differs from *Comostolopsis maculata* (14 h) in its smaller size, more bent hindwing, smaller cell-rings and better developed and less deeply dentate postmedian line. Hindtibia of the ♂ not much thickened. N. W. India. *hypotyphla.*

**C. virago** *Prout* (? = *pupillata* *Sterneck*) (14 h). Palpus shorter than in most *Comostola*, antenna pectinate in both sexes, hindtibia of ♂ not dilated. Bright green, slightly more bluish than *mundata* (14 i), costal margin not spotted, lines scarcely touched with red, terminal red line extremely fine, hindwing only very weakly bent. Sikkim to W. China, the type from the Khasis. *virago.*

**C. inops** *Prout* (Vol. 4, pl. 5 a). Bright green, less bluish than *ovifera* and with more nearly the markings of *Comostolopsis maculata* (14 h), though with the red terminal line entirely wanting, the postmedian spots differently arranged, the hindwing more evenly rounded. Lidderwat, Lidden Valley, Kashmir. *inops.*

**C. ovifera** *Prout* (14 i). Readily known by the absence of all red markings, even the cell-spot of the forewing being merely a simple roundish white spot. Sikkim at 10,000—12,000 feet. — **szechuanensis** (*Wehrli* MS.) (= *ovifera* *Sterneck*) *subsp. nov.* Rather larger, vein-dots obsolete, cell-spots red-brown, on forewing surrounded with white. Ta-t sien-lu, the type and others in coll. WEHRLI. *ovifera.* *szechuanensis*

**C. mundata** *Warr.* (14 i) is of a deeper green than most of the species, with the costal edge of the forewing strongly darkened (purple-fuscous), the postmedian dots very small. Khasis and perhaps Selangor. *mundata.*

**C. ocellulata** *Prout* (14 i). Somewhat larger, lighter green, costal edge much less dark, its cell-mark more rounded, terminal line finer, more interrupted, hindwing appreciably less narrow. Formosa; also, according to JOANNIS, Tonkin. *ocellulata.*

**C. subtiliaria** f. **nympha** *Btlr.* (Suppl. 4, pl. 3 f). Described from Japan and no doubt chiefly Palaearctic, but known from Ningpo and perhaps W. China. Very similar to *virago* (14 h) or somewhat more yellowish green, the ♀ with very long palpus and non-pectinate antenna, the creamy postmedian spots accompanied distally by stronger red markings, the terminal line generally stronger, the cell-mark of the hindwing less rounded (generally "diamond-shaped"). *nympha.*

**C. flavifimbria** *Warr.* (14 i). More vivid, yellower green, the fringes deeper buff, the pale transverse spots obsolete. Cell-spots generally large, at least on the hindwing. New Guinea, the type from Angabunga River. In this species, as also in the four which follow, the ♂ hindtibia has a hair-pencil and short terminal process. — **rubeibasis** *subsp. nov.* has stronger red vein-dots to represent the lines and has a red, black-mixed spot at the base of the costa of the forewing. New Britain (loc. typ.) and slightly less extreme forms in the other Bismarcks. *flavifimbria.* *rubeibasis.*

**C. haplophanes** *Turn.* (14 i) perhaps represents *flavifimbria* in North Queensland, but has much smaller and darker cell-spots and the other markings quite slight. *haplophanes.*

**C. leucomerata** *Walk.* Only 2 specimens known to me. Slightly less yellowish green than *flavifimbria* (14 i), costal edge white, fringe whitish, cell-mark of forewing small, that of hindwing even larger than in most *flavifimbria*, the other markings less strong. Queensland and New South Wales. *leucomerata.*

**C. rufimargo** *Warr.* (14 i). A pretty little species, the fringes more cinnamon than in the others, this colour extending on to the wing-margin and becoming still more red proximally of a series of dark, somewhat metallic lunules. Abdomen with a red patch dorsally. Structure nearly as in *laesaria*. New Guinea. *rufimargo.*

**C. laesaria** *Walk.* (= *perlepidaria* *Walk.*) (14 i). The most universally distributed of the group, inhabiting Ceylon, India, Malaysia, Queensland, New Guinea and its islands and the Bismarck group, to which list probably numerous additions will yet be made. Recognizable by its small size, light bluish green colour and orange-brown markings, the postmedian series and on the forewing the antemedian always well developed; postmedian *laesaria.*

with a dark costal mark on the forewing. It is the type of the genus and has the discocellulars very characteristically formed.

*demeritaria*. **C. demeritaria** Prout (14 i), which was long confounded with *laesaria* and *meritaria*, is similar in colour to the former, or slightly more bluish, but less small, the costal margin of the forewing without dark spots to mark the beginnings of the lines. Distinguished from both by the somewhat narrower wings (shaped more as in *mundata*), less characteristic discocellulars and smaller cell-spots. Khasis. — **vapida** subsp. (?) nov., founded on a ♂ from Mount Korintji, W. Sumatra, 7300 feet (PRATT brothers), is larger (24 mm), slightly broader-winged, the cream-coloured ante- and postmedian lines not edged with red. A ♀ taken with it measures 22 mm and the 3rd joint of its palpus looks a trifle longer than in typical *demeritaria* ♀.

*meritaria*. **C. meritaria** Walk. (14 i). Larger than *laesaria*, the cell-spots dark, shaped somewhat as in *nympha* (Suppl. 4, Taf. 3 f) the rows of dots much slighter than in *laesaria*, no dark postmedian costal spot on forewing, the dark terminal line slender, but scarcely interrupted. The bluer colour, less narrow wings, etc., differentiate it readily from *mundata*. Ceylon (the type), with probable races in Assam, Borneo and Sambawa.

*francki*. **C. francki** sp. n. (Suppl. 4, pl. 3 f). Probably near *demeritaria* (14 i). Palpus in both sexes with terminal joint appreciably longer (in ♀ about as long as diameter of eye); pectinations of ♂ somewhat less long; both wings appreciably broader, the margins of the forewing (or at least the costal) slightly more curved; colouring the same, the red and black sealing between the ground-colour and the cream-buff costal and distal edges less strongly developed; hindwing with cell-ring rounder, postmedian line more strongly outbent, generally nearer to termen at the bend than to the cell-ring (in *demeritaria* vice versa). W. China: Kwanhsien (M. FRANCK), type in my collection. Distinguishable from *subtiliaria* by its shorter ♂ pectinations, somewhat shorter 3rd joint of palpus, white lower part of face, etc.

*nereidaria*. **C. nereidaria** Snell. (= *flavicincta* Warr.) (12 c). Distinguishable by its broader wings (the distal margin of the forewing more rounded than in the allies) and especially by the large and curiously angular cell-spots. Hindtibia of ♂ without the hair-pencil and terminal process of *laesaria*. Described from Celebes, but known from Borneo and the Malay Peninsula and extending eastward to New Guinea and the D'Entrecasteaux, Louisiades, Bismarcks and Solomons. — **levata** Prout, from St. Matthias and Squally Islands, belongs here by wing-shape, broadly yellow costal margin, etc., but is less blue and has smaller cell-marks.

*orestias*. **C. orestias** sp. n. (14 k). ♂ 24—25 mm, ♀ 28 mm. Exceedingly like a giant *nereidaria* (the largest *nereidaria* known to me, a ♀, expands 22 mm). Palpus of ♀ less extremely long. Face whitish in lower half (in *nereidaria* red almost throughout). Forewing with 2nd discocellular parting from subcostal at  $\frac{2}{3}$  cell-length or beyond (in *nereidaria* at about the middle); costal edge mixed with the same dark colour as the terminal line. Hindwing with the angle at the 3rd radial rather more noticeable. Kinabalu (WATERSTRADT), the type series of 4 ♂♂ and 2 ♀♀ in the British Museum. A few ♀♀ also known from Penang and Bukit Kutu (Selangor). — **anicana** subsp. nov., of which I know only ♀♀ (26—28 mm), is a trifle rounder-winged (at least at the apices), slightly more bluish green, the cell-spot of the forewing not quite so large, the postmedian spots with somewhat less of the red sealing. Oetakwa River, Snow Mountains, Dutch New Guinea, 3 ♀♀ in the Tring Museum. — ab. (?) **ectenes** nov. is a further development of *anicana*, with slightly more rounded hindwing and the cell-spot of the forewing produced outward into a long triangle. Ekeikei, 1500 feet, British New Guinea, type ♀ in British Museum. 2 ♀♀ from Mount Kunupi, 6000 feet (Weyland Mountains, Dutch New Guinea) are closely similar but — at least in one example — with the cell-spot not quite so extremely developed.

*iodioides*. **C. iodioides** T. P. Luc. (= *eucraspeda* Turn.) (14 k) introduces the second group of the genus (subgen. *Leucodesmia* Warr.) with strongly rounded hindwings and a different scheme of pattern. In *iodioides* the prongs which project from the reddish borders are very distinctive. Terminal joint of ♀ palpus almost as long as 2nd (TURNER gives “ $\frac{2}{3}$ ”, but his description otherwise fits so well with *iodioides*, of which we figure the type, that I do not query the synonymy). A rare species; I only know of the two ♀ types, respectively from Dawson and Port Darwin. — **storthyngica** subsp. (?) sp. nov. (14 k). A little larger, the reddish parts brighter, especially the face and termen, the midterminal prongs larger, an additional one present at hindmargin of forewing. Doerian, Riou Archipelago (DAMMERMAN), 2 ♀♀, the type in coll. PROUT.

*callista*. **C. callista** West (14 k), founded on a ♀ from Mindanao, is very likely another form of the preceding. Discocellulars of forewing characteristic, of hindwing unusually oblique. Distal borders broader than in *iodioides* and *storthyngica*, not so bright as in the latter, round the apex of the forewing with pronounced white proximal edging which somewhat recalls that of *cedilla* (14 k).

*dispansa*. **C. dispansa** Walk. (14 k). Closely similar to *chlorargyra* but with the abdomen green, the discocellulars not very characteristic, the 1st subcostal of the forewing arising from the cell. Yellowish green, the borders narrower, streak from costa interrupted. Ceylon, only a few examples known.

**C. confusa** Warr. (14 k). Also closely like *chlorargyra*, but with the terminal band of the forewing *confusa*. markedly bent inward between the indentation in cellule 3 and that in cellule 5. Ceylon. If this distinction is reliable, races of *confusa* occur also in the Khasis, the Andaman Islands, probably Siam and (together with typical *chlorargyra*) Malaya.

**C. chlorargyra** Walk. (14 k). Described from Sarawak but widely distributed — India, Singapore, the *chlorargyra*. Philippines and again in New Guinea and North Queensland. Abdomen above brown, discocellulars characteristic, terminal band regular throughout. The obliquely transverse markings of the forewing (on discocellular and from hindmargin) are generally less variable than in *minutata*.

**C. minutata** Druce. Variable. The name-type, from Guadalecanar, has the midcostal projection of the *minutata*. border of the forewing very small, the hindmarginal one large and broad, the borders very little mixed with white. Probably a mere aberration, possibly a race. — **conchylias** Meyr. (14 k). Almost always distinguishable *conchylias*. from *chlorargyra* by the recession of the terminal band from the distal margin in the middle of the forewing, which suggests that *confusa* may be a race of it; but very rare aberrations have this terminal band regular throughout, as in *conchylias*. In such cases, the different ground-colour may be observed when examined in a good light (fresh *conchylias* are absinthe-green or almost apple-green, *chlorargyra* more bluish — scarcely brighter or yellower than "Rinnemann's green" of Ridgway, but difficult to match exactly) and confirmation is found in the short midcostal mark and the form of the white border at the apex. Central markings of forewing shorter also than in *confusa*. Little Kei Island, New Guinea (type) and its islands, the Bismarck Archipelago, Bougainville and Tulagi.

**C. cedilla** Prout (14 k). This elegant species differs from *chlorargyra* in the much shorter antennal *cedilla*. pectinations of the ♂. The white element in the borders is less interrupted and has a differently shaped ending at the costal margin (2 or 3 mm from apex) and posteriorly (at a similar distance from tornus). British New Guinea (loc. typ.), Mindanao, Borneo, E. Sumatra and the Malay Peninsula.

### 103. Genus: **Pyrrhorachis** Warr.

Similar to the two preceding genera, distinguishable from the second section of *Comostola* by the simple discocellulars, from *Comostolopsis* by the much more convex distal margin of the hindwing; 1st subcostal of forewing from near the apex of the cell or near the base of the stalk of the other subcostals. Both wings almost always without cell-dots and lines, but always with red borders. Exclusively Indo-Australian.

**P. caerulea** Warr. (12 c). Much larger than the other species and with a distinctive postmedian costal *caerulea*. mark on the forewing. Sikkim, rare. Structurally distinguishable from the rest by having the 1st median of both wings separate, not stalked.

**P. deliciosa** Warr. Forewing slightly more rounded than in *pyrrhogona* (14 l), the red marginal mar- *deliciosa*. kings larger, brighter red, the blackish terminal line rudimentary. Natuna Islands, only the type ♀ known.

**P. pyrrhogona** has already been differentiated in effect from the two preceding, with which it almost agrees in its blue colour. The red terminal markings are narrowed, dulled by a (generally thick) black terminal line, the paler fringes generally show more or less strong dark spots. Widely distributed, apparently with some differentiable races. A few of these have received names. — **pyrrhogona** Walk. (14 l), described from S. India *pyrrhogona*. and known also from Ceylon, is a small form, with the borders of nearly uniform breadth throughout. The form from Formosa has not been separated from this. — **turgescens** Prout, from the Khasis and Sikkim, has the *turgescens*. border markedly thickened behind the 2nd median of the forewing and slightly at the apex and anal angle of the hindwing. — **marginata** T. P. Luc., from Queensland, seems only distinguishable from the S. Indian *marginata*. type by its larger size. — According to TURNER this race has sometimes a red, ochreous-ringed cell-dot on each wing, a very unexpected development in this genus, ab. **punctata** nov. — **augustata** Prout, from the Loyalty *punctata*. Islands, agrees with *marginata* in size but has the borders still narrower, scarcely expanding into lunules between *augustata*. the veins.

**P. cornuta** Warr. (14 l) possibly represents a further race (or series of races) of *pyrrhogona*, but is readily *cornuta*. distinguished by the "horn" from which WARREN named it, a small posterior projection from the border of the forewing which suggests that of *Comostola* sect. 2. The name-typical form, from Fergusson Island (type), Goodenough Island, the Louisiades and New Guinea, has the "horn" moderate or small. A few specimens from Borneo have it perhaps smaller still. — ab. **viridescens** nov. is much less blue than the type, approaching (though *viridescens*. not quite reaching) the yellow-green of *viridula*. The ♂ of this aberration, from Mt. Goliath, presents such a sharp colour-contrast to most of the material from the mainland of New Guinea that one might believe it a separate species, but some of the island forms are similar or intermediate. — **pisochlora** subsp. nov. (14 l). The *pisochlora*. green colour seems here constant and the race further differs in having all the red markings somewhat extended. Manus, Admiralty Islands, the type series in the Tring Museum. The same form occurs on St. Matthias Is-

- callicrossa*. land, a transition on Vulcan and Dampier Islands. — **callicrossa** *subsp. nov.* Forewing with apex slightly more rounded than in the preceding forms, the terminal markings further enlarged, forming regular blunt teeth between the veins, the "horn" also generally broadened or enlarged, but rather variable. Bismarek Archipelago: Rook, New Britain, New Ireland and New Hanover. The colour varies noticeably, but is always intermediate between *cornuta* and *pisochlora*. The white dorsal spot at base of abdomen, generally conspicuous in *cornuta*, is almost obsolete in this and the following form. — **woodfordi** *subsp. nov.* Shape and coloration about as in *callicrossa*, the borders more as in *pisochlora*, but with the contained black markings thickened; "horn" broad, light red, but generally containing some strong black scaling. Tulagi Island (Woodford), 8 ♀♀ in the Tring Museum. The only other example known to me from the Solomons is from Nissan Island and perhaps represents still another race, but as I can see no difference excepting its *pisochlora*-like colour, I provisionally call it *ab. viridescens*.
- viridula*. **P. viridula** Warr. (141). Somewhat longer-winged than *pyrrhogona* and of a bright yellow-green colour; borders narrow and dark, separated from the ground-colour by a slender but conspicuous white line. British and Dutch New Guinea.
- rhodom-  
topa*. **P. rhodometopa** Prout. Borders narrower still (linear), more rosy, the line which bounds them proximally extremely slender, yellow; crown green, between the antennae rosy (in *viridula* and *ruficeps* red, between the antennae snow-white). Mount Goliath.
- ruficeps*. **P. ruficeps** Warr. (141). Borders broader than in *viridula*, they and the dorsum of the abdomen much redder, the face almost entirely red, while in *viridula* the lower part is white; the line between the wing-borders and the ground-colour yellow, as in *rhodometopa*. Owen Stanley Range and Snow Mountains, New Guinea.
- cosmeto-  
craspeda*. **P. cosmetocraspeda** Prout (141) is doubtfully placed, as both the known examples are ♀♀ and have lost their hindlegs. Possibly a *Comibaena*, but the palpus seems much too slender. Known by the rosy post-median dots and the white, rosy-edged terminal spots. Digboi, Assam.

#### 104. Genus: **Chloëres** Turn.

Erected by TURNER for *citrolimbaria* Guen. (the genotype) and a second Australian species, which disagree with *Pyrrhorachis* in shape and pattern; venation similar, the 1st subcostal of the forewing, so far as is known, always arising from the cell. Apparently connected with the typical African *Comostolopsis*, which was doubtless unknown to TURNER, by the intermediate Indo-Australian forms which we have mentioned under that genus.

- citrolim-  
baria*. **Ch. citrolimbaria** Guen. (= *inchoata* Walk., *illidgei* T. P. Luc.) (141). A simple bright-green species with pale yellow dorsal line, costal edge of forewing and fringes. Fairly common in Queensland. It has been reared from larvae feeding of *Duboisia*.
- cissina*. **Ch. cissina** Turn. is unknown to me. Face green (in *citrolimbaria* red on upper half or  $\frac{2}{3}$ ), wing-margins more curved, colour more bluish green, the lines (on forewing two, on hindwing one) indicated by whitish dots. Founded on a ♂ from Killarney, Queensland.
- prasochroa*. **Ch. prasochroa** Turn. Also unknown to me. 25 mm. Pectinations very long ("10"). Face pale green. Wings green, with distal margins probably a little less straight than in *citrolimbaria*; costal edge and fringes whitish instead of yellow; whitish lines indicated, though indistinct and very slender, on the forewing nearly straight, on the hindwing (postmedian only present) curved and slightly wavy; hindwing in addition with a whitish semilunar cell-mark, its concavity on the distal side. North Queensland: Charters Towers, 1 ♂.
- quantula*. **Ch. quantula** Swinh. (= *dulcinata* A. Fuchs) (141). Systematic position doubtful, perhaps intermediate towards the following in that the 1st median of the forewing is separate, that of the hindwing connate or separate. Easily known by the shape, the pale greyish-green colouring (whitish green with dense but very fine irroration), brown cell-dots and small brown terminal dots, which latter on the forewing continue round the apex. Pectinations of ♂ very long. — *ab. glareosa* Swinh. has the cell-dots of the forewing somewhat enlarged, that of the hindwing replaced by a large, irregular blotch. *quantula* was described from Bombay and reaches Ceylon, Lower Burma and E. Sumatra; from the last-named locality it was re-described as *dulcinata* Fuchs.

#### 105. Genus: **Neothela** Turn.

"Differs from *Chloëres* in the wide separation of veins 3 and 4 of both wings." "Posterior tibiae with all spurs present, in ♂ strongly dilated, with a groove containing a tuft of hair on inner side." 1st subcostal of forewing arising from cell, anastomosing with costal and 2nd subcostal. Founded on a single species, which I have not seen but which, according to the description, might well be referred to our comprehensive genus *Hemistola*.

**N. cissochroa** *Turn.* 24 mm. Face green. Palpus in ♂  $1\frac{1}{4}$ , with terminal joint minute. Pectinations *cissochroa*. long (outer row 7, inner row 5). Abdomen with a patch of long coarse whitish-ochreous hairs on sternite 4. Forewing triangular, bluish-green, the lines slender, white, the postmedian finely denticulate, continued on the hindwing, which is bowed at the 3rd radial; both wings with the cell-mark represented by a white ring. Townsville, Queensland, 1 ♂, in poor condition.

#### 106. Genus: **Cymatoplex** *Turn.*

Probably quite near *Mixocera*, but with very different ♂ antenna: pectinate with very long branches. Somewhat less specialised in that the 1st median is never (so far as has been observed) stalked on either wing, nor does the 1st subeostal of the forewing ever run into the costal, though often anastomosing. Exclusively Australian.

**C. halcyone** *Meyr.* (= *erenulata* T. P. *Luc.*, *diehroa* *Lower*, *imparicornis* *Warr.*) (141). Ground-colour *halcyone*. similar to that of *Ch. quantula* (141), but with eostal margin rather broadly buff and with rippled white lines which sometimes recall a *Poecilasthena*. Pectinations of ♂ extremely long. Distributed from North Australia to Brisbane, a coastal species; southern examples are said to be rather larger than northern.

**C. hypolichna** *Turn.* Unknown to me, the ground-colour not indicated. In any case, it should be readily *hypolichna*. distinguishable from *halcyone* by have only "two faint whitish wavy transverse lines" as well as by having the ♂ pectinations only two-thirds as long; eostal margin of forewing coloured about as in *halcyone*. Port Darwin.

**C. subpellucida** *Auriv.* "Wholly whitish, the frons between the eyes ochraceous; wings thinly sealed, *subpellu-* subdiaphanous. ♂ antenna excepting approximately the apical  $\frac{1}{5}$  with long pectinations; the branches blackish *cida*. at the base. Wings above faintly suffused with yellowish. Expanse 12 mm. ♀ antenna subserrate, at base thickened. Wings quite white. Expanse 18—19 mm. Agrees fully with *Cymatoplex* in the generic characters; vein 11 of forewing free." Founded on 2 ♂♂, 2 ♀♀ from Broome, N. W. Australia.

#### 107. Genus: **Idiochroa** *Turn.*

Tongue absent. Palpus minute. Antenna pectinate in both sexes. Hindtibia in both sexes with 4 spurs. Forewing with 1st subcostal arising from the cell, connected or anastomosing with costal. Hindwing with eostal touching the cell at a point near the base, very gradually diverging, 2nd subeostal scarcely stalked, 1st median remote at origin from 3rd radial. Differs from *Cenochlora* in the presence of the proximal spurs of the hindtibia. Erected for two Queensland species; I have not seen either.

**I. demissa** *Turn.* ♂ and ♀ 21—22 mm, pectinations in both sexes very long. Face pale fuscous. Fore- *demissa*. wing with apex acute; rather dark green, with a fuscous cell-dot at about  $\frac{2}{3}$ . Hindwing rounded; in the ♂ dull reddish, with only the hindmargin narrowly green; in the ♀ wholly pale green. Underside in ♂ more or less suffused with dull reddish, in ♀ green.

**I. celidota** *Turn.* ♂ 22 mm, ♀ 29 mm. Pectinations extremely long in ♂, half as long in ♀. Face dark *celidota*. reddish. Forewing less acute than in *demissa*; green, somewhat bluish, with a large whitish blotch at hind-angle, outlined with purple-fuscous, broadly divided by pale reddish and with a pale reddish streak along "anterior" border (I think TURNER means proximally). Hindwing with termen rather irregularly rounded, tornus rather prominent; green, without the blotch. Underside whitish-green, the blotch indicated in pale grey.

#### 108. Genus: **Cenochlora** *Warr.*

Characters of *Idiochroa* but without proximal spurs on the hindtibia. This genus likewise consists of two Queensland species.

**C. quantilla** *Turn.* Unknown to me. Said to be smaller than *quieta*, the antennal pectinations not *quantilla*. quite so long, the fringes wholly white, cell-dots wanting. Townsville, N. Queensland.

**C. quieta** T. P. *Luc.* (= *felix* *Warr.*) (14 a). Expanse 18—22 mm. Easily known by the structural *quieta*. characters; the fringes dull reddish, only at the tips white, each wing with a minute reddish cell-dot. Brisbane, etc., nowhere common.

#### 109. Genus: **Mixocera** *Warr.*

Palpus short. Tongue slight. Hindtibia with terminal spurs only. Forewing with 1st subeostal arising near end of cell or shortly stalked, hindwing with eostal touching cell at a point near base, rapidly diverging; both wings with 1st median from close to end of cell or stalked. A small genus, chiefly African, divisible into sections according to the structure of the ♂ antenna (see Vol. 16, p. 45). Of the two Indo-Australian species,

*parvulata* has rudimentary pectinations in the ♂ only, *latilineata* well-developed pectinations in both sexes (*Gynandria* Turn.).

*parvulata*. **M. parvulata** Walk. (= *rectifasciata* Hmps.) (14 a). Readily distinguishable from all other Indian species by its ochreous head (with red face), yellow-green wings, straight white postmedian band and white marginal line. Known from Bombay, Ceylon, the Maldive Islands and (under the name of *albistrigata* Pagenst., see Vol. 16, p. 46) from Madagascar and a great part of Africa.

*latilineata*. **M. latilineata** Walk. (14 f). Very similar to *parvulata*, but with the antenna in the ♀ at least as well pectinate as in *parvulata*-♂, in the ♂ decidedly longer than the broadest diameter of the shaft. North Australia to New South Wales. The northern forms are small and with broader lines than the more southerly, thus nearest in aspect to *parvulata*.

### 110. Genus: **Eucrostes** Hbn.

Small but relatively robust moths, with many of the characters of *Mixocera* sect. *Gynandria*, the palpus longer (though the tongue is short and rather weak), the pectinations longer, the hindwing strongly rounded, the coloration much more vivid green, the fringes nearly always in part red. See further Vol. 4, p. 33, Vol. 16, p. 46. The sole Indo-Australian species is very widely distributed, but probably introduced.

*disparata*. **E. disparata** Walk. (= *parvulata* Walk., *albicornaria* Mab., *iocentra* Meyr., *barnardae* T. P. Luc., *rubridisca* Warr., *nanula* Warr.) (Vol. 16, pl. 4 k). Generally small, the red cell-dots small, the terminal line wavy, but scarcely projecting triangularly between the veins, the fringes much less red than in *indigenata*. WALKER's type came from Ceylon; other known localities in the region are Central India, Tonkin, Penang, N. Australia and Queensland; should the Australian prove a separable race, the name *iocentra* will be applicable to it, with *barnardae* and *nanula* as synonyms. In the African region, *disparata* is very widely distributed; see Vol. 16, p. 46.

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### Addenda.

During the years which have elapsed since the issue of sheets 2—8 numerous additions have been made to the groups there dealt with. It is hoped to figure some of the most important novelties in supplementary plates.

#### Subfam. **Oenochrominae**.

To p. 5, *Diceratucha*:

This somewhat isolated genus proves, on closer study, to belong to the Notodontidae.

To p. 6, *Debos*:

This is also, according to a verbal communication of Dr. K. JORDAN, a Notodontid, unless, indeed, it be a Noctuid with the 2nd radial of the forewing exceptional in position.

To p. 7, *Adeixis*, add:

*parvitis*. **A. parvitis** Howes, from Broad Bay, New Zealand, is said to expand 16 mm. Face, head and thorax white. Forewing grey-white faintly irrorated with brown; a distinct brown band at  $\frac{2}{3}$ , edged outwardly with white; faint brown irrorations beyond, deepening to termen, which is quite brown; cilia long, grey, at base brown. Hindwing grey-white, grey at termen; cilia white. Only the type known.

To pp. 7 seq.:

A revision of the true *Oenochrominae* of Australia, with descriptions of a number of new genera and species, has been published by Dr. TURNER in the Proceedings of the Linnean Society of New South Wales, Vols. 54 and 55; but as nearly all the new species are still unknown in this country we propose to postpone their incorporation until the end of the present volume.

To p. 24, *Dinophalus*:

*idiocrana*. **D. idiocrana** Turn. (= *cyanorrhæa* Prout, nec Lower) (2 c as *cyanorrhæa*). I find that I misidentified LOWER's species and that the one on which I founded the genus *Dinophalus* was at that time without a name. It has latterly been redescribed as *idiocrana* Turn., from Townsville and Sherlock River. Our figure is from the genotype (a ♂ from Kuranda, North Queensland).

**D. cyanorrhoea** *Lower* (= *cyanorrhoea* *Turn.*). The unique type of this species, a ♂ from Alice Springs, Central Australia, has been redescribed by TURNER. 24 mm. Face with a strong, porrect, flattened, corneous projection, its anterolateral angles prolonged into a pair of sharp spikes. Palpi rather long and slender, terminal joint very short. Pectinations in ♂ 5. Forewing elongate, narrow, costa straight almost to apex, termen strongly oblique, toothed on veins 3, 4 and 6; grey; a suffused fuscous line from  $\frac{1}{3}$  hindmargin, very oblique towards, but not reaching, costa before apex, slightly bisinuate, followed by a broad, bisected whitish suffusion; cilia dark grey with some whitish scales between dentations. Hindwing rather broad, apex obtusely rounded, angled and toothed on vein 3; 6 and 7 short-stalked; grey, a suffused, whitish, transverse median band, containing a fine grey line (TURNER, abbreviated). *cyanorrhoea.*

To p. 25, *Lissocraspeda*:

**L. bicorne** *Auriv.*, described as the type of a new genus *Bumetopon* and ascribed to the *Notodontidae*, is evidently only a very slight modification, or even a synonym, of *eremoea*. To judge from the figure (un-coloured) of the type ♀, the postmedian line arises at scarcely  $\frac{3}{4}$  instead of at  $\frac{5}{6}$  and is less oblique, and the hindwing does not show the wavy lines except near the abdominal margin, where they suffuse into an ill-defined dark spot. Broome, N. W. Australia. *bicorne.*

To p. 29, *Thaumat. singularis*:

**variegata** *B.-Bak.*, described under the *Eupterotidae* as the type of a new genus *Neuroanomala*, if not a synonym of *singularis* (2g), is at most a somewhat light-coloured aberration. Mount Kebea, British New Guinea. *variegata.*

To p. 30, *Eumelea*:

A few new species and forms have been discovered or differentiated in this interesting genus since the publication of sheet 5 in 1921. The position which I assign to the new species is indicated below.

To p. 31, after *biflavata*:

**E. incensa** *Prout*. 64 mm. Like an overgrown *felicitata* (p. 32) but less yellow-mixed than most of the ♀ forms of that species, the median line of the forewing almost straight, the outer band on both wings considerably broadened, on the underside bright rosy purple, entirely without the grey admixture. Possibly a much larger race of *biflavata*, but without the characteristic yellow postmedian spots and with broader outer band. Menado, Celebes, only the type ♀ known. *incensa.*

To p. 31, *unipuncta*:

**latiparies** *Prout*. ♂: Forewing with costal edge more uniformly purple than in *u. unipuncta* (2i), in which the costal edge is much strigulated with yellow and grey; the first two lines (bands) broader, especially the second. Hindwing with median line correspondingly broadened. Underside heavily suffused with purple. ♀: Rather less deep yellow than that of the name-type; median line broadened as in the ♂. Burn. It should be remarked that the quotation of the Solomon Islands as a locality for *unipuncta* arose from a misidentification. *latiparies.*

**E. ludovicata** *Guen.* (2i, not 2h). The name-typical race, strictly defined, is only found in Ceylon and S. India and is duller than most of the races, especially in the ♂, which almost entirely lacks the rosy or vinaceous shadings and has the yellow patches small and indefinite. — **biclarata** *Prout* is on an average smaller (♂ 51—54 mm, ♀ 55—60 mm), in the ♂ much brighter, with all the yellow patches more or less developed, somewhat recalling *biflavata*. ♀ rather more variegated than in *l. ludovicata*. India (except the south) and Burma. — **referta** *Prout*. Similar in size and coloration to *biclarata* ♂, also with the yellow patches more or less developed, but in varying relative proportions, those at the distal margin (apex and tornus) nearly always conspicuous, the latter as a rule extended forward to the 3rd radial; dark markings of forewing generally broadened. Founded on 7 ♂♂ from Sipora (Mentawi Islands) and 4 from the Batu Islands. — **rhodeogyna** *Prout*, from New Ireland and New Hanover, has the sexual dimorphism much less pronounced than in the other races, the ♀ having all the irroration, clouding and maculation strong, rosy-purple; ♂ intermediate between the more typical forms and *rubra*, perhaps nearer to the latter. *ludovicata.*  
*biclarata.*  
*referta.*  
*rhodeogyna.*

To p. 32, *vulpenaria*:

ab. *flavata* *Moore* is invariably ♀, not “♂” as misprinted in the English edition.

**E. lipara** *West*. Distinguishable by its “Kaiser brown” (tern of RIDGWAY) and more sharply bent postmedian line, on the hindwing beneath strongly curved. Slight yellow maculation on fold between postmedian and subterminal of forewing. Luzon, only the ♂ type known, its hindlegs wanting. *lipara.*

**E. stipata** *Prout*, described as a form of *rosalia*, is a good species, differing from *australiensis* not only in its coloration but also structurally, the ♂ hindtibia wanting the fringe of fine hair which is developed in all forms of *rosalia*. The ♂ genitalia are smaller, with differently shaped saccus and less developed coremata, and the form of the uncus (“crux” behind — i. e. dorsal to — “chartae”, see p. 30) groups it definitely with *marginata* and *semirosea*. *stipata.*

*semitrosea*. **E. semirosea** Warr. (p. 33). Confirmation of its rank as a species is found in the ♂ hindtibia, which lacks the fringe of *rosalia*. — **rosans** Prout, from Kinabalu is somewhat more uniformly rosy, the yellow admixture rather weak, but more regularly distributed than in *phoenissa*, the lines generally slender, the postmedian rather more curved anteriorly than in *semitrosea*. ♀ probably dimorphic, the allotype yellow with the postmedian greyer than in the other races. — **smedleyi** Prout has the ♂ hindtarsus a trifle shorter in proportion but may probably be another race of *semitrosea*. More variegated in appearance, both sexes with the yellow groundcolour strongly spotted and strigulated with rosaceous. Sipora Island. Other Malaysian races will probably be separable.

*duponchelii*. **E. duponchelii** Montrz. (= *obliquifascia* Warr.). Although MONTROUZIER gives no indication of the size of his species, nor any useful structural due, there is no Woodlark species excepting the present one to which his description could apply and I have no hesitation in restoring it in place of *obliquifascia* as used on p. 33.

To p. 34, *Xyridacma*:

*veronicae*. **X. veronicae** nom. nov. (= *hemipteraria* auct., nec Guen.). GUENÉE'S *Hemerophila hemipteraria*, founded on a ♀ of which he says "je crois océanienne", proves to be the Tasmanian *Boarmia* which was recently named *epiphloea* Turn. (1926) and it is therefore necessary to re-name the New Zealand species which MEYRICK and others have misidentified as *hemipteraria* (p. 34, pl. 3 b).

To p. 35, after *D. permensata*:

*propages*. **D. propages** Prout. At first sight similar to a heavily marked *lumenaria* (3 c) but with the 2nd subcostal of the hindwing well separate. Palpus long, the 2nd and 3rd joints each measuring nearly 1 mm; hindtibia very long, dilated, fringed above. Wing-shape about as in *melagonata* (3 c); costal margin still more broadly grey-brown than in *lumenaria*, markings similarly macular, cell-dot of forewing large, subtriangular. Mount Dulit, Sarawak, only the type ♂ known.

To p. 37, *Noreia*:

*ajaia*. **N. ajaia** Walk. (= *perdensata* Walk.) (3 d). The type of *perdensata*, a ♀ from Ceylon, evidently belongs to *ajaia* (see Nov. Zool., Vol. 37, p. 4). Ceylon and Siberut Island (Mentawi) are to be added to its range.

*vulsipennis*. **N. vulsipennis** nom. nov. (= *perdensata* Prout, p. 37 supra, err. det.). This species, differentiated by me from *ajaia* by the less dilated hindtibia and absence of hair-tuft on hindwing, seems to be confined to North India; the reference to Ceylon originated from a confusion with *ajaia*. I have chosen for the type of *vulsipennis* a ♂ from the Naga Hills in the Tring Museum. Pl. 3 d, fig. 7 is quite different in shape, etc. and I cannot now determine it.

*phauda*. **N. phauda** West. Closely related to *papuensis*, hindwing with a similar tuft at abdominal margin but with only one tuft developed on the underside, arising behind the base of the 2nd median. Postmedian line on both wings dark, on the hindwing rather straighter than in *papuensis*. Mindanao (the type) and Luzon.

To p. 37, *Callipotnia*:

*incerta*. **C. allognota** Prout **incerta** Prout. Slightly larger than typical *allognota*, the apex of the forewing less acutely produced, the hindwing rather more rounded; colour warmer brown, the yellow postmedian line thicker, the subterminal scarcely filled-in with dark spots proximally. Mount Kunupi, Weyland Mountains, Dutch New Guinea. Perhaps a distinct species.

To p. 38, *Alex*:

*niasica*. **A. palparia** Walk. **niasica** Swinh., of which I have now seen the type, is evidently a race of this species, or perhaps a synonym. Similar specimens have been taken on Siberut Island. — **nephodes** West is apparently another race of the same, characterized by the fuscous-black cloudings of the distal area. Luzon. A ♀ from Mindanao reverts towards name-typical *palparia*.

P. 39, to *Naxa*:

*craspedota*. **N. craspedota** Prout. Near *guttulata* (3 f), but with the base of the forewing and the border of each wing (to a width of approximately 6 mm) suffused with black-grey; both wings with black-grey cell-spot. Nomnagihé, Weyland Mountains, only the type ♀ known.

P. 40—41, to *Ozola*:

*minor*. **O. minor** Moore (= ? *leptogonia* Hmps.). The less irregular distal margins separate both these little-known forms from *microniaria* and *indefensa*, with which I formerly suggested they might be conspecific. They perhaps represent *exigua* in the western part of the Indo-Australian Region. In any case the ♂ hindtibia is much less broadly dilated than in *indefensa*.

**O. concreta** Prout. Expanse 25—29 mm. Hindtibia of the ♂ very broadly dilated, on the outside *concreta*. concave, on the innerside with a groove containing a strong brown hairpencil (almost as in *indefensa*). Forewing narrow, especially in the ♂, distal margin not, or very slightly, concave anteriorly; hindwing not or scarcely produced at 1st radial. Lines of forewing oblique, more nearly parallel than in most of the species, median area narrow. Readily distinguished from *macariata* by these characters, particularly the less extreme shape; from *minor*, *exigua*, etc., by the ♂ hindtibia. Langkawi I. (loc. typ.), Kedah and perhaps Lower Burma.

**O. indefensa** Warr. Exceedingly similar to *macariata*, with which it has long been mixed. Distal margins, especially that of the hindwing, a little less regularly rounded; hindtibia of the ♂ still more broadly dilated, that of *macariata* being intermediate between those of *indefensa* and of *exigua*. New Guinea and its islands and the Moluccas, the type from Dorei; *macariata* is only definitely known to me from the Xulla Islands and the Moluccas, but SNELLEN'S type of *elongaria* was from Celebes and SEMPER'S Philippine record may well belong with it. *indefensa*.

**O. exigua** Swinh. This is also a separate species, distinguishable not only by its generally smaller size *exigua*. and narrower wings, but especially by the ♂ hindtibia, which is still less dilated than in *macariata*, almost exactly as in *minor*, which I have suggested may be a race of it. On Amboina, Sumbawa, Borneo, Banka Island and Hainan occur a number of other races or closely allied forms which will deserve closer study. — **O. despica** Prout, *despica*. described as a race of *macariata*, also seems to belong here. It is pale, generally weakly marked, in particular with the straightish central line of the hindwing very weak or obsolete; the terminal spots remain relatively well developed; in the ♀ the subterminal clouding of the forewing is very faint or wanting. St. Matthias and Squally Islands.

**O. eurycraspis** Prout. 29 mm. Forewing narrow, apex slightly produced, termen gently sinuous, the *eurycraspis*. anterior concavity weak; whitish ochreous, antemedian line of forewing thick anteriorly, bent in cell, then slender; both wings with a broad dark border, on the forewing just entering the cell and containing pale terminal spots as in *atrofasciata*. Tenimber, 1 ♀.

**O. pica** Wileman & South. Perhaps the most elegantly marked of the black-and-white *Ozola*. Forewing *pica*. distinct from that of *falcipennis* in having a longitudinal streak from the cell-spot to the terminal band, the latter enclosing 3 white spots; hindwing with no black markings excepting a rather regular border, which likewise encloses 3 irregular black spots. Luzon.

**O. intransilis** Prout. Markings more nearly as in *falcipennis*, but the curved subbasal band interrupted, *intransilis*. the terminal band intermediate towards that of *pica*, but narrowed in the ♂. Hindwing much as in *falcipennis*, but with somewhat more maculation in abdominal region, less extended transversely. W. Sumatra: North Korintji Valley.

*O. falcipennis* Moore **apiletica** Prout. Blackish maculation more extended than in typical *falcipennis* *apiletica*. from N. India. Borneo and the Malay Peninsula, the type from Kinabalu.

**O. pantomima** Prout. Very similar to *falcipennis*, on an average smaller, hindtibia of ♂ much more *pantomima*. broadly dilated and hollowed (about as in *indefensa*, *pica*, etc.), apex less falcate, distal margin less sinuous, costal edge often blackened, subbasal band a little less oblique, terminal band without a white subapical spot, confluent with posterior end of cell-spot, hindwing in ♂ with reduced maculation. Kinabalu.

**O. pyraloides** West has about the shape of *pantomima*, or the forewing perhaps slightly narrower. *pyraloides*. Markings perhaps still nearer to those of *falcipennis*, except that the terminal white spot of the forewing is confluent with the central white area. Differs from both in having a large midcostal black blotch on the hindwing. Benguet, Luzon.

**O. apparata** Prout. Probably near *pantomima*, a little larger and scarcely so narrow-winged. The *apparata*. terminal black band shows, better than most of the allies, its composite origin, both its parts interrupted, the subterminal only confluent with the terminal costally, at the 2nd radial broadly interrupted, behind the 2nd median wanting. Hindwing marked nearly as in *pantomima*. Korintji, W. Sumatra.

**O. ramifascia** Prout (5 b), from Central Ceram, has the wings shaped as in *albimacula*, of which it *ramifascia*. might possibly be a race, but the white markings strongly recall the quite unrelated *Hyposidra albifurcata* Warr., from the Philippines.

**O. exotrigonia** Prout represents *ramifascia* on Buru. The white of the hindwing is much extended *exotrigonia*. proximally, covering the whole basal area, and the forewing has a very large white posterior patch proximally and the distal white patch more triangular. Buru.

To p. 42, *Celerena mitis*:

**melanoprora** Prout. Palpus with 2nd joint predominantly black, not yellow, thorax with a well- *melano-* developed black anterior band. Bismarck Archipelago. *prora*.

Subfam.: **Hemitheinae.**

To p. 44, *Heliomystis*:

The enormously developed thoracic crest and even the entire scheme of markings show that this genus is almost the direct ancestor of *Dindica*, differing only in the somewhat more primitive venation (as *Archaeobalbis* from *Neobalbis*) and in the pectination of the ♂ antenna, which continues nearly to the apex.

*H. electrica* Meyr. Has been taken in scattered localities from the National Park, Queensland, to Tasmania.

To p. 45, *Sterictopsis*:

*argyraspis*. **S. argyraspis** Lower (= *inconsequens* Warr.). GOLDFINCH has confirmed this synonymy from a study of LOWER'S type, for which the locality (Blackwood) was perhaps erroneous. The well authenticated range is from Queensland to Victoria. Variable, at times more or less melanic.

*divergens*. **S. divergens** Goldfinch, founded on 4 ♂♂ taken at light in Eucalyptus forest at Mittagong, N. S. W., has the 1st radial of the hindwing stalked or connate; thus a surer generic distinction of *Heliomystis* is in its exaggerated crests. Larger than *argyraspis* (44 mm), white with black irroration and yellowish suffusions, the fine zigzag lines of the forewing arising from black costal marks, somewhat more suggestive of the scheme of *subrubescens* (*Aeolochroma*) than of *argyraspis*. Hindwing, however, whitish with a broad dark border, much as in typical *argyraspis*.

To p. 46, *Archaeobalbis cristata*:

*xuthopletes*. **xuthopletes** subsp. nov. (5 h) is smaller, with the submarginal bands beneath broader, vinaceous-tawny at the edges, more testaceous in the middle, entirely without black admixture. Bansal, E. coast of Sumatra, 3 June 1907 (O. JOHN), the type ♂ in Mus. Senckenberg. It will probably prove a good race, nearly parallel to *subtepens* except in leg-structure. I believe I have seen the same form from Perak, but I passed it over as an extreme ab. *subopalina* of *cristata*.

To p. 46, *Actenochroma*:

*pullicosta*. **A. pullicosta** Prout. Smaller than *muscoloraria* and distinguishable at a glance by having a broad blackish-fuscous costal streak on the forewing; only towards the base (for a distance of perhaps 4 mm) this divides into a costal line and an ill-defined subcostal one. Kulambugan, Lanao Plains, Mindanao, only the type ♀ known.

To p. 47, *Epipristis*:

*truncataria*. **E. truncataria** Walk. Following SWINHOE, I have previously sunk this to *minimaria* Guen. It was founded on a very worn ♂ from Sarawak, which seems to have the 3rd joint of the palpus slightly longer than in *minimaria* and, in spite of its condition, shows indications of the following characters, whereby I distinguish it from that species: more green-tinted ground-colour, with cloudings more reddish, present at base of hindwing (bounded by indications of a subbasal line), obsolescent in middle of subterminal region of hindwing, subterminal line brown rather than black, cell-mark of hindwing ill-developed, dark borders beneath not very strong. I therefore unhesitatingly refer to *truncataria* a very small *Epipristis* which possesses these characters and which I now know from Borneo, Selangor and Singapore.

*australis*. *E. nelearia oxycyma* Meyr. Variable in size (27—39 mm), the ♀♀ materially larger than the ♂♂ and with more strongly developed maculation between the postmedian and the subterminal. — ab. (?) **australis** Goldfinch is more decidedly green (perhaps only because in fresher condition), the postmedian line strongly blackish, on the forewing filling-in the bases of the vein-teeth so that they only appear as small dashes, the maculation outside it very complete in the ♀. Founded on a pair from Toowoomba (♂ 32 mm, ♀ 39 mm). There seems no doubt that GOLDFINCH has misidentified as *oxycyma* the following species; unfortunately he gives no description of the latter, nor differential characters.

*oxydonta*. **E. oxydonta** sp. n. Smaller than *nelearia* (♂ 24—28 mm, ♀ 26—33 mm), greyer, more noticeably irrorated on the underside with more strongly and uniformly dark borders, reaching from the postmedian line to the termen on the forewing and almost to the termen on the hindwing. Altogether more suggestive of a small dull *minimaria* (for which it seems to have been misidentified by TURNER and GOLDFINCH, with *oxycyma* wrongly sunk to it) but with the postmedian line fine, acutely dentate. Cell-dot of forewing more concisely punctiform than in any other *Epipristis*. Port Darwin (fairly common), Cape York and perhaps Kuranda; type in my collection.

To p. 48, *P. nobilis*:

As synonym should be added *ruginaria* Goldfinch (nec Guen.) and to the range N. Queensland.

To p. 50, *Hypodoxa*:

**H. conspurcata** *T. P. Luc.* (= *myriosticta* *Turn.*). This synonymy is given by GOLDFINCH as certain, *conspurcata*. on the examination of the types, "though the blotches beyond the second line are more red" in *conspurcata* type. LUCAS'S specimen was from the Brisbane distinct.

**H. calliglauca** *Turn.* Much like rather small greyish *muscosaria* but with the palpus somewhat shorter, *calliglauca*. the lower part of the face (nearly  $\frac{1}{3}$ ) absolutely scaleless and appearing very highly polished, the hindwing beneath clearer whitish, with punctiform (not macular) cell-mark. Queensland. The same peculiar frons is found in *conspurcata* and *deteriorata*.

**H. bryophylla** *Goldfinch* is still nearer to *muscosaria* but larger, the lines more clearly expressed, the whitish areas of the underside scarcely grey-mottled, with the cell-spot of the forewing smaller, narrower, that of the hindwing linear or absent, the subterminal bands more sharply defined, blackish. The ♂ genitalia show a pronounced difference in the valves. Queensland to Sydney.

To p. 51:

**H. involuta** *Prout.* Related to *lichenosa* and *leprosa*, but with the terminal joint of the palpus longer — almost as in *emiliaria* — pectinations longer (nearly 4 times diameter of shaft). Forewing pale green, with variable dark irroration (olive-green, purple-grey or blackish); variable rufous patches proximal to the antemedian and distal to the postmedian; lines much as in *emiliaria*, lunules of antemedian deeper, approaching those of *leprosa*. Hindwing similar to those of *leprosa* and *lichenosa*. Underside extremely like that of *lichenosa*, dark borders a little less black. ♀ larger, more suffused with rufous, abdominal fringe of hindwing orange; underside nearly as in *emiliaria*. Buru. — ♂-ab. **perplexa** *Prout.* Abdominal fringe and underside coloured as in the ♀.

To p. 52, at end of *Hydodoxa*:

**H. (?) paroptila** *Turn.*, which I provisionally (on p. 57) described under *Terpna*, has been further discussed and figured by GOLDFINCH (Proc. Linn. Soc. New South Wales, vol. 54, p. 391, pl. 16, fig. 7), who says that "the wings are tufted, but it differs from the other Australian species of this genus in the frons being clothed with fine and rather long velvety hairs, apparently somewhat as in *Dindica*". The type is in rather poor condition, the antennae missing. It will perhaps require generic separation.

To p. 52, after *Ae. metarhodata*:

**Ae. melaleuca** *Goldfinch.* Closely like a diminutive *quadrilinea*, but with 3 strong abdominal crests (in *quadrilinea* 2), the markings of the underside blackish-fuscous, not red, the ♂ genitalia with the valves more slender, especially the strongly chitinized costal part. Queensland and New South Wales, attached to *Melaleuca*, but apparently not to the same species (*M. leucadendron*) on which *quadrilinea* is known to feed.

**Ae. rhodochlora** *Goldfinch.* Probably nearest to *subrubescens*, but with the lines not dentate, etc. Ground-colour a similar blend of pale green and pale pink, the ♂ probably greener; antemedian line of forewing more nearly as in *metarhodata*, postmedian of forewing much less, of hindwing perhaps more, outbent in middle; cell-marks linear. Forewing beneath with cell-mark double; the lines present; a broad fuscous suffusion outside the postmedian, becoming crimson distally. Founded on a ♀ from Lismore, N. S. W., expanse 32 mm.

**Ae. mniaria** *Goldfinch.* Expanse 34—42 mm. Near *acanthina*, but more heavily marked with black; antemedian line of forewing much less strongly oblique outward subcostally, postmedian more regularly oblique inward between the radial and submedian folds. Antennal pectinations of the ♂ quite short. New South Wales and Victoria, rare except at Mittagong, N. S. W.; found resting on the foliage of the Native Cherry (*Exocarpus*).

**Ae. viridicata** *T. P. Luc.* GOLDFINCH differentiates this from *subrubescens* by the absence of a continuous black terminal line (both wings). It is, moreover, larger and a figure of the ♀ shows that the antemedian line of the forewing presents an exaggeration of the form seen in *saturataria* (Se) — i. e., runs very obliquely outward from costa, then very obliquely inward (parallel with postmedian) from cell.

**Ae. unitaria** *Walk.* This rare species, figured from Billopp on pl. 8 d, is perhaps confined to Tasmania. In any case, *acanthina* must not be sunk to it; see below.

**Ae. acanthina** *Meyr.* Smaller than *unitaria* (♂, 37—39 mm), antennal pectinations of the ♂ relatively somewhat shorter, forewing with subbasal line thicker, more regularly curved (recalling that of *hypochromaria*), postmedian less bent inward between the radials, hindwing with postmedian less deeply incurved between the radials, underside (especially of forewing) much less heavily irrorated, but with better-developed dark subterminal bands. Queensland.

To p. 55, *T. subtrita*:

**simplicior** *J. Joan.* differs in the absence of reddish striations at the base above and of the grey-brown shade beneath. Yen bai, Tonkin.

To p. 55, after *T. leucomelanaria*:

*ecto-xantha*. **T. ecto-xantha** Wehrli (Supp.-Vol. 4, pl. 1 h). White, asymmetrically spotted with dark grey and with a broad gold-yellow marginal band, which is finely strigulated and spotted with black. Forewing with a short, very oblique band of brown-grey spots; anterior half of wing transversely striped with dark-grey; a large roundish spot at the branching of the median; inner margin interruptedly dark-grey. Hindwing with irregular dark-grey discoidal spots; same roundish and oval ones before the yellow border. Bahand, Yunnan, only the type ♀ known.

*costiflavens*. **T. costiflavens** Wehrli (Supp.-Vol. 4, pl. 1 h). Somewhat similar to *ecto-xantha*, larger and more robust, easily distinguishable by the absence of black on the yellow face and palpus, stronger dark-yellow abdominal crests, broad yellow, blackish-spotted costal area from base to  $\frac{2}{3}$  and posteriorly reaching the median vein, etc. Founded on a ♀ from Siaolu, W. China.

To p. 56, after *costistrigaria*:

*eupines*. **T. eupines** West. Somewhat rounder-winged, cell-spots smaller. Recognizable by its increased dark maculation, more proximally placed postmedian line, and increased yellow on underside, where the forewing has also more vinaceous suffusion. Abdominal crests dark. Mindanao, only the type known.

After *erionoma*:

*loncheres*. **T. loncheres** Prout. Very similar to *albicomitata* (8 g), 3rd joint of palpus a little less short. Forewing with subbasal line less oblique, postmedian thick at the costa, macular behind the 1st median. Hindwing with cell-mark strong (recalling *pratti*), long blackish wedge-marks outside the postmedian between  $R^3$  and  $M^2$ , etc. Sandakan district, North Borneo.

*eueryphes*. *T. funebrosa* Warr. **eueryphes** West, so far as can be judged from 2 ♀♀, differs very little from the Sumbawa type of *tenuilinea*, also a ♀, but lacks altogether the white subapical spot of the forewing, both above and beneath, and has the antemedian line somewhat less straight, the border of the forewing beneath less black, except at its proximal edge. Luzon.

*furvirubens*. **T. furvirubens** sp. n. Also near *erionoma*. Termen of forewing anteriorly and of hindwing more rounded. Abdomen above darkened, the crests reddish. Both wings dark, the forewing with broad white line outside the postmedian posteriorly, the hindwing with a slender white line, both wings (especially the hind) with white terminal maculation; red suffusions between this and the postmedian; proximal red suffusion of forewing ample. The white underside weaker-marked than in *erionoma*, forewing with faint red suffusion. Kinabalu (WATERSTRADT), ♂ in Mus. Tring.

To p. 58, *Dindica*:

*alaopis*. **D. alaopis** Prout. Closely related to *para*, antennal pectinations rather longer. Underside at once distinguished from that of the allies by the reduction of the large cell-spot of the forewing to a slender and ill-developed streak, with no white patch beyond it. Kinabalu; at 5500 feet, 2 ♂♂.

To p. 58, *Hypobapta*:

*diffundens*. **H. diffundens** T. P. Luc. (= *eugrapha* Lower). According to a figure given by GOLDFINCH, who has examined LOWER'S type, this synonymy is certain. The hindtibiae, lost in *diffundens* type, are said to lack the proximal spurs, but the generic agreement with *percomptaria*, in which they are present though not long, is otherwise complete. Only a few specimens are yet known, but the range is wide: Queensland, Victoria, South Australia, West Australia. There is possibly some geographical variation.

*barnardi*. **H. barnardi** Goldfinch. Proximal spurs present, though extremely small; otherwise more recalling *diffundens* than *percomptaria*. Distinguished from both by having the postmedian line of the forewing angled outward at both folds; antemedian oblique outward. Hindwing beneath with the subterminal dark shade less complete than in *percomptaria* and *diffundens*. Toowoomba, Queensland, the type; Hornsby, N. S. W.; Murray Bridge, South Australia.

*xenomorph-a*. **H. xenomorpha** Lower. The unique type, a ♀ from Pinaroo, is said to be in damaged condition, but might apparently be the ♀ to *diffundens* except that the antemedian line runs straight from  $\frac{1}{4}$  costa to middle of hindmargin. Hindtibia with all spurs.

To p. 59, *Cyneoterpna*:

*alpina*. **C. alpina** Goldfinch, founded on 3 ♂♂, 1 ♀ from Mt. Kosciusko, 5000 feet, closely resembles a large *wilsoni*, so closely, indeed, that I incline to suppose it a form thereof. Its author differentiates it by the origin of the 1st subcostal of the forewing considerably before that of the 2nd—5th (which applies also to the type of *wilsoni*), the origin of the 2nd radial on both wings at a point with, or close to, the 1st (this structure closely approached by *wilsoni* type) and the absence of "a large black blotch on the underside of the forewing" which is said to be present in *wilsoni*. Perhaps GOLDFINCH had before him, as *wilsoni*, a *Cyneoterpna* which I cannot compare.

After *Cyneoterpna*:

18 a. Genus: **Paraterpna** *Goldfinch*.

Closely allied to *Cyneoterpna*, from which it differs in the smoother face, absence of frontal crest, presence of rather strong abdominal crests, very short antennal pectinations and wide separation of 1st radial from 2nd on both wings. Only one species is known.

**P. harrisoni** *Goldfinch*, founded on 1 ♂ and 1 ♀ from Barrington Tops, 5000 feet (New South Wales), *harrisoni*. is a larger species, expanding 52 to 60 mm, and is readily distinguished from both the *Cyneoterpna* by the more definite but extremely irregular lines of the forewing; the antemedian is thrice very acutely dentate, the inward teeth being subcostal, median and postmedian, the latter two particularly long, postmedian dentate outward on all the veins and extremely angled inward between the 2nd median and 2nd submedian. Hindwing white, the distal part suffused with grey and with darkened veins.

18 b. Genus: **Austroterpna** *Goldfinch*.

Face smooth. Palpus rather long, terminal joint short, hairy. Antenna in ♂ pectinated, apex simple. Thorax with broad posterior crest. All spurs present. Forewing with 1st subcostal anastomosing with costal and with 2nd subcostal, 2nd radial remote from 1st. Hindwing with costal approximated to cell to about  $\frac{1}{3}$ , thence rather rapidly diverging, 2nd subcostal stalked, 2nd radial remote from 1st. (Abridged from GOLDFINCH.) Distinguished from *Terpna* by double anastomosis of 1st subcostal of forewing, stalking of 2nd subcostal of hindwing and absence of abdominal crests. Two Australian species.

**A. idiographa** *Goldfinch*, the genotype, expands 32 mm and has the forewing brown, densely dark-*idiographa*. strigulated, the lines distinct, black, the antemedian almost straight, very oblique outward, the postmedian sinuous, mostly little more than 3 mm from termen, but forming a very deep bay inward behind 2nd median. Hindwing mostly fuscous beyond the postmedian line, more whitish proximally; cell-mark rather large. Gosford, New South Wales, only the type ♂ known.

**A. paratorna** *Meyr.* Superficially somewhat similar to *Sterictopsis argyraspis* (S a. as *inconsequens*); *paratorna*. indeed Dr. TURNER formerly misidentified it as that species. The strong stalking of the 2nd subcostal of the forewing, shorter pectinations and lack of abdominal crests are the most outstanding structural distinctions. The wings are narrower and more elongate than in *idiographa*. South Australia, only known from MEYRICK'S type and a rather poor ♂ in the South Australian Museum.

To p. 60, *C. (?) xenomorpha*:

This species, which differs from *Crypsiphona* in the presence of all spurs on the hindtibia, has proved to be a *Hypobapta*: see above.

To p. 118, after *Diplodesma*:

78a. Genus: **Ctenothea** *Prout*.

Palpus rather long. Antenna of ♂ pectinate to beyond middle, with moderate branches, a long distal portion merely with minute ciliation. Hindtibia of ♂ long, dilated, with pencil and short terminal process, only the terminal spurs present; ♀ with all spurs. Abdomen with slight crests. Forewing with 1st subcostal free, 2nd stalked to much beyond 5th. Hindwing with 1st radial stalked, 1st median stalked. Facies of the *Hemithea* group but with different ♂ antenna and different subcostal venation. Genotype: *ornata* *Warr.* On account of a rearrangement in the sequence of genera, this and the two following were unfortunately dropped out of my manuscript.

**C. ornata** *Warr.* (= *bella* *Warr.*) (15 g). Easily known by the structural characters and by the elegant *ornata*. bordering of the wings. First described, from both sexes, from Adenara; a ♀ from S. Flores subsequently as *bella*, probably by an oversight, as no mention was then made of *ornata*. Later received from Bali, but not in any large numbers.

78b. Genus: **Cyclothea** *Prout*.

Palpus in both sexes long and slender, particularly in the ♀. Antenna of ♂ strongly dentate-fasciculate. Hindtibia of the ♂ much as in *Hemithea* and *Cyclothea*, in ♀ with terminal spurs only. Abdomen with small crests. Forewing with subcostal venation as in *Hemithea*. Hindwing with the costal shortly approximated to the cell near base, but not anastomosing. Three species, probably all closely related.

*disjuncta*. **C. disjuncta** *Walk.* (15 h), the type of the genus and the best-known species, has the characteristic cell-rings moderate or rather small, the angulation of the hindwing at the 3rd radial acute. Ceylon (loc. typ.), S. India, Malay Peninsula, Hainan, Formosa and Sumatra.

*catathymia*. **C. catathymia** *sp. n.* (15 h). Closely related to *disjuncta*. Vertex and costal margin of forewing orange-buff. Apex of forewing somewhat less produced than in *disjuncta*, angle of hindwing decidedly less produced. Ground-colour a more vivid green; cell-spots larger and surrounded by relatively stronger buff rings. Celebes, a long series from G. Rangkoenau, Paloe, collected by J. P. A. KALIS for the Tring Museum.

*exaereta*. **C. exaereta** *West* (15 h). Rather small and less vividly coloured, the cell-rings considerably reduced. The antennae of the ♂ are lost, but a stump suggests that its teeth are becoming rudimentary pectinations; the 3rd joint of the palpus in this sex is somewhat shorter, but that of the ♀ typical. The abdominal crests appear to have been slight, but perfect material is still needed. Luzon described as a *Comostola*.

### 78c. Genus: **Neromia** *Stgr.*

(See Vol. 4, p. 23; Vol. 16, p. 29.)

Palpus in both sexes short. Antenna in the ♂ ciliated or almost simple. Hindtibia in both sexes with terminal spurs only. A chiefly African genus, into which, however, the following species appears to fit well.

*carnifrons*. **N. carnifrons** *Bldr.* (= *indecretata* *Hmps.*, nec *Walk.*) (Vol. 4, pl. 2 i). Palpus very short. Antenna of ♂ dentate, with fascicles of cilia. Not likely to be mistaken for any other Indian species, though its pattern is extremely simple, consisting only of a single common postmedian white line and on the forewing a yellowish-white costal border. Distributed in India from Travancore to the Northwest; the originals came from Mhow and Sohun. — **rectilinearis** *Leech* (15 h), from Huang-mu-chang, W. China, is perhaps merely an aberration, with an antemedian line indicated on the forewing. A Ningpo example in fresh condition, which I saw in the JOANNIS collection, seemed to agree almost exactly with Indian material.

## 3. Subfamily: **Sterrhinae.**

This subfamily, which is called *Acidaliinae* in our Introduction (p. 3) and in Vol. 4, is well represented in most parts of the Indo-Australian Region, with the exception of New Zealand and a few of the smaller islands of the Pacific, but its genera show much less that is distinctive than those of the Neotropical Region. The *Scopula* (= *Acidalia*, olim) and to some extent the *Sterrho* (= *Ptychopoda*) are for the most part quite nearly related to their Palaearctic representatives, *Sterrho* having developed far less of the ♂ specialisation than in South America (see Vol. 8, p. 72). *Anisodes*, on the other hand, is here extraordinarily interesting on account of the manifold deviations in the ♂ structure. The *Rhodostrophia* group shows some developments peculiar to the region and the beautiful *Ptochophyle* and *Chrysocraspeda* — offshoots of the *Calothysanis* (*Ti-mandra*) stem — are much more prominent here than in Africa.

The subfamily has already been characterized in our other volumes; see especially Vol. 4, pp. 34, 35. It need only be repeated that the most salient features are the smooth face, general absence of crests, frequent modification of the hindlegs, presence of all the 8 veins of the hindwing, the costal anastomosing with the subcostal, though nearly always at a point only, and a characteristic scheme of forewing-venation — costal free, subcostals forming one or two areoles, or occasionally all stalked. Frenulum always present, tongue nearly always; foretibia never with a terminal claw.

### 1. Genus: **Rhodostrophia** *Hbn.*

Antenna of ♂ pectinate, with slender branches, 2 pairs to each joint. Legs slender; hindtibia in ♀ with all spurs, in ♂ generally with one of the proximal pair absent (so in all the Indo-Australian representatives). Forewing with areole double, the dividing wall (base of 2nd subcostal) in some species arising from the cell, in others stalked.

The larvae of the European species are extremely long and slender (see Vol. 4, p. 36) and as the genus is evidently a very natural one this will probably apply throughout.

Chiefly Palaearctic, the Indo-Australian species belonging for the most part to North-West and North India or to China.

A. Section **Rhodostrophia**. Forewing with 2nd subcostal arising from cell.

**Rh. cinerascens** Moore (= *subflavida* Warr.) (Vol. 4, pl. 5 d), founded on a ♂ from Pir Panjal, W. Kashmir, *cinerascens*. is the oldest name in a group which embraces also *adauctata* Stgr. (Vol. 4, pl. 3 d) and *bicolor* Warr., and which evidently belongs to the Palaearctic more than to the properly Indian fauna. WARREN's type of *subflavida* comes also from W. Kashmir (Sonamarg) and the two have been accepted as synonymous, I think correctly. The ♀♀ are smaller and narrower winged than the ♂♂. The type form has the forewing ashy or greyish, but the colour varies to light brown and the strength of the markings is also subject to great variation. — ab. **rufilinea** Prout, *rufilinea*. only known to me in the browner forms, has the postmedian line of the forewing reddish or purplish, sometimes diffused distally. — **borealis** Swinh. (15 b), from Masuri (?), Kulu (type locality) and E. Kashmir, seems to be *borealis*. on an average much more strongly marked, has the forewing brown, commonly with a purplish tinge costally, and the cell-dots distinct, but is variable and perhaps not really tenable as a subspecies. — ab. **rhoda** Prout *rhoda*. has the rosy suffusion much increased, the postmedian line reddened as in ab. *rufilinea*. The type ♂ and a very rosy ♀ were collected at Kokser, together with almost typical *borealis*. A nearly identical, or even brighter-lined aberration occurs in the Gurais Valley as an extreme development of *c. cinerascens* ab. *rufilinea*.

**Rh. bicolor** Warr. (Supp.-Vol. 4, pl. 3 h, the forewing not shown nearly grey enough), differs from the *bicolor*. preceding in its appreciably more rounded wings, more diffuse and nearly always rosy postmedian line, and more denticulate subterminal, placed farther from the postmedian, on the hindwing running obliquely to near the tornus. N. W. India. — ab. **suffusa** Prout has the rosy suffusion extended over the entire forewing. Collected with the type, of which WARREN supposed it to be the ordinary ♀-form. *suffusa*.

**Rh. poliaria** Hmps. (Vol. 4, pl. 7 a). Distinguishable from strongly marked *cinerascens* by the bidentate *poliaria*. antemedian line of the forewing, the sinuous and dentate border of the postmedian band, etc.; both cell-spots very distinct. — ab. **roseata** Prout (15 b) has the markings, the costal margin and the fringe of the forewing *roseata*. above and the entire underside strongly suffused with red. Both forms occur together in the Gurais Valley, Kashmir.

**Rh. plesiochora** Prout (= *pelloniarina* Leech, nec Guen.) (Supp.-Vol. 4, pl. 3 i). Antennal pectinations of *plesiochora*. the ♂ shorter than in *meonaria* (scarcely over twice the diameter of the shaft), wings shorter, particularly in the ♂, postmedian of forewing rather less oblique and more proximal, of hindwing broader. W. China (the type from Pu-tsu-fong, 9820 feet) and Chinese Tibet. Occasionally the 2nd subcostal of the forewing arises from the stalk of the 3rd—5th instead of from the cell, while every transition occurs.

**Rh. yunnanaria** Oberth. (Supp.-Vol. 4, pl. 3 i). It has been found that this is very close to *plesiochora*, *yunnanaria*. perhaps merely an aberration of the same, perhaps a very rare species which occurs amongst it. In either case, it has not been matched in an extensive and somewhat variable series from the same locality (Tse-ku) and others in Chinese Tibet, all of which seem referable to *plesiochora*. Dr. WEHRLI, who has very kindly lent me his material for study, points out that *yunnanaria* type (of which our copy, though not so excellent as CULOT's, gives a very good idea) shows a quite different antemedian, more approaching that of *tristigalis* and that this and some other details suggest that a ♂ which he has recently received from Ningwuan and which certainly presents a different appearance from most *plesiochora* (markings and perhaps termen of forewing slightly more oblique, colour somewhat less bright, the markings grey rather than rosy, cell-dot of forewing rather well developed) may belong to the true *yunnanaria*. In some ways (including the staking of the 2nd subcostal) this Ningwuan form rather approaches *peregrina*. The antemedian line, which would seem to give the best clues, is really very elusive, as it is generally extremely faint or obsolete, scarcely ever traceable to the costa.

**Rh. meonaria** Guen. (= *pelloniarina* Warr. et Hmps., nec Guen.) (Vol. 4, pl. 7 a). Probably GUENÉE's type *meonaria*. came from N. W. India, perhaps Masuri, although he only gives "N. India" as the locality; in any case chiefly known from Kashmir. The records for W. China belong to *plesiochora*. Larger than that, intermediate towards *cinerascens*, which it sometimes rather closely resembles; but its termen is slightly more oblique, even less convex posteriorly, its tone more ochreous brown, the costa of the forewing generally, the fringes always pink, the oblique band (or at least the line) pink, the accompanying line not developed or, if present at all, very close to the principal line on the forewing and not dentate.

**Rh. glaucofusa** Hmps. (Vol. 4, pl. 5 d). A narrow-winged, glossy species, recognizable by its pale glaucous-greyish tone; proximal markings obsolete, postmedian not very firm, parallel with the termen, accompanied distally by a white band. Quetta, only the type ♀ known. *glaucofusa*.

- rhodospania*. **Rh. rhodospania** Prout (Supp.-Vol. 4, pl. 3 i). Proximal spur of hindtibia exceptionally short. Somewhat less narrow-winged than *borealis*, slightly more olive-tinged than *cinerascens*, a rosy colour showing only on the costa of the forewing and on the fringes; both wings with strong cell-dot and postmedian line, that of the forewing sinuous, and a dusky terminal shade. Beluchistan: Khan Mehterzai, 7000 feet, 1 ♂.
- anomala*. **Rh. anomala** Warr. (= *araearia* Hmps.) (15 b) is the type of HAMPSON's genus *Leptosidia*, but is certainly a *Rhodostrophia*; he compared it with our Section B and thus found a venational difference, while the slender build, thin scaling and other slight distinctions further misled him. Easily known by these characters and the zigzag lines. WARREN's originals came from the FELDER collection and no locality was published; they were probably collected at high altitudes in Ladak or the Karakoram Mountains; the type of *araearia* is from Narkundah, other known examples from Gurais Valley and Thundiani (Kashmir) and from Kangra (Punjab).
- inconspicua*. **Rh. inconspicua** Butl. (15 b) has nearly the markings of the non-banded aberrations of *tabidaria* (Vol. 4, pl. 2 k), but is much smaller, much less brightly coloured, the 2 outer lines less approximated, the hindwing somewhat paler and weaker-marked than the forewing. Punjab (the type from Murree), Kashmir and Afghanistan. — ab. **subconspicua** Prout (Supp.-Vol. 4, pl. 3 i) is brighter and more banded, thus still more like a dwarf *tabidaria* or *calabra* ab. *punctaria*.
- B. Section (**Delocharis**). 2nd subcostal of forewing stalked.
- anchotera*. **Rh. anchotera** Prout (Supp.-Vol. 4, pl. 4 a) resembles *acidaria* Stgr. (Vol. 4, pl. 3 d) except in the 3 spurred ♂ hindtibia; cell of forewing a trifle shorter, antemedian less sharply angled near the costa, postmedian with its outer line or shade more diffuse, as also the subterminal, while the termen shows no suffusion; hindwing paler, cell-dot minute, postmedian shade faint, subterminal less sinuous. Szechuan: S. of Muli, 8850 feet; only the type known.
- herbicolens*. **Rh. herbicolens** Butl. (15 b). Recalls the Palaearctic *acidaria* (Vol. 4, pl. 3 d) in miniature, but with a darker and more extended terminal shade on the forewing and with only 3 spurs on the hindtibia. Distributed in N. W. India, the type from Solun.
- muricolor*. **Rh. muricolor** Warr. (15 c). Hindwing and underside nearly as in *herbicolens* or rather more weakly marked, the hindwing with slightly greyer suffusions, the underside with a more ochreous tinge than in most *herbicolens*; forewing above dark-suffused throughout. Simla (loc. typ.), together with *herbicolens*, of which it may possibly be a dimorph; Kumaon, not rare.
- subrufa*. **Rh. subrufa** Warr. (15 c), founded on a single ♂ from Simla, can hardly be an ab. of the preceding, though certainly near. The pectinations are perhaps rather shorter, the hindwing is rounder, the colour different, etc.
- tristrigalis*. **Rh. tristrigalis** Butl. (15 c). Central line double or (through the filling in of the interspace) forming a band, antemedian well developed, curved, subterminal neither dentate nor punctiform. Underside with the ground-colour somewhat brighter, markings somewhat less strong. N. W. India (the type from Dharmsala) and Bhotan.
- peregrina*. **Rh. peregrina** Koll. (= *rara* Butl.) (15 c). Near *tristrigalis*, the antemedian line weaker or obsolescent, especially on the hindwing, the central band not divisible into 2 lines, the subterminal d e n t a t e o r p u n c t i f o r m. Described from Masuri, not altogether rare in N. W. India.
- olivacea*. **Rh. olivacea** Warr. (15 c) is similar to *peregrina* but larger, the forewing more falcate, the subterminal slightly sinuate posteriorly. Both wings beneath in part bright ochraceous, the forewing, however, with an extensive, though not sharply defined pale posterior area, which commences narrowly near the base, but widens so as to reach the median vein about the end of the cell and in the distal part of the wing is bounded anteriorly by the 3rd radial or even extends as far as the 2nd. Described from Sikkim, known also from Burma.
- inaffectata*. **Rh. inaeffectata** sp. n. (15 c). Close to *olivacea*, possibly even a seasonal form of it. Forewing, at least in the ♀, more acuminate still, paler, its colour above not ochreous but very light brown, sometimes (especially in the ♂) with a tinge of fawn-colour, the hindwing above more whitish; antemedian of forewing generally less slight; subterminal dots developed into sharp points or teeth, on the pale patch of the forewing beneath scarcely weakened (in *olivacea* much weakened). Darjiling, the typical series in the Tring Museum (PILCHER), dated March 1889.
- pulverearia*. **Rh. pulverearia** Hmps. (15 d), from Simla, is very like a "miniature edition" of the preceding or still paler, but its shape is quite different (more as a slightly longwinged *peregrina*), the 1st line weak, the subterminal punctiform but not sinuous.

**Rh. haematozona** *Hmps.* (15 d). A rare species, founded on 2 ♂♂ and 1 ♀ from Chumbi Valley (Sikkim), *haematozona*, a pair more recently obtained from Yatung (Sikkim—Tibet). Not quite so falcate-winged as *olivacea*, the subterminal line sinuous but not punctiform, placed somewhat less near the termen, the hindwing above more weakly marked. The type form is further characterized by its red colour between the subterminal line and the termen of the forewing. — ab. **aïdela** *nov.* lacks the terminal band, but the fringes remain rosy. One of the *aïdela*. Chumbi ♂♂ and a second ♂ (Tring Mus., ex coll. ELWES, probably from the same source) belong here.

**Rh. pelloniaria** *Guen.* (= *meonodes* *Prout*, *meonaria* *Hmps.*, nec *Guen.*) (Supp.-Vol. 4, pl. 4 a, as *meo-* *pelloniaria*. nodes). From an examination of GUENÉE'S type, unfortunately not exactly localised, I judge that it is one of the brightest, least *meonaria*-like forms of the north-western race which I named *meonodes* (Supp.-Vol. 4, pl. 4 a), perhaps from Masuri. This race, when pale, can be confusingly similar to *meonaria*, except in the venation; generally smaller, the cell-dots better developed, a subterminal line present, at least beneath. — **khasiana** *Moore* (15 d) is a brighter and unmistakable form, with broad, deep-rosy markings on the forewing *khasiana*, (including streak or suffusion near the base posteriorly) and copiously marked underside. Common in the Khasis, known also from Sikkim.

**Rh. stigmatica** *Bull.* (= *vinacearia* part. *Hmps.*, nec *Moore*) (15 d). Cell-dot of forewing sharply black, *stigmatica*, generally larger than in the allied species; 2nd line slender, sharply defined, without any duplicating line or shade distally, at most with a very faint, scarcely noticeable shade. Subterminal line on both wings sinuous. Underside slightly yellower, sharply marked. N. W. India, the type from Dharmsala; eastward it reaches Kumaon.

**Rh. similata** *Moore* (15 d). Very similar to *stigmatica*, on an average rather smaller, apex of wing slightly *similata*, more acute, generally a little more yellowish or brownish; cell-dots not enlarged, that of hindwing often wanting, central line scarcely ever so sharp as in *stigmatica*, nearly always with a duplicating line or shade distally, terminal line slighter, fringe pale (in *stigmatica* with a more or less dark central line or shade). Described from the Khasis, but known from Sikkim to Burma. Probably *stigmatica* may prove a race of it, for I observe that at Muktesar the September *stigmatica* are typical, white those collected in April—May are smaller and mostly transitional towards *similata*.

**Rh. vinacearia** *Moore* (15 d). The original specimen, a ♂ from "Bengal", which we now figure, has never *vinacearia*, been duplicated and remains somewhat enigmatical (see Vol. 4, p. 43). If *stigmatica* is not (as suggested above) the north-western race of *similata*, it may be that *vinacearia* (1867) and *stigmatica* (1889) belong together as races; in any case *vinacearia* and *similata* seem too dissimilar to be united. The generally larger size, more ochreous ground-colour and weak, reddish lines give it quite a distinctive appearance. Cell-dot of forewing rather stronger than in *similata*, but not enlarged as in *stigmatica*.

**Rh. bisinuata** *Warr.* (= *vinacearia* *Leech*, nec *Moore*, *sinensis* *Prout*) (Supp.-Vol. 4, pl. 4 b) is probably *bisinuata*, not, as I first assumed, a race of either of the preceding but a good species, with more deeply sinuous outer line. The type, erroneously labelled "Japan", was almost certainly from W. China; the distribution is from Teng-yueh-Ting and Chinese Tibet to Chang Yang. — **wilemani** *subsp. nov.* is on an average large, with a more *wilemani*, grey-brown tone and more pronounced grey shade bordering the postmedian distally. Formosa: Rantaizan, 4 ♂♂, 2 ♀♀; Arizan, 1 ♀; type in the British Museum.

**Rh. tremiscens** *Prout* (Supp.-Vol. 4, pl. 4 b) is very similar to *bisinuata* but broader-winged, darker, *tremiscens*, the lines much finer and more tremulous, the median line sinuous. Nanchuen, S. Szechuan.

## 2. Genus: **Tanaotrichia** *Warr.*

(See Vol. 4, p. 44.)

Antenna of the ♂, as in *Rhodostrophia*, with two pairs of pectinations to each joint. Hindleg of the ♂ with a strong hair-pencil from femoro-tibial joint, proximal spurs wanting, one terminal spur strong, the other more or less completely atrophied; ♀ with 4 spurs. Venation and scheme of markings about as in *Rhodostrophia*, 2nd subcostal of forewing arising from the cell. Genitalia (♂) similar in scheme but very distinct; "pseudo-mappa" (bilobed process of 8th sternite) almost terminal and there are in addition two masses of darkened chitin, separate from it; uncus very remarkable, strongly chitinous (in *Rhodostrophia* "fleshy"); inflated, truncate; aedeagus long, narrow, curved (in most of the group shorter and stouter). Only a few Himalayan and West Chinese species or races are yet known.

**T. prasonaria** *Swinh.* (= *prasonarius* *Hmps.*) (15 e). The type of the genus and by far the best-known *prasonaria*, species, recognizable by its warm ground-colour and strongly darkened costal margin. Underside paler, especially

*trilineata*. in the proximal part; the first line wanting, the middle one weakened. Fairly common in the Khasis. — **trilineata** Warr. (15 e). from Sikkim, is much less reddish ochreous. Known also from the N. W. Himalayas.

*curvata*. **T. curvata** Warr. (15 e). Smaller, duller in tone, the lines dull reddish, the subterminal much less sinuous than in *prasonaria*, on the hindwing somewhat nearer the distal margin. Underside with the lines present, fairly distinct. British Bhotan: Buxa. 1 ♂, possibly an aberration or local form of the preceding species.

*orientis*. **T. orientis** Prout (= *trilineata* Leech, nec Warr., *bisinuata* Prout olim, nec Warr.) (Vol. 4. pl. 7 a). Forewing with apex less acute than in *prasonaria*; further distinguishable by the light yellowish brown ground-colour, fuscous irroration, curved antemedian line and development of postmedian and terminal dark shades on the forewing. Founded on a ♂ from Che-tu, W. China, 3360 m.

### 3. Genus: **Discoglypha** Warr.

Differs from the two preceding genera in that the ♂ antenna is not quadripectinate, but quadrifasciculate, the pairs of fascicles either equal in length (the genotype and some others) or consisting of a long and a short fascicle (as in *hampsoni*); hindtibia of the ♂ tufted and with a stout terminal spur, hindtarsus usually with the 1st joint dilated and fringed with hair; forewing with the 2nd subcostal arising from the stalk of the 3rd to 5th. Really much nearer to *Organopoda*, as is shown not only by the external structure but by the wing-markings and by the genitalia; perhaps merely a section thereof, though the palpus there is generally long, here rather short and there are a few other small differences, noted under *Organopoda*. India, purely endemic, indeed apparently confined to the N. E. Himalayas except that one species (*hampsoni*) is known from Ceylon.

*hampsoni*. **D. hampsoni** Swinh. (15 e). Cell-mark of hindwing consisting of 2 white dots, one on 2nd discocellular, the other on 3rd, separated by some dark scaling; the forewing — which, indeed, is monotonously alike in nearly all *Discoglypha* and *Organopoda* — shows nothing particularly distinctive, though the colour may be a little more uniformly reddish brown than usual, the lines not very sharply expressed. Khasis (type) and Ceylon.

*punctimargo*. **D. punctimargo** Hmps. (15 e). Larger, generally less warmly coloured, always with a conspicuous series of terminal white vein-dots, which afford a good recognition-mark for the species. Hindwing with a large and irregular grey cell-mark. Sikkim (type) and the Khasis. Also a smaller, more *hampsoni*-coloured ♂ from Buxa, British Bhotan.

*sanguinata*. **D. sanguinata** Warr. (= *sanguinatus* Hmps.) (15 e), described as an *Organopoda*, but with short palpus, is recognizable by its yellow colour, dull red suffusions and blackish spots, notably the paired dark subterminal spots between the radials, and the large roundish black cell-spots. I know only WARREN's type, a ♂ from the Khasis.

*vario stigma*. **D. vario stigma** Warr. (= *plenorbis* Warr., M. S.) (15 f). Forewing very similar to that of *hampsoni*, a trifle more ochreous and with more noticeable pale (somewhat yellowish) subterminal spots between the veins; cell-spot of hindwing large and round, white with a black rim. Khasis. — ab. **implenorbis** ab. nov. has this spot irregularly filled with blackish, leaving only a few pale-grey (not white) scales.

*inflammata*. **D. inflammata** Warr. (= *inflammatus* Hmps.) (15 f). More blotchy in appearance, parts being suffused with dark grey, while clear broad streaks of the bright reddish ground-colour remain along both folds; similarly clear subterminal spots; black lines intenser, antemedian of forewing straighter. Hindwing: cell-mark large, with a pointed projection outward, white edged with black. Khasis.

*locupletata*. **D. locupletata** Prout (15 f). Closely like *aureifloris* (15 f), but with the more blotchy appearance of *inflammata*; the ♂♂ smaller than the latter. Forewing with the lines in general somewhat thicker than in *aureifloris*, an irregular series of yellow subterminal spots distinct, the one behind the 3rd radial the largest and roundest. Hindwing with the cell-mark very pale golden (in some lights almost silvery), not marked with the ground-colour and yellow as in *aureifloris*. Khasis.

*aureifloris*. **D. aureifloris** Warr. (15 f). Typically the darkest *Discoglypha* and with a large cell-mark on the hindwing, variegated in its centre and, as WARREN says, "resembling a flower with its stalk". Khasis. — ab. (loc.?) *parvifloris*. **parvifloris** Prout is slightly paler and more rufous-tinged, the hindwing with the cell-mark smaller, only extending along (approximately) the middle half of the 2nd—3rd discocellular, narrow, marked with orange-ochreous, the distal projection along the 3rd radial small or almost wanting. Sikkim: Darjiling. I described it as a race, but have since seen a closely similar ♂ from the Khasis.

4. Genus: **Organopoda** *Hmps.*

Characters nearly as indicated under *Discoglypha*. Apart from the elongate palpus (particularly as regards its more or less long, exposed 3rd joint), which holds for all except the intermediate species *brevipalpis* and *atrisparsaria*, it is distinguished chiefly by the much more extreme specialization of the ♂ hindleg (see HAMPSON, Fauna of British India, Moths, Vol. 3, p. 451), the variable point of origin of the 2nd subcostal of the forewing (as in *Rhodostrophia*) and the small, pointed aedoeagus (that of *Discoglypha*, so far as tested, is strong, pistillate and furnished with cornuti). A genus of not many species, but probably of greater antiquity than *Discoglypha*, having a very wide distribution in the Indo-Australian Region. Genotype: *O. carnearia* Walk.

**O. fulvistriga** *Bastelb.* (15 f). ♂ unknown. The unique ♀ is worn and the structure not indicated; perhaps a *Discoglypha* akin to *hampsoni* (15 e) but duller, the median shade more dentate, on the hindwing more distally placed than in most *hampsoni*. WARREN (MS) perceived a "pale spot at each end" of the cell-mark, as in *D. hampsoni* or some *O. olivescens*. Arizan, Formosa. *fulvistriga*.

**O. brevipalpis** *Prout* (16 a). Placed here on account of the ♂ hindtarsus and aedoeagus and the origin of the 2nd subcostal of the forewing from the cell; but transitional in that the palpus is not elongate, its terminal joint scarcely, if at all, longer than in *Discoglypha*. Closely similar to *carnearia* (16 a) but the forewing has the apex slightly more acute and the cell-spot slightly enlarged, nearly always with minute white pupil. Kachin Hills, Upper Burma. *brevipalpis*.

**O. atrisarsaria** *Wehrli* (= *brunnearia* *Oberth.* nec *Leech*) (Supp.-Vol. 4, pl. 4 b) is very near *brevipalpis*, but superficially very distinct in the heavy black median shade, etc. On p. 26 of the volume indicated, I referred it to *Discoglypha*, but it certainly cannot be separated generically from *brevipalpis*, though the point of origin of the 2nd subcostal of the forewing generally differs somewhat, being usually connate with 3rd subcostal; the genitalia are so similar as to suggest that they are races of a single species. I therefore now accept WEHRLI'S original taxonomy. Distributed in China, the type from E. China (perhaps Shanghai, the first locality mentioned). *atrisarsaria*.

**O. annulifera** *Bull.* A true *Organopoda*, with long terminal joint of the palpus. Easily distinguished by its pale-pupilled cell-spot on the forewing, strong black dots on the outer line and sharply black terminal dots. The type ♂ — unfortunately the only specimen yet known from N. W. India (Dharmasala) — is a little smoother-looking (less irrorated) than the following form, the cell-spot of the hindwing scarcely larger than in *brevipalpis*, and most probably represents a separate race. — **signifera** *subsp. nov.* (16 a). Slightly more reddish than the type, the markings (except perhaps the cell-ring of the forewing) coarser, the cell-spot of the hindwing much enlarged. Not rare in the Khasis; type in the Tring Museum. The only Ceylon specimen known to me, a ♂ from Haputale, closely agrees with the Khasi form. *annulifera*.

**O. carnearia** *Walk.* (16 a). Duller and darker (especially in the typical Ceylon race) than *annulifera*, the cell-marks smaller, that of the forewing not pupilled, the other markings weaker, the terminal dots wanting; terminal joint of palpus still longer. — **himalaica** *subsp. nov.* Somewhat brighter (a little more reddish and suffused with grey than *annulifera*), cell-spot of hindwing generally larger, its pupil less pure white; underside with paler hindwing and often a conspicuous pale admixture in distal area of forewing. Khasis (common) and Sikkim (less common), the Khasi holotype in the Tring Museum. A few examples from scattered localities (Hainan, the Riu-Kiu Islands, Formosa, Sumatra, the Mentawi Islands, W. Java, Kinabalu) which seem to belong here suggest greater variability, with the probability of a number of separable races. *carnearia*.

**O. acmaea** *sp. n.* (16 a). Rather smaller than average *carnearia* (length of a forewing 14 mm. or barely); 3rd joint of palpus considerably less long than 2nd (in *carnearia* about equal); 2nd subcostal of forewing arising from cell (in *carnearia* generally well stalked); coloration brighter, more inclining to orange. costal region of forewing shaded with grey, especially in proximal part; cell-spots intenser, that of the forewing a little larger; underside more suffused with reddish. Mountains of Malaya, the type ♂ from Bukit Kutu, Selangor, 3300 feet, a second ♂ from Fraser's Hill, Pahang, 4200 feet; discovered by Mr. H. M. PENDLEBURY. Type in the British Museum. *acmaea*.

**O. subbrunnea** *Warr.* (16 a). Smaller and paler than *carnearia*, the cell-spot of the hindwing reduced, long-oval, with a white dot in its anterior part. We figured a larger, fresher ♂ from Sambawa, but a series since received from W. Celebes shows it to vary in size and tone. Closely like *olivescens*. palpus longer. *subbrunnea*.

**O. acerbata** *sp. n.* (16 a), a ♂ collected on Fraser's Hill with *acmaea* (H. M. PENDLEBURY), but very distinct therefrom, has the 3rd joint of the palpus as long as in *carnearia*, the tone of a rather dull *olivescens* (16 b), the costal region of the forewing not notably suffused with grey; distal areole very small (2nd subcostal

well stalked); cell-spot of hindwing transversely elongate, white, containing some dark-grey scales. Here may also be mentioned, with a view to stimulating research, 3 ♀♀ in the Tring Museum, from separate localities in E. Java, which await their ♂ but may well be forms of *acerbata*. All are larger than the type (forewing 15 to nearly 16 mm) and they agree together in having the 3rd joint of the palpus about as long as the 2nd, the 2nd subcostal of the forewing stalked, their shape pretty normal, etc. Two nearly agree in coloration with *acerbata*, though the costal darkening (compare *acmaea*) is noticeable; one of these (from Djoenggo, Ardjoeno, 4500 feet) has the cell-mark of the hindwing narrower than in *acerbata* ♂. white, with some black scales about the radial fold (compare *olivescens*); the other (Nongkodjadjar, 4000 feet) has it as in *brevipalpis* (15 f). The third ♀ (Singolangoe, Tengger, 5000 feet) is lighter and brighter, without costal darkening, the cell-mark as in the Djoenggo ♀. By the palpus, these four cannot represent races of *olivescens*. An extremely worn ♀ from Trinidad, Baguio, Benguet (A. E. WILEMAN) may also represent *acerbata*, but is not worth describing.

*olivescens*.

**O. olivescens** Warr. (16 b). Typically smaller than *carnearia*, especially in the ♂, terminal joint of palpus much less extreme, particularly in the ♀, the cell-mark of the hindwing normally a black dot, usually accompanied anteriorly by a white dash on the 2nd discocellular, occasionally also with a minute dot posteriorly. Point of origin of 2nd subcostal of forewing variable, probably oftenest from the cell, at least in the ♀♀. Queensland, the type series from Cedar Bay. St. Aignan produces quite similar forms, at least as to the 2 ♀♀ hitherto known; the one ♂ is large, rather bright (more recalling the tone of *carnearia*), the underside rather strongly marked, with particularly prominent cell-dots. From New Guinea also, at low elevation (Kumusi River) come a few specimens which I cannot yet definitely distinguish from *olivescens*. The mountain *Organopoda* of that county are very perplexing and unfortunately for the most part have occurred only in single specimens, often ♀. Two such (Upper Aroa River and Hydrographer Mountains), together with a ♀ from Bomfia, Ceram and a very worn ♂ from Vulcan Island, would certainly have passed for *olivescens* except that the 3rd joint of the palpus is longer (and perhaps longer in the Hydrographer than in the Aroa ♀!), but must await better material.

*subcarnearia*.

— f. (?) **subcarnearia** nov. (15 f) combines the tone of *olivescens* with the markings of *carnearia* and may represent yet another species. Angabunga River, 6000 feet or upwards. 1 ♀ in Mus. Tring. I find a similar ♀-ab. can occur among undoubted *olivescens* (Kuranda, 1 ♀) and that the Javan ♀♀ mentioned under *acerbata* show a similar variability.

*hadra*.

**O. hadra** sp. n. (16 b). ♂, 34 mm, with 2nd subcostal of forewing well stalked, 3rd joint of palpus moderately elongate; ♀, 32 mm, 2nd subcostal from cell well before origin of 3rd, 3rd joint of palpus  $\frac{2}{3}$  length of 2nd joint, or rather more. Appreciably broader-winged than *olivescens*, the hindwing a little more produced to the anal angle, the forewing with termen fairly long but little oblique, both angles well expressed. Otherwise much like overgrown, weak-marked *olivescens*, but with the forewing, in the ♂ also the hindwing, strongly suffused with red beneath. New Ireland, November 1923—January 1924 (A. J. EICHHORN), only one pair obtained,

*rubrior*.

both in the Tring Museum. — **rubrior** form. nov., possibly only an aberration but more probably a race or even — as the terminal joint of the palpus appears somewhat longer — a separate species, has the upperside redder (less strongly suffused with grey); 2nd subcostal of forewing connate with 3rd—5th, but this may probably be individually variable. New Hanover, February—March 1932 (A. S. MEEK), 1 ♀ in the Tring Museum.

*orbiculata*.

**O. orbiculata** Prout (16 b), described as a race of *olivescens*, is larger, the 3rd joint of the palpus relatively somewhat longer (almost as long as the 2nd), the cell-dot of the hindwing surrounded with whitish. Mt. Goliath, Central Dutch New Guinea, 2 ♀♀.

*cnecosticta*.

**O. cnecosticta** Prout (16 b). Palpus with terminal joint long, about equalling 2nd joint. Forewing with 2nd subcostal from the cell in the ♂ type, but stalked in a ♀ which is believed to belong to it. Distinct from all the preceding forms, except possibly *annulifera*, in the white cell-spot of the forewing, from *annulifera* in the structure of the palpus and in the conspicuous buff terminal spots on the veins. Underside fairly well marked. Kinabalu, at 5500 feet altitude.

*orbata*.

**O. orbata** Warr. (15 g). Size of *orbiculata*, much more reddish and much more clouded with black-grey. Distinguished among all the known *Organopoda* by the cell-marks, particularly that of the hindwing. The termen shows, on attentive examination, buff dots at the veins, but they are very small and much less conspicuous than those of *cnecosticta*. The ground-colour is more tinged with vinaceous than in that species and the 3rd joint of the palpus is not as long as the 2nd. The unique type is a ♂ from Biagi, Mambare River,

*perorbata*.

British New Guinea. — **perorbata** Prout, a ♂ from Mondoktoempang, W. Bali, 2500 feet, October 1934, recently sent by Mr. J. P. A. KALIS to the Tring Museum, may be provisionally accorded this status. 2nd subcostal of forewing from the cell (in WARREN'S type connate), apex of hindwing somewhat more rounded; forewing with costa blackish-mixed to beyond  $\frac{1}{3}$ , hindwing with cell-mark slightly larger.

5. Genus: **Metallaxis** Prout.

(See Vol. 16, p. 49.)

Palpus short. Antenna of ♂ ciliate. Hindtibia of ♂ with 2 strong spurs (type) or spurless; of ♀ with all spurs. Forewing with areole double, 2nd subcostal arising from cell, 2nd radial from about the middle of the discocellulars. Hindwing with 2nd subcostal shortly stalked with 1st radial. Type: *semiustus* Swinh. The genus differs more from the two preceding in shape and pattern than in any fundamental characters of structure, but has a very different ♂ hindleg and differs further from *Organopoda* in the short palpus, from *Discoglypha* in the point of origin of the 2nd subcostal of the forewing.

**M. semiustus** Swinh. (16 b). Unique in the distribution of the grey and ochraceous-salmon of the upper- *semiustus*. side; underside more resembling a strongly marked *Discoglypha* underside. Khasis.

**M. semipurpurascens** Hmps. (16 b). Structurally distinct from *semiustus* in that the ♂ hindtibia lacks *semipurpur-* the spurs but bears a strong hair-pencil. The differences in the tone and arrangement of the colours is also *ascens.* considerable, as can be seen from our figures. *semipurpurascens* was founded on a ♂ from Bhotan and has remained very rare in our collections; the typical form has been taken in Sikkim. I have also seen a form (aberration or very likely subspecies) from Kuala Tahan, Malay Peninsula, represented by a larger and more pinkish ♀; in it one proximal spur is strong, the other apparently vestigial.

6. Genus: **Pseuderythrolophus** Prout.

Palpus with 3rd joint short, especially in the ♂. Antenna of the ♂ bipectinate, with very strong branches. Hindtibia of the ♂ strongly thickened and tufted, without spurs; of the ♀ with 3 spurs. Forewing with areole double, 2nd subcostal from cell; hindwing with 2nd subcostal not stalked. Only one species known, unless the Fijian be distinct.

**Ps. bipunctatus** Warr. (16 b) cannot well be mistaken for any other known species. Named from the *bipunctatus*. paired white cell-spots of the hindwing. New Guinea, Ceram and Dampier Island, the original from Milne Bay. — **idmon** Prout, from Fiji, has the apex of the forewing slightly less sharp, the tone more vinaceous, the median *idmon*. shade strong, rather more distally placed, at least on the hindwing; postmedian of forewing rather less proximal at 4th and 5th subcostals, the dot on 1st radial not enlarged; cell-spot of hindwing not distinctly bipupilled. May well prove a separate species.

7. Genus: **Apostegania** Prout.

Palpus rather short. Antenna in both sexes ciliate, in the ♂ fasciculate. Hindtibia of the ♂ with a single (strong) terminal spur, in that of *rectilineata* also with a single proximal spur, the ♀ with a pair of terminal spurs. Forewing with cell short, areole double, 2nd subcostal from cell; hindwing with 2nd subcostal and 1st radial about connate, or very shortly stalked. Genitalia of the *Rhodostrophia* type, but with gnathos undeveloped. Type: *crina* Swinh. Only two species known.

**A. crina** Swinh. (16 c). Quite distinctive in structure and pattern; the latter, evidently brought about *crina* by some unexplained protective need, misled SWINHÖE into describing it as a *Stegania* (= *Lomographa*). Described from the Khasis, but extends to the Shan States and Cochin-China.

**A. rectilineata** Swinh. (16 c) differs from *crina*, apart from its larger size, more ochreous ground-colour *rectilineata*. and obsolescence of terminal line, in that the ♂ hindleg has a femoro-tibial hair-pencil and a dense tuft on the 1st tarsal joint, the ♀ hindtibia 3 spurs. Sumatra (loc. typ.) and Borneo. — **prosthesis** *subsp. nov.* is somewhat *prosthesis*. less warmly coloured and the hindwing above and beneath has a well developed proximal line, placed nearly as the very fine line which is present in *crina*. W. Bali: Mondoktoempang, 2500 feet (J. P. A. KALIS). 2 ♀♀ in the Tring Museum.

8. Genus: **Dithecodes** Warr.

(See Vol. 4, p. 46; Vol. 8, p. 72; Vol. 16, p. 49.)

A genus of relatively few species (less than 20 have yet been described) but scattered in all the principal faunal regions, excepting only the Holarctic, sens. str. Antenna of ♂ with fascicles of cilia. Hindtibia in both sexes with terminal spurs only (in the ♂ occasionally with only one spur). Forewing with areole double, the point of origin of the 2nd subcostal variable. Hindwing rounded or (very frequently) bluntly angled at the 3rd radial, 2nd subcostal not or only slightly stalked. The few Indo-Australian *Dithecodes* belong chiefly to India and Malaysia; the two New Guinea ones are in some respects outliers.

- pseudacidalia*. **D. pseudacidalia** *Sterneck* (see Supp.-Vol. 4, p. 26, pl. 4 b). Distinguishable by its whitish ground-colour and remarkably *Scopula*-like facies. The ♀ is still unknown and may perhaps have 4 hindtibial spurs, in which case a transference to *Somatina* will be necessary; but the very strong reddish hair-pencil of the ♂ hindtibia accords well with some *Dithecodes*. Hindwing very bluntly (scarcely noticeably) bent at the end of the 3rd radial. W. China: Tatsien-lu, etc.
- idaea*. **D. idaea** *Swinh.* (16 c) differs in its green upperside, the cell-mark of the forewing black, punctiform, of the hindwing white, angular. Face and palpus deep red. Both wings beneath with some rosy suffusion proximally. N. India, commonest in the Khasis, from which it was first described; also recorded from Pahang, Sumatra and Lombok.
- specialis*. **D. specialis** *Prout* (16 d). Near *idaea*, the antennal fascicles longer, hair-tufts on the ♂ hindleg denser, in part reddened; forewing with apex slightly more produced, distal areole generally very small, cell-dot slightly enlarged. Hindwing with a black dot on the white cell-mark; beneath with coarse rust-reddish specialized scaling, covering the greater part of the wing. E. Java, recently discovered on Tengger and Ardjoeno.
- inornata*. **D. inornata** *Warr.* (16 c) differs from the two preceding in its brown ground-colour, broad (or double) median shade, etc. Underside slightly paler than upper, in the ♂ in part with coarse cinnamon scaling, the forewing to beyond middle, the hindwing in costal region. Hindtibia of ♂ with only 1 spur and strong hair-tufts. W. Java. — **aniara** *Prout* is somewhat smaller and darker, the irroration more reddish, the band outside the cell less broad, nearly always resolvable into 2 approximated lines, or a line and a narrow shade. Specialized scaling of the ♂ beneath perhaps stronger. Tengger and Ardjoeno, in abundance.
- phaenomeris*. **D. phaenomeris** *Prout* (16 c). This and its nearest relative (*inconspicua*) are decidedly smaller than the Indo-Malayan *Dithecodes* and of a greyish rather than green or brown colour. In *phaenomeris* the areole is double (i. e., normal for the genus), with the 2nd subcostal arising from the cell; face brick-red to maroon-purple; hindleg in the ♂ glabrous; postmedian line of forewing straightish, of hindwing curved or bent in the middle; cell-dot of hindwing small. British New Guinea, the type series from Biagi.
- inconspicua*. **D. inconspicua** *Warr.* (16 c). Distal areole minute, oftener wanting. Hind femur of ♂ strongly hairy, the tibia with strong hair-pencil, the inner spur more or less strongly atrophied. More drab-grey (less fawn) than *phaenomeris*, apex of forewing slightly less pointed, fringe more whitened; postmedian line of both wings dentate; cell-dot of hindwing large; underside less reddish than in *phaenomeris*, less sharply marked; face black or blackish. British New Guinea, perhaps at lower altitudes than *phaenomeris*, the type from Milne Bay. Two specimens from Dutch New Guinea (Fak-Fak and the Snow Mountains) have the distal areole better developed and perhaps represent a race or races.
- monotheca*. **D. monotheca** *sp. n.* (15 g). In size, shape, colour and markings very similar to *Symmacra solidaria* *Guen.* (16 d), though the green colour is less deep and bluish, more olivaceous than in fresh *solidaria*. Easily distinguished by the simple, 2-spurred ♂ hindtibia and by the venation of the forewing; the areole, though always undivided (exceptional in this genus), is larger than in *S. solidaria*, with the 1st and the 5th subcostal arising just before its apex, or occasionally the one or the other connate with the 2nd—4th, which are long-stalked together. Forewing with the postmedian more, its distal pale edging less, developed than in *solidaria*; a dark terminal line, with whitish vein-dots; fringe fleshy grey. Hindwing with similar distinctions. Underside, at least of forewing, slightly suffused with vinaceous or vinaceous-grey, the postmedian line developed on both wings. Paloe. W. Celebes: Gunong Tompoe, 2700 feet, the type series; also a few from Lindoe, 3700, Koelawi, 3100 and G. Rangkoenau, 1800 feet; all collected for the Tring Museum by Mr. J. P. A. KALIS.

### 9. Genus: **Symmacra** *Warr.*

Most characters as in *Dithecodes*, of which it may be regarded as a more specialized development. Differs in the loss of the proximal spurs of the ♀ hindtibia and in the subcostal venation of the forewing. Areole simple, simple, the 5th subcostal separating from the others at or just before its apex, the other 4 very long-stalked from its apex, as in *Cosymbia*. Erected for *regularis* and obviously accommodating also *solidaria* and its attendant forms, which scarcely differ structurally from the genotype except in their more robust ♂ hindleg. Exclusively Indo-Australian.

- genuflexus*. **S. genuflexus** *Hmps.* (16 c). Generic position doubtful, but if the (unknown) ♀ is 2-spurred, probably best referred here; ♂ hindtibia tufted, 2-spurred, tarsus simple. A minute distal areole sometimes retained, 1st subcostal stalked with 2nd—4th, but not for long. Aspect of an undersized *Tanaotrichia*. Only the type (believed to come from Sikkim) and a closely similar ♀ from the Khasis, December 1896, are yet known to me.
- regularis*. **S. regularis** *Warr.* (16 c). In aspect somewhat like a small, dull-coloured *Discoglypha*, the cell-mark of

the hindwing narrow, white, weakly dark-edged. Underside, especially of the hindwing, paler, the markings of the outer half reproduced. Only known from the Khasis.

**S. inobtrusa** Warr. Very similar to *regularis* (16 c), possibly a race. The unique type, a ♂, is in poor *inobtrusa*. condition, but seems to be of a less reddish brown, the cell-dot of the forewing rather large, the teeth of the postmedian rather weaker. S. Celebes.

**S. solidaria** Guen. (= *quadraequata* Walk., *thalassica* Moore, *rufifrontaria* Hmps.) (16 d). Hindtibia *solidaria*. of the ♂ with only one spur. Colour of *D. idaea* Swinh., or a slightly greyer green, hindwing not at all bent at 3rd radial, cell-dot of forewing not sharply black, lines differently placed. The typical Indo-Malayan form is small, but the two following races attain fully to the size of *idaea*. *solidaria* and *thalassica* were described from Ceylon, *rufifrontaria* from Calicut, *quadraequata* from Sarawak, but I cannot separate the latter from the Indian forms, which extend, with little modification, to Malaya, Java and through the Lesser Sunda Islands to Timor, perhaps even Queensland. — **sinensis** Prout (see Supp.-Vol. 4, pl. 4 b), from W. China, is larger and *sinensis*. still more indistinctly marked. — **ochrea** Warr. (16 d). It is to be regretted that this inappropriate name, founded *ochrea*. on a discoloured ♂ from Woodlark I., is the only one available for the large forms which represent *solidaria* in the Papuan Subregion and which cannot be merged in *sinensis*. They are in general more strongly dark-marked than the name-type and have the costal margins beneath perhaps more brightly cinnamon, a considerable part of the forewing beneath with rosy suffusion. Hindwing of ♂ beneath with rougher scaling in the submedian area, particularly about the fold. I include provisionally under this name the forms from New Guinea, the D'Entrecasteaux, Louisiade and Bismarck Islands, perhaps even Buru and even (?) the Philippines. — **validaria** Walk. To judge from abundant material from W. and S. Celebes, this seems to be a distinct *validaria*. guishable race, differing from type *solidaria* in its better developed, undulate whitish subterminal. Coast up to at least 1800 feet. — f. **hyporrhoda** nov. From Paloe at 3100—3700 feet comes an interesting modification of *hyporrhoda*. *validaria*, with an expanse at least equal to that of large *ochrea*, beneath with the forewing (except the hindmargin) entirely suffused with rose, the hindwing with apex and termen more suffused therewith than in *ochrea*. At 2700—3100 feet this form occurs with more typical *validaria*. — **baptata** Warr. (16 d), from Samoa, is glistening *baptata*. whitish, with the cell-mark of the hindwing purer white, more elongate than that of *solidaria*. It may perhaps have attained to the status of a species, but certainly represents *solidaria*.

#### 10. Genus: **Pylargosceles** Prout.

(See Supp.-Vol. 4, p. 27.)

Antenna of ♂ slenderly bipectinate, the pectinations surmounted with long branching cilia. Hindtibia in ♂ with 2 spurs, in ♀ with 4. Forewing with areole simple, moderately large, the subcostals normal. Hindwing with 2nd subcostal shortly or very shortly stalked. Genitalia characteristic, but showing definite affinities with *Symmactra*, *Metallaxis* and others; the uncus is peculiar, 4-lobed, the gnathos long, sword-shaped; valves very short. Apparently only one species. Differs from *Metallaxis* in the simple areole.

**P. steganioides** Bull. (Vol. 4, pl. 4 m), described from Japan, is predominantly a Palaearctic species and *steganioides*. has been dealt with in the volumes devoted to that fauna. It is known from N. China and I have seen it from Ningpo and one specimen (rather poor) from W. China (Omei-shan). — **limbaria** Wileman (16 d) is smaller *limbaria*. and with a stronger median band on the hindwing and more definite terminal shade, but occasionally produces forms which very closely approach *S. steganioides*; the genitalia show nothing distinctive. Formosa. — ab. **unicolor**. *unicolor*. **color** Prout, with the median shade obsolescent and the colour-contrasts altogether weak, has occurred in *limbaria* as well as in *steganioides* (see Vol. 4, p. 55).

#### 11. Genus: **Erythrolophus** Swinh.

Palpus more or less elongate, the terminal joint in the ♂ longish, in the ♀ long. Antenna in the ♂ bipectinate, with long branches. Hindtibia of the ♂ tufted, with terminal spurs almost concealed in a strong brush of hair; of the ♀ with 4 spurs. Forewing with areole double, 2nd subcostal arising from stalk of 3rd—5th. Distinguished chiefly from *Organopoda* by the ♂ antenna and hindleg. There is only one species.

**E. fascicorpus** Swinh. (16 d). Recognizable by the structural characters, the ocellated cell-spot of the *fascicorpus*. hindwing, etc. The general resemblance is perhaps more to some Neotropical *Semaepopus* than to any Indian species with which it can be compared. Besides the type locality (Khasis) it is known from Tonkin, the Malay Peninsula and Java.

#### 12. Genus: **Synegiodes** Swinh.

(See Supp.-Vol. 4, p. 27.)

Antenna of ♂ strongly bipectinate. Hindleg in both sexes simple, with all the spurs developed. Forewing with apex acute, termen slightly or moderately bent at the 3rd radial, areole double or simple. Hindwing

more bent or angled at 3rd radial than forewing, sometimes more or less crenulate throughout; 2nd subcostal connate or stalked; 1st median separate, connate or shortly stalked. Type: *sanguinaria* Moore. The genus consists of 6 species, mainly Himalayan, and its more specialized members (with areole simple) are kept apart from *Calothysanis* and *Ptochophyle* more by their wing-shape, pattern, etc. than by important structural characters.

A. Section. Areole of forewing double.

*hyriaria*. **S. hyriaria** Walk. (16 d). Orange-yellow, with the cloudings outside the postmedian slighter than in the similarly coloured forms, the cell-spot of forewing small, punctiform. Also distinct in structure from *obliquifascia* in that the 2nd subcostal of the forewing arises from the stalk of the 3rd—5th; 1st median of hindwing separate or connate. N. India and Burma; also (possibly a separable race) in Yunnan.

*obliquifascia*. **S. obliquifascia** Prout (16 e). Forewing with 2nd subcostal arising from the cell; hindwing with 1st median connate or stalked. Somewhat narrower-winged than *hyriaria*, the lines of the forewing correspondingly more oblique. Fairly common in the Khasis, rare at Darjiling.

B. Section. Areole of forewing simple.

*diffusifascia*. **S. diffusifascia** Swinh. (16 e) can be so similar in aspect to *obliquifascia* that the two were long confused as a single species. The easiest distinction, apart from the venation, is that the median shade is continuous across both wings, whereas in *obliquifascia* its greater obliqueness makes it terminate more proximally. Its colour is on an average less warm and the postmedian of the hindwing is not definitely separate from the distal shade beyond it. Sikkim to Pahang and Tonkin, the type from the Khasis.

*sanguinaria*. **S. sanguinaria** Moore (16 e). Paler yellow, with a stronger vinaceous tinge in the distal blotches; these are ample and well separated by the ground-colour between the 3rd radial and 1st median. Common about Darjiling and occurring again in the Nagas, but I do not think recorded from the Khasis.

*histrionaria*. **S. histrionaria** Swinh. (16 e). Variable, sometimes very similar to *sanguinaria*. Generally somewhat more warmly coloured; cell-spot of forewing smaller, that of the hindwing, on the other hand, more conspicuously white-pupilled, generally set on a more definite median shade; subterminal spots often more confluent, or at least connected by a sinuous proximal line or narrow shade, their tone oftener purple-grey than vinaceous. In the venation there is no constant difference, but the first median of the hindwing is oftener stalked in *sanguinaria*, merely connate in *histrionaria*. Distribution as in *hyriaria*. — **ornata** Bastelb. (= *lentiginosaria* Wileman) (15 g) is of a considerably deeper colour (nearly as in *obliquifascia*), the proximal part of the forewing much suffused, the cloudings of the distal area on the whole less sharp. Formosa.

*brunnearia*. **S. brunnearia** Leech (Vol. 4. pl. 5 f). As was pointed out in the Supplement to Vol. 4 (p. 27), this seems to be best treated as a somewhat aberrant *Synegiodes*, with less bright colour and simpler markings. The shape is not at all extreme: the areole is considerably smaller, with all the subcostals well stalked from its apex, and it is just possible that my earlier placing in *Anisephyra* was preferable; probably it may require a separate genus. The variable veins of the hindwing (2nd subcostal and 1st median) here both arise at about the end of the cell. W. China.

### 13. Genus: *Anisephyra* Warr.

Face in the type species sloping, protuberant below, in *ocularia* more normal. Palpus and tongue in the type species stout. Antenna of the ♂ strongly bipectinate. Hindtibia in both sexes with all the spurs. Forewing with termen smooth; cell  $\frac{1}{2}$  the wing-length, thus longer than in *Synegiodes*; areole simple, of moderate size, all the subcostals generally stalked beyond it, 1st median widely separate at its origin from 3rd radial. Hindwing with termen rounded (type) or very feebly bent in the middle; cell  $\frac{1}{2}$  or nearly; 2nd subcostal about connate or quite shortly stalked; 1st median nearly as on forewing. Founded on the little-known *rufaria* Warr., to which was added the common *ocularia* F.; the latter, at least, has very much in common with the African *Palaeaspilates* (Vol. 16, p. 49).

*rufaria*. **A. rufaria** Warr. (16 e). A rather small species, narrower-winged than the following, the light-brown ground-colour with a more or less strong fleshy or rufous suffusion; irroration coarse, the lines of the hindwing macularly thickened in places. Ajmere, Rajputana, type and allotype; also known from Jubbulpore and Deesa.

*ocularia*. **A. ocularia** F. (= *albannularia* Walk., *invexata* Walk., *monochromata* Walk.) (16 f). Variable, but not liable to be mistaken for any other species which is yet known. The type form, described from India, was yellow, with the band-like postmedian shade apparently obsolete (perhaps, however, not a very fresh specimen). *maculifascia*. The name-typical race is distributed from Ceylon and India to Hainan and Formosa. — ab. **maculifascia** Hmps. lacks the white pupils of the cell-spots and has the punctiform ante- and postmedian lines strengthened. The

type came from the Nilgiris. — ab. **quieta** *Swinh.* (16 e) is a fairly common form, with the broad, dusky post-*quieta.* median shade strongly developed. Bombay, Poona, etc. — ab. **brunnescens** *nov.* has the yellow ground-colour *brunnescens.* changed to brownish, nearly always with a fleshy tinge. Occasional in several localities (S. India, Shan States and perhaps especially Formosa), the type ♂ from Tainan, Formosa. — **aurata** *Warr.*, founded on a single ♂ *aurata.* from Kalao, is very likely a mere aberration of the following, but may well represent a separate local race, of a deeper “gilded yellow” and showing only, on the upperside, the cell-rings (larger on the hindwing) and traces of punctiform outer line (distal extremity of postmedian band, here nearer the termen the usual). The under-side (as often in the well-marked Indian forms) shows definite outer blotches (radial and posterior). — **incorrupta** *Warr.*, provisionally regarded as a race, has the upperside “entirely devoid of darker atoms or suffusion, the ocelloid cell-spots distinct”, the forewing with traces of a dark postmedian line, which on the hindwing is marked with dark dots on the veins. Founded on a long series from Dili, Timor, “all exactly alike”. I have hitherto employed the name for all the variable forms which are spread over the Lesser Sunda Islands to Java, but it is only those from Sumba which seem at all constantly similar to the Dili series, those of some other islands including occasional throw-backs towards the Indian forms. Even at Dili (pace WARREN) a few banded aberrations occur.

#### 14. Genus: **Calothysanis** *Hbn.*

(See Supp.-Vol. 4, p. 27.)

Antenna of ♂ strongly bipectinate. Hindleg simple, in both sexes with all spurs. Forewing with apex acute, often produced, areole simple. Hindwing with the angles pronounced, a tooth or short tail at the 3rd radial; 1st median not stalked. On the early stages (of the genotype) see Vol. 4, p. 47. Range: Holarctic Region. India to Formosa, Malaysia.

**C. comptaria** *Walk.* (Supp.-Vol. 4, pl. 4 c). Formerly supposed to be a small Eastern form of the well-*comptaria.* known *amata* *L.* of Europe, this was proved to be quite distinct in the ♂ genitalia (see Supp.-Vol. 4, p. 27, 28). Generally duller-looking than *amata*, the irroration being stronger, the termen without rosy suffusion. Distributed in China, from Shanghai to Szechuan, besides occurring in the Ussuri district, Japan and I think Formosa.

**C. responsaria** *Moore* (= *strigulata* *Warr.*) (16 f). Genitalia so similar to those of *comptaria* that one *responsaria.* is inclined to view it as the N. Indian representative there of. Very distinct, however, in the cinnamon ground-colour, above and beneath, which, indeed, distinguishes *responsaria* from all the other *Calothysanis*; the oblique shade generally thicker than in most of the forms. Both the types were from the Khasis; the species occurs also in Bhotan and Tonkin. — **aganopsis** *Prout*, from S. India (the type from Malabar) is less warmly coloured, *aganopsis.* pinkish buff rather than cinnamon, the oblique line pink, little darkened, the outer line inclined to break up into vein-dots, at least anteriorly.

**C. convectaria** *Walk.* (16 f). Somewhat sharper winged than *comptaria*, the ground-colour more ochreous, *convectaria.* the costal margin of the forewing strongly darkened except towards apex. Silhet (type) and distributed from Sikkin to Szechuan, Tonkin and through Hainan and S. China to S. Japan, the Riukiu Islands and Formosa. — **baguionis** *subsp. nov.* has a more fleshy tinge, the celldot of the forewing minute; the holotype and allotype *baguionis.* (especially the latter) rather small, the darkening of the costal edge perhaps less pronounced. Baguio, Benguet, Luzon, at 4000—5000 feet (A. E. WILEMAN), the typical pair from Trinidad, Baguio, at 4000 feet.

**C. nelsoni** *Prout* (16 f). Superficially extremely similar to *convectaria*, sometimes scarcely distinguishable. *nelsoni.* On an average larger, of a deeper yellowish (without the fleshy tinge which generally appears in the brightest *convectaria*); oblique line perhaps less perfectly straight; underside, especially of forewing, rather heavily irrorated and suffused. Antennal pectinations perhaps slightly longer and more numerous. Genitalia remarkably different, as it is one of the few *Calothysanis* which have a well-developed bifid uncus; costa as long as valve, sacculus fused, etc. S. India and Ceylon, type from Madura district.

**C. oligoscia** *Prout* (Supp.-Vol. 4, pl. 4 d) also belongs to the group with bifid uncus. Superficially it *oligoscia.* is perhaps best distinguished from *comptaria* by the somewhat smoother appearance of the wings, brought about by their less strong irroration, the slenderness of the oblique line and a slight proximal darkening of the costa (much less developed than in *convectaria*); costa, moreover, slightly more curved distally, angle of hindwing intermediate in strength between those of the two compared species; antemedian line obsolete. W. China to Upper Burma. — ab. **pompalis** *Prout* (Supp.-Vol. 4, pl. 4 c), a remarkable ♂ from Tse-ku, is much more irrorated *pompalis.* and heavily marked, the antemedian line developed, but appears to agree in the genitalia with the type.

**C. correspondens** *Hmps.* (16 f). Easily distinguished by the much straighter postmedian line, especially *correspon-* of the hindwing; cell-dot of forewing generally strong. N. W. India to Tonkin, the type from Dharmasala. *dens.*

**C. commixta** *Warr.* (16 g) seems to be nearly related to *nelsoni*, but differs in its less yellow colour, its *commixta.* rosy fringes and rosy outer shade to the oblique line; hindwing, as in *punctinervis* (though on an average not

*lombokensis*. quite so strongly). with a black cell-dot. Java. — **lombokensis** *subsp. nov.* More irrorated, cell-dot of forewing more normal; altogether nearer in aspect to small *nelsoni*, but retaining the cell-dot of the hindwing. Lombok. —

*punctinervis*. **C. punctinervis** Prout (16 f) is not liable to be confused with the other Javan *Calothyranis* (*commixta*); shape quite different; duller in colour, the oblique line accompanied distally by a dusky shade, the postmedian, on the forewing, by some characteristic vein-dots from 2nd radial to apex. W. Java (type) and S. W. Sumatra, perhaps also in the Malay Peninsula (a separate race?). — **piperata** Prout, recently received in numbers from E. Java, is more densely irrorated, the cell-dots often enlarged, the postmedian line of the hindwing less bent. — **rigida** Prout. Postmedian of hindwing still straighter, ground-colour warmer, oblique line in all the known examples thick. E. Bali: Batoeriti, 3500 feet, 3 ♂♂, 1 ♀ in the Tring Museum. — **fastosa** *subsp. nov.* Another heavily irrorated form, almost certainly belonging to this species. Rather large, relatively broader-winged, apex of forewing perhaps slightly more produced; hindwing with cell-spot weak, bend of postmedian somewhat stronger than in *p. punctinervis*; the characteristic subterminal dots present, but the line which connects them undeveloped at the radials, very slender and browner anteriorly. Kinabalu (WATERSTRADT), 1 ♂, in the British Museum.

*obsoleta*. **C. obsoleta** Warr. (16 g) differs from all the other species of similar shape in the extreme weakness of the markings. The ♂ genitalia are strikingly similar to those of *dichela*, but the lateral plate of the uncus is not definitely two-pronged and the aedoeagus lacks the strong cornutus of *dichela*. Only known from the Khasis, where it is fairly common.

*pusilla*. *C. dichela* Prout (Supp.-Vol. 4, p. 29, pl. 4 d) **pusilla** Prout (16 g). This form (described from Corea as probably a local form of the 2nd generation), or something so similar that I do not yet care to separate it under a new name, occurs in a still smaller form also in Assam, as the only known Indo-Australian representative of *dichela*. It lacks the ochreous tinge of typical *pusilla*, has the oblique line fairly strong, but scarcely at all darkened or thickened at the apex, and at times shows a less angled postmedian on the hindwing. Tezapore. Nagas and (1 ♀) Hainan (Youboi). Very like a dwarfed *amata recompta* Prout or *comptaria* Walk., termen very rarely pinkish.

*synthaca*. **C. synthaca** *sp. n.* (16 g). Very near *apicirosea* Prout and *dichela* Prout (see Supp.-Vol. 4, p. 28, 29), but apparently distinct from both, the uncus more resembling that of *apicirosea*, the valve that of *dichela*, the sacculus arm (fibula) very long, strongly upcurved at its free, pointed extremity. Superficially quite like a larger *apicirosea* gen. 2. *inturbida* Prout, with the bend of the postmedian line of the hindwing weaker than the average; terminal line weak, especially on the hindwing. Kagi district, Central Formosa, a ♂ in the Tring Museum.

*ruptilinea*. **C. ruptilinea** Warr. (= *flavisponsaria* Hmps.) (16 g). Very distinct in its brighter colour, more interrupted markings, bandlike shade of the oblique line, etc. Cell-dot of forewing generally large, apical dash with strong black dots. Not common, but known not only in the Khasis (WARREN'S type locality) but also in Burma. Selangor, the Nilgiris and Hainan. The Malayan and Hainan may possibly represent a race perhaps rather smaller and more weakly marked, cell-dot of forewing less large.

*extremaria*. **C. extremaria** Walk. (= *sordidaria* Walk.) (Vol. 4, pl. 5 f). A rather large species, recognizable at once by the arched costa (definitely more so than in *oligoscia*), the punctiform postmedian line, etc. The genitalia show the bifid uncus which may warrant the re-grouping which I proposed in Supp.-Vol. 4, p. 27 and 29. Widely distributed in China, occurring also on Formosa. — **xenophyes** Prout (Supp.-Vol. 4, pl. 4 c). a single ♂ from Nanning, Central China, seems to belong here according to the genitalia, and fairly closely by shape, but lacks the oblique line and has a much better developed postmedian and (both above and beneath) a strong apical clouding.

### 15. Genus: **Ptochophyle** Warr.

(See Vol. 4, p. 47; Vol. 16, p. 50.)

Palpus shortish or quite moderate, with terminal joint distinct but never long. Antenna in the ♂, and occasionally in the ♀, bipectinate with long branches; in both sexes (though more noticeably in the ♀) generally with the proximal part thickened and bearing rough projecting scales. Hindleg as in the preceding genera. Forewing with termen smooth or bent about 3rd radial — 1st median; areole simple, 1st subcostal generally from or from before its apex. Hindwing somewhat variable in shape; 2nd subcostal shortly stalked; 1st median just separate, connate or stalked. A considerable genus of small, often gaily coloured species, belonging to the Indo-Australian and African faunal regions. Apparently closely connected with *Synegiodes* through *permutans* Hmps., while the genitalia (at least in the type species, *togata* F.) show a remarkable resemblance to those of *Calothyranis*.

A. Section. Antenna of ♀ not pectinate.

**Pt. marginata** Warr. (16 g). Hindwing almost regularly rounded. Very distinct in the unusual shape *marginata*. of the grey distal border of the forewing. Only known from the Khasis.

**Pt. pulverulenta** Warr. (16 h). A very obscure and little-known species, founded on a ♀ from Perak, *pulverulenta*. to which has been added a closely similar one in better condition (here figured) from Kuching, Sarawak. Not quite so small as *inornata*, the costa of the forewing relatively somewhat more elongate; perhaps merely a race thereof. Colour and (so far as discernible) the markings similar. Underside unmarked.

**Pt. inornata** Warr. (16 h) has much of the aspect of a rather round-winged *Sterrha*, but the marginal *inornata*. dots (which are moderately large) are placed on the wings, not on the fringes, and are interneural, while very minute dots are also discernible on the vein-ends, pointing to the *Anisodes* relationship. Underside paler, with the slightly elongate cell-marks reproduced and with the broad, pale subterminal accompanied proximally by an ill-defined, twice outbent darkish shade. Founded on 3 ♂♂ from the Tenimber Islands, which are a little darker and more uniform-looking than the other forms, unless perhaps the sole specimen known from the Kei Islands. — **sordida** Warr., from the Louisiades (type from Rossel), is perhaps synonymous, but looks a little *sordida*. lighter and more ochreous-tinged, the postmedian dots a little more connected by a line and separated from the median shade by an appreciably lighter band. Here, too, may belong a ♀ from Ron I. and a ♂ from Rook I. Unfortunately I have not seen any quite fresh example. — **stolida** (Warr., MS.) Prout (16 h) is closely like *stolida*. *sordida*, perhaps not separable, but has the characteristic pattern of the underside more sharply expressed on the forewing, the hindwing beneath rather white, the subterminal here, and sometimes on the forewing beneath, inclined to extend to the termen. Bougainville (type series) and Guadalcanar, presumably also on some of the intermediate islands.

**Pt. exitela** Prout (16 h). Distinguished by the broad pale wings, the cell-dot of the forewing rather *exitela*. large, black, that of the hindwing white, slightly elongate; hindwing with termen subcrenulate; underside with the subterminal enclosed between flesh-pinkish shades, the proximal one interrupted or macular. Celebes: Dongala, S. of Palos Bay.

**Pt. prouti** B.-Bak. (16 h). Smaller, yellower, the distal margin of the forewing somewhat more gibbous, *prouti*. Variable in the amount of purple grey clouding; in the more typical forms this is only conspicuous in the vicinity of the anal angle of the hindwing. — In ab. **griseofusa** nov. the clouding covers almost the entire surface of both *griseofusa*. wings as far as the subterminal and, by way of compensation, the terminal area remains almost as clean yellow as the subterminal. *prouti* is known from British New Guinea (the type from Dinawa) and Mt. Goliath.

**Pt. albidisca** Warr. (16 h). Rather larger than *exitela*, forewing longer costally, hindwing somewhat *albidisca*. more crenulate. Much more clouded with greyish fawn, sometimes with some blackish maculation towards the tornus of each wing; a pale (buff or yellowish) band between the median and postmedian of forewing; cell-spot of forewing large, greyish, indefinite, that of hindwing white. British New Guinea (the type from Biagi) and the Snow Mountains.

**Pt. strigata** Warr. (16 h). More ochreous than *exitela*, the diffuse greyish markings much stronger, *strigata*. particularly in the type, which is unfortunately the only ♀ yet known. The ♂♂, of which we figure one from Kulambangra, vary very little. The underside is considerably more strongly marked than that of *exitela*; the shade or band which accompanies the subterminal proximally is uninterrupted, the terminal shade slightly interrupted. Solomons, distributed, the type from Guadalcanar.

**Pt. tristicula** Swinh. (16 h). A small and inconspicuous species. The almost straight median shade, *tristicula*. particularly on the hindwing, where it touches the white cell-dot, is distinctive, as also, in strongly marked specimens, the character of the grey clouding of the tornal region, that of the forewing enclosing a pale spot in the submedian area; this is present also in weakly marked specimens, though less conspicuous. Hindwing not angled at 3rd radial. Described from Bombay; distributed in Ceylon, India, Burma, Luzon, Sambawa, to which range additions will certainly be made.

**Pt. volutaria** Swinh. (16 h). Very similar to *tristicula* except in shape; forewing with termen sinuous, *volutaria*. the apex acute, the midtermen gibbous; hindwing angled at 3rd radial. Also described from Bombay and known from Ceylon and several stations in India, besides the Malay Peninsula.

**Pt. virgata** West (16 i). Hindwing angled about as in *volutaria*, or rather — on account of a faint con- *virgata*. cavity in the termen between the 2nd subcostal and the angle — appearing a little more irregular. Wings more regularly reticulated, postmedian of forewing distinct, with yellow maculation proximally, hindwing also with a conspicuous yellow spot just outside the cell. Benguet, Luzon, 1 ♂. Probably quite near the following.

- lineata*. **Pt. lineata** Warr. (16 i). Colour of *tristicula* and *volutaria* (or rather, as it lacks the tornal cloudings, of *inornata* and *pulverulenta*), intermediate in shape, the forewing almost as simple as in *tristicula*, the hindwing angled; cell-dots small, respectively black and white; postmedian line of forewing rather strongly excurved; fringes with dark dots at vein-ends; underside very feebly marked. Dili, Dutch Timor.
- nebulifera*. **Pt. nebulifera** Prout (16 i). Recognizable by the strongly gibbous distal margins and the very ample grey cloudings on the very pale buff ground-colour. Underside much less clouded, the forewing with a characteristic vinaceous costal border, which swells triangularly at the proximal side of the subterminal. British New Guinea, the type from Collingwood Bay.
- innolata*. **Pt. innolata** Warr. (16 i). Very like a broad-winged, somewhat more warmly coloured *lineata* Warr., which may conceivably be a race of the same species. The type, a ♂ from Kiriwini which is the only example known from the Trobriand Islands, is unusually weakly marked, the upperside showing nothing definite excepting the small white cell-dot of the hindwing, though the characteristic costal triangle (formed by the meeting of the highly oblique costal commencement of the postmedian line with a dark proximal-subterminal shade) and pale apical patch are just discernible. We figure a more normal ♂ from Goodenough I., but I do not propose to name the form separately unless the Trobriand should prove to be a race. — ab. **tristicula** nov. has a large dark suffusion in the tornal region of the hindwing, as in *tristicula* and *volutaria*. I have seen it from Collingwood Bay.
- tristicula*. the Hydrographer Mountains and Milne Bay. — ab. **fasciata** Warr. has a darkened median band on both wings, reaching from the postmedian line about to the cell. Type a well-marked ♂ from Goodenough I.; less pronounced examples known from Fergusson I., etc. The known range of the species is British New Guinea, Trobriand and D'Entrecasteaux Islands, St. Aignan and (1 ♂, perhaps representing a race) New Ireland.
- fasciata*.
- dischista*. **Pt. dischista** sp. n. (16 i). ♀. 24 mm. Face pale. Forewing with termen slightly bent in the middle: areole moderate; the cleanest parts little duller than vinaceous-fawn, the greater part gradually shading into cinnamon-drab; costal margin indistinctly dark-spotted; cell-dot minute; antemedian line acutely angled in the cell; median shade very weak, strongly outbent; a slightly greyer apical patch cut off by a thick line which runs from costa to termen at 2nd—3rd radial; a dark terminal line; fringe paler. Hindwing somewhat crenulate, the central tooth little stronger than the posterior ones; 1st median shortly stalked; much more ochraceous than forewing; cell-mark larger, white, set on a broad median shade; a weak, interrupted postmedian. Underside paler, the forewing inclining to vinaceous, the hindwing to buff, the latter with the weak postmedian present. Type from Bukit Kutu, Selangor, 3500 feet, presented to the British Museum by the Federated Malay States Museums.
- cyphosticha*. **Pt. cyphosticha** Turn. (16 i). Generally more reddish than any of the preceding; relatively rather short-winged. Variable, but distinguishable from all by the sharp inward bend of the postmedian (especially on the forewing) behind its strong outward projection; antemedian line generally well expressed. The distal area may be without dark cloudings or may have such in the posterior half of each wing, sometimes, in addition, on the apical part of the hindwing. — In ab. (? subsp.) **mayeri** nov., so striking that I had almost supposed it a separate species, the postmedian is scarcely so sharply bent as usual, the distal clouding of the forewing slight, that of the hindwing posteriorly ample, pale olive-grey, suffusedly bordered (except at abdominal margin) with blackish grey. Founded on a unique ♂ from the Buntibasa district of New Guinea: Kratke Mountains, 4000 to 5000 feet, January 1933 (F. SHAW MAYER); type in the Tring Museum. I find, however, that Vulcan I. has produced a similar ♀, while more normal forms occur at Astrolabe Bay. — The type locality of *cyphosticha* is Queensland; in New Guinea it is distributed, but rare. — **dubia** subsp. nov. (16 f). More heavily irrorated proximally, the antemedian line obsolete; postmedian rather less strongly excurved than usual (particularly noticeable on the underside), the pink shades which accompany the subterminal of the underside strengthened, almost exactly as described under *strigata*. Manus, Admiralty Islands, 2 ♂♂ in the Tring Museum.
- mayeri*.
- dubia*.
- planctogramma*. **Pt. planctogramma** sp. n. (16 i). ♀. 25 mm. Face pale, narrowly redder above. Thorax and abdomen above nearly concolorous with wings, beneath pale buffish; 1st abdominal tergite rufous. Forewing with termen very gently curved; areole rather long and narrow; dull vinaceous, largely (except costally and subterminally) with more or less rufous cloudings; median area marked in places with yellow; cell-mark linear; antemedian scarcely indicated; postmedian thick, very irregular, an outward lobe divided into an acute tooth in front of 1st radial and blunt double tooth at 3rd radial and 1st median; a narrow terminal shade; the yellow of the fringe slightly encroaching on the wing. Hindwing with termen scarcely bent, 1st median very shortly stalked; the vinaceous and rufescent parts not sharply differentiated; cell-mark and other small markings yellow. Underside vinaceous, with some ill-defined whitish yellow markings. Dutch West Borneo, 85 miles above Pontianak, type in the British Museum.
- ozophanes*. **Pt. ozophanes** Prout (16 k). Expanse 20 mm. Wings relatively broad. Pale lemon-yellow, so strongly irrorated with vinaceous or reddish as to produce an effect of dull orange, leaving somewhat less heavily irrorated

ated areas here and there; forewing with cell-spot grey, large but not strong; a slightly interrupted and irregular yellow line about 2.5 mm from termen, thickened between the radials and with a tapering distal projection behind the 2nd radial. Hindwing subcrenulate and with a slight tooth at 3rd radial; a thick yellow line just beyond middle, running from abdominal margin in the direction of the apex, arrested about the 1st radial, but throwing out some irregular branches; a yellow subterminal spot or dash about the 2nd radial. Fringes chequered. Founded on a ♂ from Perak. Since received from N. Borneo, but only singly.

**Pt. notata** Warr. (= *insolita* Warr.) (15 f). Recognizable at a glance by the reticulated appearance, *notata*. position of the dark suffused parts and "scorched" look of the lighter suffusions. Founded on a ♂ from Fergusson I., which its author seems to have forgotten when he redescribed it from Milne Bay 3 years later. Also known from Mt. Goliath.

**Pt. miniosa** Warr. (Vol. 4, pl. 5 d). Easily known by its pink colour and deeper pink, yellow-edged lines. *miniosa*. As explained in Vol. 4 (p. 47) and its Supplement (p. 29), it probably got into the Palaearctic fauna by error. Described from Penang, its normal range embraces Lower Barma, Tonkin, Hainan, Hongkong and other localities in S. E. China.

**Pt. medioplaga** Swinh. (16 k), only known from Pulo Laut (1 ♂), has the forewing as square as the apex *medioplaga*. as in *ozophanes*, the hindwing straighter on each side of the (blunt) central angle; larger and brighter than *ozophanes*, with some violet-grey cloudings, a conspicuous one just outside the cell of the forewing; an angular yellow mark beyond the anterior part of this adds to the variegated aspect of the wing.

**Pt. sanguinipuncta** Swinh. (16 k). Rather bright yellow, in part irregularly irrorated with vinaceous, *sanguini-* the clearer yellow spaces being more or less central, that of the hindwing shaped much as in *togata* ♂. Cell- *puncta*. mark of forewing large, oval, more or less pupilled; subterminal and terminal markings irregularly macular. Margins almost rounded, very different in shape from *togata*. Borneo (loc. typ.) and Kuala Lumpur.

**Pt. porphyrochlamys** Prout (16 k) was founded on a ♂ collected at light on Kedah Peak (3300 feet) by *porphyroch-* PENDLEBURY and a ♀ from Bukit Kutu, Selangor (3400 feet). Larger and still brighter yellow than *sanguini-* *lamys*. *puncta*, much more evenly irrorate, with only a few very small spots and very conspicuous purple basal patch, thorax, head and antennal shaft.

**Pt. oöphora** Prout (16 k). Unique and again quite outstanding in its design. Head, body and wings *oöphora*. bright pink with a tinge of violet, the very pale yellow outer half of the forewing bearing a large oval patch of the ground-colour, spotted with yellow. Matang Rd., Sarawak.

**Pt. flavipuncta** Warr. (16 k), founded on the ♀, is similar to the same sex in *togata* but with the yellow *flavipuncta*. borders narrower and less irregular, the cell-dot of the hindwing yellow, not white. Samar (type) and Penungah. — **westi** *nom. nov.* (= *rothschildi* West nec Warr.). It is almost certain, by analogy with the sexual dimorphism *westi*. of *togata* and *permutans*, that this is the (or a) ♂-form of *flavipuncta*; but as there may be a separable race on Luzon (WEST's type locality), and as in any case it is customary to give distinctive names to the sexes in dimorphic species, I propose a new name for the "primary homonym", which was an unfortunate result of the reference of the form to *Chrysocraspeda*. Very similar to *togata* ♂ (17 b), the wing-shape not so extreme, the yellow median patch differently shaped, on the hindwing containing additional rosy spots and succeeded by a more definite yellow subterminal patch at the radials.

**Pt. permutans** Hmps. (17 b, ♂ ♀). Considerably larger than *togata* and much more variable; there is *permutans*. no known species with which it could be confused. ♀ generally somewhat more variegated than that of *togata*, though with the purples strongly predominant; yellow borders generally less ample. ♂ predominantly yellow. The ♂-form which HAMPSON selected for his holotype is the most striking one, having intensely darkened apical patch on the forewing and central hindmarginal patch on the hindwing, the latter patch partly bordered with bright red. — ab. **devia** *nov.* (17 b), perhaps commoner, has more nearly the aspect of *togata* ♂, the mottlings *devia*. reddish or purplish (very inconstant in depth of colour) and leaving free an irregular central patch on each wing as well as smaller spots proximally and distally. Nilgiris (loc. typ.), Palnis and Ceylon.

**Pt. togata** F. (= *faganaria* Guen., *amoenaria* Snell., *auricincta* Hmps.) (17 b) was founded on the ♀, *togata*. which is almost uniform purple or vinaceous, with broad (but strongly constricted or cleft about the 3rd radial) yellow borders and yellow fringes, the hindwing with a white cell-dot; there are usually weak traces, at least on the forewing anteriorly, of a dark postmedian line. — ♂-f. **deviaria** Walk. (= *rhodinarina* Walk.) (17 a) has *deviaria*. on each wing an irregular pale yellow patch, also irregular yellow transverse lines and longitudinal terminal streaks. Fairly widely distributed and showing little variation. The first descriptions of both sexes were based on Indian specimens; the Malay Peninsula, Sumatra, Java and Sambawa are other known localities.

- crypsaurea*. **Pt. crypsaurea** *Bastelb.* (15 b), described as a *Chrysocraspeda*, probably belongs here. "Grey-lilac with dark gold-yellow spots." The only conspicuous one is the wedge-shaped spot of the forewing which, at about 1 mm distant from the costa and reaching the 3rd radial, runs from near the distal margin to the middle of the wing, and the corresponding, ill-defined mark of the hindwing which reaches the base but not the distal margin. Goping, Perak, the type unique.
- vinosa*. **Pt. vinosa** *Prout* (16 k) founded on 2 ♀♀ ("N. Borneo" and Elopura, off N. Borneo), has about the expanse of average *togata* but the termen of the forewing more strongly curved in the middle, thus highly oblique posteriorly, and has an irregular yellowish postmedian band and tornal patch on the forewing and yellow terminal spots on the hindwing. Its probable ♂♂, also from N. Borneo, are strongly mottled with yellow in the central area of the forewing and throughout the hindwing and have in addition a more or less complete antemedian band.
- conversata*. **Pt. conversata** *Walk.* (17 a). In coloration similar to the ♂ of *togata* or with the bright ground-colour rather more pink (compare *miniosa*) the light yellow markings in the median area much more restricted, a broad line (irregularly angulated) taking the place of the central patch. Although described by WALKER as long ago as 1861, from a Sarawak ♀, it has remained almost unknown, but a much damaged ♀ from the same country (Baram district) seems to agree essentially with it.
- anisocosma*. **Pt. anisocosma** *Prout* (17 a). Hindwing much less bent at the 3rd radial. Very distinct in having the forewing, but not the hindwing, irrorated in large part with blackish fuscous, strongly so proximally (especially anteriorly); the yellow markings, too, show considerable disparity on the respective wings. The unique type is a ♀ from Sungei Ujong, Malay Peninsula.
- dilucida*. **Pt. dilucida** *Warr.* Expanse 24 mm. Both wings bluntly angled at the 3rd radial. Perhaps the most distinctive feature is the almost diaphanous central area of the hindwing; the base, a costal spot and terminal band dark-clouded, the latter containing irregular yellowish subterminal spots. Prevailing colour of forewing yellow, more orange in posterior half, the costal area in part suffused with olive-grey, the lines broad but indistinct, yellow; cell-dot black. Sarawak (type) and Singapore.
- rubricata*. **Pt. rubricata** *Swinh.* (17 a). Both wings highly gibbous; yellow, the markings of the forewing much obscured by purplish suffusion, only the median area anteriorly clear enough to show the type of marking of the hindwing; cell-mark linear, blackish. Hindwing with 1st line straightish, postmedian much bent, double except anteriorly, a short transverse streak behind them. Siam: Bulsit Besar, 1 ♂.
- phlogea*. **Pt. phlogea** *sp. n.* (17 a). Shape less extreme, nearer that of *tigrina*; ♀ antenna normal. Yellow markings of forewing intermediate between those of *dipyramida* and *dracontias*, its apex irrorated as in *tigrina*. Hindwing more variegated than in either, the termen only narrowly yellow; the 3 cell-dots large, purplish, almost connected into an angular figure. Dutch West Borneo, 85 miles above Pontianak, type ♀ in the British Museum.
- B. Section. Antenna of ♀ pectinate (*Heteroctenis* *Meyr.*).
- tigrina*. **Pt. tigrina** *Meyr.* (17 a). Pectinations short and stout, only developed on outside of shaft. Wings broad, the forewing moderately gibbous, the hindwing appreciably crenulate. Yellow, irregularly irrorated with orange; cellmarks blackish, that of the hindwing double; each wing with a large vinaceous cloud, bounded distally by a sinuous yellow line. S. E. Borneo, 1 ♀.
- dipyramida*. **Pt. dipyramida** *Prout* (17 b). Antenna (♀) as in *tigrina*. Hindwing strongly angled. The vinaceous forewing with yellowish mottlings in places and yellow fringe; the principal yellow markings are the two irregularly pyramidal patches, one beyond the cell, the other from the tornus. Burma: Tenasserim Valley, E. of Tavoy, type ♀, 2 further ♀♀ collected with *phlogea*.
- dracontias*. **Pt. dracontias** *Meyr.* (17 a). Pectinations (♀) much longer than in the two preceding, biseriata. Hindwing, with the exception of the termen, nearly unicolorous purplish, with a group of 3 blackish cell-dots. Forewing more variegated, the purplish parts (a very large posterior patch and a large roundish subapical spot) being separated by deep yellow, somewhat as in *oöphora*. Borneo; the one known ♂ has the purple parts somewhat more variegated with reddish than the ♀♀.

## 16. Genus: **Chrysocraspeda** *Hmps.*

(See Vol. 16, p. 51.)

Certainly very closely related to *Ptochophyle*, only differing materially in the loss (or, in one exceptional instance, extreme reduction) of the areole, which leaves all the subcostals of the forewing to arise from a common, long stalk. As with *Ptochophyle*, there are a few species in which the ♀ antenna is bipectinate, indeed

here very strongly so; but it is interesting to notice that the pectinate *Chrysocraspeda* are chiefly Papuan, not (as in the case of *Ptochophyle*) Malaysian. About 40 known species are Indo-Australian, a very few African; the one reputed Syrian (see Supp.-Vol. 4, p. 30) is of doubtful origin.

**Ch. gibbosa** Warr. (15 g). Easily known by its gibbous-margined forewing and straightish-margined hindwing, as well as by its markings. Assam, the unique type a ♂ from Tezpur. HAMPSON incorrectly sunk it to *plumbeofusa* Swinh.

**Ch. truncipennis** sp. nov. (17 c) is so obviously related to *gibbosa* that it must be congeneric, notwithstanding that the type ♀ has retained a minute areole — whether as a sport or a sexual or specific character can only become known when more material is to hand. Forewing slightly more gibbous still; colour very much darker, predominantly red-brown though with much the same pale purplish grey suffusions; the acutely angulated antemedian line much more sharply developed; cell-mark of forewing not ringed with yellow; dark borders of both wings narrower. Underside almost unmarked (in *gibbosa* with central suffusion and curved postmedian buff on both wings). Kinabalu, 5 May 1903 (WATERSTRADT), 1 ♀ in the British Museum. It will not surprise me if it proves to be a subspecies of *gibbosa* or a ♀-form there of.

**Ch. praegriseata** Warr. Wing-shape approaches, without quite attaining, that of *gibbosa* (15 g). Colouring intermediate between this and *truncipennis*, nearer to the former but without yellow suffusions. Forewing with a pale costal border, broadening at apex to an irregular patch of at least 2 mm extent, cut proximally by the excessively oblique, cinnamon antemedian (which becomes indefinite behind its acute subcostal angle) and bounded in its distal part by a curved and irregularly dentate shade of the same cinnamon; a small extension of the costal border just outside the antemedian, reaching the minute black cell-dot; dark terminal line slender; fringe buff. Hindwing with white-pupilled cinnamon cell-ring, double subbasal line and vague sinuous postmedian; dark terminal shade less broad than in *gibbosa*. Underside almost as unicolorous as in *truncipennis*. Biagi (type) and Dinawa, British New Guinea, only 2 specimens known to me.

**Ch. flavimacula** Prout (17 b). Colours about as in *gibbosa*, their distribution quite different, with the ochre more developed, especially on the hindwing; shape normal; the bright spot outside the cell-dot and the extended apical patch of the forewing are distinctive. Mt. Goliath and the Weyland Mountains.

**Ch. eutmeta** Prout (17 b). Quite distinct from anything else known and apparently not variable. The relatively large, trilobed white cell-mark of the hindwing is an interesting development. Dutch New Guinea, the type series from the Snow Mountains.

**Ch. perpicta** Warr. (15 g). Both wings with termen somewhat more convex than in *flavimacula*, the ochre still more dominant, the costal border and apex of the forewing light violet-grey, both wings with white-pupilled cell-ring; the strong dark patch beyond middle of abdominal margin of hindwing distinctive. Khasis.

**Ch. mitigata** Walk. (17 c). A rather small species, the division between the purple-grey and yellow colours of the forewing longitudinal, the markings of the yellow part variable, but not extremely; cell-dot of forewing black. Hindwing with the yellow colour basal, costal, apical and (narrowly) terminal, the large enclosed purple-grey area edged with reddish. Borneo.

**Ch. dinawa** B.-Bak. (= *informiplaga* Prout). (17 c). Hindwing bluntly angled, forewing noticeably bent in the middle. The irregular yellow central patches, containing the dull purple cell-dots, and the mottled distal borders are characteristic. British New Guinea (type) and Snow Mountains (type of *informiplaga*). — **Ch. ronensis** subsp. nov. is a more brightly coloured form (especially as regards the purple parts) and has the central yellow patches somewhat larger. The hindwing is slightly less angled, but I do not think the difference sufficient to denote a species. Ron Island (W. DOHERTY), a pair in the Tring Museum.

**Ch. sanguinea** Warr. (17 c). In this and the next few species, the apex of the forewing is very acute, its termen almost straight. *sanguinea* is known by the unusual brightness of the red parts. ♀ darker, with a yellow band outside the postmedian dots of the hindwing. Khasis.

**Ch. conspicuaria** Swinh. (17 c) may possibly be a colour-form of the preceding, more flesh-pink, with the postmedian series of black dots more conspicuous, set on a pale space. Khasis (type), Sikkim and Ceylon.

**Ch. abhadraea** Walk. (17 c) is much more dark-clouded, leaving little trace of the pink colour except in some pale antemedian and postmedian spots. The underside, however, is much less clouded, nearly uniform vinaceous, extremely like that of the two preceding forms, from which, however, *abhadraea* seems to differ in its slightly less oblique-margined forewing. Described from Ceylon, but distributed in India, known also from Selangor, Sumatra and Sarawak.

- callima*. **Ch. callima** *B.-Bak.* (= *oxyporphyris* *Prout*). (17 c). Hindwing with abdominal margin longer than in the preceding group. Uniform dull purple, with minute cell-dots (that of the hindwing white) and slender dark postmedian; the slight dark marginal line touches the termen at apex of forewing only, the bright yellow of the fringes encroaches slightly on to the wings elsewhere. British New Guinea (type) and Dutch New Guinea (type of *oxyporphyris*).
- autarces*. **C. autarces** *sp. n.* (17 d) is another species with simple pattern and the narrow yellow terminal border not interrupted in the middle, but deviates from *abhadraca* in the opposite direction to *callima*, the termen inclining toward convexity rather than concavity. A little larger than the neighbouring species (about 26 mm); ground-colour reddish, the forewing to just over  $\frac{1}{2}$ , the hindwing to just under, the rest — as far as the yellow border — almost uniformly suffused with violet-grey, the boundary between the two colours straight. Under-side similar, but rather paler and duller. Paloe, W. Celebes: Gunong Tompoe, 2700 feet, February 1937 (J. P. A. KALIS). 1 ♂ in the Tring Museum. If the ♀ has the antenna pectinate, it may well be related to *allegradia*.
- olearia*. **Ch. olearia** *Guen.* (= *olenaria* *Walk.*) (15 g). Apex of forewing almost as acute as in *conspicuarina*, termen somewhat less oblique, appreciably curved; cell-mark of hindwing longer, more angular. The type, a ♀, has some yellow mottlings and such can also occur in the ♂. — ab. **cerasina** *Swinh.*, founded on a ♂ from Ganjam (not "Ceylon" as published) is almost uniform pink (excepting the cell-marks), though some slight markings remain outside the cell of the forewing. I do not know this form in the ♀. More or less name-typical *olearia*
- ecteles*. (embracing these two forms) has a wide distribution in India and is recorded from Hainan. — **ecteles** *subsp. nov.* (17 d) is still more uniformly pink or vinaceous, only with the cell-marks and faint traces on both wings (at least anteriorly) of a punctiform postmedian. Tambora, Sambawa, 5 ♂♂ in the Tring Museum, misidentified by WARREN as *croceomarginata*; as they do not vary, it is safe to assume that they represent a geographical race.
- eumeles*. **Ch. eumeles** *Turn.* is unknown to me, but may well be another form of *olearia*. Probably near *ecteles* (17 d) but with the apex of the forewing rounded, ground-colour strigulated with yellow (except the costal margin to  $\frac{3}{4}$ ), no white cell-mark on hindwing; no mention is made of a deepened vinaceous terminal line. Cape York, 2 ♂♂.
- croceomarginata*. **Ch. croceomarginata** *Warr.* Readily distinguishable from *ecteles* by the cell-marks, which on both wings are small (on hindwing punctiform and white, finely dark-ringed); no postmedian dots visible; ground-colour rather more purple, at the first median projecting a point into the pale yellow border, recalling the African *rosina* (Vol. 16, pl. 6 b) except that it is not here darkened. S. Java, type; also Sumatra.
- phrureta*. **Ch. phrureta** *sp. n.* Still more like *rosina* (Vol. 16, pl. 6 b) both in shape and in the thick (very dark purple-grey) terminal line: forewing with termen strongly bent in the middle, becoming extremely oblique, almost as in *cruoraria* and *inundata*, hindwing more bent than in *croceomarginata* but less than in the two last-named. Somewhat more dulled with grey than *ecteles*; cell-dot of forewing black, of hindwing as in *croceomarginata*; indications, especially on forewing, of curved grey median and postmedian lines (very weak, but not very slender); posterior half of terminal line somewhat crenulate. Selangor: Bukit Kutu, 3500 feet, at light, 14 April 1926 (H. M. PENDLEBURY), type ♂ in the British Museum, presented by the Federated Malay States Museums.
- comptaria*. **Ch. comptaria** *Walk.* (17 d). Dull purple, a trifle darker than *callima*; not reddish except where the ground-colour meets the yellow borders. The latter broaden at the apex of the forewing and are irregular on the hindwing, in part irrorated with red; hindwing with a very small white cell-dot. Borders beneath paler and without red irroration. Described from Singapore; known also from Penang, Sarawak, Bali, Celebes and Luzon, but always rare. — **pulverimargo** *Prout*. Rather larger, with relatively broader borders, their dark sprinkling less reddish and more regularly distributed. Type ♂ from Kumusi River, British New Guinea.
- dysmothauma*. **Ch. dysmothauma** *Prout* (17 e. ♀). A beautiful little species, especially in the ♂. The yellow border of the forewing broadened, the rest, in the ♀, with varied purple-grey shades, a bright rufous suffusion in cell and at base of costa: cell-dot of hindwing white-pupilled. The ♂ is rather smaller, the red part of the forewing still brighter and more extended than in the figured ♀, followed posteriorly by a blackish patch, the hindwing blackish proximally, then rosy. Koung, near Kinabalu (the ♀ type), Selangor and Singapore. — **splendens** ♀-form. *nov.* (? *sp. div.*). Yellow borders extended to  $\frac{1}{3}$  or  $\frac{2}{5}$  wing-length, brightened with red irroration and strigulation; forewing with a red subbasal and a red median band, not sharply defined, separated by some yellow, the median containing the black cell-spot, only a basal patch dark; hindwing dark to beyond the white cell-dot, then narrowly red. Singapore (H. N. RIDLEY), 2 ♀♀ in the British Museum.
- philoterpes*. **Ch. philoterpes** *sp. n.* (17 d) perhaps represents *dysmothauma* on Celebes, though the yellow colour is greatly predominant. Body above largely suffused with dull purplish, the thorax darkest. Wings with scat-

tered purple irroration; forewing further with costal margin, ill-defined basal and median bands and costal, central and hindmarginal spots near the termen, cell-spot indistinct; hindwing with the white, black-ringed cell-spot placed on an incomplete purple median band, the subterminal maculation approximately as on forewing. Underside with similarly placed, but weak and confused, dusky markings. Paloe, W. Celebes: Lindoe, 3700 feet (type) and Koelawi, 3100 feet (J. P. A. KALIS), 3 ♂♂ in the Tring Museum.

**Ch. cambogiodes** *Prout* (17 d). Rather bright yellow, with moderate irroration and a simple pattern, *cambogiodes*, somewhat recalling some American *Eois* (*Cambogia*). Underside paler and not irrorated, the cell-dots and curved postmedian weaker, the broad costal suffusion more vinaceous. Mount Goliath, 1 ♂.

**Ch. rothschildi** *Warr.* (15 h) is of a similar yellow, but has the apex of the forewing sharper, some bright *rothschildi*, red markings on the proximal part of its hindmargin and a most remarkable pattern of black, white and red on the inner half of the hindwing. British New Guinea: Upper Aroa River (type) and Mount Kebea.

**Ch. lilacina** *Warr.* (17 d). Both wings strongly bent in the middle, the forewing looking still more so *lilacina*, on account of the dark mark which runs out into the yellow fringe. The dark basal patch, elongate yellow cell-spots and pale violet-grey distal suffusions are further distinctive. British New Guinea. I know only ♀♀, but cannot associate it with any other *Chrysocraspeda*.

**Ch. iole** *Swinh.* (17 d). Generally larger than most *Chrysocraspeda*, quite different in pattern from all *iole*, the preceding and apparently not very variable, the ♀ more vinaceous. Only known from the Khasis.

**Ch. fruhstorferi** *sp. n.* (17 e). Similar to the darkest aberrations of *iole*, the forewing and the proximal *fruhstorferi*, and distal areas of the hindwing almost uniformly suffused with the purplish drab colour. Possibly a race; that the termen of the forewing looks somewhat less bent is partly, but not entirely, due to the fact that the fringe is as strongly spotted at all the veins as at the 1st median. Further differs in that the yellow antemedian line of the forewing is angled in the cell and forms at the angle a conspicuous spot which nearly reaches the cell-spot, the oblique line is extremely slender and the subterminal of both wings obsolete. W. Java: Mt. Tjikorai, 4000 feet (H. FRUHSTORFER), the type ♂ in the British Museum. Intermediate (except in colour) towards the following.

**Ch. fulviplaga** *Swinh.* (17 e) differs from *iole* in its brighter colour, smaller cell-spot of the forewing, *fulviplaga*, loss or reduction of the distal yellow pattern, etc. Also from the Khasis.

**Ch. euryodia** *Prout.* Coloration of *inundata* (17 e), shape much less irregular, forewing with the trans- *euryodia*, verse yellow band much broader, isolating a less ample apical patch, hindwing with the white cell-dot more minute, the yellow border broader and much more regular. Ninay Valley, Central Arfak Mountains, only the type ♀ known.

**Ch. ignita** *Warr.* (17 e). Possibly a remarkable form of *cruoraria* with the dark area of the forewing *ignita*, greatly extended, so as to leave only the termen, part of the costal edge and a cell-spot yellow, all with some bright red bordering. New Guinea: Biagi and Mount Goliath.

**Ch. orgalea** *Meyr.* (17 e), to judge from the only known specimen, a ♂ from Pulo Laut, is one of the *orgalea*, smallest *Chrysocraspeda* (16 mm). Forewing with the termen curving to become extremely oblique; hindwing rather narrow, termen produced to a blunt central angle. Dull purple, the yellow markings consisting on the forewing of an irregular border (projecting inwards in the middle and near costa) and a postmedian spot at the 3rd radial, on the hindwing of an irregular border, twice expanded in anterior half, very slight in posterior.

**Ch. cruoraria** *Warr.* (17 e). Approaches *inundata* in shape, though less extreme. The dark parts consid- *cruoraria*, erably darker than in that species and *euryodia*, the apical half of the forewing variously mottled with this dark colour, bright red and yellow, the obliquely placed, clearer yellow band (complete or interrupted, but never very sharply defined) showing the near relationship to those. Described from Queensland, known also from New Guinea and New Britain. The late Mr. F. P. DODD, a very good observer, stated that they, and even *aurimargo*, were all forms of one extraordinarily variable species, but gave no evidence. A remarkable Kuranda series which he sent to OBERTHÜR offers some justification for the surmise, but the differences in shape are puzzling, there is no evidence of the occurrence of true *inundata* in Australia (see below) and one of the Kuranda groups shows little sign of linking up with the others. I have therefore conserved WARREN'S names and added others for the principal recurrent forms. — ab. **porphyrogonia** *nov.* (? *sp. div.*) (17 f) has the distal area, costal *porphyrogonia*, margins and base dull purple, the rest of the proximal areas yellow, with purple-red markings, the best developed being a thick, angular antemedian line. Kuranda, 3 ♂♂ and 1 ♀; also a ♂ from Port Darwin in my collection. The probable development of this strikingly dissimilar form from typical *cruoraria* is shown by 3 very interesting specimens: a ♂ has retained much of the dark proximal shading, especially on the forewing, but becomes more mottled with red in the distal part of the hindwing; 2 ♀♀ which seem evidently to belong to it (as all

three retain approximately the *cruoraria*-scheme in the distal or apical half of the forewing) have the proximal half of both wings much like that of *porphyrogonia*, the distal part of the hindwing red mottled with the dark purple and with the usual irregular yellow border.

- aurimargo*. **Ch. aurimargo** Warr. (*praec. form.?*) (17 e). Wings more elongate than in *subangulata*, darker and with some red admixture on the yellow border; markings faint, the postmedian line more curved than in *subangulata*.
- rosulenta*. N. Queensland: Cedar Bay (type) and Kuranda, known in both sexes. — ab. **rosulenta** nov. (? *sp. div.*) differs chiefly from *aurimargo* in its bright rose-colour (nearly "hellebore-red" of RIDGWAY), though the wings may be slightly less angled and the yellow tornal spot of the forewing is a little enlarged (formed as in *porphyrogonia*).
- flavimaculata*. Kuranda. 3 ♂♂. — ab. **flavimaculata** nov. has the same ground-colour and borders, but larger yellow central spots line it with *porphyrogonia*. Kuranda, 1 ♂.
- leucotoca*. **Ch. leucotoca** sp. n. (17 f). Forewing with tornus more rounded off, hindwing with termen strongly produced, but the angle on the middle more rounded off, especially in the ♂. ♀ slightly more purplish than *rosulenta* and with some dark grey suffusions; the yellow patch at the tornus of the forewing enlarged, somewhat recalling *araliphaga*; hindwing, as in the ♂, with conspicuous oval white cell-dot. ♂ with the dark suffusions much more extended, occupying the greater part of both wings proximally, the yellow borders, especially in the type, much extended. Kuranda, 2 pairs in the British Museum. This is the group which, as remarked above, "shows little sign of linking up" with *cruoria* and *aurimargo*.
- inundata*. **Ch. inundata** Warr. (17 e). Recognizable by the shape, the oblique pale-yellow band of the forewing (constricted or occasionally interrupted about the 2nd median) and the narrow, sinuate yellow border; cell-dot of hindwing white, oval. British New Guinea and the Snow Mountains, the type from Mailu, British New Guinea. TURNER records 1 ♀ from Kuranda, with a broad, sharply defined yellow band from subcostal to tornus, but afterwards sinks it to *cruoraria*, so that it may have been a striking aberration of that species or rather (by shape) of *leucotoca*. — ab. (? subsp.) **spudaea** nov. Oval white cellspot of hindwing much larger; terminal yellow, particularly of forewing, also increased, the very slight swelling between the radials on that wing becoming a prong over 1 mm in length, an additional though shorter swelling developed between the medians. Ninay Valley, Central Arfak Mountains, type ♀ in the Tring Museum.
- auristigma*. **Ch. auristigma** Prout (17 f). Similar to *croceomarginata* and *phrureta* except in shape; hindwing elongate, almost rectangularly bent in the middle; further distinguished by the yellow cell-spot of the forewing. Snow Mountains (type), Vulcan Island and New Britain, perhaps representing two or three different races. We figure the Vulcan I. ♂, which is lighter than the type ♀, vinaceous rather than dull dark purple, the distinction probably sexual or individual rather than racial.
- phaedra*. **Ch. phaedra** Prout, from Sudest Island, may possibly be or further race of *auristigma*, but the face is purple (in *auristigma* whitish, narrowly red above), the 2nd radial of the forewing arises nearer to the 1st, the ground-colour is brighter, the yellow borders broad, the hindwing appreciably less angled, the prominence embracing both the 3rd radial and the 1st median. The yellow cell-spot is sometimes reduced in size. Here may also be mentioned the problematical *charites* Oberth. (see Supp.-Vol. 4, p. 30, pl. 4 d).
- subangulata*. **Ch. subangulata** Warr. Rather similar to *phrureta*, particularly on the forewing, but lighter, more violet, the black cell-dot of the forewing sharper, the postmedian line very slender, running to the tornus; hindwing angled (though not strongly) at 3rd radial, its cell-dot white. Khasis. A ♀ from E. Pesu, which probably belongs to it, has the margins more gibbous in the middle, the slight yellow border of the forewing expanding between 2nd median and tornus. A small ♂ from Mount Gede is somewhat intermediate between these two and may represent a race.
- remutans*. **Ch. remutans** sp. n. ♀, 19—20 mm. Extremely like an undersized ♀ of *Pt. togata* F., but a true *Chrysocraspeda*. Face paler. Wings slightly more angular still; similarly vinaceous or slightly more reddish; vertex concolorous, not white; yellow borders a trifle narrower and paler, tapering rather more gradually to the central projection of the ground-colour and its crimson edging; no trace of a line; cell-dots weak. S. E. Borneo, the type, misidentified by MEYRICK (1897) as *permutans* Hmps.; W. Borneo, 85 miles above Pontianak (SIMONS & MELIGAN), a second from the OBERTHÜR collection.
- analipaga*. **Ch. analipaga** Warr. (17 f) has the hindwing gibbous, but scarcely angled; larger and more vinaceous than *subangulata* type, postmedian line wanting, the expansion of the yellow border at the tornus larger than in the ♀ which I referred to *subangulata*, an additional (slight) expansion between the radials of the forewing, also on the anterior half of the hindwing; white cell-dot of hindwing more conspicuous. Biagi, British New Guinea, 1 ♀.

**Ch. lunulata** *Swink*. Similar to *aurimargo* (17 e) or still darker; scarcely any red on the yellow border. The most striking distinction is the long white cell-mark of the hindwing. Borneo (loc. typ.) and Selangor. *lunulata*.

**Ch. tricolora** *B.-Bak*. Forewing not quite so strongly bent as in *lunulata*, hindwing extraordinarily *tricolora*. elongate, the length from the (weak) apex to the strong prominence at 3rd radial — 1st median nearly as great as that of costa, the termen slightly sinuate on each side of the prominence. Tone somewhat orange (yellow densely mixed with purple-reddish); cell-mark of hindwing as in *lunulata*; forewing with a curved, somewhat trilobed central yellow band from 1st radial to tornus; yellow of fringes encroaching on the wing in a few spots. Dinawa, British New Guinea, only the type ♂ known.

**Ch. flavisparsa** *Prout*. The forewing has nearly the shape of the surrounding species; the hindwing *flavisparsa*. has the abdominal margin fairly long, the termen gibbous at the 3rd radial and 1st median, but not angled. The coloration is closely that of *Ptochophyle miniosa* (mottled pink and yellow) but there are no definite markings and no dark terminal line. Mount Goliath. 1 ♂.

**Ch. elaeophragma** *Prout* (17 f). Recognizable by the very extreme shape of the forewing, the browner *elaeophragma*. tone, rather strong markings, long white cell-streak of the hindwing, etc. Snow Mountains, a good series, very constant.

**Ch. uncimargo** *Warr.* (17 f) also has the extraordinary forewing shape, if not, indeed, still further exaggerated, but is much larger, darker, more indefinitely marked, with a yellow spot at tornus of forewing and apex of hindwing; the hindwing, moreover, is remarkably produced. British and Dutch New Guinea the type from Biagi.

**Ch. plumbeofusa** *Swink*. (17 f). Markings weak, excepting the black cell-spot of the forewing; shape *plumbeofusa*. simple, the extremely curved postmedian line of the forewing suggesting a possible association with the first few species of the genus as here arranged; but the long pectinations of the ♀ antenna refer it to the following group. Khasis and (perhaps in a separable race with smaller cell-spot) Singapore.

**Ch. semiocellata** *Prout* is only known from the type ♂ (Snow Mountains, near Oetakwa River), but *semiocellata*. its general similarity to *concentrica* (17 g), especially in the extreme curvature of the lines of the forewing, leads one to suppose that the ♀ will have strongly bipectinate antenna. Possibly even a subspecies. Much darker — heavily irrorated and strigulated with black — but with the gold-yellow of the fringes encroaching a little further on to the wings; lines thicker, the postmedian of the hindwing more sinuous; cell-dot of hindwing enclosed in a thick black ring.

**Ch. alTEGRADIA** *Prout* is mother near relative or possible race of *concentrica*. Larger (about 30 mm), *alTEGRADIA*. both distal margins slightly less curved; lines obsolete; yellow of fringes scarcely invading the wings; terminal shade narrower than in the name-type of *concentrica*, but broader than in ab. *lineimargo*; a slightly paler area, about 2.5—3 mm wide, between this border and the rest of the ground-colour. A ♀ from Klondyke, Benguet, Luzon.

**Ch. concentrica** *Warr.* (17 g). Variable, but generally easy to recognize by its shape and structure, *concentrica*. notably in the ♀, with its very long antennal pectinations. The type, a ♂ from St. Aignan, has the dark borders slightly broader than in the figured ♂, which comes from Kumusi River, British New Guinea. — ab. **lineimargo** *ab. nov.* lacks the dark marginal shade, which is merely represented by a line, usually of a redder tone. *lineimargo*. The type is a ♂ from Kumusi River, but it represents the commoner form of the species and occurs in both sexes. — ab. **regalis** *Warr.*, mistaken by its author for a ♂ and therefore assumed to be a separate species, is *regalis*. a large ♀ from St. Aignan with the lines obsolete, the marginal shades present, though neither so broad nor so dark as in the type. Like most ♀♀ it has a more reddish tone than the typical ♂♂, but the colour differences are inconstant. *concentrica* is distributed in the islands off New Guinea (rarer on the mainland), especially the Louisiades and the Bismarcks, and reaches Choiseul and Guizo.

**Ch. indopurpurea** *Prout* (17 g) differs from *concentrica* in its strongly bent hindwing, duller colour and *indopurpurea*. weaker markings. Snow Mountains (type) and British New Guinea.

**Ch. flavimedia** *Prout* (17 g). In shape intermediate between the two preceding, the hindwing more *flavimedia*. nearly as in the latter of them. Cell-mark of hindwing elongate, red-brownish, indistinct; the yellow central patches recall *dinawa* more than any other known *Chrysocraspeda*. ♀ antenna strongly bipectinate. Near Oetakwa River, Snow Mountains. — ab. **perspersa** *Prout* has the cell-spots rather less long but broader, the *perspersa*. median yellow patches much reduced, the rest of the wing, right to the termen, almost evenly irrorated with the darker colour. 1 ♀, taken with the type form. Possibly a separate species. — **panconita** *subsp. nov.* (17 g) *panconita*. lacks entirely the yellow median patch, has the whole wing-surface densely but finely irrorated, the markings

exceedingly weak. Vulcan Island, November 1913—January 1914 (MEEK), 1 ♂ and 2 ♀♀ in the Tring Museum. We figure a ♀ which shows the markings better than the others; the ♂ is slightly yellower, the second ♀ is a more reddish aberration.

### 17. Genus: **Traminda** Warr.

(See Vol. 16, p. 52.)

A predominantly African genus, typified by *atoviridata* Saalm., the Madagascar race of the very common *obversata* Walk. (misprinted *observata* in Vol. 16, p. 54). If the present taxonomic distribution is correct, it contains only one or two essentially Indo-Australian species, which differ from *Gnamptoloma* in lacking the anterior excavation of the distal margin of the forewing and in the genitalia. Where as *Gnamptoloma* has a complex armature of the 8th segment, simple sac-like valves and more or less elongate uncus, *Traminda* (so far as known) has no such 8th segment, the valves divided much as in *Cosymbia*, the uncus divided and with lateral processes, more recalling some of the *Calothysanis* group.

*rufistrigata*. **T. rufistrigata** Hmps. (Vol. 16, pl. 6 c), described from Aden and known chiefly from the African side of the Red Sea, should be mentioned here, especially as it may well be found to occur also in dry or desert country farther eastward. Small, narrow-winged, with relatively long cells; hindtibia of the ♂ not tufted; termen of hindwing rounded, not angled.

*mundissima*. **T. mundissima** Walk. (= *semicompleta* Walk., *diatomata* Walk., *malacopis* Lower) (17 g). Easily recognizable among the Indo-Australian species, though so similar to the African *viridaria* Walk. (Vol. 16, pl. 6 c), described from Caffraria 5 pages later, that the last-named might well be regarded as a race of it; the only specimen which I have seen from Sokotra looks to some extent intermediate. Hindtibia of the ♂ fringed with long coarse hair. As in many of the group, the colour may be either dull green or fleshy brownish and there is also considerable variation in the strength of the markings. The type (a ♀ from S. India) is flesh-coloured, the line

*burmana*, red-brown, distally white-edged. — ab. **burmana** Swinh., from Rangoon, is large, green, weakly marked, only

*variegata*, the oblique whitish-buff line conspicuous. — ab. **variegata** nov., analogous to the *viridaria* Walk. forms which are so named (Vol. 16, p. 53), is green, with the oblique line red, accompanied proximally by a greyish shade.

*submarginata*. Occasional in India, the type from the Nilgiris. — **submarginata** Warr. Postmedian dots of forewing generally connected by a line, which on the underside becomes a band-like vinaceous shade, continued on anterior part of

*subvirgata*, hindwing. Almost a fixed race on Tambora, even the green form from that locality belonging here; elsewhere a very rare aberration. — **subvirgata** subsp. (?) nov. Postmedian shade beneath nearly as in *submarginata* or

*hemichroa*, narrower, generally greyer; upperside greenish, weakly marked. Bali, 3 ♂♂, 4 ♀♀ (DOHERTY). Seems fairly constant. — **hemichroa** Meyr., founded on a ♀ from Port Moresby, is unknown to me, but I suspect will prove to be a form of *mundissima*. "22 mm". Forewing pale dull green, the oblique line "reddish-whitish"; hindwing "dull whitish-reddish", strigulated with dark grey. — Forms of *mundissima* from Siam, Hainan, Sumba, Timor and northern Australia have not yet been differentiated from the type. Several specimens from Pusa have been submitted to me by the Agricultural Research Institute, Pusa, labelled as bred from *Acacia catechu*.

*prasodes*. **T. prasodes** Meyr. (= *viridaria* Swinh.) (17 g) has been regarded by HAMPSON and TURNER as synonymous with *mundissima*, but this can scarcely be correct, as the forewing shows an approach (though only slight) towards the shape of *Gnamptoloma*. The cell-spot of the forewing, though still small, has a distinct white pupil, the hindwing a similar cell-spot and the underside is green, with a grey postmedian line and a more purple-grey line on the pale fringes. Both the name-types (MEYRICK's from Duaringa, Swinhoe's from Bali)

*rufa*, belong to the green form. — Of ab. **rufa** nov. (nom. coll.) I know only a few ♀♀, including the type and another from Toowoomba. Sumba and Timor are further localities for *prasodes*.

### 18. Genus: **Gnamptoloma** Warr.

Palpus moderate to longish. Antenna of ♂ bipectinate, with long branches. Hindtibia in both sexes with all spurs; in the ♂ tufted with long coarse hair. Forewing with apex produced, termen with an anterior concavity, an angle at the 3rd radial; areole simple, generally rather small, all the subcostals stalked well beyond it. Hindwing with a short tail or acute angle. Exclusively Indo-Australian, the few species very closely related.

*aventiaria*. **G. aventiaria** Guen. (17 h), founded on a ♀ from "Australia", has an even wider range than *T. mundissima*, embracing most of the Indo-Australian Region from Ceylon and India to Formosa, to the Louisiades and through the Sunda Islands to N. Australia and Queensland. It shows the same colour variation and the same general scheme of markings as that species and *prasodes* but, apart from the shape, differs from them in the generally larger and stronger cell-ring and especially the thick mark (on the underside often extended

into a broad suffusion) at the terminal sinus of the forewing. The type was of the fleshy form. — ab. **virescens** *virescens*. *nov.* may be employed to designate the greenish form, which accompanies it not only in Queensland but in most, if not all localities. The larva of *aventiaria* was first made known by MOORE, who knew only a bright green form, but SEMPER, from Luzon, figures it brown. Slender, thickening posteriorly, dorsally with minute, acute warts and on the 5th abdominal two long slender processes. Very restless. Pupa slender, the head pointed; above greenish or (agreeing with the larva) brownish, ventrally dark; in a slight cocoon. — **molybdias** *Meyr.*, *molybdias*. a ♀ from Port Moresby, expanding “26 mm”, is “closely allied to *aventiaria*, of which it might possibly be a form, but the differences in cilia and ground colour separate it from any specimens which the author has seen”. He describes the ground-colour as “pale dull ochreous-greenish” (presumably a little faded), the costal edge pale ochreous-reddish on anterior half, the fringes reddish-brown with pale ochreous tips. In view of the now known variability, I doubt the significance of these details.

**G. aria** *sp. n.* (17 g). Notwithstanding that the genitalia have shown no appreciable distinction excepting their much larger size, I am convinced this must be a separate species from *aventiaria*, particularly as they occur together in the D’Entrecasteaux and parts of New Guinea. Considerably larger (33—38 mm); forewing with the excavation scarcely so deep, the dark shade accompanying it generally less thick, postmedian line a little nearer the termen, on the underside heavy almost throughout (in *aventiaria* nearly always weak or obsolete anteriorly, generally forming a thick spot about the fold), posteriorly no farther from the termen than in the much smaller *aventiaria* (normally about 3.5 mm therefrom in both). Fergusson (loc. typ.) and Goodenough Islands, British New Guinea (Milne Bay to Upper Aroa River), Dutch New Guinea (Snow Mountains), Vulcan and Dampier Islands and the Bismarcks. Variable in the black cell-spot of the forewing.

**G. subochrea** *Btlr.* (17 h) in its size recalls or approaches *aria*, but is certainly a distinct species, with differences in the structure of the 8th abdominal somite, more pointed uncus, etc. Readily distinguishable also by the underside which, apart from its deeper ochreous (at times reddish) colour, has on both wings a complete postmedian line near the distal margin, whereas the other species has this represented by mere vein-dots, sometimes quite weak; oblique stripe of forewing not reaching the costa, sometimes only strong near hindmargin. Distributed in the Solomon Islands, the type from Alu.

### 19. Genus: **Anisodes** *Guen.*

(See Vol. 16, p. 54.)

Palpus moderate to very long, terminal joint in the ♂ often, in the ♀ almost always, elongate, often reaching a striking length, as in few other Geometridae. Antenna of the ♂ bipectinate, with long branches. Hindtibia in the ♀ with 4 spurs, in the ♂ with the armature very variable. Forewing with the areole simple or wanting, rarely very large, the subcostals stalked, the 5th always arising before the 1st. Early stages, so far as known, similar to those of *Cosymbia* (see Vol. 4, p. 141), the pupa with the same butterfly-like attachment to a leaf, with a central girth. Although represented in the African Region and very rich in species in the Neotropical, *Anisodes* undoubtedly reaches its most interesting developments in the Indo-Australian, where an enormous number of ♂ modifications is known, the hair-tufts or pencils appearing not only on different parts of the hindleg, but in some cases on one of the other legs, on the abdomen, on a wing, or on the palpus or antenna. It is not surprising, therefore, that numerous genera or subgenera have been proposed, founded exclusively on ♂ characters. The distribution southward in the region extends to New South Wales (though almost all the Australian representatives belong to Queensland or the north), eastward to the Society Islands. It is wanting in the Hawaiian Islands and New Zealand.

A. Hindtibia of ♂ with 4 spurs; wings normal (*Zeugma* *Walk.*).

**A. recusataria** *Walk.* (17 h). A small species, of comparatively simple structure, the legs in no way aborted, glabrous; palpus very long and slender; areole small or moderate. The cell-marks are brown, punctiform, not ocellated, the lines also punctiform. Described from Sarawak, known also from Banka Island and Malaya. — **parva** *Warr.* from N. Queensland, shows little difference except that the cell-dot of the hindwing is black, not brown. With it are associated the forms from (? Amboina), New Guinea, Woodlark, the Louisiades, Dampier Island and the Northern Solomons.

B. Hindtibia of ♂ with 4 spurs; forewing of ♂ in proximal part above with dense furry scaling (*Prostenodes* *Warr.*).

**A. glomerata** *Warr.* (= *comosa* *Warr.*) (17 h). Palpus with 3rd joint moderate in the ♂, long in the ♀. The ♂ (*comosa*) is easily distinguished from the following by the structure; the ♀ (*glomerata*, with page-priority) might be more difficult to separate, but the range, so far as is known, does not overlap. — ab. **condensata** *Warr.* has a broad diffuse sinuous median fascia of a vinous-reddish shade. I only know *glomerata* from British and

- Dutch New Guinea; all the types were contained in MEEK'S fine collection from the Upper Aroa River. —
- collusa*. **collusa** *subsp. nov.* Except that the termen of the hindwing (especially in the ♂) is slightly less convex, giving to the wing a less broadened appearance, this differs very little from the New Guinea type. Upperside in general slightly duller (more irrorated with grey), the greyish costal edge of the forewing more pronounced, the cell-dot generally weakened. Both wings beneath more strongly vinaceous than in some *g. glomerata*, almost the entire forewing suffused, hindwing strongly marked. Paloe, W. Celebes: Gunong Tompoe, 2700 feet, both sexes (including the type) and Koelawi, 3100 feet (J. P. A. KALIS).
- C. Hindtibia of ♂ with 3 spurs; antenna of ♂ with a tuft of hair; forewing of ♂ with a costal fold which is partly clothed with projecting hair-scales (*Pachythalia* Warr.).
- rotundata*. **A. rotundata** Warr. (17 h). Areole wanting, as also in *glomerata*. The considerable differences in the ♂ structure prevent our regarding them as races of one species, but they have quite evidently a common origin. The type locality is Penang and I have other records for the Malay Peninsula and Sumatra.
- D. Hindtibia of ♂ with 3 spurs, normally placed; forewing of ♂ without special modifications (*Pisoraca* Walk.).
- insitiva*. **A. insitiva** Prout (17 h) recalls small specimens of the widely-distributed *obliviaria* Walk. more than any known *Pisoraca*; but the less elongate forewing and the presence of an areole (though small), as well as the ♂ leg-structure, distinguish it readily. Nilgiris (type) and Formosa.
- mesotoma*. **A. mesotoma** Prout (17 h). Similar in structure to *insitiva*, but with the 3rd joint of the palpus less elongate. The most distinctive marking is the strong (on the hindwing almost straight) median line, a marked contrast to the indefinite median shade of most *Pisoraca*. Hainan (type), Burma and Malaya.
- spectabilis*. **A. spectabilis** *sp. n.* (19 a). Quite distinct from any 3-spurred Indo-Australian *Anisodes* previously known. Palpus with 3rd joint slender, not greatly elongate. Crown of head scarcely whiter than ground-colour. Abdomen with minute dorsal dots. Forewing with areole developed. The wing-pattern in all known examples is constant, recalling the Neotropical *nigropustulata* Warr., and the cell-spots and characteristic subterminal spots are also strongly developed beneath. Paloe, W. Celebes: Gunong Tompoe, and Lindoe, 2700—3700 feet (J. P. A. KALIS), both sexes in the Tring Museum; ♀ rather larger than ♂, the markings intense.
- punctata*. **A. punctata** Warr. (19 a). A smaller species, in colour and markings similar to *mesotoma* with the median shade weakened; the palpus, however, is at least as long as in *insitiva* and the areole is wanting. N. Queensland in
- interpolis*. October and November, best known from the Cairns district. — **interpolis** *subsp. nov.* Rather larger than WARREN'S originals (but *p. punctata* varies in size), postmedian dot on 2nd radial less large, cell-ring of hindwing rounder and blacker, underside of forewing more rosy. Paloe, Celebes (J. P. A. KALIS): a good pair from Tompoe, 2700 feet; a somewhat worn ♀ from Rangkoenau, 1800 feet.
- auricosta*. **A. auricosta** Prout (17 i). A striking species, not only on account of its shape and its bright colour, but also on account of its very moderate palpus, even in the ♀. When I knew only that sex, I was misled into calling it "*Ptochophyle?*", with *Anisodes* venation, but my alternative suggestion, that it might require a new genus, may yet prove justified. Areole well developed. Dutch New Guinea, the type from Mt. Goliath. Subsequently discovered by the PRATT brothers on Buru.
- aurora*. **A. aurora** Warr. (17 h), which is certainly related to *auricosta*, was on similar grounds (and from a single ♀) misplaced by its author in *Chrysolene* (= *Ptochophyle*). It is distinguished from *aurora* by its different tone and by the "dull olive-yellow band" of the forewing; cell-dots wanting or rudimentary. British New Guinea, type from Upper Aroa River.
- cos*. **A. eos** Prout (17 i) differs from *auricosta*, together with which it was collected on Mt. Goliath, in its smaller size, somewhat longer and more slender 3rd joint of the palpus, less extreme shape, more orange-red colour and presence of grey lines.
- geranium*. **A. geranium** Prout (17 i) is presumably a fourth species in the *aurora*-group, but is only known from two ♀♀. Smaller; wings more rounded; palpus quite moderate; peach-blossom pink, irrorated with geranium pink, the markings of the latter colour, not grey. Near Oetakwa River, Snow Mountains.
- compacta*. **A. compacta** Warr. (17 i). Much less bright than the four preceding, though a little more orange-reddish than the average *Pisoraca*. Palpus moderate, slender, the terminal joint in the ♀ about ½ of the rather elongate 2nd joint. Areole developed. Build fairly robust, forewing not elongate. Kei Islands (type), New Guinea, the
- batia*. Louisiade Islands and Bismarek Archipelago. — ab. **batia** *nov.* (17 i), with heavy markings, in particular the

subapical and hindmarginal, is noteworthy because it recurs exactly (both sexes) on St. Matthias Island. Type a ♂ from Little Kei. — **niveostilla** Prout (= *niveopuncta* Turn., nec Warr.) is the North Queensland form, or *niveostilla*, perhaps an aberration, somewhat smaller and less ochreous, perhaps on an average more strongly marked, at least as regards the (often enlarged) black, white-pupilled cell-spot of the hindwing. Occasionally, heavily dark-marked aberrations occur among it. — **lautokensis** Prout, from Fiji, is larger, the vertex and proximal part of antenna snow-white (in *c. compacta* little paler than the body and wings), the grey irroration on the whole stronger. Variable in strength of markings.

**A. obstataria** Walk. (= *acuta* Moore) (17 i). Somewhat paler than *compacta*, though still with a reddish tinge. Areole wanting; further distinguishable by some details of shape and especially by the dark punctiform (not ocellated) cell-mark of the hindwing. Markings generally weak. Borneo (WALKER'S type), Samatra, the Malay Peninsula, S. India and Ceylon (MOORE'S type). — ab. **ignorata** Walk., also from Ceylon, a single ♀, has a slightly more orange-brown tone than usual and has the markings exceptionally weak, even the minute terminal dots brown rather than black. — **imbuta** Warr. from the Khasis and occurring also in Sikkim, is slightly more reddish-tinged than the type-form, the termen of the forewing perhaps slightly more oblique, median shade ill-defined, powdery, postmedian with fairly sharp dots on the veins. Underside very weakly marked, pale or (perhaps always in perfectly fresh specimens) with a rosy suffusion on the forewing. — **cryptorhodata** Walk. (17 i) is probably a further race of the same species, perhaps nearer to *obstataria* in shape, to *imbuta* in markings; upperside generally without a hint of reddish tone, the forewing beneath, on the other hand, with a definite purple or rosy flush, the terminal dots, on the forewing a subterminal series also, deeper purplish. Queensland, from Brisbane northward, not rare. — **tenuis** Warr., described from Biagi, British New Guinea, is certainly very close to *cryptorhodata*, perhaps almost synonymous; unless it is very slightly broader-winged, I can find no difference except in its less pale (more brownish or red-brownish) upperside. British and Dutch New Guinea.

**A. xenocometes** sp. n. (17 k). Rather larger than *obstataria*, more orange, markings more reddish, stronger (at least the median band) both above and beneath; forecoxa of ♂ with an ochreous pencil from base, as long as the coxa itself. Ceylon: Maskeliya, type ♂ and another and 2 ♀♀; Haputale, 1 ♀; all in coll. British Museum.

**A. subdolaria** Swinh. (= *simplex* Warr., *decretaria* Turn., nec Walk.) (17 k). Easily distinguished from *obstataria* by its pale face (that of *obstataria* is predominantly red or purplish), generally paler groundcolour and especially by its shape: termen of forewing more curved, so that the anterior part is less oblique and the wing looks broader and more stumpy, with squarer apex, costa rather straight. Palpus slightly shorter. Very widely distributed, India, Malay Peninsula, Bali, Borneo, Mindanao and again in British New Guinea and Thursday Island; if a separation is possible, the Indo-Malayan group will be *subdolaria* (type from Bombay), the Papuan *simplex* (type from Upper Aroa River).

**A. hirtipalpis** Prout (17 k, ♂ and ♀) should properly constitute a separate section, perhaps next to *hirtipalpis*. *Pachythalia* as the ♂ forewing has the scaling of the upperside specialised, presenting a mealy appearance: palpus long, the 2nd joint in the ♂ with very long forward-directed hair-tuft. The large oval buff cell-spot is another striking characteristic of the ♂. Areole present, rather narrow. The ♀ is a much more normal-looking creature, but I do not think the determination can be doubted. Kinabalu, at elevations of 5000—7200 feet.

E. Hindtibia of ♂ with 3 spurs, normally placed; forewing of ♂ with 3 raised tufts of scales near the apex.

**A. tricrista** Prout (17 k). Besides the scale-tufts, of which the one on the 1st radial is very small, the anterior ones progressively larger, the ♂ forewing has an area of fine, closely appressed, transverse hair-scaling in and behind the cell. New Ireland, 3 ♂♂.

F. Hindtibia of ♂ with the proximal spur near the terminal ones.

**A. sarawackaria** Guen. (= *sarawakaria* Walk.). GUENÉE'S type, from Sarawak, was a ♀, but a series of both sexes from Kinabalu agrees perfectly with it and shows very little variation. The ochreous tint, the broad, cloudy lines and the amount of the subterminal maculation give it a characteristic aspect. Areole present. Known also from Malaya, Tonkin, Formosa, Ceram and New Guinea. Probably several races may, with more material, be found to be distinguishable. — **lichenaria** Swinh. (= *obscurata* Warr.) (18 a), the types respectively from the Khasis and Sikkim, has a distinctly duller tone and is proved by a long series to be a separable subspecies. — **argyrisma** form. nov. has a large white cell-spot on the hindwing, almost as in typical *monetaria* (19 e). A ♀ from New Britain (loc. typ.), where I suspect it is a race, a second from the Kratka Mtns.; both in the Tring Museum.

**A. rufiplaga** Warr. (18 a). Much larger than *sarawackaria* (42—48 mm) and not liable to be confounded

with that or any other known *Anisodes*. Areole wanting. Typical *rufiplaga* has subterminal reddish blotches, *stabilata*. the large (posterior) one reaching the 1st median. — ab. **stabilata** Warr. is a rather frequent form with no special *fasciata*. maculation except small paired black spots (dots) placed near the tornus. — ab. **fasciata** Warr. has no special dark markings, except sometimes the cell-spot of the hindwing, but has the space between the median and postmedian lines and that between subterminal and termen dark-shaded so as to form greyish bands. — ab. *nigriversa*. **nigriversa** Warr. has the reddish blotches of the type changed to black, but lacks the one beyond the cell. New Guinea and Goodenough Island, all the name-types coming from the Owen Stanley Range.

G. Hindtibia of ♂ with 3 crowded spurs.

*penumbrata*. **A. penumbrata** Warr. Palpus in the ♂ with the terminal joint long. Areole present. Recognizable by the long wings, the very oblique lines and shades of the forewing, etc. The type ♂, from S. Celebes, measures *acrobeles*. about 36 mm. — **acrobeles** Prout (18 a) is somewhat larger, slightly narrower-winged, the grey markings less (or not at all) reddish- or vinous-tinged, the vein-dots on the lines inclined to lengthen into very small dashes, the proximal markings of the forewing beneath more obsolete. Central Ceram: Manusela, 6000 feet. — ab. *argyrostigma*. **argyrostigma** Prout, collected with *acrobeles*, has the cell-spots white, black-ringed, that of the hindwing larger, *ma*. more elongate. — 2 ♂♂ from Rana. Buru, belong to the subspecies *acrobeles* but are perhaps slightly intermediate towards the type *penumbrata*. — **microtera** *subsp. nov.* Considerably smaller (scarcely 33 mm), slightly *microtera*. less fleshy-tinged (more yellowish), hindwing with the cell-mark narrow, not white-pupilled, the postmedian slightly more sinuous than in *p. penumbrata*, the underside also yellowish, with little sign of rosy markings. Klondyke. Benguet. Luzon. 800 feet, 1 ♂ in the WILEMAN collection.

*variospila*. **A. variospila** Warr. (= *falsareolaria* ♂ Oberth., *falseareolaria* ♂ Oberth., *biformis* Warr.) (18 a). Very inadequately erected as a new name for a 3-spurred *Anisodes* which WARREN thought was probably the *monetaria* of HAMPSON's "Moths of India", but which (as WARREN rightly saw) could not be that of GUENÉE. "Yellowish ochreous, with the usual markings fairly well expressed", the cell-spot of the hindwing either black, cloudy, with pale centre (the usual form) or round and white, with dark edging. No more definite locality is given than "India", but the specimen which serves as type came from Sikkim; OBERTHÜR's type from the Khasis. Probably a brighter, more sharply marked race of the following.

*contrariata*. **A. contrariata** Walk. (18 b). The determination of this *Anisodes* is not yet absolutely assured, as the type is a poor ♀ from Sarawak, which is not yet an ascertained locality for the present species. SWINHOE considered it to be a "much faded" *obrinaria*, but it seems to agree better with the Malayan species which has the ♂ leg-structure of *variospila*, and of which we here figure a faded ♀ from Kuala Trengganu; perhaps if this were in fresher condition, it would be indistinguishable from typical *variospila*, but the Sarawak original seemed slightly longer-winged, with the termen of the hindwing slightly more crenulate and had the cell-spot of that wing smaller than in any true *variospila* I have yet seen.

*patruelis*. **A. patruelis** Moore (18 b). Extremely similar to the common *absconditaria* Walk., though the different leg-structure will prevent any confusion as to the ♂♂. Forewing with the apex scarcely so acute; a slightly warmer tone of colour is general than in that species, but both are somewhat variable. The cell-spot of the hindwing shows a much wider range of variation than in *absconditaria*, where it is usually a white dot surrounded by a very small black ring; in *patruelis* that form does occur, but quite frequently the cell-spot is large, either black with a small white pupil, or white with a slender black ring round it, or whitish with two dark rings, one surrounding it, the other smaller, placed within the large one and in its turn enclosing a very small pale spot. In these large-spotted forms the cell-dot of the forewing is also slightly enlarged and encloses a more conspicuous white pupil. — ab. **punctata** *ab. nov.* has a few irregularly placed dark spots on the antemedian of the forewing and more on the postmedian and in the subterminal region of both wings, causing it to recall, except in its considerably larger size, a moderately strongly marked specimen of the common South American *Semaopus caecaria* Hbn. Type a ♀ from Maskeliya in my collection. *patruelis* seems to be confined to Ceylon, where it is locally common.

*aëdes*. **A. aëdes** *sp. n.* Close to *patruelis*, perhaps a subspecies of it. Hindtibia of the ♂, in both the known examples of the sex, with the proximal spur not longer than the terminal ones (in *patruelis*, at least sometimes, so definitely longer that when directed hindward it can slightly outreach the longer terminal). Wing-expanse on an average a trifle less, colour slightly paler, especially on the forewing beneath, cell-dot of forewing perhaps oftener without a white pupil; median shade generally weak, postmedian dots perhaps set on a better-developed line or shade than in *patruelis*. Selangor: Bukit Kutu (loc. typ.), 3400—3500 feet, 2 ♂♂, 2 ♀♀; Pahang: Cameron's Highlands, 4800—5500 feet, 2 ♀♀; Kedah Peak.

*subroseata*. **A. subroseata** Walk., a small and poor ♀ from Ceylon, has never been rightly determined, but I have an impression that it may belong to the present section and therefore deal with it here. HAMPSON made it

*obstataria*, which is impossible as the areole is well developed, the 5th subcostal arising from its apex. Head lost, but WALKER says "with a rosy band; palpi slender, shorter than the breadth of the head, 3rd joint linear, full  $\frac{1}{2}$  the length of the 2nd". Resembles a dwarfed, rather pointed-winged, weak-marked *xenocometes* with whitish-yellow costal edge.

**A. minorata** Warr. (= *ephyrata* Warr.) (18 b). Decidedly smaller than the rest of the section, unless *minorata*. my suggestion above regarding *subroseata* prove correct. In colour, etc., not unlike *patruelis*; cell-spot of hindwing more constant; proximal spur of ♂ hindtibia shorter than the terminal ones. Very similar, except in the structure of the hindleg, to *compacta* Warr., 3rd joint of palpus a trifle longer, at least in the ♂; rather smaller, upperside on the whole less weakly marked, underside paler, less glossy, better marked. Tenimber Islands (both the types) and Key Islands. — **tribeles** Prout, erected as a species before I had learned to know *minorata*, *tribeles*. is perhaps almost a synonym, but with the ground-colour a little more vinaceous. Described from Sudest Island. Either this or *m. minorata* occurs in N. Queensland. — **vinotincta** Prout has the ground-colour strongly *vinotincta*. suffused with deep vinaceous (slightly rufous), the dark median shade somewhat broadened, an additional dark band generally more or less strongly developed outside the postmedian dots and enclosing a series of subterminal spots. St. Matthias Island, a short series. — **dubiosa** *subsp. nov.* (18 b) shows some tendency to *dubiosa*. a reduction of the median spur in the ♂ hindleg, but neither definite enough nor constant enough to indicate a separate species. Forewing with termen rather straight, apex rather acute, colour nearly as in the name-type or a little paler. Common at Takow, Formosa, type ♂ in the Tring Museum. A few specimens from S. E. China and Hainan may be associated with it, though rather larger and brighter.

**A. discofera** Swinh. (= *discifera* Hmps.) (18 b). Strikingly unlike any of the preceding in its charac- *discofera*. teristically shaped, red-brown-edged cell-marks. Superficially it is much more like *heydena*, from which it differs in its ♂ hindleg structure. Khasis (type) and Tonkin.

**A. taiwana** Wileman (18 b) is perhaps a race of *discofera*, certainly a near relative. Distinguishable *taiwana*. by its much less definite cell-marks (that of the forewing in one aberration wanting, leaving only the zigzag line) and lack of outer patch between the radials. Formosa.

H. Forewing of ♂ with 1st radial abnormally curved; hindtibia of ♂ with 3 spurs (*Mesotrophe* Hmps.).

**A. alienaria** Walk. (18 c). Forewing relatively more elongate than in *intortaria*, the curvature of the *alienaria*. 1st radial much less extreme, the wings characteristically blotchy (yellow and dull vinaceous-grey), the black dots indistinct. Malay Peninsula and Borneo. A worn ♀ from Siberut Island, which I tentatively referred here, now seems to me more likely to be an unusually blotched *intortaria*.

**A. maximaria** Guen. (= *immonstrata* Walk., *erubescens* Warr.) (18 c). Larger and more reddish (or *maximaria*. bright orange-cinnamon) than the commoner *intortaria*, somewhat differently shaped and on an average more weakly marked; underside notably weak-marked, more vinaceous-tinged than upper. Borneo (the locality of all the types). Singapore and probably Tonkin. — ab. **maculata** *nov.* has a small blackish terminal spot between the radials of the forewing and larger, less solid ones at the anal angle of each wing. A ♂ from Singapore.

**A. intortaria** Guen. (= *expunctaria* Walk., *responsaria* Walk., *ovisignata* Moore, *maximaria* Hmps., nec *intortaria*. *Guen.*) (18 c). In addition to the distinctions noted above, this has the lines generally stronger than in *maximaria* or, at the least, strongly black-dotted on the veins; median shade nearly always dark at costa. Variable, but all the synonyms refer to (approximately) the name-typical form; *intortaria* and *responsaria* from Borneo, *expunctaria* from Singapore and *ovisignata* from Ceylon. — ab. **maculata** *nov.*, corresponding to that of *maximaria* with the same name, is the most striking aberration and not altogether rare. In addition to the localities mentioned, *intortaria* is found also from Assam to Tonkin, on Sumatra, the Philippines and, according to SNELLEN on Celebes.

**A. nephelospila** Meyr. (18 c) has the forewing a little narrower, with the tornus more rounded, the *nephelospila*. hindwing relatively ampler and with the termen slightly more irregular, the whole effect somewhat recalling that of some *Luxiaria*. At least as variable as *intortaria*, probably with a larger percentage of more or less maculate forms. Fairly common in New Guinea and its satellite islands and North Queensland.

I. Hindtibia of ♂ extraordinarily short, with a tuft of hair at the base and with 3 crowded spurs (*Brachycola* Warr.).

**A. jocosa** Warr. (18 c). Very distinct in its bright yellow colour and strong markings. The name- *jocosa*. typical race, from the Khasis, is little, if at all, modified in Pahang and Sumatra. — **glycidora** Turn. from *glycidora*. Queensland, has the ground-colour somewhat lighter, the median line on both wings more distally placed, the cell-dot of the forewing smaller and the cell-ring of the hindwing larger, more narrowly margined with

- black; perhaps sufficient differences to betoken a separate species, in which case the two following forms are probably races of it. *glycidora* is generally rather a small form. — **thysanopoda** Prout (= *fimbripedata* Warr., nec Walk.) (18 d). from the Solomons, is larger and of a somewhat duller colour, the median shade strengthened, etc. Type locality: Florida Island. — **clara** Prout, from New Guinea and its islands, has the irroration finer and sparser, the dark median shading almost entirely obsolete, leaving the zigzag line itself distinct, with its costal spots sharply black; subterminal with some sharp black dots. In all these respects nearer to *j. jocosa*, but conserving the essential distinctions noted under *glycidora*.
- cora**. **A. cora** Prout (18 c). Very similar to *niveopuncta*, but with the body and wings paler above, less fleshy-tinged; markings of forewing more strongly expressed, cell-dot enlarged into a small elongate ring, median shade more deeply dentate; hindwing somewhat more crenulate than in *niveopuncta*, with stronger markings. Near Oetakwa River, Snow Mountains, Dutch New Guinea, 1 ♂.
- absconditaria**. **A. absconditaria** Walk. (= ? *acritophyrta* West ♂, nec ♀ typ.) (18 d) has already been differentiated above from *patruelis*, the species with which, where both occur together, it might most easily be confused. Apparently less variable than that, although the cell-spot of the hindwing exhibits the 3 most usual phases. WALKER'S type, a ♂ from "S. Hindostan", is worn, but shows a stronger median shade than usual. The combined strengthening of the markings and slight "warming" (in the direction of reddish) are characteristic of the S. Indian and — so far as I can see — the Formosan forms, and I am inclined to restrict the name to these, with, probably, those of Ceylon (where it seems rare) and perhaps Malaya and Sumatra. A few from the mountains of Java are larger, but I know too few to offer any opinion on them. — ab. **fasciata** nov., a ♀ from Arizan (A. E. WILEMAN) has the median shade of both wings strikingly broadened and darkened. — **assamica** *subsp. nov.* (18 d). In looking through long series in good condition from the Khasis, one is struck by the generally weaker markings, the great rarity of particularly reddish specimens and the strong preponderance of specimens with the small black-ringed cell-dot of the hindwing, though with a certain percentage in which it is larger and white; those which have it large and black seem almost unknown there. I add here the forms from Sikkim, Bhutan and Upper Burma. — **conjectata** *subsp. nov.* Almost as weakly marked as *assamica* and with the same general tendency in the cell-spot of the hindwing, though occasionally the black ring may be a little enlarged; tone about as reddish as in *a. absconditaria*. Siao-lu, a long series, including the type; Tse-ku, Tien-tsuen, Ta-tsien-lu, Kwanhsien, Kunkala-shan, etc.; chiefly from the OBERTHÜR collection.
- clandestina**. **A. clandestina** Prout (18 d). Smaller and shorter-winged than *absconditaria*, structure in most points quite similar, tympanal orifice greatly enlarged, sternal tuft in ♂ less developed. Wings with the irroration stronger than in *absconditaria*, purple-reddish, giving an appreciably different tone to the species; underside of forewing with a rosy flush, of hindwing generally with the cell-spot developed (in *absconditaria* obsolete). Assam (the type from the Khasis), Malay Peninsula, Borneo, Java and Bali; I think also at Pundaluoya, Ceylon (a ♀ in the Tring Museum) and perhaps Nias.
- paucinotata**. **A. paucinotata** Warr. (18 e). Intermediate in size between the two preceding, in structure (so far as examined) like *absconditaria*, in colour nearer *clandestina*; markings very weak, the minute white cell-dot of the hindwing with its ring very slender and scarcely darker than the rest of the (purplish) irroration. S. and W. Celebes.
- niveopuncta**. **A. niveopuncta** Warr. (18 e). Extremely similar to *clandestina*, which might have been considered a race of it but for the different genitalia; in *niveopuncta* the uncus is longer and more slender, the valves very different, the aedoeagus with very distinct cornutus, etc. Tone seldom quite so purplish, at times almost as in the least reddish *absconditaria*; cell-mark of hindwing generally (? always) minute, with a very small and slender (rarely moderate) black ring. The size sometimes reaches that of *clandestina*, rarely that of a moderate *absconditaria*. N. Queensland; also distributed in New Guinea and known from Vulcan and Dampier Islands. — ab. **indigenus** Warr., from British New Guinea (Angabunga River) has the forewing more weakly marked and the white cell-dot of the hindwing lacks its black ring.
- matthias**. **A. matthias** Prout (18 e). Close to *niveopuncta*, possibly a subspecies. Rather smaller, the forewing perhaps slightly broader in proportion. Distinguished by its less fleshy tone and stronger irroration and markings, notably the proximal shading of the subterminal. Forewing beneath not or scarcely suffused with pink. St. Matthias Island.
- melantroches**. **A. melantroches** sp. n. (19 a). Expanse 35—37 mm. In colour near *clandestina* or bright *niveopuncta*, wings slightly more rounded than in them and *absconditaria*; forewing with costal edge darkened, cell-spot white (not dark-ringed), postmedian dots more proximal, that on R<sup>2</sup> strengthened; hindwing with cell-spot regularly large and blackish. The genitalia differ from those of all the 3 allies. Kinabalu, 5 August 1903, 10 ♂♂ (J. WATERSTRADT) in the British Museum.

**A. decolorata** Warr. (18 e), founded on a pair from Lifu (Loyalty Islands) is generally at least as small *decolorata*. as *niveopuncta*, on the whole paler or more inclining to ochreous. Probably not specifically distinct, though the distal margins in the originals look slightly more bowed and the ♀ rather broad-winged. Forms from Fiji and Tahiti are also referred here.

**K.** Forewing of ♂ narrow, the proximal part of the hindmargin lobed, the region of the hind angle cut away; areole wanting; hindtibia of ♂ with 3 spurs (*Streptopteron Swink.*).

**A. posticamplum** Swink. (= *posticampla Hmps.*) (18 e). ♀ unknown; ♂ recognizable at a glance by *posticam-* its shape and the curiously formed black posterior mark of the hindwing. Khasis. — **expunctor** Prout, a ♂ *plum.* from Kinabalu, at 3300 feet, has the posterior lobe of the forewing a little fuller, the hindwing slightly better *expunctor.* rounded between the 3rd radial and the tornus; slightly paler, median shade of forewing better developed, but with the characteristic mark obsolete. A ♀ from the same mountain, at 5500 feet, has exactly the same tone and markings but the normal wing-shape of *Anisodes* and may be safely referred here. A ♂ from Bukit Kutu represents perhaps an intermediate subspecies.

**L.** Hindtibia of ♂ with 2 spurs, femur and tibia not tufted (*Anisodes*).

1. Subsection. Areole present.

**A. confiniscripta** Warr. (= *punctata Rothsch., nec Warr.*) (18 e). A small and pale species, with the *confini-* lines punctiform, the postmedian strongly displaced on the 2nd radial and strengthened into a dot or dash; *scripta.* cell-mark of forewing always, of hindwing very generally punctiform. Widely distributed; the range embraces Malaya, Borneo, Mindanao, Celebes, Sula, Koer, Little Kei, Dammer, Tenimber (the type) and Dutch New Guinea. — ab. **rubripuncta** Warr. has the cell-spot of the hindwing somewhat larger, bright ochreous; the type *rubripuncta.* and several transitions are from Celebes and a W. Javan ♀ (the only Javan *confiniscripta* yet known) is a rather extreme development.

**A. intermixtaria** Swink. (18 f). Generally less small than *confiniscripta*, hindwing appreciably more *intermix-* crenulate; colour warmer, median shade thicker, postmedian dots more normal, cell-mark of hindwing ocellated, *taria.* etc. Palpus, even in the ♂, strongly elongate. Common in the Khasis, rarer in Sikkim and Bhutan. Variation very slight. Specimens from Formosa perhaps constitute a separate race, almost as heavily marked as the following but agreeing with the type in colouring. As I only know ♀♀, mostly in poor condition, I defer judgment. — **collustrata** *subsp. nov.* Larger, at least than the average *i. intermixtaria*, length of a forewing 13 or *collustrata.* 14 mm. Femoro-tibial tuft of ♂ hindleg perhaps a little stronger. Colour warmer (cinnamon-buff, in places a trifle lighter and yellower); cell-ring of hindwing larger than that of forewing, markings decidedly heavier, the grey antemedian and median shades (especially the former) more zigzag, antemedian of hindwing better developed. Underside also more strongly marked. Pahang: Cameron Highlands (H. M. PENDLEBURY), a pair taken at light, 4800 m, the ♂ in the British Museum, the ♀ in the Selangor Museum.

**A. pepira** *sp. n.* (19 a). Very near the preceding, the ♂ (though in good condition) with scarcely a *pepira.* vestige of a femoro-tibial tuft. Forewing slightly broader, the termen a little less oblique, that of hindwing less crenulate; colouring more reddish; costal irroration and transverse grey shades less strong, antemedian less strongly zigzag, cell-ring of hindwing reduced, only about the size of that of forewing, though in the ♀♀ rather more blackened. Underside weakly marked, the forewing except at hindmargin with rosy or vinaceous suffusion, the hindwing predominantly pale. Pahang: Cameron Highlands, a pair, at the same altitude as the preceding; Fraser's Hill, 1 ♀. Type in the British Museum. — **sbesta** *form. nov.* Rather smaller and decidedly *sbesta.* paler, less reddish. Structure about the same, unless there are slightly more definite indications of the femoro-tibial tuft of the ♂; wings slightly intermediate in shape towards those of *collustrata*; cell-ring of hindwing perhaps relatively a little less small than in *p. pepira*; underside not quite so weakly marked, the forewing showing the median shade and the proximal subterminal in a slightly more definite vinaceous than the ground-colour. Selangor: Bukit Kutu, 3500 feet (H. M. PENDLEBURY), 3 ♂♂ and 1 ♀, type ♂ in the British Museum. Also 1 ♀ from Tanah Rata, Cameron Highlands, 4800 feet.

**A. interpulsata** Walk. (18 f). Much larger than *confiniscripta* and *intermixtaria*, colouring intermediate *interpulsata.* towards that of the latter, to which it also assimilates in the long ♂ palpus and the crenulate wing-markings. Underside whitish, the markings tinged with pink, weak, especially on the hindwing. N. India (loc. typ.). Malay Peninsula and Kinabalu.

**A. arenosaria** Moore (18 f) was sunk by HAMPSON to *interpulsata* and is without doubt nearly related, *arenosaria.* but distinct. The pale ground-colour is more densely, though irregularly, irrorated and the irroration is predominantly sandy ochreous: the cloudy, on the forewing very irregular (in places broad) median shade is

- rather bright ochreous and the cell-dots are more indefinite than in *interpulsata* (with little or no blackish admixture). Described from Ceylon, known also from N. India, Penang and peninsular Siam. — **cretacea** Warr. (19 a) is probably a race of *arenosaria*, though the tooth at the 3rd radial of the hindwing in some examples looks somewhat more pronounced. Ground-colour still whiter, cell-dots blacker, markings more macular, those which proximally bound the subterminal nearly always well developed between the radials and from the 1st median hindward. Variable, but no definite races have yet been made out. WARREN described from Woodlark, but *cretacea* is now known from Dutch and British New Guinea and most of the islands N. E. and E. of the latter; a few specimens have even been brought from the Solomons (Choiseul and Rendova) and *lapidata*. TURNER has recorded it from North Queensland. — ab. **lapidata** Warr. has the irroration greyer, "the lines more distinct than usual", but the bright median shade is obsolete, its position only vaguely indicated by an intensification of the grey irroration. — ab. **venusta** Warr. shows the opposite extreme in colouring, the median shade in particular, being broad and of a bright ochre from the radials hindward. Both these aberrations were described from St. Aignan.
- curtisi*. **A. curtisi** Prout (18 f). Forewing with termen somewhat less oblique than in the previous members of the section, more recalling *alienaria* or *intortaria*; hindwing less ample than in them. Apart from the differences of ♂ venation and leg-structure, distinguishable from *alienaria* in the whiter lower part of face, the less clouded (or mottled) wings, smaller cell-rings and less broad median shade. Penang (type), Selangor and Kedah.
- effeminata*. **A. effeminata** Prout (18 f). Broader-winged than *curtisi*, ground-colour somewhat deeper and somewhat more dulled with greyish; hindwing with cell-ring larger. Forewing beneath with more pinkish-grey suffusion, especially in distal area. Formosa.
- dithyma*. **A. dithyma** sp. n. Expanse 34—35 mm. Except in the simple 2-spurred ♂ hindleg almost exactly like *obviata*, even the pair of triangular vinaceous marks on the abdomen (continuing the median shade of the hindwing) reproduced; rather more deeply and brightly ochre, cell-ring of hindwing in all three rather ample (open), underside rather heavily marked. Dutch W. Borneo: 85 miles above Pontianak, 2 ♂♂, 1 ♀, in British Museum.
- perpunctulata*. **A. perpunctulata** sp. n. ♂, 24—27 mm. Structure about as in *obrinaria* Guen. Palpus nearly  $2\frac{1}{2}$  times as long as diameter of eye. 2nd joint with suberect (forward directed) purple-red scales above, 3rd joint nearly as long as 2nd (perhaps  $\frac{3}{4}$ ). Face whitish, narrowly reddened above. Abdomen with black dorsal dots. Colour whitish, with slight or very slight vinaceous tone ("tilleul-buff" to "vinaceous-buff", RIDGWAY); markings blackish, conspicuous, mainly punctiform; cell-spot of forewing scarcely more than a dot, minutely pale-centred, of hindwing narrow, whitish with a black dot at each end; proximal area with the maximum of dots (on forewing 8 or 9, on hindwing about 4) disposed as in *decretaria*, etc.; median shade strengthened by distal dashes on the veins; postmedian dots strong, that on the 2nd radial displaced proximally; distal subterminal also represented by vein-dashes, less intense, proximal subterminal indicated by a very faint, scarcely noticeable grey shade. Kuranda (F. P. DODD), the type dated November 1905; 2 ♂♂ in the British Museum. Unless TURNER supposed this an extremely strongly marked *leptopasta*, it seems to be unknown to him; it has not the short terminal joint of the ♂ palpus which characterizes *Stibarostoma*, but his indication "terminal joint  $2\frac{2}{3}$  second" is also in conflict therewith; a figure of his type, however, is in colour and weak markings more like *longidiscata*.
- flavissima*. **A. flavissima** Warr. (18 f). Recognizable by its colour and its almost smooth wing-margins, the hindwing not very strongly convex. Terminal joint of palpus in both sexes strongly elongate. Founded on a single ♀ from Biagi, British New Guinea; a series subsequently obtained on Mt. Goliath, including a few examples of — ab. **ophthalmicata** Prout. The white cell-dot encircled, on both wings, by a thick black ring. Recently the species, in apparently identical forms, has been taken on Kinabalu, but only in the ♀ sex.
- acritophyrta*. **A. acritophyrta** West (18 d) is a rather weakly marked species, of nearly the size and shape of *flavissima*, but less warmly coloured, the vertex and the shaft of the antenna whitish; cell-marks formed about as in *flavissima*. Luzon, subprovince Benguet: the type ♂ from Baguia, a ♀, somewhat more reddish and with stronger grey shades, from Haight's Place.
- radiata*. **A. radiata** Warr. Only known from WARREN's original, a ♀ from Indrulaman, Bont̄hain (Celebes), at 2300 feet. Similar in shape and coloration to *intermixtaria* (18 f), the wings (especially the forewing) relatively a little more elongate, the colour a trifle darker or duller. The most obvious distinction is in the cell-marks; while that of the hindwing is as in *intermixtaria*, that of the forewing here forms at least as large a ring, though not quite so sharply black-and-white. Face only narrowly white below (in *intermixtaria* broadly).

**A. frenaria** Guen. (= *maculifera* Swinh., *plumbeodisca* Warr., *cyclophora* Turn.) (18 g). In its typical *frenaria* form, as here figured, an unmistakable species, on account of the large, roundish grey cell-spots. Even when these are reduced, there remain traces, at least, of the shade which runs from the costal part of the antemedian of the forewing along the median vein. The types of the four names came respectively from Borneo, Queensland, Upper Aroa River and North Queensland, but all represent essentially the same form. Also known from the Malay Peninsula, Java, Bali, Celebes and Mt. Goliath. — **pulverulenta** Swinh. (= *pulverentula* Swinh.) *pulverulenta*. (18 g) seems to be the usual form in Assam but can appear, at least as an aberration, elsewhere; its reduced dark cloudings make it a much less striking creature than the name-type.

**A. scriptata** Walk. has nearly the same size and shape as *frenaria* and apparently a similarly irregular *scriptata* (or more broken) postmedian line, but is paler and has nearly the median markings of *heydena* (18 g), though the large oval patch in the middle of the forewing seems to be relatively a little broader and the tone of the markings more red grey than violet-grey. The type is a Borneo ♀ in very poor condition. The few examples yet known are from that country or the Malay Peninsula.

**A. heydena** Swinh. (18 g). Larger and longer-winged than the two preceding, the postmedian line non-dentate, etc. The central marks recall those of *discofera* (18 b), but no confusion between the two species is likely. Khasis (type) and Tonkin. — **victrix** *subsp. nov.* Distal area on the whole more strongly marked, oblique apical streak undeveloped, the slender antemedian line of the hindwing angled (in *h. heydena* straightish or very gently curved). Kinabalu, 5 ♂♂ from the OBERTHÜR collection.

**A. indecisa** Warr. (18 g). Duller (greyer) than *intermixtaria*, the wings perhaps a trifle broader, with the hindwing slightly more bent in the middle. Palpus somewhat longer still (in the ♀ well over 3 times the diameter of the eye). Markings rather indefinite, the white cell-spot of the hindwing not, or scarcely, dark-ringed; shading of distal area slight, but tolerably even, leaving the subterminal visible as a row of pale spots. Forewing beneath suffused with flesh-colour. Described from the Owen Stanley Range, known also from Dutch New Guinea and Ceram. A ♀ from Luzon and a few specimens from Celebes may perhaps represent subspecies.

## 2. Subsection. Areole wanting.

**A. obrinaria** Guen. (18 g) may be regarded as the type of a group of closely allied species and forms *obrinaria* which have not yet received the close attention that they demand. Captured specimens are generally in rather poor condition and are probably often neglected, as they lack special attractiveness. *obrinaria* is moderately common in Ceylon, but was unfortunately misidentified by MOORE, so that the name was long applied to *oblivaria* Walk.; which is generally larger, has the ♂ hindfemur strongly tufted and shows other quite obvious differences. The present species has the palpus in both sexes long, though less extreme than in *intermixtaria*. the ♂ hindtibia with the inner spur long, the outer very short. Markings rather weak, only the white cell-dot of the hindwing with a strong or moderate (though never very large) blackish or dark circumscription. The originals have a decided fleshy or vinaceous tinge in the ground-colour. — ab. **calidata** Walk., also from Ceylon, *calidata*. is an unimportant colour modification, more inclining towards cinnamon. — **similaria** Walk., based on a worn *similaria*. ♀ from "Hindustan" (really from Moulmein) should probably supplant ab. *calidata*, over which it has "priority" by two pages. It seems to have about the same tone of colour, but is larger and it is probably wise to reserve the name in case it should represent a geographical race. — **contracta** Walk., a very poor ♀ from Sarawak, is *contracta*. perhaps in like case. It seems to have had about the same fleshy ground-colour as *obrinaria* but probably a stronger, brighter cell-spot on the forewing; that of the hindwing is more flattened on the proximal side and more bulged on the distal than in typical *obrinaria* and the palpus may be a trifle longer. — The localities in which *obrinaria* has been believed to occur, in addition to the above, are the Malay Peninsula, Hainan, Formosa and even the Kei Islands (1 ♀ besides the aberration); I can, however, more definitely add the Nilgiris. — ab. **nebulifera** Warr. (18 d) was described from a ♀ from the Kei Islands (see above), but WARREN also *nebulifera*. mentions an identical specimen in the British Museum. The latter, besides others since acquired from the ALSTON and MACKWOOD collections, shows that it is chiefly a local aberration on Ceylon and its occurrence in so remote a locality as Kei is remarkable, though I cannot as yet see any grounds for challenging it.

**A. anulifera** Hmps. (= *annulifera* Hmps.). I strongly suspect this is another remarkable aberration of *obrinaria*. Both wings with terminal area somewhat darker than the rest and bearing double series of ill-defined fuscous subterminal spots. Ceylon. 1 ♀, in poor condition.

**A. decretaria** Walk. (18 g). Much paler than *obrinaria*, with sharper markings, the cell-mark of the *decretaria*. forewing punctiform, that of the hindwing annular, of moderate size; median shade (or line) more zigzag, subterminal markings somewhat recalling those of *nebulosata* but slighter. Rather variable. Described from Sarawak, known also from the Malay Peninsula, Tonkin and Formosa and apparently Ceylon. From the latter country came — ab. **pallida** Moore, typically a more heavily marked form than the type; I do not think, how- *pallida*.

- javensis*. ever, that the distinction is racial. This sharp-marked form occurs also in the Khasis. — **javensis** Warr. The type is a small ♂ from Bandung, with a small and narrow (relatively elongate) cell-ring on the hindwing, and may represent a race. A larger ♂ from Trettes, E. Java, however looks like a more fleshy-coloured ab. *pallida*. A similar form has been received from Bali. A few specimens from Tambora, Sambawa, are perhaps more suffused, but I do not yet venture to give them a name.
- subsimplis*. **A. subsimplis** Warr. (18 g) may well be another race of the same species, larger, the cell-spots rather inconstant, though always small; that of the forewing shows a tendency to become irregularly ocellated; that of the hindwing sometimes shows a black dot, indeed in the type specimen the ring appears to be replaced by a black dot; lines never intense. Celebes.
- privata*. **A. privata** Walk. is one of WALKER'S (unfortunately numerous) worn ♀ types and although I have examined it repeatedly I am not yet confident about it. Areole wanting, the stalk of the subcostals arising rather early, the palpus about as in *decretaria*, to the group of which it manifestly belongs. Possibly a large specimen of that species (expanse about 28 mm), the black dots on the postmedian almost obsolete (indicated in red where not too rubbed), the cell-ring of the hindwing large; underside fairly strongly marked. Sarawak. Another possibility is that it might be a discoloured *pictimaculis*, though it is hard to reconcile it.
- pyrrhocrica*. **A. pyrrhocrica** Prout (19 g). Structure again similar to that of *decretaria*, etc. and with the same general scheme of markings. Best characterized by the bright orange cell-ring of the hindwing, with small pale yellow centre. Described from Mt. Murud, Sarawak, known also from other mountains in Borneo and from Pahang and Singapore.
- mesocupha*. **A. mesocupha** sp. n. represents *pyrrhocrica* on Amboina. 30 mm. Smoother-looking, ground-colour somewhat more reddish, irroration much slighter and greyer; median and subterminal shades obsolescent; cell-ring of hindwing smaller. 1 ♂ in Tring Museum (DOHERTY).
- rubrisecta*. **A. rubrisecta** Warr., a ♀ from Kei Islands, is, I now suspect, a remarkable ab. of *obrinaria*, but the hindwing looks somewhat more convex-margined. Larger, the cell-ring of the hindwing sharply black, both wings with the median shade strong, brown-red.
- festiva*. **A. festiva** Warr. (18 h). An attractive species, with its grey ground-colour and purplish admixture in the markings, these latter strongly expressed. The composite cell-mark of the hindwing (reddish with white pupil and dark-grey ring) varies in size and strength; otherwise there is little variation. British and Dutch New Guinea.
- subalbescens*. **A. subalbescens** Warr. (18 h). Paler and without purplish tinge, the grey more inclining towards yellowish, markings much weaker, cell-ring of hindwing small and simple. Underside of forewing terminally and posteriorly and of hindwing wholly whitish. Face white in lower half, in upper half blackish (♂) or greyish (♀). British New Guinea. ♀ a good deal larger than the figured ♂.
- exaucta*. **A. exaucta** Warr. (18 k). Variable in size (not sexually), but generally larger than *subalbata*; longer-winged, more ochreous, antemedian sharply dotted on the veins, a black dot on the cell-fold making an acute triangle with the (elongate) subcostal and (simple) median dots. Cell-ring of hindwing variable in size, its centre more ochre than the ground-colour. Owen Stanley Range (loc. typ.) and Mt. Goliath. — ab. **maculata** nov. has a large dark-brown blotch behind the proximal half of the 1st median and the 2nd submedian; also, but on forewing only, weaker maculation between the radials, in line with the posterior blotch. Mount Goliath, 1 ♀, together with typical ♀♀.
- colysirrhachia*. **A. colysirrhachia** sp. n. (18 k). Expanse 28 mm. In markings like a diminutive *exaucta*, in colour of upperside slightly more pinkish-tinged than *subalbata*. Underside of the forewing distinctive: the greater part (costa to median and its branches; base to well beyond postmedian line) evenly suffused with flesh-colour, the narrow distal area contrastingly whitish, with large dark interneural dots at termen. Dutch New Guinea: near Oetakwa River, Snow Mountains, up to 3500 feet, type ♂; Mount Goliath, 500 feet, February 1911, 2 ♀♀; all collected for the Tring Museum by A. S. MEEK.
- tenuilinea*. **A. tenuilinea** Warr. (18 k). Only known from 2 ♂♂, neither perfectly fresh, the type from Guadalcanar, the second from S. Christoval. Face white in lower half, dull deep red in upper. Palpus with 3rd joint not quite so long as in the preceding group. Median and (especially) postmedian line more regular; antemedian of hindwing more evenly curved, the black dots on median and submedian veins strengthened. Underside whitish, with a weakened postmedian and terminal dots; forewing with a red flush proximally and anteriorly, strongest and brightest at base of costa, in and beyond cell somewhat duller and more greyish.

**A. recumbens** Warr. (18 k). Known at once by its large size, its colour and the narrow, elongate cell-ring of the hindwing. Solomons: Bougainville to Florida and the western group; type from Kulambangra. *recumbens*.

**A. incumbens** Prout (19 a). Very distinct in its narrower wings, ochreous colour, grey costal edge and strongly oblique grey shades. S. Christoval, 1 ♂. *incumbens*.

**A. epicoccastria** Prout (19 c). Extremely like an overgrown *griseata* Warr. with rather shadowy markings; but whereas that belongs to the section *Stibarostoma*, this has the simple palpus of the present group. Upper Aroa River, only the ♂ type known. *epicoccastria*.

**A. praetermissa** Bastelb. (18 h). As the type was a weakly marked ♂ in poor condition, we figure a better-marked ♂ of (presumably) the original series (Fergusson I., MEEK). Moderately variable, but generally recognizable by the shape, the colour, the postmedian and especially the elongate, narrow cell-mark, which approaches the *recumbens* form and only appears again in the specialized groups which follow. On the underside the markings of the forewing are more or less reproduced in pink. Known from British New Guinea (near the coast), Goodenough, Woodlark, the Louisiades, Bismarcks and even Nissan I. and Choiseul in the Solomons; 2 ♀♀ from the Kei Islands are of doubtful identity. — **australis** *subsp. nov.* Smaller, only a few specimens reaching 27 mm; generally paler; markings generally stronger, at least as regards the vein-dots, which can even develop on the median shade (at the extremities of its teeth on the 4th and 5th subcostals, 1st and 3rd radials and 1st median). Underside pale, with the markings less rosy. N. Queensland: Cedar Bay, S. of Cooktown (A. S. MEEK), a series in the Tring Museum, together with 1 ♀ from Geraldton, near Cairns. *australis*.

**A. ampligutta** Warr. (18 h). Forewing somewhat narrower. Most easily distinguished from the preceding species, however, by the straighter postmedian (in *praetermissa* in bent at 2nd radial) and the strongly elongate cell-mark of the hindwing; this mark is at times almost S-shaped, at other times somewhat more sinuous, but never regular. Described from N. Queensland, where it is commoner than the preceding; since found on many of the islands off N. E. and E. New Guinea. *ampligutta*.

**A. pilibrachia** Prout (18 h). Paler than *ampligutta* and weakly marked beneath; otherwise scarcely distinguishable except that the ♂ foreleg (femur, tibia and base of tarsus) is densely clothed with matted hair. Palpus perhaps not quite so long. Median line of forewing with the projections very long. As in *ampligutta*, the cell-mark of the hindwing is occasionally blackened. Solomons, New Ireland, Dampier Island (together with *ampligutta*) and a few localities in New Guinea — Humboldt Bay, Milne Bay, Upper Aroa River. Type from Bougainville. *pilibrachia*.

**A. sublanuginosa** Warr. (18 h). Very similar to small *praetermissa*, agreeing in the sinuous postmedian; again best distinguished by the ♂ character: both wings beneath, to just beyond end of cell, clothed with specialized scaling of an ochreous colour. Further distinguishable by the more rounded cell-ring of the hindwing. Upper Aroa River, type and paratype; Goodenough Island, 1 ♂. A pair of small ♀♀ which, judged by the rounded cell-ring, belong here, are otherwise indistinguishable from some *australis* (rather less broad-winged than the ♂♂). *sublanuginosa*.

**A. hypomion** Prout, only known from a worn ♀, belongs to the present section in the broad sense (areole wanting), but cannot be exactly placed until the ♂ is discovered. 22 mm. Palpus slender, over twice diameter of eye, 3rd joint nearly as long as 2nd. Light pinkish cinnamon with strong grey irroration; cell-mark of forewing large, irregularly long-oval, weakly dark-outlined and enclosing pale scaling, but not conspicuous; of hindwing apparently subtriangular (cf. *turneri*); median shade rather broad and diffuse, on forewing rather strongly oblique; postmedian accentuated by dark dots or minute dashes on the veins, between the radials incurved. Christmas Island. *hypomion*.

M. As L. 2 but with 2nd joint of ♂ palpus elongate, 3rd quite short (*Stibarostoma* Warr.).

**A. turneri** Prout (= *pallida* Turn., nec Moore) (18 h). Palpus of ♂ with 2nd joint smooth above, beneath with long hair directed somewhat backwards. The typical Queensland forms, matched also from Upper Aroa River, are characteristically pale, with strong black punctuation, the triangular cell-mark of the hindwing with a black dot at each angle or at least at the anterior one. — **dampieri** *subsp. nov.* (18 i) is larger, browner, with the punctuation less strong, the cell-mark of the hindwing regularly dark-margined throughout (or, as in the figured aberration, more or less darkened throughout). Dampier Island, February and March 1914. 2 ♂♂ in the Tring Museum. A ♂ and 2 ♀♀ from Rook Island are somewhat discoloured and look more ochreous, but probably agree. — **thesauri** *subsp. nov.* Expanse 22—26 mm, thus no larger than *t. turneri*; colour intermediate between that and *dampieri*, punctuation no stronger than in the latter. Cell-mark of hindwing on its distal side less angled, almost lunulate (in both the known examples dark-filled). Solomons: Treasury Island (type) and Florida. *thesauri*.

- griseata*. **A. griseata** Warr. (18 k). The most widely distributed of the section and easy to recognize by its oblique median shade, the very narrow cell-mark of the hindwing and the strongly elongate 2nd joint of the ♂ palpus, crested with stiff backward-directed hair. Already known from Malaya, Siam, Formosa, Java, Bali, Celebes, Amboina, Kei, N. Queensland (loc. typ.), Fergusson, Dampier and Witu (= French Island). Mr. F. P. DODD bred it from *Ficus glomerata* in Queensland. — **belgaumensis** *subsp. nov.* (19 b). On the whole rather broad-winged, at least as regards the hindwing, which in the ♂ shows a tendency towards an elongation of the abdominal margin and a slightly more wavy (in anterior half almost crenulate) distal margin. Colour constantly (in a series of 12) more (orange-) brown than in the name-typical form. S. India: Belgaum (T. R. BELL); type in the British Museum.
- longidiscata*. **A. longidiscata** Warr. (= *pulverata* Warr.) (18 l). Structure of *griseata*, with which Dr. TURNER unites it. Palpus of ♂ less dark-marked. Forewing with termen less oblique, colour paler, markings shadowy, median shade broad. Hindwing with similar distinctions; cell-streak whiter. Underside still more faintly marked. Townsville, Queensland.
- furcata*. **A. furcata** Warr. (18 k). Similar to *griseata* in structure, the hair on the 2nd joint of the palpus denser. Extremely distinct in coloration and not at all variable. British New Guinea (type from Moroka, 3500 feet); Arfak Mountains and Ysabel Island.
- nebulosata*. **A. nebulosata** Walk. (18 l). Until recently, the ♂ of this *Anisodes* was unknown to systematists and the correct systematic position unsuspected. It proves, however, to be quite near to *griseata*. Markings more cloudy, distally macular. Ceylon.
- leptopasta*. **A. leptopasta** Turn. TURNER differentiates this from the other *Stibarostoma* in which the ground-colour is white (*turneri*) by the ♂ palpus, which is longer (2 as against  $1\frac{1}{2}$ ), the "2nd joint moderate, rough-haired above, smooth beneath, terminal joint  $\frac{2}{3}$  second". The wings have the fuscous irroration more purplish, the cell-dot of the forewing obsolete, the median shade faint, grey. Cell-spot of hindwing blackish, sometimes with white centre, rarely obsolete. North Queensland: Cairns and Kuranda.
- N. As L. 2 but with 2nd and 3rd joints of ♂ palpus quite short (*Xenoprora* Warr.).
- samoana*. **A. samoana** Warr. (19 b). The few known examples are in inferior condition, but recognizable. Wings rather elongate and narrow, the forewing with the median shade about as oblique as in *griseata*, the hindwing with cell-mark formed about as in *ampligutta*. Palpus of ♂ upcurved, 2nd joint short, smooth below, densely clothed above, 3rd joint very small. The only ♂ which I have seen is somewhat more yellowish than the following form and shows on the forewing beneath, at and in front of the end of the cell, a roundish patch of dense, somewhat specialized scaling. Samoa and (perhaps a different race) Society Islands. — **parallela** Warr. (19 b). On the whole larger and relatively less narrow-winged, the tinge more fleshy, the markings on an average stronger. Palpus the same, but I have found no indication of specialized scaling on the forewing beneath. Possibly a separate species, but fresh specimens are still a desideratum. Loyalty Islands: Lifu. I have referred here also a few examples from Fiji.
- O. As N but in addition with a contorted area on the ♂ forewing (*Emmesura* Warr.).
- illeepidaria*. **A. illeepidaria** Guen. (= *semicompleta* Walk., *immemoraria* Walk., *strictaria* Snell.) (18 i). The hair-pencil which arises from the upperside of the contorted patch on the forewing cannot be overlooked and separates the ♂ at a glance. The ♀, on which GUENÉE founded his *illeepidaria*, is much more indefinite, but I believe the determination is correct. Not common in India, much more so in Malaysia and Hainan and extending to Formosa, the Philippines, Celebes and Bali. The earliest two types came from Sarawak, *immemoraria* from Java, *strictaria* from Celebes.
- P. As L. 2 but with the costa of the ♂ forewing forming a large fold beneath (*Crypsiplocia* Warr.).
- pulvinaris*. **A. pulvinaris** Warr. (18 i). Wings elongate in the ♂, typically with the cell-ring of the hindwing oval, somewhat ochreous within. Rare in the Solomons, having been taken singly on Guadalcanar (the type), Ysabel, Choiseul and Treasury besides, one merely labelled "Solomons (WOODFORD)", perhaps from Tulagi. Besides, I have seen a ♂ from Vulcan I. and a pair from Dampier, perhaps rather less narrow-winged, but allowing it to be asserted that the sexes are alike in colour and markings.
- Q. As L. 2 but with the costa of the ♂ forewing irregularly folded above (*Plocucha* Warr.).
- irregularis*. **A. irregularis** Warr. In colour and markings not dissimilar to *pulvinaris*, but rather broad-winged, the termen of the forewing little oblique. The original pair came from Humboldt Bay and I have not yet

seen any others from that part of New Guinea. — **rothschildi** *Prout* (= *warreni* *Rothsch.*, nom. praeocc.) (18 i) *rothschildi*. is more sharply marked, at least as regards the black outlining of the cell-spots; that of the hindwing in the originals is very slender and inconspicuous, that of the forewing virtually wanting. 4 ♂♂ from Oetakwa River (including the type) are quite homogeneous, a pair from Mt. Goliath, 500 feet, a little larger and more deeply coloured.

**A. nigricosta** *Warr.*, also from Humboldt-Bay, shows no really rear connection with *irregularis*, the *nigricosta*. costal fold being quite differently placed and marked with black. The unique type is somewhat larger than the race from the Solomons (expanding fully 30 mm), has the fold longer (its distal part less truncate, more oblique) and has a weaker, more broken cell-mark on the hindwing. — **postposita** *Warr* (18 i) has already been *postposita*. sufficiently differentiated from name-typical *nigricosta*. It will be noticed that the dark parts of the costal fold are here brown-grey rather than black. Besides the original series from Guadalcanar, I have seen *postposita* from Rendova, Vella Lavella and Bougainville and one ♂ from New Ireland.

**A. cristata** *Warr.* (18 i). Larger, paler, the hindwing much more elongate, the costa of the ♂ forewing *cristata*. misshapen, the large costal fold again distinctive in shape. Range similar to that of *postposita*: Bougainville, Tulagi (type), Guadalcanar, Kulambangra, Gizo and Vella Lavella.

R. Hindtibia of ♂ with 2 spurs, femur and sometimes tibia strongly tufted (*Perixera* *Meyr.*).

**A. bisecta** *Warr.* (18 l). Very distinct in its colouring, almost straight red-tinged median line, non-*bisecta*. ringed white cell-dot of hindwing and weakness of other markings. ♂ hindtibia with long red hair from proximal part and shortening whitish hair distally. Owen Stanley Range and Kratke Mountains, New Guinea.

**A. dimerites** *Prout* (19 b). Leg-structure much as in *bisecta*. General aspect more recalling *denticulata* *dimerites*. (19 b), but with cell-spot of forewing ocellated, antemedian of hindwing obsolescent, etc.; leg-structure entirely different. Founded on a ♂ from Kinabalu, 5500 feet, 2 ♀♀ taken with it probably also referable here. — **goliathi** *subsp. nov.*, a ♂ from Mt. Goliath, 5000—7000 feet, February 1911, is rather smaller and paler, the *goliathi*. cell-rings rather larger, especially that of the hindwing, which is clear white in its centre. Type in Tring Museum. A ♂ from Paloe, W. Celebes probably represents this or a further subspecies.

**A. subrosea** *Warr.* (18 l). Leg-structure again similar. Variable, but always bright reddish ochreous, *subrosea*. more rosy beneath. The typical form has an intermixture of grey shading on the upperside and none of the markings intense. The white cell-dot of the hindwing may be either minutely dark-ringed (type) or moderately black-ringed. — ab. **nigriscripta** *nov.* has all the transverse markings sharply expressed in black-grey, the *nigriscripta*. black cell-ring of the fore-, as well as of the hindwing intensified and a black posterior spot on the thorax. All the forms occur in the original series, from Angabunga River. Other localities are known in Dutch New Guinea; and more recently 11 ♀♀ have been collected on Kinabalu (PENDLEBURY) which entirely agree, although the ♂ may make some unexpected revelation.

**A. sordidata** *Warr.* (18 l). Unmistakable through its grey colour, long wings, dentate hindwing and *sordidata*. punctiform black cell-marks. New Guinea, the type from Humboldt Bay. Hindfemur of ♂ red-tufted; tibia smooth. — ♀-ab. **grisea** *Warr.*, the only Kei Island specimen yet known, shows no difference on the upperside *grisea*. except that it is slightly paler, but has the hindwing beneath strikingly pale, only narrow costal and distal borders (the latter embracing the subterminal line) remaining dark. As another single ♀ (Mt. Riu, Sudest) agrees with it, I should have supposed it an island race but that a few ♀♀ in an Aroa River series agree absolutely.

**A. pictimaculis** *Prout* (18 l) approaches *sordidata* in structure, shape and markings but is more fleshy *pictimaculis*. in colour, the cell-spots cinnamon and (though small) not literally punctiform, the postmedian of the hindwing less straight. Underside mostly pale, an extended vinaceous patch on the forewing. Java (type), Bali, Malay Peninsula, Borneo and perhaps Tonkin.

**A. apogona** *sp. n.* Closely similar to a broad-winged *pictimaculis* (18 l) and with similar structure. *apogona*. Rather larger (30—31 mm). Face with lower part purer white. Red tufts of ♂ hindtibia moderately bright. Antemedian dots of forewing with an additional one on the cell-fold only about 1.5 mm from the cell-spot; cell-spots slightly smaller than in *pictimaculis*; postmedian with its dot on 2nd radial less displaced proximad. on the hindwing not, on the forewing scarcely at all, enlarged or strengthened; forewing beneath with the vinaceous shades outside the postmedian dots (i. e., the proximal subterminal) rather well developed in places, though interrupted in cellule 3 and sometimes in cellule 6 and weaker in posterior than in anterior half. Karwar, S. India, 29 July and 4 August 1925 (T. R. BELL), 2 ♂♂ and 2 ♀♀ in the British Museum. A worn ♀ from Ceylon agrees with it.

- dotilla*. **A. dotilla** Swinh. (19 b). Easily known by the broad, dentate-margined wings, their delicate violet-grey tone and the white pupils of the cell-spots. Khasis (type), Nagas, Penang and Hainan.
- faustina*. **A. faustina** Prout (19 b). Extraordinarily like the largest, lightest (least irrorated) *festiva*, but with the ♂ hindfemur red-tufted. Face white in lower half (in *festiva* red throughout). Cell-marks with an increase of red scaling. New Guinea, the type from Upper Setekwa River, Snow Mountains.
- flavispila*. **A. flavispila** Warr. (19 c). A rather simple, broad-winged species, of a pale colour, notably beneath, where the vinaceous-grey irroration is mostly wanting and the cell-spots and postmedian dots stand out strongly. On the upperside both cell-spots are ocellated, the orange filling of that of the hindwing a conspicuous feature; beneath, the relative size of the two is reversed. Hindfemur of the ♂ tufted, tibia glabrous. North India and Burma, the type from the Khasis. The Malaysian forms and those from Hainan and Hong-kong may perhaps be separable racially by their smaller average size and slightly reduced cell-spot of the hindwing. —
- liphosceles*. **liphosceles** Turn. is definitely of a colder grey and with the cell-spot of the hindwing further reduced. Queensland (type) and New Guinea. Single specimens from Sumba and Sumbawa await further material.
- nepheloscia*. **A. nepheloscia** Prout. Very near *pauper* (19 c). Palpus with rather longer terminal joint. Forewing with all the markings stronger, notably the black cell-dot and the olive-grey median shade and spots proximally to the subterminal; median shade less sinuous but more oblique, meeting the antemedian dot. Hindwing with similar strengthening of the markings, the cell-spot larger than in normal *pauper*, the shade beyond it broad and strong. Underside also more sharply marked. Kako Tagalago, Buru, 1 ♂. — **plotosphaera** *subsp. nov.* (19 c) is somewhat larger (42 mm) and paler, the markings above and beneath on the whole less heavy, though the proximal subterminal shading of both wings above is rather conspicuous, generally forming some roundish spots of grey irroration. The termen of the hindwing is slightly less convex than in *pauper* and its postmedian dots less out of alignment at the radials; these distinctions are foreshadowed in *n. nepheloscia*, where, however, the postmedian dots are less conspicuous. Paloe, W. Celebes, 1800—3700 feet (J. P. A. KALIS), a short series in the Tring Museum, the type from Lindoe, 3700 feet. As the Buru type remains unique, and is slightly rubbed distally, it is not certain, though probable, that the subspecies will remain tenable.
- pauper*. **A. pauper** Butl. (19 c). BUTLER'S type, the only specimen known from Malayta, has a diffuse median shade and the cell-dots scarcely developed, but is not in very good condition and I do not suppose differs racially from other Solomon Islands examples. Unless *pauper* sens. lat. (Bougainville, Tulagi, Malayta) has the proximal subterminal shade less developed and the underside less strongly marked, I cannot differentiate it from — **syntona** Meyr. (19 c), the New Guinea representative, very variable in the cell-spot of the hindwing, but not likely to be confused with any other Papuan *Anisodes* yet known in the structure-group. Type from Port Moresby. — **egens** Prout. Smaller (34—36 mm), slightly narrower-winged, of a more fleshy tone, cell-mark of hindwing reduced to a dot, terminal dots beneath not (as in *pauper*) connected by dark shading. Central *celsa*. Ceram, 6000 feet, only 2 ♀♀ known. Possibly a separate species. — **celsa** Prout. Distinguished chiefly from *p. pauper* by its large size (45—48 mm). More rufescent, with somewhat denser dark irroration and darker costal edge. Forewing beneath with more extended fleshy suffusion. Abdomen above more purple-mixed. New Britain.
- prionodes*. **A. prionodes** Meyr. Expanse 40—45 mm. Pectinations very long. Hindfemoral tuft purplish. Both wings a little narrower than in *pauper*, termen of forewing more rounded, anteriorly slightly less oblique; of hindwing more crenate. Markings similar, median shade less oblique. Cell-mark of hindwing in type small, black, white-centred. Fiji. — ab. **discifera** *nov.* has the cell-spot large (diameter at least 2 mm), blackish.
- perscripta*. **A. perscripta** Warr. (19 c), described as an aberration of *pallida*, but showing the structural characters of the present group, is recognizable among the Himalayan species by its reddish irroration and sharply black markings, notably the zigzag median line. It may possibly, however, be a race of *thermosaria*, longer-winged and less heavily marked. Khasis (type) and Sikkim. Areole wanting. ♂ palpus with 3rd joint shortish-moderate. — **cedens** *subsp. nov.* Upperside with some of the dark dots reduced or weakened, particularly those on the teeth of the median line; forewing beneath with much increased rosy suffusion, though (as in *p. perscripta*) the distal border remains narrowly whitish. Paloe, W. Celebes (J. P. A. KALIS): Gunong Tompoe, 3 ♂♂ (including the type); G. Rangkoenau, a worn ♂. Two ♀♀ from G. Tompoe which probably belong here show much wider divergence from the type, having appreciably broader wings, the cell-spot of the hindwing somewhat narrowed and with the black circumscription a little heavier, both wings beneath deeply roseate.
- thermosaria*. **A. thermosaria** Walk. (19 c), presumably named from its "warm" ground-colour, will be readily recognized from our figure and the notes on the preceding. Borneo and the Mergui Archipelago and the Malay Peninsula; type from Sarawak. — **multipunctata** Warr., from British New Guinea (loc. typ.) and Vulcan

Island, scarcely differs, but can perhaps be kept apart as a race by its slightly less reddish tinge and less suffused central area (reverting towards *perscripta*). Possibly the 3rd joint of the palpus is a little longer.

**A. palirrhoea** *Prout* (19 d) apparently represents *thermosaria* on the Solomons; type from Vella Lavella. *palirrhoea*. Larger, 3rd joint of palpus longer (about equal to the 2nd), femoral tuft of ♂ deeper red. Other differences will readily strike the eye.

**A. obliivaria** *Walk.* (= *suspiciaria* *Snell.*, *rufannularia* *Warr.*, *obrinaria* *Moore*, nec *Guen.*) (19 d). One *obliivaria*. of the most widely distributed of the Indo-Australian species — Ceylon, India, Malaysia, Celebes, the Moluccas, some of the Lesser Sunda Islands, New Guinea and its islands, Queensland, the Bismarcks, Solomons and as far as Samoa. Less variable than a good many, the forewing rather weakly marked, cell-spot of hindwing tinged with brownish and with a (generally thick) dark fuscous circumscription. WALKER's type came from *rufidorsata*. Ceylon, SNELLEN's from Celebes. — ab. **rufidorsata** *Warr.*, the type from the Khasis, has the cell-mark of the hindwing considerably enlarged, broadly dark-ringed. Known also from N. Queensland, approximations on Java and New Guinea.

**A. nesidica** *Prout* (19 d). Near *obliivaria*, but smaller, relatively narrower-winged, different in colour *nesidica*. and with very much smaller cell-mark on the hindwing. Face rosy, edged laterally (except the upper part) with whitish (in *obliivaria* an extensive lower part is whitish). Mentawi Islands, common; a few are also known from Sipora and Langkawi.

**A. evocata** *sp. n.* (19 d). Also near *obliivaria*, at least in structure, and with similar whitish face, only *evocata*. the upper  $\frac{1}{3}$  or less rosy. Considerably larger, relatively longer-winged; distal margins more crenate. More strongly marked, especially beneath, cell-mark of forewing less concise (more suggesting the annular form, but not sharply expressed), that of the hindwing narrowed, in the type ♂ not ocellated; postmedian less extremely inbent at the radial fold (both wings). New Hebrides (Miss L. E. CHEESMAN): Malekula, Ourua, type ♂; Santo, allotype ♀. A further ♀ from the same group of islands (Tongoa) is in the Tring Museum. From *recumbens* and *samoana*, which it more resembles in shape, colour and the strongly oblique median shade. *evocata* differs in the ♂ structure.

**A. roseofusa** *Warr.* (19 d). ♂ still larger than the figured ♀ and more deeply coloured — intermediate *roseofusa*. in colour between *obliivaria* and *nesidica*. The usual median shade and dotted lines extremely weak, reddish, costal edge and fringes rather pale, forewing beneath with fleshy tinge, white posteriorly and distally. Borneo: Mt. Mulu, only one pair known; possibly also a more rosy aberration (1 ♀) from Kamborangah, Kinabalu.

**A. ochraria** *Swinh.* (= *ochracea* *Swinh.*), described from Singapore, but not rare in the Malay Archipelago and Borneo and occasional in New Guinea, is probably nothing more than a form of the variable *argyromma*, though it presents a somewhat different aspect. Smaller and rather less brightly coloured, with the cell-marks reduced to a dot on the forewing and a very small ring on the hind. I formerly thought that the hind-femoral tuft of the ♂ was less strong, but do not find this to be substantiated.

**A. argyromma** *Warr.* (= *gaeta* *Swinh.*) (19 g). Known by its large (though variable) size, ochreous *argyromma*. ground-colour and strongly darkened costal edge of the forewing. In the type form the cell-spot of the hindwing is large, roundish and shining white. — In ab. **heterospila** *Warr.* (the type from Penang), it is small, black, *heterospila*. with a whitish dot in the middle. — In ab. **oberthüri** *nov.* (= *falsareolaria* ♀ *Oberth.*, nec ♂) it is large and *oberthüri*. black. Other slight variations of this marking are known but have not received names. — **celebensis** *subsp. nov.* *celebensis*. Hindwing in all the examples yet known with the white cell-spot punctiform or quite small, with narrow or quite moderate black circumscription (compare ab. *heterospila*). Underside considerably more variegated and strongly marked than in *a. argyromma*, the rosy suffusions generally very strong. Paloe, W. Celebes (J. P. A. KALIS): a good series from Gunong Rangkoenau, 1800 feet (loc. typ.) to Lindoe, 3700 feet, variable in size but otherwise rather constant. — *argyromma* is widely distributed: Ceylon, India (type from Khasis), Malaya, Tonkin, Sumatra, Borneo, New Guinea and (perhaps a race, but only one specimen known to me) New Britain.

**A. hypocris** *Prout*. In the absence of the ♂ the position of this species is conjectural, but it *hypocris*. probably belongs to the section *Perixera*, perhaps quite near *argyromma* though with more crenulate margins. Areole wanting. Markings greyish, more blurred than in *argyromma*. Upolu, Samoa, 1 ♀.

**A. argentosa** *Prout* (= *monetaria* var. A *Guen.*) (19 e). Closely similar to *monetaria*, especially to *argentosa*. some of the large, dark New Guinea forms (*ceramis*). A small areole almost invariably present (in *monetaria* almost invariably wanting). Tone never very reddish; costal edge of forewing dark; hindwing with the white cell-spot almost always (in *monetaria* rarely) outstandingly large, more inclined to show a small projection outward behind the 2nd radial, the ante- and postmedian lines generally blacker. I regard as the type the Borneo specimen on which GUENÉE founded his "*monetaria* var. A"; other known localities are Ceylon, India,

- scioëssa*. Malaya, Sumatra and perhaps Mindanao. — **scioëssa** *subsp. nov.* is darker (more suffused with grey). Forewing with median shade broad, the ante- and postmedian rows of dots more connected into lines; beneath with a more pronounced rosy suffusion in and behind cell and distally between the folds as far as the postmedian, which latter is better developed than on the underside of *a. argentosa*. Paloe, W. Celebes, 1800—2700 feet (J. P. A. KALIS), type ♀ in the Tring Museum, from G. Rangkoenau. The Bali form, of which I know only one imperfect ♀, is very similar, probably an intermediate race.
- monetaria*. **A. monetaria** *Guen.* (= *pleniluna* *Warr.*) (19 e). Easily known by its shape, the wide distance between the costal end of the postmedian and the apex of the forewing, the cloudy grey shades which accompany (or represent) the transverse markings, etc. Generally more reddish or more cinnamon than *argentosa*, especially so the name-typical race, which, moreover, is generally smaller. The type ♂, from Borneo, and the Penang ♀ on which WARREN based *pleniluna* have the cell-spot of the hindwing large and white. This western race, however, includes a large percentage in which it is small or even punctiform, surrounded by a very slender or moderate
- argentispila*. or very ample black ring or spot. — ab. **argentispila** *Warr.* is a rather light, rather less weakly marked ♀ from the Naga Hills, with the large cell-spot of the hindwing more irregular in shape (with 2 teeth projecting distad)
- areolaria*. and rather more broadly ringed with black. — ab. **areolaria** *Oberth.*, also from Borneo, has the cell-spot of the
- hyperythra*. hindwing black, with only a very small white centre. — ab. (loc.?) **hyperythra** *Swinh.* is nearly the same, the ground-colour a trifle redder, the underside with stronger rosy suffusion. This form is perhaps more prevalent in the Khasis than elsewhere. — These and similar forms inhabit Ceylon, India, Malaya, Tonkin, Borneo. —
- homostola*. **homostola** *Meyr.*, founded on a single ♂ from Talaut, is either an aberration or race, slightly more yellowish.
- ceramis*. weakly marked, the cell-ring of the hindwing extremely small and oval, as in some *m. ceramis*. — **ceramis** *Meyr.* (19 e), which represents *monetaria* eastward, from Celebes to the Solomon Islands, is very variable in size, as well as in the development of the cell-spot of the hindwing; there may perhaps be further races distinguishable. The tone is on the whole less reddish than in *monetaria*, often somewhat dulled with greyish, the grey median shade on the whole a little broader, on the hindwing generally farther from the cell-spot. The type, a ♀ from the "Solomon Islands", has the cell-spot of the hindwing blackish with a white pupil. — ab.
- leucopelta*. **leucopelta** *Lower* denotes the forms with large white cell-spot, as in typical *argentosa* and *monetaria*. Type
- inornata*. from Mackay, Queensland. — ab. (? *subsp.*) **inornata** *Warr.*, from Banda Island is small, hindwing with very small cell-spot, in 4 of the 5 known examples almost punctiform, blackish, with scarcely perceptible white centre, in the other white (almost punctiform), with very slender black ring. These forms are also somewhat prevalent in North Queensland and perhaps on Suriba Island; occasional elsewhere. I have a weakly marked, but not undersized ♂ from Dammer Island, the only *ceramis* yet seen from that locality.
- rudis*. **A. rudis** *Prout* (19 e). Larger than the two preceding, relatively broad-winged, the crown and the antennal shaft much clouded with blackish, the costal margin of the forewing also blackened. Structurally distinct in that the midtibia of the ♂ is densely clothed with long hair, the midfemur having shorter hair and the hindfemur being still more weakly clothed. Forewing of the ♂ with the 1st radial curved, nearly as in *alienaria*, so that both in midleg-structure and venation (excepting the loss of the areole) this sex shows definite convergence towards that species or (as I now suspect) a really close affinity. Cell-spot of hindwing white, but quite small. Underside almost uniform, dull rosy. Snow Mountains: near Oetakwa River; also from Aroa River, 1 ♀. A ♂ from New Hanover is more heavily irrorated and not quite so large as the type. —
- impavida*. **impavida** *subsp. nov.* apparently deviates remarkably little except in a structural detail which will need confirming on more extensive material: hindtibia in the ♂ type with a (very short) proximal spur retained, of which the New Hanover *rudis* shows no vestige (both hindlegs very unfortunately lost in *rudis* type). Face with less (if any) white on lower part. Ground-colour slightly more reddish (less cinnamon), median shade of forewing posteriorly meeting that of hindwing, cell-spot of hindwing reduced. W. Sumatra: Lebong Tandai (C. J. BROOKS) a ♂ and 2 ♀♀ in the British Museum. A much damaged ♀ from N. Borneo (mentioned in my original description of *rudis*) should probably be added.
- sciota*. **A. sciota** *Turn.* has, to judge from its author's account, similar structure to the preceding and following species: "middle tibia and 1st tarsal joint of ♂ elongate and densely clothed beneath with long pale ochreous hairs. Palpus 1½." More ochreous than *rudis*, irregularly blotched with purple-fuscous, apparently much as in *subrubrata* and, like that species, somewhat variable. The chief distinction seems to be that the termen of the hindwing is "rounded". Founded on a ♂ from Kuranda, N. Queensland. A worn ♀ from St. Aignan, though less large, seems to agree better with *sciota* than with *subrubrata*.
- subrubrata*. **A. subrubrata** *Warr.* represents the two preceding on the western group of the Solomons. The type ♀, from Gizo, has the dark blotches developed only in the distal area, the large tornal one on the hindwing
- ustipennis*. the blackest; possibly it is the regular ♀-form, as the other 8 specimens before me are ♂♂. — **ustipennis** *Warr.* (19 e), the type a ♂ from New Georgia, has the hindwing darkened over more than half its surface and the

tornal blotch of the forewing extended by a longitudinal cloud to the cell-spot and the antemedian. 2 ♂♂ from Vella Lavella, one of which we figure, agree closely, though slightly more colourful. The form from Rendova (5 ♂♂) is also essentially the same, though rather variable, in the direction of the weakening of the dark cloudings.

S. Hindleg of ♂ with femur tufted, tibia very short, not tufted, with 1 long and 1 moderately long spur (*Conchocometa* Warr.).

A. **sabulosa** Warr. (19 f). Areole very small, sometimes wanting. WARREN founded the section on *sabulosa*. the "basal segments of abdomen of ♂ armed with flaps of scales, one at each side being smooth and very glossy". A similar latero-ventral "flap" is conspicuous at the base of the abdomen of *flavirubra* ♂ (see below). *sabulosa* is weakly marked, pale both above and beneath, hindwing with the punctiform cell-mark of *interpulsata*; shape and lines more as in *dotilla*. Java, the original series from Palabuan. It is also known from Sarawak, and Mr WILEMAN took a ♀ on Luzon.

T. Hindtibia of ♂ very short, tufted (except in *pantophyrta*) and with only 1 spur (*Eremocentra* Warr.).

A. **obviata** Prout (= *stramineata* Warr., nom. praeocc.) (19 f). Palpus less extremely long than in *obviata*. *denticulata*, the only other similarly coloured *Eremocentra*; hindwing much more crenulate; forewing with cell-spot annular, though less distinct (except its anterior dot) than on hindwing, median shade anteriorly not oblique. Founded on a ♂ from Biagi, a few specimens from Oetakwa River, Mount Goliath and Rook Island also known. A race (?) from Ceram is rather large and pale.

A. **pantophyrta** Prout (18 a). Hindtibia less extremely short than in the rest of the group and not tufted; *pantophyrta*. femur only slightly (in the rest strongly) tufted. The yellow colour brighter than in *subrubrata* f. *ustipennis* and differently disposed. Upper Aroa River, 1 ♂. Perhaps an aberration of a more uniformly coloured species; compare *flavirubra* f. *flavareata*.

A. **flavirubra** Warr. Very variable, but generally easy to recognize by the squarer forewing (termen *flavirubra*. anteriorly less oblique), the prevalence of some shade of dull cinnamon in the colouring and the very small, white-pupilled cell-spots. The "spur" (terminal) of the ♂ is somewhat aborted, but there are 2 additional processes on the tibia, thorn-like and irregularly placed, both as a rule entirely concealed in the dense hair-tuft. ♀ antenna proximally thickened, with raised scale-tufts above. Type a worn ♂ from Cedar Bay, with yellow spots much as in *pantophyrta*, although mostly smaller, but with a stronger development of them between the cell-dot and the subterminal series on the forewing. It is unfortunately one of the rarest forms, though I have seen a very similar ♂ (also worn) from Sudest Island and 2 approaching it from the Admiralty Islands. The race — if indeed the Malaysian one be differentiable — is further known to me from New Guinea, Admiralty Islands, Dampier, Rook. New Hanover, Woodlark, Sudest and Rossel. — ab. **simplex** nov. (19 f). More reddish *simplex*. and much more unicolorous than the name-type. Generally distributed, the type a ♀ from Cairns district. — ab. **transversata** Warr., the type from Cedar Bay, has a sharp black median line on both wings, a slight or *transversata*. strong longitudinal line from it to the distal margin along, the 3rd radial and a more or less linear (instead of punctiform) postmedian line. It has occurred sparingly on the Louisiades, Rook Island and the Hydrographer Mountains, probably everywhere. — ab. **maculata** nov. (19 f) has a large black patch on the hindmargin *maculata*. of the hindwing, a smaller one (or rather, a cluster of 3) subterminally between the radials and often a slight thickening of the black cell-rings. Cedar Bay (type), the Louisiades, Woodlark and New Hanover. Intermediates, which should be classed here, have the black markings of the hindwing more broken or more distributed. — **flavareata** Warr., from Penang, Pahang and Sumatra, has the yellow patches in part larger than *flavareata*. *flavirubra*, so that it is superficially almost exactly like *pantophyrta*. — ab. **flaviversata** nov. A ♂ from Mount *flaviversata*. Tahan and a ♀ from Kedah Peak, Malay Peninsula, show almost the counterpart of *transversata* but have distinct yellow maculation to recall that of *flavareata*, especially on the forewing outside the median line anteriorly. Thus the few Malayan specimens yet known seem to point to the possibility of a separate subspecies, but they are insufficient to justify any dogmatic pronouncement. — **hyperpheres** subsp. nov. is larger, the length of a *hyperpheres*. forewing 17 mm (in a few exceptional examples of the other races reaching 16). Wings above more suffused with grey, beneath relatively pale, less rosy than in most *flavirubra*. Probably variable, but both the known examples belong to the buff-spotted form, like typical *flavirubra* or rather *pantophyrta*. Paloe, W. Celebes (J. P. A. KALIS), a pair, the type ♂ at 3100 feet, the ♀ at 1800 feet.

A. **denticulata** Hmps. (19 f) has already been differentiated above from *obviata*. The type ♂ is the only *denticulata*. specimen which I have seen from the Naga Hills, but I have found no indication of racial variation at Darjiling (where it is also very rare) nor in Malaysia, nor even on Ceram. We figure a ♀ from Pengalengan, Java. A Ceylon ♂ of this structure-group, in the Oxford Museum, has a large white cell-spot on the hindwing, almost as in *monetaria* (ab., subsp. vel sp.?). — ab. **mediusta** Warr., from the Khasis, has the median shade of both *mediusta*.

- glareosa*. wings thickened and much darkened. — **glareosa** Warr., from New Guinea, described as a separate species, may be a race, but I can find no definite difference and shall not be surprised if it has to be treated as a synonym. Median shade (or line) on the whole slenderer, underside possibly rather cleaner. — ab. **fuscisecta** Warr., taken at Biagi with the holotype of *glareosa*, is almost exactly like ab. *mediusta* only with the deep-brown median line a little less thick, and even this distinction does not hold for a *fuscisecta* from the Upper Aroa River.
- porphyropis*. **A. porphyropis** Meyr. Intermediate in colour between the yellower and the more cinnamon species of the group — nondescript light-brown with grey irroration. Palpus extremely long, perhaps even more so, at least in the ♀, than in *denticulata*, but very similar. The ordinary lines generally weak; cell-ring of hindwing moderate, blackish, commonly surrounded with cinnamon-buff suffusion, its centre whitish or slightly purple. MEYRICK chose as his type (probably because the most strongly-marked known to him, but unfortunately by no means the commonest) the form with some blackish subterminal spots and with a subquadrate blackish patch at the tornus of the hindwing (compare *palirrhoea* (19 d) or — as with the corresponding ab. *maculata* of *flavirubra* — a cluster of spots. Not rare in parts of New South Wales (the originals from Sydney — holotype — and Newcastle) and of Queensland at least as far northward as the Cairns district. — ab. **simplex** nov. (19 g), described by MEYRICK as “var. a” and characterized as having “all blackish dots changed to fuscous, indistinct; all blackish spots absent”, is the commonest form. Type from Newcastle; we figure a ♀ from Illawarra. — ab. **mediusta** nov., 2 ♀♀ from Kuranda (ex coll. OBERTHÜR), collected with the two preceding forms, is almost exactly like *denticulata* ab. *mediusta* except in the somewhat less yellow ground-colour. — *meniscata*. **meniscata** subsp. (? sp.) nov. Slightly broader-winged and more warmly coloured, in both these respects somewhat intermediate towards *flavirubra*, but without the noticeable central tooth on the margin of the hindwing. Both the white, narrowly black-edged cell-marks crescentic or comma-shaped. Cedar Bay, S. of Cooktown (A. S. MEEK), 1 ♂ in the Tring Museum. The hindlegs are somewhat damaged, but I do not think they can ever have been so densely clothed as those of *porphyropis* ♂; if not, my suspicion (derived from the shape and facies) that this is a distinct species, is confirmed.
- microsticta*. **A. microsticta** Turn. Expanse 34 mm. Palpus 4 times as long as diameter of eye, terminal joint  $\frac{1}{2}$  second joint. Forewing with apex acute, slightly produced; ochreous whitish, with very sparse irroration; a postmedian series of minute vein-dots; a terminal series between the veins. Hindwing with termen slightly bowed; markings the same. Underside as upper, but slightly tinged with rosy, the dots paler than above. Lowe Howe Island, 1 ♀. Unknown to me; as TURNER says, it is “impossible to be certain of the genus” (subgenus) in the absence of the ♂; he writes “*Brachycola?*” but I suspect it is an *Eremocentra* near *porphyropis*.

## 20. Genus: **Bytharia** Walk.

Palpus rather long and slender, with smooth, exposed 3rd joint. Antenna in the ♂ pectinate, but rather shortly. Hindtibia in both sexes with terminal spurs only. Forewing with simple areole, 5th subcostal from near its apex, 1st—4th long-stalked from its apex, 1st median arising far from 3rd radial (as also on hindwing). Hindwing with termen almost smooth. Notwithstanding its entirely changed pattern, certainly an offshoot of *Anisodes*; the genitalia confirm the relationship indicated by other characters. Exclusively Indo-Australian.

- uniformis*. **B. uniformis** Swinh. (= *baletensis* Schultze) (15 i). The only Malaysian species (or race), recognizable by its narrow dark borders; the yellow ground-colour inclines to become whitish on meeting the distal border. Sumatra (type), Java, Borneo, Luzon and Celebes. SCHULTZE, who treated his Luzon capture as a new genus (*Silvaspica*) and species, reports it as flying in large numbers during the whole day.
- marginata*. **B. marginata** Walk., from Ceram, has the borders broad. I measured them in WALKER'S type ♀, as there was at one time some confusion about the synonymy. That of the forewing is  $8\frac{1}{2}$  mm at the 5th subcostal, 6 at the 1st radial, 4 at the 3rd, thence (and on hindwing) approximately 3 mm, weakly subcrenulate throughout. — **atrimargo** Warr. (= *latimargo* Warr.) (15 i), the Papuan race, has the borders about 1 mm wider. The type of *atrimargo*, from Fergusson Island, and that of *latimargo*, from Etna Bay, are not racially separable.
- lucida*. **B. lucida** Warr. (15 i) represents *marginata* on New Hanover and it is very doubtful whether it should be regarded as anything more than a race. The breadth of the borders is nearly as in *m. marginata*, in the ♀ a little broader than in the ♂; but on the forewing their shape is different, so that they meet at almost a right-angle. — **circumducta** Pagenst. (= *circumdata* Swinh.) is larger and less deeply coloured, the border of the hindwing in the (type) ♀ not broadened, those of the forewing a little more rounded where they meet.
- circumducta*.

New Britain (type) and New Ireland. — **angustimargo** *Prout*, from the Solomon Islands, has the distal border considerably narrower, in its typical form (from Rendova) measuring only  $1\frac{1}{2}$  to 2 mm, at the apex of the forewing 3–4 mm; its proximal edge scarcely crenulate. Expanse in the ♂ 36–42 mm, in the ♀ 48 mm. Remarkably similar to *uniformis*, which is larger and has the borders more lead-coloured (here blacker); moreover the present species lacks the whitish line between ground-colour and border. A ♂ from Choiseul has the borders somewhat less narrow, possibly another race. *angusti-*  
*margo.*

### 21. Genus: **Epicosymbia** *Warr.*

(See Vol. 16, p. 56.)

Near *Scopula* in most characters, but with the ♂ antenna strongly pectinate (as in only a few African *Scopula*), the areole of the forewing double, etc. Genitalia of the ♂ much as in *Scopula*, but with a well developed uncus. In Africa, the chief home of the genus, there are two sections recognized, according to the armature of the ♂ hindleg; the Indian forms belong to the section *Anacosymbia* *Prout*, i. e. the tibia without spurs.

**E. albivertex** *Swinh.* (15 i). Somewhat larger than its African congeners, the ♂ hindtibia with a strong hair-pencil. In tone strongly reminiscent of *Organopoda* and *Discoglypha*, the cell-dots simple, the apex of the forewing not very acute. The name-typical race is N. Indian, the type from the Khasis; a “Pulo Laut (DOHERTY)” ♂ in the British Museum, from the ELWES collection, agrees so exactly with one from the Naga Hills, from the same collector, that I assume an error in labelling. — **ancillaria** *Warr.*, from S. India and Ceylon is on an average smaller and generally of a duller, less reddish brown, not very sharply marked. *albivertex.*  
*ancillaria.*

**A. conspersa** *Warr.*, founded on a ♂ from Sumba, is probably a further race, though the type has lost its hindlegs. It and a ♀ from Portuguese Timor which I associate with it are still smaller than *ancillaria*, similar in tone, vertex perhaps less clear white, postmedian line on both wings perhaps more sharply expressed. *conspersa.*

### 22. Genus: **Lissoblemma** *Warr.*

(See Vol. 16, p. 57.)

This genus is also common to India and Africa, each fauna contributing one species. Very near *Somatina*, perhaps a section thereof. Antenna of the ♂ pectinate (as in few *Somatina*), forewing with the apex falcate, costa rather strongly arched, 2nd subcostal arising from the cell. Hindtibia of the ♂ without spurs.

**L. lunuliferata** *Walk.* (15 i). A relatively large and rather striking insect, which cannot be confused with any other known species. Apparently confined to S. India, the type from Canara. *lunuliferata.*

### 23. Genus: **Autanepsia** *Turn.*

Palpus rather short. Antenna of the ♂ dentate-fasciculate. Hindtibia of the ♂ not dilated, with terminal spurs only (♀ probably with 4 spurs). Forewing with areole double, 2nd subcostal from the cell, 2nd radial from slightly before the middle of the discocellulars. Hindwing with 2nd subcostal and 1st radial quite shortly stalked. Type and sole species: *poliodesma* *Turn.* It could perhaps be made a section of *Dithalama*, like *Pylarge* of *Scopula*, but the shape and pattern are different.

**A. poliodesma** *Turn.* (15 g). Recognizable by the generic characters and the pale leaden-grey irroration and markings. Brisbane. *poliodesma.*

### 24. Genus: **Dithalama** *Meyr.*

Characters as given under *Autanepsia* except that the ♂ hindleg has the tibia flattened and distorted, without spurs, and the tarsus much shortened; 2nd subcostal of hindwing somewhat variable, occasionally connate instead of stalked, but apparently never separate. Erected for a single species, *cosmospila*; I have left with it 3 others which perhaps fit better into it than into true *Somatina*, but which have not yet been closely studied. All are Australian and of rather small size.

**D. punctilinea** *Swinh.* (= *tetrasticha* *Lower*) (15 h). Antennal ciliation short. Palpus moderate. A whitish species with the lines indicated by 4 series of grey dots, the outermost blacker. W. Australia, SWINHOE's type from Sherlock River, LOWER's from Derby. *punctilinea.*

**D. cosmospila** *Meyr.* (15 h) is the most ornate *Dithalama*, the coloured outer irregular band quite characteristic. Described from New South Wales and subsequently recorded from Victoria. Said to frequent Eucalyptus. *cosmospila.*

*persalsa*. **D. persalsa** Warr. (= *ioparia Swinh.*) (15 k). More fleshy or reddish than the other species, densely irrorated with coarse dark scales, the proximal lines formed of this irroration, the outer ones more slender; cell-dot and terminal marks black. Underside much paler. W. Australia: Sherlock River and district. Stalking of 2nd subcostal of hindwing variable in extent, rather long in WARREN's type, short in SWINHOE's.

*desueta*. **D. desueta** Warr. (15 k). On account of its somewhat elongate wings and the highly oblique outer line of the forewing, WARREN described this provisionally as a *Lycauges*; perhaps it more suggests some smooth-margined, very fine-lined Palaearctic *Sterrha*. Discovered with *persalsa* at Roebourne, W. Australia.

### 25. Genus: **Somatina** Guen.

(See Vol. 4, p. 44, 415; Vol. 16, p. 57.)

Characters nearly as in *Scopula* but with the areole nearly always double, in that case (unless the 3 preceding are to be merged in it) with the 2nd subcostal nearly always arising from the 3rd, not from the cell. When the distal areole is lost (often merely by a "sport") it can scarcely be distinguished structurally unless in having the 4th and 5th subcostals arising from the areole separately, whereas in *Scopula* they are very generally stalked beyond it. On the whole larger than *Scopula*, the cell-spots often ocellated, showing more the facies of *Problepsis*. Even without the inclusion of the outlying genera there is still some structural variation, as the ♂ antenna can be pectinate (a few African species) or merely with fascicles of cilia, and the ♂ hindleg may retain the terminal spurs (see *nigridiscata*). Somewhat more than half the known species are African, the rest Indo-Australian.

*nigridiscata*. **S. nigridiscata** Warr. is almost exactly like *discata* (15 k) except that the ♂ hindtibia has a pair of terminal spurs (genus *Somatinopsis* Warr.). S. Java, the type only. From Paloe, W. Celebes, a series has

*aequidiscata*. recently been received of which scarcely over one-third agree with the type. — ab. **aequidiscata** nov. (19 h), there the commoner form, has both cell-dots punctiform. ♀ scarcely distinguishable from rather pale *plynusaria*.

*pernigrata*. — ab. **pernigrata** nov., 1 ♂ (Paloe), is densely irrorated almost throughout with blackish, the front of the thorax, as well as the fringes, remaining white. The underside has some similar dark powdering, on the hindwing distal only, on the forewing chiefly subcostal and in the cell.

*maeandrata*. **S. maeandrata** Prout (15 k) is characterized by the dark red-grey fringe and terminal suffusion. Face black. 2nd subcostal of forewing connate with 3rd or even (occasionally) from the cell. We figure a ♀. The ♂ is small and less clouded and has the hindtibia strongly dilated and fringed, the tarsus shortened. Kedah Peak, Malaya. Probably a form of the following, which was published (by a figure) while *maeandrata* was in the press.

*obscuriciliata*. **S. obscuriciliata** Wehrli (24 a). Face dark brown. Antennal ciliation perhaps slightly longer than in *maeandrata*, but I doubt whether close study will confirm this. Cell-spot of forewing larger than in *maeandrata* ♂. I see no other appreciable difference. S. E. China: Lienping, type ♂; Kowloon, a ♀.

*discata*. **S. discata** Warr. (15 k). ♂ hindtibia rather short, spurless, tarsus not shortened. The recent discoveries regarding *nigridiscata* (see above) render it extremely probable (though not yet proved) that this is merely an aberration of *plynusaria*, as I already suggested tentatively in 1930. Hainan: besides the ♂ type from Ching Mai, I know only a ♂ from Manehyo. Neither of these villages has yet produced typical *plynusaria*, which however is well known from Hainan.

*plynusaria*. **S. plynusaria** Walk. (= *congruaria* Walk., 1869) (15 k). The type of *congruaria*, formerly cited as a synonym of *anthophilata*, has been acquired by the British Museum and proves to be a wretched ♀ of the present species from "Benares" (err. loc.); in any case the name *congruaria* is preoccupied by WALKER himself. Hind-tarsus of ♂ about as long as the tibia. Nearly related to *anthophilata* but less glossy, more irrorated and clouded, with a dark spot close to apex, etc. Distributed in India (type from Sylhet); Burma, Hainan, Formosa and Java (Mt. Gedeh).

*purpurascens*. **S. purpurascens** Moore (19 g) is nearly related to the preceding, with narrowed median area and generally whiter ♂, apical region clear; the ♂ hindtarsus seems scarcely as long and the genitalia prove it to be a separate species. Described from Ceylon, but meets *plynusaria* in South India.

*anthophilata*. **S. anthophilata** Guen. (15 k) is the type of the genus and a well-known Indian species. Its range embraces further Malaya, Siam, Tonkin, Hainan and a part of China. SEMPER has recorded it from Luzon, but I cannot say whether this will prove to be a race or near ally.

*ossicolor*. **S. ossicolor** Warr., a ♀ from Sumba, has about the same size as a large *anthophilata* ♀. Paler, less pink-tinged, more weakly marked excepting the median line, which on the forewing is acutely angled in cellule 6, on the hindwing straightish.

**S. rufifascia** Warr. (19 g). Represents *anthophilata* in Northern Australia. Smaller, and apparently *rufifascia*. much more variable. The type ♀, from Cedar Bay, was named from the irregular, predominantly deep reddish median band of the forewing. — ab. **maculata** Warr. (19 g) has the lines of the forewing indistinct, but *maculata*. accentuates the pairs of conspicuous black-brown spots at the hindmargin as well as at and in front of the 1st radial on each side of the subterminal line. Described from 2 ♂♂ from the Dawson district; I have a ♀ from Port Darwin. — ab. **sordida** Warr., also founded on 2 ♂♂ from the Dawson district, a trifle larger than *sordida*. the foregoing, is of a dull whitish-drab (somewhat more deeply coloured at termen), with the lines only weakly darker, the spots wanting, the terminal dark line a little better developed. — ab. **rubridisca** Swinh. has the *rubridisca*. red of the median area more broken than in the type and somewhat developed on the hindwing also; subapical maculation of forewing present, not darker than median band. “Queensland”, 1 ♀.

**S. rosacea** Swinh. (19 h). Recognizable at a glance, in the name-typical race, by the rosy flush on *rosacea*. the forewing. In the type; the 2nd subcostal of the forewing arises (exceptionally) from the cell. Khasis. Also known from Penang. — **anaemica** Prout. Much paler, almost entirely without the rosy tinge; tornus of fore- *anaemica*. wing without black spots. The 2nd subcostal of the forewing — at least in my specimen — is very shortly stalked with the 3rd. Formosa.

**S. microphylla** Meyr. (= *catacissa* Turn.) (19 h). A striking species, on which MEYRICK, mistaking *microphylla*. his unique ♀ type for a ♂, founded a separate genus *Prasonesis*; TURNER calls it Sect. II of *Antitrygodis*: “hind-tibia of ♂ slender, without tuft”. The ♂ antenna has rudimentary pectinations, surmounted with fascicles of long cilia. New Guinea (*microphylla*) and N. Queensland (*catacissa*).

**S. postlineata** Warr. (19 h), a pair labelled merely “India”, is a very simple species, with the facies *postlineata*. of a *Scopula*, to which genus indeed WARREN referred it, overlooking the double areole. Crown of head bright ochreous. As nothing similar has subsequently been met with in India I suspect that it is really African. Very like a small, impure white, weakly marked *sedata* Prout (Vol. 16, pl. 6 f), the antemedian line obsolete. also — in the ♀. here figured — the postmedian.

**S. centrofasciaria** Leech (Vol. 4, pl. 5 f). Only known from the type ♀, from Chang-yang, Central *centrofasciaria*. China; I have suggested in Suppl.-Vol. 4, p. 26 that it might prove to be a *Discoglypha*, but I prefer its present position. Pale chamois or cream-buff with sinuous postmedian line, on the forewing also an antemedian; a strong cinnamon-drab median shade (narrow band), on the forewing placed just outside a black cell-dot. Warmer in colour than *Dithecodes pseudacidalia* STERNECK (Suppl.-Vol. 4, pl. 4 b); costa of forewing rather more curved, termen of hindwing not bent; cell of forewing slightly longer, distal areole much smaller (typical *Somatina* venation), median shade much darker, postmedian line slender.

**S. mendicaria** Leech (Vol. 4, pl. 5 t). Hindtibia of ♂ not dilated, but spurless; tarsus not aborted. *mendicaria*. Leaden grey, with the simple scheme of markings of a *Scopula*. Expanse 30 to 33 mm. Central and West China, the type from Mupin.

**S. sublucens** Warr. (19 f). Systematic position doubtful; possibly, as the areole is simple, it should *sublucens*. be treated as an overgrown *Scopula*. Terminal joint of palpus small, though WARREN (apparently from its facies alone) placed it in *Organopoda*; breast moderately hairy; 2nd radial of forewing arising before middle of discocellulars. Biagi, British New Guinea, type ♀; 3 ♀♀ also from Mount Goliath, Dutch New Guinea. The discovery of the ♂ should throw further light on its affinities.

**S. indicataria** Walk. (Vol. 4, pl. 5 a). Perhaps predominantly Palaearctic, but its distribution in China *indicataria*. necessitates its mention here: S. E. China, Kiukiang, Chang-yang and Szechuan — not yet fully worked out. The elongate, very black cell-marks, that of the forewing enclosed in an ill-defined ring, and the copious grey cloudings of the hindwing are distinctive. The type probably came from the Shanghai district, but the species is common in Japan, Corea, Ussuri, etc.

**S. eurymitra** Turn. is only known to me from the original description. “♀, 34 mm. Head fuscous; *eurymitra*. lower part of face whitish. Forewing broadly triangular, apex pointed, termen wavy; whitish-grey; an ochreous-fuscous subbasal spot; a fine angulated line shortly beyond this, not reaching costa; a very large discal blotch, not reaching costa, ochreous-grey finely irrorated with fuscous, edged proximally by a fine fuscous line from behind  $\frac{1}{3}$  costa to middle of inner margin, distally by a line from  $\frac{2}{3}$  costa obliquely outwards, angulated near costa, approaching termen behind middle, then bent inwards to  $\frac{5}{6}$  inner margin; an interrupted, closely parallel line, thickened and dentate near costa and with 3 large teeth behind middle, their apices almost touching termen. Hindwing with termen rounded, wavy, tornus rather prominent, pointed; as forewing, but without basal markings”. Queensland: Toowoomba, 1 ♀.

- omicraria*. **S. omicraria** *F.* (= *cana* *Hmps.*, ♀ = *extrusata* *Walk.*) (19 h). A link to *Problepsis*, the cell-marks similarly formed and even with some silvery scaling. Areole variable, double or single. Closely related to the common African *figurata* *Warr.* (Vol. 16, pl. 6 g) and with similar sexual dimorphism: ♂ smaller and whiter; ♀ larger and much more suffused. India and Ceylon.
- triozellata*. **S. triozellata** *Bastelb.* (= *cana* *Turn.*, nec *F.*) (19 i). Antennal ciliation of the ♂ even more extremely long than in *cana*, which it represents in N. Australia; sometimes scarcely distinguishable, though the areole seems more consistently single. On the whole somewhat whiter, or more weakly marked, excepting the cell-marks, which stand out sharply, that of the forewing usually interrupted, merely with a connecting thread at the proximal end. Cape York (type), Port Darwin and Baudin Island. Similar forms occur on Java, Bali and Sumba. — **scenica** *subsp. nov.* (19 h). Generally larger, the ante- and postmedian lines much more developed, terminal dots enlarged, more triangular, on the forewing in part meeting the distal subterminal shade. Paloe, W. Celebes (J. P. A. KALIS), a moderate series in the Tring Museum, almost all from Gunong Rangkoenau, 900 to 1800 feet, though one ♂ was taken at sea level. Not particularly variable.
- transvehens*. **S. transvehens** *Prout* (19 i). Head black. Antenna in the ♂ with strong teeth or rudimentary pectinations, surmounted with fascicles of long cilia. Hindtibia of the ♂ rather strongly dilated, tarsus shortened. Areole simple. Distal markings nearly as in *omicraria*, the median patch of the forewing, on the contrary, incorporated into an almost complete band. Hindwing with termen rather more regularly rounded than in that species. Hainan. This species and *Problepsis sancta*, with perhaps one or two others, almost complete the venational transitions between *Somatina* and *Problepsis*, to which reference is made below.

## 26. Genus: **Problepsis** *Led.*

(See Vol. 4, p. 49; Vol. 16, p. 59.)

This genus was formerly thought to be constantly differentiable from *Somatina* by the undivided areole; but the occasional inconstancy or failure of this character in *Somatina*, as noted above, has rendered the line of demarcation very thin, especially as two or three *Somatina* begin to develop the silvery markings which are so conspicuous a feature of *Problepsis*. Nevertheless, the latter does seem to represent a homogeneous group with the areole regularly undivided, and the venation has nearly always advanced somewhat further in that the 5th subcostal is stalked with the others beyond the areole, not (as in *Somatina*) from the areole itself. Antenna in the ♂ usually pectinate, sometimes with much longer branches than in any *Somatina*. Of about 40 known species, nearly three-fourths are Indo-Australian, the rest mostly African.

- craspediata*. **P. craspediata** *Warr.* (19 i) lacks the usual discal ocellus of the genus, instead of which it has only a very small cluster of dark scales. The type ♂, from "Simbang, [N. E.] New Guinea", for many years remained unmatched, but the same form has been found to inhabit New Britain. — **frosti** *subsp. nov.* A small form (33 mm), with the cell-mark of the forewing as small as in the type, the lines and the median shade relatively strong. Kei Islands (W. J. C. FROST), a pair collected for the late Mr. J. J. JOICEY. — **rotifera** *Prout*. This name must be employed for the ordinary New Guinea forms, in which the cell-mark is roundish or longitudinally oval. The type series, from the Snow Mountains, may be larger and less whitish than the series from the Upper Aroa River. — **longimacula** *Warr.* was properly an Aroa River aberration (very rare) with the cell-mark of the forewing 4 mm long, reaching the postmedian line, and a corresponding, but much shorter mark developed on the hindwing. If the British New Guinea race as a whole needs separation from *rotifera* another name will be required.
- evanida*. **P. evanida** *Prout* (19 i). Recognizable by its clean white ground-colour and shadowy markings, the subterminals wanting; the silvery scales, though scattered, are moderately copious and form, at least on the forewing, definite outlines of the characteristic ocellus. Vertex white. Pectinations of the ♂ moderate. Buru.
- argentea*. **P. argentea** *Warr.*, from Dammer Island, is smaller and perhaps even more devoid of markings, but the unique type, a ♀, is somewhat worn; in any case very weakly marked. Costa and fringe-tips not (as in *evanida*) darkened; the wings with some scattered dark irroration.
- clemens*. **P. clemens** *T. P. Luc.* (= *margaritata* *Warr.*). Larger than *evanida*, the ♂ pectinations twice as long. The lines are all present, the antemedian on the forewing only; median unusually distal (well beyond the weak cell-mark), parallel with the postmedian but stronger; the scattered silvery scaling does not seem to form even the outlines of a definite ocellus, unless perhaps on the hindwing. Brisbane.
- plenorbis*. **P. plenorbis** *Prout* (19 i). One of the largest and most handsome *Problepsis*. From the large *superans* and *discophora* of eastern Asia abundantly distinct in the pectinate ♂ antenna, black crown, absence of the strong dark clouding of the hindwing, etc. Sumatra.

**P. maxima** *Th.-Mieg* (Vol. 4, p. 50; Suppl.-Vol. 4, p. 221), said to come from Japan, must be mentioned *maxima*. here, as I suspect it is really Malaysian. A large ♀, with shortly pectinate antenna (which therefore, it may be anticipated, will be found to be the case also in *plenorbis* ♀) and black vertex, according to the description (confirmed by Mr. SCHAUSS in litt.) very close to *plenorbis* but with the ocellus of the forewing only reaching the subcostal vein and probably some small differences in its maculation, perhaps also in that of the hindwing and in the subterminal spots. It is perhaps still closer to *insignita*, but the ocellus has a diameter of 7 mm, as in *plenorbis*.

**P. insignita** *sp. n.* (19 k). In general coloration and markings (including the bicoloured abdomen above) *insignita*. akin to *plenorbis*, yet remarkably distinct. Antennal and hindleg structure similar. On an average decidedly less large. Wings less broad and with termen more strongly waved or crenulate. Forewing with cell-spot considerably less large (diameter 5 mm), its black markings less thick, the central thickening of the blackish costal edge of the wing well separated from it; postmedian line and subterminal spots greyer, not evanescent anteriorly; terminal line more thickened between the veins. Hindwing with median and postmedian less thickened. Underside of the forewing much more weakly marked. Gunong Tompoe, Paloe, W. Celebes, 2700 feet, February 1937 (J. P. A. KALIS), a fine ♂ in Tring Museum; a few further ♂♂ subsequently received from higher altitudes (3100 and 3700 feet).

**P. apollinaria** *Guen.* (19 k). I have accepted this spelling (in GUENÉE'S index) as a legitimate ortho- *apollinaria*. graphical emendation of the *apollinaria* of the text, seeing that both were published simultaneously. Widely distributed and, notwithstanding its variability, easily recognized by the oblique, oval ocellus of the forewing and the well pectinate antenna and extremely short hindtarsus of the ♂. Probably a fuller analysis of subspecies is desirable than has yet been made, but some forms are so outstandingly distinct that they have already been separated off. The type, from Borneo, is rather large and strongly marked; similar forms inhabit N. India, Burma, Siam, Celebes, Bali, New Guinea and Queensland. — **candidior** *Prout*, from S. India, is con- *candidior*. spicuously cleaner white, the ocellus of the forewing more produced distally about the 1st and 2nd radials, containing near its distal margin two (partly confluent) black marks instead of the one which *apollinaria* shows. As the ♂ hindtarsus seems scarcely so extremely short, this may prove a separate species. — **hemicyclata** *Warr.* is a small and weakly marked race from the Kei Islands. A single ♀ from Ansum, Jobi, seems *hemicyclata*. similar. — **wilemani** *West.* On an average less small than *hemicyclata* (though variably), not quite so weakly *wilemani*. marked; generally best distinguishable by the narrowed central markings. Luzon. The only 2 *apollinaria* which I have seen from Bali resemble some *wilemani* on the forewing, but have the silvery transverse markings farther apart on the hindwing. Probably another race. — **deparcata** *Prout* is also less small than *hemicyclata* *deparcata*. (36—37 mm), the "fillet" (between the antennae) less blackened than in the other races, the face white excepting a narrow band above, the wings purer white, the lines and subterminal shades weak, the silvery ocellus entirely unaccompanied by dark markings. St. Matthias Island. — **aphylacta** *subsp. nov.* Fairly large, other- *aphylacta*. wise probably transitional to *deparcata*. Face about  $\frac{2}{3}$  white, median shade fairly strong, ocellus of forewing shown chiefly by its silvery element, postmedian line distinct, though not broad. Manus, Admiralty Islands, only ♀♀ known. Single ♀♀ from Dampier, Vulcan and Rook Islands and New Britain perhaps represent some other intermediate races.

**P. ocellata** *Friv. cinerea* *Buttl.*, supposed to come from Campbellpur (Punjab), is so closely like the *ocellata*. Palearctic *ocellata* *Friv.* that I have not been able to find even a racial difference, that which was suggested in Vol. 4 (p. 49) being inconstant. I therefore feel strongly inclined to challenge the locality, since I have no further records south-eastward of Syria.

**P. metallopectata** *Pagenst.* (= *venus* *Th.-Mieg*) (19 k). So distinct from all the rest that no detailed *metallopec-* comparison is necessary. The ♂ has the pectinations moderate, the hindtarsus about half the length of the *tata*. tibia. Amboina (both the types) and Ceram.

**P. achlyobathra** *Prout.* ♂ pectinations rather short, hindtarsus not greatly shorter than tibia. Fore- *achlyo-* wing marked nearly as in *transposita* (20 a) but with the ground-colour more tinged with brown, the proximal *balhra*. half heavily suffused with purplish-grey and with indications of a darker antemedian band much as in *metallopectata*; ocellus rather broad, its 2 black posterior lines longer than in *transposita*, postmedian band broader than in that species. Hindwing also with some appreciable differences. Barisan Range, S. W. Sumatra, founded on a ♂; afterwards seen from Perak and from N. Celebes. — **violescens** *Prout* (19 k) was founded on the ♀ (as *violescens*. here figured) and the opinion expressed that it might well prove to be a race of *achlyobathra*; "body and wings more suffused with violaceous, the forewing less dark-clouded, with the ocellus and its accompanying markings more constricted (more recalling those of *transposita*, though with the black marks at the 1st median more slender), the distal area in consequence broader. E. Java: Nongkodjadjar, 4000 feet". The ♂, received later from the same district, almost lacks the violet tone and confirms the specific unity.

- emphyla*. **P. emphyla** *sp. n.* (19 k). In its violet-grey tone and diffuse shade very suggestive, at first sight, of the preceding form; not quite so dark. Forewing with the curved outer band broad and dark, as distally placed as in *transposita*; ocellus broad, its longitudinal black lines on an average longer than in *achlyobathra*, its boundary almost interrupted posteriorly (in this also more as in *transposita*). Hindwing with the dark median shade broad, the metallic postmedian streak straightish, somewhat oblique. W. Celebes: G. Rangkoenau, Paloe, 900 feet (J. P. A. KALIS), many ♂♂ and 1 ♀ in the Tring Museum.
- transposita*. **P. transposita** Warr. (20 a). Structure about as in *achlyobathra*, which see for the differentiation. ♀ concolorous with ♂. British New Guinea.
- vulgaris*. **P. vulgaris** Butl. (= *deliaria* Walk. nec Guen., *ocellata* Moore nec Friv., *delphiaria* Hmps. nec Guen.) (20 a) is now a well-known species, notwithstanding the synonymic entanglements of the earlier authors. From *deliaria* (20 a), the only species wherewith there was any excuse at all for confounding it, it differs in its generally smaller size, the narrower ocellus of the forewing (generally concave on its proximal side) and the black scaling on it proximally. Moreover the pectinations are a little longer and the tarsus shorter. Described from Kangra; widely distributed in India and extending to Malaya, Annam, Tonkin, Hainan and S. China and even a part of Szechuan (see Suppl.-Vol. 4, p. 33). — ab. **attenuata** Warr., from Merkara, S. India, is a slight and unimportant aberration with the posterior part of the median fascia complete and broad. — ab. (?) **auriculifera** Warr., founded on a bred ♂ and ♀ from Singapore, is somewhat more doubtful, as the pectinations of the ♂ look a trifle shorter before they break up into the fascicles of cilia, in which those of typical *vulgaris* also terminate. In the markings I can see nothing altogether distinctive and their small size may well be a result of breeding, but similar specimens from Annam and Hainan are also small.
- albidiior*. **P. albidiior** Warr. (Suppl.-Vol. 4, pl. 4 f). This also was much confused by previous writers and even in Vol. 4 (p. 50) I treated it as a *deliaria* form. A correction has been made in the supplement to that volume (p. 33). The pectinations in *albidiior* ♂ (unless, indeed, it has been wrongly mated — the originals were 2 ♀♀ from Kulu) are about 3 times the diameter of the shaft, in *deliaria* less (about 2); ocellus of the forewing more circular, showing evidently a close affinity with *magna*, which may perhaps be a race of it. Besides N. India, *albidiior* inhabits S. China and S. Japan, perhaps also Borneo. The Ichang ♀ which WARREN associated with it (see Vol. 4, p. 50) probably belonged to *euircota* Prout. — **matsumurai** *subsp. nov.* is a smaller paler form, apparently racial on the Riu-Kiu Islands. Certainly the form figured by MATSUMURA (Ins. Mats. Vol. 4, pl. 2, f. 20) as *deliaria*. A pair from Okinawa (Tring Museum).
- magna*. **P. magna** Warr. (20 a). On an average larger than *candidiior*. Forewing with cell-spot nearly always larger in proportion; a grey streak from it to hindmargin; silvery irroration proximally. Hindwing with ocellus enlarged, but ill-defined. Mountains of New Guinea, the type from Angabunga River.
- exanimata*. **P. exanimata** Prout (20 a). Structure about as in *albidiior* and *magna*, or with the pectinations a little longer. Wings white, without the brownish suffusions of its near allies (about as in *sancta* or the African *Problepsis*). Ocellus of forewing rather less large and regular than in *albidiior*; etc., etc. Java, the type series from the east of that country.
- deliaria*. **P. deliaria** Guen. (20 a). Intermediate between *albidiior* and *vulgaris*; comparative notes have already been given. Though the name has been so often misapplied, it is really by no means common; I have seen it only from Ceylon, S. India and Bombay.
- korinchiana*. **P. korinchiana** Rothsch. (20 a). Pectinations shorter than in any of the preceding, only about as long as the diameter of the shaft. It also recalls *euircota* in the roundness of the ocellus (forewing), but this has a good deal of black scaling just inside the orb thereof and the orb itself is more fuscous than light-brown; hind-tarsus of ♂ less extremely short. S. W. Sumatra.
- euircota*. **P. euircota** Prout (Vol. 4, pl. 7 b). Smaller than *korinchiana* (20 a), the pectinations at least as short, perhaps scarcely equalling in length the greatest diameter of the shaft. Hindtarsus of the ♂ extremely short, scarcely  $\frac{1}{4}$  as long as the strongly dilated tibia. Ocellus of forewing rounded, containing black marks only before and behind the base of the 1st median, the anterior (and larger) one reaching the 3rd radial. Ocellus of hindwing also broad, but much less circular than that of forewing. Distributed in China: Shanghai (loc. typ.), Ningpo, Ichang, Chang-yang and Szechuan.
- paredra*. **P. paredra** Prout (Suppl.-Vol. 4, pl. 4 f). Probably near *euircota*, though neither the pectinations nor the ♂ hindtarsus are quite so extremely short. The ocelli are different in shape and contain a larger amount of dark scaling; they recall those of *vulgaris* in shape but are perhaps still broader than the extreme limit reached in that species. Szechuan.

**P. subreferta** *Prout* (Suppl.-Vol. 4, pl. 4 f). Variable in size (34—51 mm). Pectinations rudimentary, *subreferta*. the longest ones definitely shorter than the diameter of the shaft. Hindtarsus of ♂ well under  $\frac{1}{2}$  the length of tibia. Cell-marks darker than in *paredra*, more continuous, only a very little constricted at the fold, the larger (anterior) patch without the definite outward projection between the 2nd radial and 1st median. Tse-ku. N. Yunnan.

**P. discophora** *Fixsen* (Suppl.-Vol. 4, pl. 4 g et Addenda p. 222). Formerly confused with the following, *discophora*. but generally less large (42—50 mm), postmedian generally thick at costa, otherwise weak or obsolescent. The teeth (rudimentary pectinations) of the ♂ antenna still further reduced than in *superans*. Retinaculum of ♂ concolorous with the part of the wing-surface to which it is attached. Described from Corea, but is common in E. and W. China, with a race in Ussuri and close relatives in Japan. Crown in this group white, not black as in most *Problepsis*.

**P. superans** *Butl.* (Vol. 4, pl. 5 a) expands as a rule about 58—62 mm. Ocellus of forewing large, with *superans*. strong black curved line in it (except in front), the subterminal spots on an average more strongly biseriate than in *discophora*. Blotch of hindwing larger, with the metallic ocellus widening more strongly in its posterior half. Retinaculum of ♂ with a black spot posteriorly. May be considered chiefly Palaearctic (Japan, Ussuri, Corea) but reaches Central China. — **summa** *Prout* (Suppl.-Vol. 4, p. 33). Still larger (64—66 mm), the central *summa*. spots relatively rather larger, that of the hindwing with its posterior extension less narrowed. Tse-ku. 2 ♂♂. perhaps a local race.

**P. longipennis** *Prout* (20 b). Possibly a very remarkable aberration of the following, with which it *longipennis*. seems to agree in structure. Unique among the Indian *Problepsis* in the shape of the markings of the forewing, which approximate to those of the Palaearctic *phoebearia* *Ersch.* (Vol. 4, pl. 5 a). Khasis, only the ♂ type known.

**P. crassinotata** *Prout* (20 b). Antenna of ♂ with short triangular teeth, which bear long fascicles of *crassinotata*. cilia; hindtarsus about  $\frac{1}{2}$  the length of the tibia. Cell-patch of the forewing large, not quite circular, its longitudinal exceeding its transverse diameter; that of the hindwing very characteristic in the abrupt expansion of its posterior half. Described from the Khasis; known also from Sikkim and spreading eastward through Tibet to Szechuan and Yunnan.

**P. conjunctiva** *Warr.* (20 b), the type of WARREN'S genus *Problepsiodes* (i. e., the dentate-fasciculate, *conjunctiva*. not pectinate *Problepsis*) is closely allied to *superans* and *discophora* but has the crown and the base of the antennal shaft black. Sikkim (type) to Upper Burma. — **subjunctiva** *Prout*. Considerably smaller (30—33 mm), *subjunctiva*. both wings with the median grey band and outer line much narrower, more brownish. Underside less darkly marked. Hainan.

**P. delphiaria** *Guen.* (= *argentisquama* *Warr.*) (20 b). A rather small species, the ♂ antenna with fas- *delphiaria*. cicles of long cilia, the cell-mark of the forewing large, broadly connected with the hindmargin, that of the hindwing moderate, also with dark posterior extension. Forewing beneath with heavy dark suffusions as far as the subterminal. Borneo, Malaya, Tonkin, Sumatra, Borneo and Palawan. GUENÉE'S type was labelled "Central India". — **auriculifera** *Warr.* is a smaller form (26 and 32 mm) but otherwise showing little difference *auriculifera*. from the type; founded on a pair from Singapore; probably a mere aberration, but the one Annam ♂ and the one Hainan which I have seen are also small.

**P. lucifimbria** *Warr.* (20 b). Closely allied to *delphiaria*. but with the discal mark much smaller and *lucifimbria*. paler, and without any silvery scaling at the base and along the veins; fringes more strongly silvery. Celebes.

**P. sancta** *Meyr.* (20 b). At least as small; snow-white and differing from all the other *Problepsis* in *sancta*. its bright golden-brown face; ocellus oval, moderate, on hindwing slighter. Antenna of ♂ dentate-fasciculate. Queensland.

## 27. Genus: **Lipomelia** *Warr.*

Antenna of ♂ ciliate. Hindtibia of ♂ thickened, enclosed in a long membranous sheath and with a hair-pencil, the tarsus minute; of ♀ with 4 spurs. Areole simple, subcostals 2—5 always stalked from its apex (5 quitting very soon), 1st subcostal either from its apex or just before or beyond. Hindwing with 2nd subcostal from apex of areole or just before, 1st median arising near 3rd radial. Obviously related to *Scopula*, uncus wanting, socii reduced to long-spined pads, valvula much reduced, saccus highly asymmetrical, cerata fused, asymmetrical, and as it is impossible for the mappa to be between them it has apparently divided into 2 ovate plates. Type and only species: *subusta* *Warr.*

*subusta*. **L. subusta** Warr. (= *ustata* Swinh.) (20 c). In colouring, etc. slightly reminiscent of *Nobilia*, but smaller; impossible to confuse with any other known species. North India, Burma and Formosa; type *subusta* from Sikkim, of *ustata* from the Khasis, where it is very common, though the ♀ is very retiring.

## 28. Genus: **Nobilia** Walk.

Palpus shortish-moderate. Antenna of ♂ with fascicles of long fine cilia. Hindtibia of ♂ short, with long hair-pencil, hindtarsus not shortened, hairy, at least its 1st joint; of ♀ with all spurs. Forewing with areole double. 2nd subcostal stalked with 3rd—5th, 2nd radial arising much before middle of discocellulars. Hindwing with 2nd subcostal from about the apex of the cell, or very shortly stalked with 1st radial. A small genus, belonging chiefly to India and Malaysia and entirely confined to the Indo-Australian Region. See Novitates Zoologicae, Vol. 38, p. 1—6.

*obliterata*. **N. obliterata** Warr. (20 c) is the simplest species in markings, conserving a normal (though indistinct) postmedian and on the hindwing a small black cell-dot. Borneo (type), Perak and Sumatra.

*cupreata*. **N. cupreata** Pagenst. (= *nebulosa* Warr.) (20 c). Hindwing still less bent at 3rd radial than in *obliterata*; the pale costal streak of all the succeeding species indicated; distal area, and on the forewing the proximal also, suffused with a slightly deeper, more coppery shade. Amboina; I only know the two types, both ♂.

*avellanea*. **N. avellanea** Prout (20 c). Formerly supposed to be a form of *turbata*, but distinguishable by the tone of colour and nearly always by the postmedian of the forewing, which forms an acute angle at the 2nd median. The genitalia show it to be a good species. N. India (the type from Cherrapunji), Burma, Tonkin, Malaya, Sumatra and Borneo.

*turbata*. **N. turbata** Walk. (= *strigularia* Snell.) (20 c), the type of the genus, has the dark parts considerably darker than in *avellanea* and some other appreciable differences. Described from Sarawak, it is also known from E. Pegu, Tenasserim, Malaysia and some of the Philippines, at least Mindanao and Mindoro. There may be differentiable races.

*erotica*. **N. erotica** Prout is larger, more cinnamon than most *turbata*, though more dark-mixed than *avellanea*; forewing with the postmedian almost as acutely angled as in the latter; hindwing with termen apparently slightly more crenulate than in *turbata*, terminal area between the radials more clouded with the ground-colour. Plate of 8th sternite less deeply emarginate at posterior edge than in *turbata*; aedeagus much stouter than in the rest of the *Nobilia*. Celebes.

*fastigata*. **N. fastigata** sp. n. (20 c). Considerably smaller (40 mm) and much paler, particularly on the under-side, which has none of the orange colour of that of the *turbata* group, though the hindwing and (especially) the costal and distal parts of the forewing have some fleshy suffusion. Hindtibia pale, much more strongly dilated than in *erotica*. In the markings of the forewing the following distinctions are appreciable: costal edge, though narrowly, more or less strongly dark-marked; distal edge of the reddish posterior patch more curved, narrowing the pale ground-colour at hindmargin; postmedian line more produced at 2nd median vein than in most *erotica*, more sinuous between this point and the 3rd radial. Paloe, W. Celebes, a few ♂♂ collected with many *erotica* (J. P. A. KALIS). Type in the Tring Museum, from Gunong Rangkoenau, 900 feet.

*aphrodite*. **N. aphrodite** Prout (20 d). Termen of hindwing with a well-defined central tooth; otherwise in some of its forms scarcely distinguishable from *turbata*; pale parts nearly always with a more decided tinge of brown; forewing with the cell-spot and often the postmedian line more as in *avellanea*; terminal area as in *avellanea* or even paler. The ♀ is more cinnamon than the ♂, occasionally even much like *avellanea*. New Guinea, the type from Upper Aroa River; also from Ron, the d'Entrecasteaux, Dampier and Vulcan Islands. — **rooki** *subsp. nov.* Very similar to a few very strongly marked *a. aphrodite*, but with the dark outer band of the forewing copiously (though very finely) strigulated with the pale ground-colour, whereas in the similar *a. aphrodite* it is solid. Rook Island (Bismarcks), apparently not variable except sexually, the ♀♀ about as deeply coloured as average ♂♂ of the name-typical race. Also a ♀ from Talasea, New Britain, in January. Type ♂ in the Tring Museum.

*molybdina*. **N. molybdina** sp. n. (20 d). Much darker, with more slaty or plumbeous tone (sometimes almost violet); forewing with costal edge strongly darkened, except distally, base somewhat suffused, ante-median line less oblique, postmedian with the angle at 2nd median vein less acute, usually quite rounded off; hindwing less variegated. The genitalia fully confirm its right to rank as a species. British New Guinea and *tombarensis*, New Hannover, the type series in the Tring Museum, from the Hydrographer Mountains. — **tombarensis** *subsp. nov.* is a trifle larger and reverts towards the colouring of *aphrodite*, so that at first sight it might be possible

to misidentify it; but all the essential characters of *molybdina* hold and a glance at the costal edge will at once prevent any confusion. New Ireland (the type series) and Talasea, New Britain (2 ♂♂ and 1 ♀, February to April). Type in the Tring Museum.

**N. strigata** Warr. (20 d). Hindwing more strongly toothed at 3rd radial. In its more purplish colouring *strigata*, and more speckled or strigulated pale parts very distinct from the *turbata* group. Borneo (type), the Malay Peninsula and Java. — **rubescens** *subsp. nov.*, a ♀ from Batoeriti, E. Bali, 3500 feet, is considerably redder, *rubescens*, the "reniform" cell-mark of the forewing apparently less developed (here slightly rubbed) and will probably be found to be a constant race.

### 29. Genus: **Ignobilia** Prout.

Palpus moderate. ♂ antenna with moderate pectinations, ending in short, slight fascicles. Hindtibia of ♂ spurless, with dense pencils; of ♀ with 4 spurs. Forewing: costa arched, apex acute; 2nd radial much less extreme than in *Nobilia*. Hindwing: termen not bent at 3rd radial, tornus pronounced, 2nd subcostal separate. Differs from *Somatina* in the longer palpus, from the majority also in the pectinate ♂ antenna; from *Nobilia* in shape, pattern and in the venational details noted; from *Orthoserica* in shape and pattern; from *Lissolemma* in that the 2nd subcostal of the forewing arises well down the stalk of the 3rd—5th. Erected for the single species *urnaria*.

**I. urnaria** Guen. (20 d). Sufficiently characterized by the above generic diagnosis and very distinct in *urnaria*, its facies, though with approximately the coloration of the surrounding genera. Hindwing beneath uniform orange, much as in most *Nobilia*; forewing beneath with distinct cell-dot and sinuous postmedian (in all *Nobilia* unicolorous). Malay Peninsula, Sumatra, Borneo, Palawan, and Mindanao, the type from Borneo.

### 30. Genus: **Orthoserica** Warr.

I was at one time inclined to make this a subgenus of *Nobilia*, thus destroying the homogeneity of a very natural genus. It can, I think, be conserved according to the markedly crenulate termen of the hindwing, the much less extreme position of the 2nd radial of the forewing and, in the ♂, the (shortly) pectinate antenna. In these characters, indeed, but not in shape and pattern, it assimilates more to *Ignobilia*. Antenna of the ♀ also with short pectinations, as in neither of the near allies. Apparently only one species, in two subspecies.

**O. rufigrisea** Warr. (20 d). The arrangement of the pale areas shows some resemblance to that of *Nobilia*, *rufigrisea*, but the shape and colouring, apart from the antennal differences, should prevent confusion; further, the presence of a dentate postmedian line on both wings occurs in no known *Nobilia* excepting the one (*obliterata*) which lacks the pale areas. Khasis, not common. A few examples from the Malay Peninsula (Bukit Kutu, etc.) are similar. — **mirandaria** Leech (Vol. 4, pl. 25 a) is smaller, lighter, less brightly coloured, the grey basal and costal *mirandaria*, areas of the forewing more extended. Ichang, Central China.

### 31. Genus: **Craspediopsis** Wass.

(See Vol. 4, p. 45.)

Characters mainly as in *Scopula*, but with the areole double and the uncus better developed. Less essential distinctions are the moderate or long pectinations of the ♂ antenna, perhaps the more strongly hairy breast and the generally large size of the species. It would be easy to stretch the somewhat elastic genus *Somatina* so as to include it (see above), but the angled hindwing would add a further element of instability thereto and the special developments of the 8th sternite in the ♂ are here definitely Scopuline, there at the least ambiguous. Hindtibia of ♂ spurless, with pencils, tarsus short. Point of origin of the 2nd subcostal of the forewing variable. A genus of only 7 species, entirely Himalayan and Chinese. Type of the genus: *pallivittata* Moore.

**C. sinuosaria** Leech (Vol. 4, pl. 5). Very distinct from typical *Craspediopsis* in its large, subtriangular *sinuosaria*, black cell-mark and mostly strong, sinuous postmedian line; as the genitalia of this species and the following lack the mappa and cerata they should perhaps be removed from the genus. W. China: Pu-tsu-fong, Ta-tsienu, etc.

**C. necopina** Prout (Suppl.-Vol. 4, pl. 18 k) represents *sinuosaria* at Tse-ku, where it seems plentiful. Hind- *necopina*, wing slightly less angled. Colour, especially of hindwing, somewhat darker. Forewing with cell-mark less triangular, postmedian more sinuous. The genitalia confirm its right as a species.

**C. acutaria** Leech (Vol. 4, pl. 5 e). Considerably smaller than the Indian *Craspediopsis*, the tooth (or *acutaria*, tail) of the hindwing stronger; type of markings much as in *inaequata* and *bimaculata*, the postmedian of the

forewing being accompanied by a dark spot at the hindmargin. Pectinations of antenna moderate, 2nd subcostal of forewing (as also in *acutaria*) arising from the cell. Central and W. China.

- inaequata*. **C. inaequata** Warr. (20 e). On an average decidedly less large than *bimaculata*, though the measurement given by WARREN ("36 mm") refers only to his type, which is unfortunately a small aberration and has the 2nd subcostal connate with the 3rd—5th, whereas in the many well-sized specimens which I have examined it nearly always arises from the cell. Slightly darker than *bimaculata*, more tinged with ochreous, pectinations shorter (about 3, as against 4 or 5, in terms of diameter of shaft), forewing slightly less produced apically. Khasis and (much more rarely) Darjiling. Postmedian spots generally stronger than in *bimaculata*, but variable.
- immaculata*. — ab. **immaculata** nov. Spots narrowed and very faint, so that the form resembles the most feebly marked *bimaculata*. Khasis, a perfect ♂ in the Tring Museum.
- bimaculata*. **C. bimaculata** Warr. (= *bipunctata* Warr.) (20 e). Forewing with 2nd subcostal short-stalked to rather long-stalked; further distinctions have been noticed under *inaequata*. Khasis.
- pallivittata*. **C. pallivittata** Moore (= *rectata* Walk., MS.) (20 e). Antennal pectinations longer and continuing a little further down the shaft; 2nd subcostal of forewing stalked, usually long-stalked. Differs from the two preceding in its brown tone, the absence, with rare exceptions, of the conspicuous postmedian spots, the different median shade of the hindwing, etc. Kumaon to the Khasis.
- persimilis*. **C. persimilis** Warr. (Vol. 4, pl. 7 a). Much greyer than the north-eastern species, the markings simpler, the postmedian punctiform, but conspicuous. Antennal pectinations not or scarcely longer than in *acutaria* and *inaequata*; 2nd subcostal of forewing from the cell, near its end. Known from a number of localities in the N. W. Himalayas.

### 32. Genus: **Antitrygodes** Warr.

(See Vol. 16, p. 60.)

Characters nearly as in the *Problepsides* section of *Problepsis*, i. e. the ♂ antenna ciliate, more or less definitely in fascicles, the ♂ with spurless, tufted hindtibia, that of the ♀ with 4 spurs, the areole simple, etc. Differs essentially in the pattern and in the dentate wing-margins and often has, in the ♂, well-developed abdominal tufts laterally. Indo-Australian and African. Genitalia altogether *Scopula*-like; valves, at least in the genotype *divisaria*, extremely asymmetrical.

- cuneilinea*. **A. cuneilinea** Walk. (20 f). A relatively simple species in shape (distal margins not dentate); lateral tufts of the abdomen moderate. Base of abdomen beneath in the ♂ and anal extremity in the ♀ with special cinnamon-buff scaling. The shape of the antemedian line and the cuneiform subterminal are characteristic. S. India, Burma, Siam and the Malay Peninsula, seldom common, the only extensive series which I have seen coming from the Nilgiris. In Ceylon "very rare except in dry low country" (G. ALSTON, in lit.).
- agrata*. **A. agrata** Feld. (= *restricta* Warr., M. S.) (20 f) has the blackish-green markings less ample than in *divisaria*, the white parts more suffused with vinaceous, the wings beneath, excepting the subterminal band, not (as in *divisaria*) suffused with fuscous or blackish. A frequent venational variation, both in this species and *d. divisaria*, is the loss of the areole, through the failure of the 1st subcostal to anastomose with the others. Typical *agrata*, from Celebes, is a rather small race, usually with a rather broad subterminal band beneath. —
- vicina*. **vicina** Th.-Mieg. Green spots somewhat more extended; subterminal band beneath narrow. N. India, especially the Khasis (loc. typ.); forms from S. China and Borneo may probably be united with it.

- parvimaecula*. **A. parvimaecula**. Probably nothing but a further series of races of *agrata* from Melanesia, but it will, I believe, be more conducive to clearness if we deal with them for the present as a separate unit. Forewing with postmedian somewhat more curved, reaching the hindmargin less near the tornus than in *vicina*; spot in base of cell nearly always small or wanting; postmedian green spot outside the discocellulars rarely much, if at all, produced outward anteriorly, in most of the forms reduced. Hindwing with the postmedian strongly sinuous. Underside with the dark subterminal band narrow; on the forewing beginning in a point at costa and gradually widening to tornus; on the hindwing the reverse (sometimes even vanishing in posterior part). In *vicina* this band is less narrow on the hindwing and broadens in the middle thereof, on the forewing. The types of all the forms are in the Tring Museum. — **parvimaecula** Warr. (20 e). Of this, the name-typical race, I know only the 3 originals (1 ♂, 2 ♀♀), from the Trobriand Islands and the 2 ♀♀ are discoloured; but a good series from the Louisiades shows so much in common with them that I do not hesitate to unite them. Size of *vicina* or little larger, perhaps relatively a trifle broader-winged; subbasal spot behind cell and median spots narrowed, the one outside the discocellular notably narrowed, indented or bisected at the 1st radial. Hindwing with the spot just inside the discocellulars more strongly narrowed than the one just outside. ♀♀ rather deeply suffused with

vinaceous. The Queensland form (Cedar Bay, Geraldton, Kuranda) only differs in having the spot in the end of the cell broader (both wings) and the posterior spot of the hindwing inclined to become produced outward as in *papuana*, with which it occasionally intergrades. So too the only specimen (a ♀) which I know from Fergusson Island. Single specimens from Obi, Buru, Ceram and the Kei Islands (one from each source) do not admit of exact placing at present; perhaps nearest to *papuana*. — **papuana** *subsp. nov.* is larger and lighter, *papuana*, the green markings relatively larger, deeply coloured and standing out strongly; the posterior spot of the hindwing shows a pronounced tendency to run outward strongly at and behind the fold, so as to recall *divisaria* *Walk.* Distributed in New Guinea, the type from the Hydrographer Mountains, 2500 feet. Also Goodenough Island, 1 ♂. — **kirwiriensis** *subsp. nov.* About as large, and at least as pale as *papuana*, but with nearly the maculation of medium *parvamacula*; subterminal green spots of forewing rather small. New Ireland. ♀ much like a larger *parvamacula*. — **erythroconia** *subsp. nov.* Also fairly large (39—41 mm) and with the ♂ pale, but having *erythroconia*, a slightly more uniform tinge of delicate violet and the irroration copious, largely dull red instead of blackish; tornal clouds rather strong; green spots rather pale, the subbasal wanting, those at the discocellulars about as in *privativa*, but with a rather more conspicuous red cell-streak between them, those at the fold present, generally a little larger than in average *parvamacula*. ♀♀ very deeply purple-coloured, the colour and arrangement of the green spots about as in the ♂♂, the median shade (outside the cell) rather broader and brighter red than in most other ♀♀. Admiralty Islands. — **privativa** *Prout* (20 e) is the culmination of the series, similar to *erythroconia* *privativa*, but without the red irroration and with the green spots behind the 2 discocellular ones extremely small or (oftener) wanting. Rook Island (loc. typ.) and New Britain.

**A. subaequalis** *Prout* (20 e). As small as *agrata*, paler than *parvamacula*, the median green markings at least as broad as in the most heavily marked examples thereof, on the forewing even more strongly confluent. Underside almost as in *a. vicina*, the subterminal band of forewing at least as broad as in the most heavily marked. Solomons: Ysabel, only the type ♂ known. *subaequalis*.

**A. pirimacula** *Prout* (20 f). Smaller than the following, antennal ciliation of the ♂ longer (almost as in *agrata*), distal margins scarcely so deeply crenulate, basal patch of forewing more oblique-edged, central patch differently shaped, etc. New Guinea, the type from Fak-Fak. *pirimacula*.

**A. divisaria** *Walk.* (20 f). Varies little and has already been differentiated from its allies. Antennal ciliation of the ♂ about as long as the diameter of the shaft. India (type from Canara) and Malaysia, reaching Bali. Recently received also from W. Celebes. — ab. loc. (an *sp. div.?*) **virentiplaga** *nov.* (20 f). Shape about as in *perturbata*; green markings less dark than in the other forms, median band almost solid, only with a very slender pale mark on the discocellulars, its distal element less produced, on the forewing not appreciably bilobed; the fine brown line outside it, which in *divisaria* is very generally marked on the hindwing with some blackish vein-dots, generally more unicolorous. Hindwing beneath in its proximal half with much less of the dusky suffusion which characterises *divisaria*, the faint indications of the green band of upperside separated from the broad subterminal band by a white band which broadens between the two folds. Ceylon: Kandy. 5 ♂♂ from the Mackwood collection (now in the British Museum); also 3 without exact locality. But that the few Ceylon ♀♀ yet known are intermediate, I would unhesitatingly call this a species. Typical ♂ *divisaria* are known from Maskeliya and "North-Central Province" (ALSTON). — **perturbata** *Prout*, from Formosa, is rather smaller (32—34 mm), termen generally slightly less strongly crenulate, cell of forewing slightly shorter, the green patch outside the discocellulars reduced, the outer line perhaps less sinuous, the subapical spots more separated by the veins. *divisaria*. *virentiplaga*. *perturbata*.

### 33. Genus: **Dasybela** *Turn.*

Face not hairy. Palpus moderate, with long, stiff, projecting hairs. Antenna of ♂ serrate-fasciculate. Breast and coxae hairy. Hindtibia of ♂ with 2 spurs (the hitherto undescribed ♀ will certainly have 4). Areole simple, 1st subcostal stalked beyond it. Hindwing with 2nd radial arising rather near 1st. One, or perhaps two species; exclusively Australian. It apparently differs from the *Holarctias* of the northern hemisphere (Vol. 4. p. 85) only in the position of the 2nd radial of the hindwing and small details of shape and facies.

**D. achroa** *Lower* (20 f). Antennal serrations strong ( $\frac{2}{3}$  diameter of shaft), ciliation long (about  $1\frac{1}{2}$ ). Forewing rather elongate, rounded towards apex, termen bowed, oblique; hindwing with termen strongly rounded; brown-whitish with dense dark irroration, cell-dots present, median and postmedian lines more or less dentate, thickened at costa of forewing, which has also a twice angled antemedian; a dark subterminal suffusion and black terminal dots. Tasmania, in February. *achroa*.

**D. (?) argillina** *Lower* (described as *Emmiltis*). Palpus "long", densely hairy beneath. Hindtibia of ♂ presumably with terminal spurs (so in *Emmiltis* ♂). Forewing ochreous-fuscous, with ochreous basal patch. a *argillina*.

moderate, slightly excurved, dull orange band from  $\frac{1}{3}$  costa to hindmargin near tornus, separated only by a fine white line from a rather broad fuscous-ochreous distal band. Hindwing dull whitish, overlaid with fuscous, 2 lines remaining whitish. Expanse 18 mm. A ♂ from Broken Hill, New South Wales.

### 34. Genus: **Antilycauges** Prout.

(See Vol. 4, p. 51.)

Palpus moderate, lacking the long hair of *Dasybela*. Antenna in the ♂ pectinate. Cell of forewing long, 1st subcostal arising from the areole. Hindwing with 2nd subcostal shortly stalked, 2nd radial central. Probably still nearer to *Scopula* sect. *Pylarge*, differing chiefly in the longer cells and the pectinate ♂ antenna; the approximation of the costal of the hindwing to the cell is longer than is normal in *Scopula*. Only one species.

*pinguis*. **A. pinguis** Swinh. (Vol. 4, pl. 5 b). Distal margins less rounded than in *D. achroa*. Forewing with cell-dot distinct, antemedian line unusually far from base, median shade faint and diffuse, sometimes scarcely discernible, postmedian dentate, some dark shading on proximal side of the sinuous subterminal, almost reaching the postmedian except at costa; sometimes also a terminal shade which almost obliterates the subterminal. Hindwing somewhat more weakly marked. Tonkin, S. and E. China, the Chusan Islands and Formosa, the type from Formosa.

### 35. Genus: **Scopula** Schrank.

(See Vol. 4, p. 51, as *Acidalia*; Suppl.-Vol. 4, p. 33; Vol. 16, p. 61.)

A cosmopolitan genus, consisting already of well over 500 describes species, to which additions are constantly being made. Palpus rather short or moderate, moderately smooth-scaled. Antenna of the ♂ generally dentate-fasciculate (the few pectinate species are chiefly African). Hindtibia in the ♂ with 2 spurs (sect. *Pylarge*), or 1 spur (*vigilata* Prout, Suppl.-Vol. 4, p. 39; see also *cineraria* below) or in the overwhelming majority of species spurless; in the ♀ with 4 spurs. Forewing with areole simple. Hindwing with 2nd subcostal separate, connate or very shortly stalked, 2nd radial not or very little before middle of discocellulars, 1st median separate. The ♂ genitalia and the early stages have been noticed in our other volumes; the extremely slender larvae should be sought for among herbage.

A. Section: hindtibia of ♂ with terminal spurs (*Pylarge*, H.-Sch.).

*cineraria*. **S. cineraria** Leech (Vol. 4, pl. 3 k). Palpus longer than in *impersonata*; generally larger and less brownish grey, forewing with costal margin more arched, postmedian and subterminal lines on the whole less straight (though somewhat variable in *impersonata*). Japan (type), the Riu-kiu Islands, Corea and apparently part of China. STERNECK has recorded 2 ♂♂ from Ta-t sien-lu; he tells me (in lit.) that in one case there is only one spur on the hindtibia.

*impersonata*. **S. impersonata** Walk. (20 g). Variable in colour and in the point of origin of the 2nd subcostal of the hindwing. Some detailed notes on the forms have been given in Vol. 4 (p. 53). The originals, from Foo-chow, are (as was there stated) in poor condition, but we now figure a specimen from Siccawei, near Shanghai, which seems to match them well. Somewhat darker specimens also occur in Fokien; about Shanghai, and probably elsewhere, the first generation is darker, the second smaller and lighter. I have seen these pale forms also from *macescens*. S. Japan. — **macescens** Btlr., on an average larger and more brownish, is perhaps the most usual form in Japan *accurataria*. (whence it was described) and N. E. China and perhaps passes by transitions into — **accurataria** Christ. Rather darker still, at least in the distal area, which may form a conspicuous terminal band bisected by the pale subterminal. Described from Raddefka (Amurland), this form also seems to include some of the specimens known from China, even as far as Szechuan (Kwanhsien).

*anaitisaria*. **S. anaitisaria** Walk. (20 g). This species and the following differ from *emissaria* in the structure of the ♂ antenna, which has the fascicles of cilia arising from short, but definite pectinations. In the present species the pectinations are very little longer than the diameter of the shaft. Apparently very variable and sometimes almost impossible to separate from *dimoera* except by this character; as a rule, the dots which represent the ante- and postmedian lines are more strongly marked, the median shade not quite so oblique, intenser and more sharply defined, the cell-dot of the hindwing rather larger. "S. Hindostan", a very large ♂ with the postmedian dots of the forewing almost parallel with termen, perhaps a "lost species"; represented in the Nilgiris and Palnis by the smaller form which we figure here.

*dimoera*. **S. dimoera** Prout (20 f). Pectinations mostly about twice the diameter of the shaft, the fascicles of cilia almost equalling them in length. On the whole perhaps a little more warmly coloured and a little more irrorated than *anaitisaria*, the oblique shade rather broad, its edges not generally very sharply defined. Palnis (type), Nilgiris, etc.

**S. emissaria** *Walk.* (= *defamataria Walk.*) (20 g). Generally smaller, at times much smaller. Antennal structure normal. Forewing less acute, hindwing narrower; oblique shade less dark. Moulmein (type of *emissaria*). Ceylon (type of *defamataria*) and apparently almost throughout India, besides Siam, Formosa, the Philippines, Celebes, Sumatra and from Java to Sumbawa, to which list numerous additions will probably be made. — ab. **mollis** *Warr.*, a ♂ from the Khasis, is an unimportant fleshy-ochreous, weakly marked aberration. — **lactea** *Btlr.* (Vol. 4, pl. 3 g), from Japan and E. and Central China, is on an average somewhat larger and the wings as a rule relatively broader, but some individuals would be difficult or impossible to separate from some of the name-typical race. — Of **proxima** *Btlr.* (20 g), from Queensland and New South Wales, I have seen only the type ♂, Rockhampton; this is paler and slightly greyer, possibly also slightly less narrow-winged than the other forms. — The larva of *e. lactea* was bred from the egg at Shanghai by Dr. Millais CULPIN (see Vol. 4, p. 54).

**S. orthoscia** *Meyr.* (20 g) is apparently near *emissaria* but with rounded hindwing. "16—19 mm." Antennal ciliation long ( $2\frac{1}{2}$  times width of shaft); forewing with cell-dot minute, lines straight, the median not notably oblique. West Australia: Geraldton and Perth.

**S. loxosema** *Turn.* "17—20 mm." Antennal ciliation less long ( $1\frac{1}{2}$ ). Median shade of forewing probably stronger ("broadly suffused with fuscous"), its position more distal ( $\frac{3}{4}$  costa to  $\frac{2}{3}$  hindmargin), antemedian faint or obsolete, postmedian slender, finely crenulate. Hindwing with termen strongly bowed. Victoria: Lancefield Junction and Melbourne.

**S. oxystoma** *Prout* (20 g). An apparently isolated species, referable here by the leg structure of the ♂. Antennal shaft in the ♂ stout, the ciliation long and fine. Wings somewhat more elongate than in any other known *Scopula* with at all similar colour and markings. Marquesas: Hivaoa.

**S. erebospila** *Lower.* "♂, 20 mm." Said to be a peculiar-looking insect, not unlike some Noctuidae. Forewing elongate-triangular, costa straight almost to apex, termen somewhat prominent in the middle; pale ochreous, with 3 faintly paler lines beyond the middle; cell-dot, dots on costa, on costal portions of 1st and 3rd lines and on termen blackish. Hindwing with termen slightly rounded; the costal dots obsolete, the terminal lines replaced by a row of dark fuscous dots. Cooktown, N. Queensland.

**S. episcia** *Meyr.* (20 g). "18—19 mm." TURNER differentiates it from the other Australian species of *episcia*. *Pylarge* by the dark-grey (not whitish) thorax. Forewing with costa straight; white, suffusedly irrorated with fuscous; costa and a basal patch bounded by a line from before middle of costa to near base of inner margin fuscous sprinkled with black; median shade outside the cell-dot, strong, rather irregular, cloudy, fuscous, mixed with black; the other markings less striking. Hindwing with termen rounded, much bent (though obtusely) about veins 3 and 4, sinuate near tornus, inner margin short; veins 6 and 7 connate; a cloudy dark median line: outer markings much as on forewing. Founded on 2 ♂♂ from Carnarvon, West Australia; TURNER adds Broken Hill, N. S. W.

**S. megalocentra** *Meyr.* (20 f). Larger, much more regular in shape and pattern. Hindleg long. Forewing with lines slender, the antemedian only indicated towards inner margin, here mixed with black, median very faint, outside the conspicuous black cell-dot, postmedian faint, wavy, slightly sinuate at both folds, somewhat dotted on the veins and with a more distinct dot at the 1st radial. Hindwing rounded; postmedian more irrorated with black throughout than on forewing, median faint, cloudy, proximal to the cell-dot, which is large and black. Adelaide, South Australia, 1 ♂.

B. Section: hindtibia of ♂ without spurs (*Scopula*).

**S. bifalsaria** *Prout* (= *falsaria Leech*, nec *H.-Sch.*) (Vol. 4, pl. 3 l, 5 e). ♂ with antennal ciliation rather long, hindtibia dilated, tarsus not greatly shortened. Whitish grey, well irrorated, the lines somewhat diffuse or band-like, the suffusion outside the postmedian reaching the rather conspicuous whitish subterminal. Hindwing with termen slightly bent in the middle. W. China. — **falsificata** *Prout* (= *grisescens Prout*, nec *Stgr.*) (Suppl.-Vol. 4, pl. 5 a) is a dusker, greyer form from Vriantong, Tibet, with the markings not so diffused into bands.

**S. oxysticha** *sp. n.* (20 h). Antenna with the ciliation moderately long. Tibial pencil strong and dense, tarsus little shorter than tibia. Wings so uniformly suffused with delicate light olive-grey that only 2 or 3 almost straight bands and a deeply dentate subterminal remain conspicuously white; cell-dots and terminal dots obsolescent. Forewing beneath more brownish, with similar white bands, hindwing whiter. "Yunnan", probably Teng-yueh-ting district (FORREST), type ♂ in the British Museum, kindly presented by Mr. M. J. MANSFIELD. Suggests a link between *bifalsaria* and (by the underside) *gulmargensis Prout* (Suppl.-Vol. 4, pl. 5 a).

**S. coniaria** *Prout* (= *pulveraria Leech*, nec *Snell.*) (Vol. 4, pl. 3 m, as *pulveraria*). I have pointed out in Suppl.-Vol. 4, p. 43 that this South Japanese species was subsequently, but doubtfully, recorded from

- okinawensis*. Kwanhsien by STERNECK but that in any case the following is probably only a form of it. — **okinawensis** Prout (20 h), founded on a single ♀ (not “♂”, as misprinted in the original description), is white, with extremely fine grey irroration, the markings, excepting the postmedian, more or less weak, the antemedian and median obsolete anteriorly. Without more material I cannot differentiate it definitely from the Japanese specimens; in describing it I overlooked the close connection. Okinawa, Riu-kiu Islands.
- farinaria*. **S. farinaria** Leech (Suppl.-Vol. 4, pl. 5 a) is larger and more strongly marked than *coniararia*, with thicker and more irregular lines, somewhat transitional in appearance, or at least in the bluish grey tinge, to name-typical *submutata* Tr. or *Glossotrophia confinaria* of the Palearctic Region, but without blackish costal spots. The unique type is a ♀ from Chia-ting-fu.
- distracta*. **S. luridata** Z. (Vol. 4, pl. 4 e) **distracta** Butl. (20 h) is a dirtier-looking form of this very widely distributed species, heavier dark irroration obscuring the sandy colour of the markings and giving to it a dull grey-brownish tone; median shade generally heavy, especially about the fold. Described from Karachi, known also from Ajmere and perhaps Mhow (in a still darker form), but little notice has yet been taken of it in the not very attractive collecting-localities in which it occurs. From Peshawar I have almost typical *luridata*. — **sternecki** Prout (= chinensis Sterneck, nom. praeocc.) (see Suppl.-Vol. 4, p. 39), with vertex clean white, collar red-brown, cell-dot of hindwing more distal to the median line, underside better marked than in the type form, with the cell-dots and postmedian line well visible, the latter even quite conspicuous on the hindwing, is probably a separate species. Chiefly Palearctic: Corea (type) and Pekin; but recorded also from Omei-shan.
- isomerica*. **S. isomerica** Prout. 23 mm. Recalls *effrenata* (20 h), but the ♂ hindtarsus is as long as the tibia; rather round-winged, with hindwing faintly crenulate and appreciably bent at 3rd radial, rather less dark than *effrenata*. Antemedian line of forewing without the second well-marked angle outward (i. e. the one behind the cell), subterminal line not thickened into whitish spots proximally, on the other hand with very noticeable dark shades between it and the postmedian at these positions; hindwing beneath rather paler or better marked. Formosa: Chosokei, the type ♂; Kanshirei, a rather larger, more weakly marked ♀.
- fibulata*. **S. fibulata** Guen. (= *cleoraria* ♀ Walk., err. det.) (20 h). At first sight closely like some forms of *cleoraria*, but easily distinguished from it and its closest allies by the uninterrupted terminal line, which is c o n t i n u e d r o u n d t h e a p e x . as in the Palearctic *submutata* Tr. (Vol. 4, p. 64). Antenna of the ♂ with the ciliation on little longer than diameter of shaft; tarsus nearly as long as tibia. Ceylon (the type), India, Burma, Tonkin and Hainan.
- cleoraria*. **S. cleoraria** Walk. (= *coenosaria* Butl., nec Led.) (Suppl.-Vol. 4, pl. 4 i). Antennal ciliation longer than in *fibulata*, hindtarsus shorter (little over  $\frac{1}{2}$  tibia). Similar in size, or a trifle larger. The typical race of N. W. India is lighter grey than the following. — **effrenata** Walk. (20 h) is a rather large, dark, commonly more strongly marked form, of very common occurrence in Sikkim, Assam and parts of the Malay Peninsula; type from Bhotan. Among the Malayan there are probably further races awaiting differentiation; thus my specimens from Pahang, though at least as dark as the Assamese, are appreciably less brownish and are very strongly marked, while those of Kedah Peak are less dark, of a somewhat glossy bluish grey and relatively weakly marked.
- scialophia*. **S. scialophia** Prout (20 h). Colouring nearly as in *fibulata*, ♂ hindleg about as in *cleoraria*, antennal joints projecting somewhat less than in that. Characterized by a large darkish hair-tuft at the base of the ♂ abdomen beneath. Only known from the Khasis.
- tsekuensis*. **S. tsekuensis** Prout (Suppl.-Vol. 4, pl. 6 g) is much like large, well-marked *cleoraria*, the collar similarly without darkening. Antennal shaft fairly thick, with the fascicles over 1, but less long than in *cleoraria*. Hind-tibia of the ♂ long, with strong white pencil, tarsus little over  $\frac{1}{2}$ . Forewing with costal spots rather strong, postmedian somewhat more deeply sinuous and denticulate than in *cleoraria*, etc. Tseku, N. Yunan.
- subtracta*. **S. subtracta** Prout (Suppl.-Vol. 4, pl. 4 k). Smaller (length of a forewing 10 or 11 mm). Collar dark brown — a ready distinction from its nearest relatives; otherwise similar to a small, greyish *cleoraria*; costal spots scarcely developed, fringe irrorated to the base (in *cleoraria* with a whitish basal line). Antenna of the ♂ with fascicles of cilia at least twice as long as diameter of shaft; tarsus nearly as long as tibia. Simla (loc. typ.) Sabathu and Masuri.
- intensata*. **S. intensata** Moore (20 h). Hindtibia of the ♂ not very much thickened, but with a long hair-pencil, tarsus not abbreviated. Wings rather glossy, yet presenting somewhat of the dusted appearance of *coniararia*: cell-marks weak; all the transverse markings, especially on the forewing, forming lines rather than shades; postmedian finely dentate; subterminals close to termen, the proximal one on the forewing almost straight, the distal one indefinite. ♀ greyer. Ceylon. — **ochriata** subsp. nov. In both sexes paler, the lines less sinuous (though the postmedian of the forewing remains markedly dentate); antemedian of forewing perhaps rather more oblique.

Palnis (loc. typ.) and Nilgiris; type ♂ in the British Museum. A pair from Travancore, more weakly marked, are also provisionally referable here.

**S. opicata** F. (= *infantularia* Guen., *vaniaria* Walk.) (Vol. 16, pl. 6 m). Absolutely unmistakable. Small, *opicata*. white, with sharply marked fuscous lines, all straightish except the distal subterminal, which is finely denticulate; antemedian and median of forewing extremely oblique, the latter making a small crook in front of the 5th subcostal and joining the postmedian close to the apex; a few of the anterior veins very slenderly infuscated. Hindtarsus of ♂ scarcely abbreviated. "East Indies" (type) and very generally distributed from Sierra Leone across Africa and in the Indo-Australian Region: Malaysia, the Philippines, Celebes, the Lesser Sunda Islands and New Guinea, etc.

**S. adeptaria** Walk. (= *eximia* Warr., *tainanensis* Wileman) (20 h) often accompanies *opicata*, but I *adeptaria*. have no records south-eastward beyond the Philippines and Sumba, while on the other hand it extends through Siam, Hainan, and presumably S. China, to Formosa. On account of its very small size, probably often overlooked or neglected; generally easy to recognize by the brownish shade on the proximal side of the sinuous white subterminal, the other markings slender and rarely strong. The ground-colour varies from white to whitish-brown, but never shows the ochreous or stramineous tint which characterizes most of the very small *Scopula*. The types came respectively from Ceylon, Sumba and Formosa, but I doubt whether they show any geographical variation. — **tenuipes** Turn. I gather from the description that this is a race or aberration of *adeptaria*, perhaps *tenuipes*. eventually a synonym. 14 mm. "Whitish without ochreous tinge", the lines apparently fairly strong, the median on forewing perhaps rather more distally placed than usual, finely dentate, etc. Melville Island, 1 ♂. The ♂♂ of *adeptaria* are on average whiter than the ♀♀.

**S. innocens** Butl. (20 h). Similar to the whitest forms of *adeptaria*, with the subterminal band more *innocens*. strongly developed, continued (at least apically) on the hindwing; on an average larger. Queensland, not rare.

**S. segregata** Prout (20 i). Larger than *opicata*, forewing much more brown, hindwing pale except at *segregata*. termen and fringe. Markings of forewing not quite so oblique, less sharp, those of the hindwing above weak. Forewing beneath more suffused as far as the median shade. Kachin Hills, Upper Burma, and extending across the frontier into Yunnan.

**S. dubernardi** Oberth. (Suppl.-Vol. 4, pl. 6 h) must be very close to *segregata*, possibly a large form of it. *dubernardi*. The structural characters given me by my friend Dr. WEHRLI (♂ antenna serrate, with the fascicles about as long as the width of the shaft; hindtarsus about as long as tibia) are virtually the same, but the "white" vertex is probably cleaner, for in *segregata* it is much suffused with brown. Tse-ku. N. Yunnan; by an oversight the locality was omitted from Suppl.-Vol. 4, p. 41.

**S. tersicallis** Prout (20 i). The brown colour much less definite than in the two preceding, something *tersicallis*. between the "tulleul-buff" and "drab-grey" of RIDGWAY; cell-dots sharp, though small, postmedian of forewing weak, acutely angled outward at 1st radial, marked with prominent dark dots or dashes on the veins. Hindleg lost in the only known ♂, probably as in *menytes*. Marquesas Islands: Hivaoa.

**S. menytes** Prout. ♂, 23 mm. Close to *tersicallis*, probably a representative species. Antennal ciliation *menytes*. of ♂ the same; hindleg with the tarsus  $\frac{1}{2}$  as long again as tibia. Forewing less strongly elongate (shaped more as in *oxystoma*, 20 g); median shade almost equally developed throughout — fairly broad but ill-defined — its acute angle at 3rd radial instead of 1st. Hindwing with termen gibbous in the middle, very noticeably concave between 1st median and 2nd submedian; cell-dot rather large; median shade broad. Marquesas: Uahuko, 2850 feet, 1 ♂.

**S. angusticallis** Prout. ♀, 23 mm. Shape of forewing nearly as in *menytes*; probably a third representative *angusticallis*. of the same group. Median and postmedian lines less extremely oblique, more approximated, the latter scarcely dark-marked on the veins; subterminal shades well-defined. Marquesas: Uapou, 3200 feet, only the type ♀ yet known.

**S. usticinctaria** Walk. (20 i). Distinguished by the much darkened distal borders, which look as though *usticinctaria*. they had been scorched or burnt. Hindtarsus of ♂ not much abbreviated. Sarawak (type) and Perak, few specimens yet known.

**S. ferrilineata** Moore (20 i). Distal borders much as in *usticinctaria*; the extremely irregular course of *ferrilineata*. the median line of the forewing quite characteristic. Darjiling (type) and the Khasis. There may be separate races in Upper Burma and Tonkin, but only single specimens are yet known; my single specimen from Hkam-kawn (Upper Burma) is very large, with the median shade on the hindwing and the posterior part of the forewing broadened and infuscated, but the rest of the forewing is badly rubbed.

- rantaizanensis*. **S. rantaizanensis** *Wileman*, erroneously published as a *Ptychopoda*, is closely related to *ferrilineata*, but has the termen of the hindwing somewhat more rounded, the median line of the forewing less extremely outbent and the postmedian line of both wings rather deeply incurved at the radials. Rantaizan, Formosa, only the type ♂ known.
- perialurga*. **S. perialurga** *Turn.* ♀, 29 mm. "Forewing triangular, costa gently arched, termen bowed, oblique; grey, some purplish suffusion towards base; a minute discal dot; a band of pale purplish suffusion, its proximal edge from  $\frac{4}{5}$  costa to  $\frac{2}{3}$  hindmargin, slightly curved inward before hindmargin, outer edge formed by a fine crenulata fuscous line at about  $\frac{7}{8}$  thickened to form minute dots on veins; a terminal series of dark interneural dots; fringe pale purple with a few fuscous scales, apices grey-whitish. Hindwing slightly angled at vein 4; as forewing but discal spot at  $\frac{1}{3}$  and larger". New South Wales: Port Macquarie, 1 ♀.
- caesaria*. **S. caesaria** *Walk.* (= *obturbata* *Walk.*, *perfectaria* *Walk.*, *faeculentaria* *Mab.*, *rufimixtaria* *Warr.*, *caesarea* *A. Fuchs*) (20 i). This very widely distributed *Scopula* has already been noticed and figured in Vol. 16 p. 68, pl. 7 b. Variable, but generally very easy to recognize by the purplish or purple-grey distal borders; that of the forewing is the stronger and sharply bounded anteriorly by an oblique line from the apex. Hindtibia of ♂ dilated, the tarsus not quite as long as the tibia. General in Africa, the islands of the Indian Ocean, India to Formosa, the Sunda Islands, Queensland and New Guinea. — ab. **defecta** *Prout* lacks the purplish borders but retains that colour on the fringes.
- kashmirensis*. **S. kashmirensis** *Moore* (Vol. 4, p. 79; Suppl.-Vol. 4, pl. 5 e). Glossy white with the cell-dots small and not intense, the median shade moderate or rather weak, on the forewing excurved or bent well beyond the cell-dot; postmedian line conspicuous, finely denticulate but (after the sharp bend near the costa of the forewing) much less sinuous than in the Palaearctic *ornata* *Scop.*, generally, however, blackened at the places where that of *ornata* bends proximad; a narrow brownish band on the distal side of the postmedian, at least on the forewing.
- gocraisensis*. Kashmir to Bhotan. *kashmirensis* is the most sharply marked form, on an average rather small. — **goocraisensis** *Prout* (Suppl.-Vol. 4, pl. 5 e) is larger, less pure white, the markings much weakened, the lack of the sharply expressed postmedian line and shading beyond giving it a very distinctive appearance. Goocrais Valley, Kashmir, a good series. — **quettensis** *Prout* (Suppl.-Vol. 4, p. 46). Variable in size, otherwise pretty constant, intermediate between the other forms; clean white, the median line weak or obsolescent, the postmedian very slender, the shade outside it generally lighter brown. Quetta.
- deliciosaria*. **S. deliciosaria** *Walk.* (20 i). Similar to sharply marked *ornata* (Vol. 4, pl. 4 l), the ♂ hindtibia long, the tarsus very short, the hindwing with the angle at the 3rd radial more acute. ? N. India; Central India to Ceylon. WALKER'S type from S. India.
- pedilata*. **S. pedilata** *Feld.* (20 i). A somewhat rare species, differing from the following (which has sometimes been confused with it) in having a slight greenish tone, the blotches larger, etc. Figured by FELDER from Ceylon; also known from Assam, E. Java and Bali.
- insolata*. **S. insolata** *Butl.* (= *butleri* *Prout*) (Vol. 4, pl. 7 c, as *butleri*). A small but attractive species; clean white, with minute cell-dots and grey-brown lines, the forewing with an incomplete, bright brown band outside the postmedian and a black posterior spot close to the tornus. N. India, the type from Dharmasala; also on
- satsumaria*. Sumatra and, according to J. JOANNIS, in Tonkin. — **satsumaria** *Leech* (Vol. 4, pl. 5 e). On an average less pure white, postmedian line of forewing reaching hindmargin farther from the tornus, that of the hindwing farther from the termen, etc. Sometimes the differences between the two forms seem very slight. Japan (the type) and N. and W. China.
- ferruginea*. **S. ferruginea** *Hmps.* (20 i). Very distinct in the extensive bright-brown markings of the forewing, the outer ones bandlike, the postmedian line with a black dot on its angle at the 1st radial, the median shade not defined, but represented by the extremely outbent edge of the variegated area which, except along the costa, occupies all the proximal part of the wing. Ceylon; also 1 ♂ from near Castle Rock.
- pithogona*. **S. pithogona** *sp. n.* (20 k) agrees well with *ferruginea* in shape and structure (♂ ciliation moderate, hindtarsus very little shortened) and in the excessively angled median shade, etc., but presents a quite different appearance on account of its light colouring — white with pale buff markings and scarcely any black irroration; subterminal band more slender than in *ferruginea*. Underside almost unmarked, the cell-dots very minute. E. Java (J. P. A. KALIS): Singolangoe 5000 feet, type ♂; Nongkodjadjar, 4000 feet, 1 ♀; both in the Tring Museum.
- propinquaria*. **S. propinquaria** *Leech* (Vol. 4, pl. 3 l, 5 f). Although not so white nor so conspicuously bordered as most of the *ornata-kashmirensis* group, this is also an easily recognizable species, the distal area of both wings being darkened and bearing a conspicuous pale subterminal line which expands greatly at both folds, especially the

radial. ♂ hindtarsus about  $\frac{2}{3}$  the length of the tibia. Very widely distributed in China, excepting the North, known also from Corea, Formosa and Tonkin. Type from Szechuan.

**S. francki** *Prout* (Suppl.-Vol. 4, pl. 5 e). Hindtarsus somewhat shorter, cell-dots larger, borders less *francki*. strongly darkened, the subterminal not expanding quite so strongly at the radials, terminal line broken into dots or very short dashes. W. China: Kwanhsien.

**S. limbata** *Wileman*. Very near *francki*, cell-dots hardly larger than in *propinquaria*, borders as weak *limbata*. as in *francki*, subterminal line less broadened, etc. Formosa.

**S. sybillaria** *Swinh.* (20 k). Perhaps not always distinguishable from *limbata*, which may be a race of *sybillaria*. it. On the whole smaller and less contrastingly marked, cell-dots less large, postmedian with the angulations less deep. Central and W. China, the type from Ichang.

**S. praesignipuncta** *Prout*. Altogether more sharply marked than *sybillaria*; cell-dots relatively extremely *praesigni-* large; that of the forewing round, that of the hindwing slightly elongate along the discocellulars; antemedian *puncta*. of forewing well developed, rather regularly curved, the proximal area strongly irrorated; postmedian much less irregular than in *limbata*; distal area rather strongly darkened, the pale subterminal thickening almost as in *propinquaria*, Riu-Kiu Islands, only the type ♀ known.

**S. ophthalmica** *Prout* (20 k). Perhaps a subspecies of the following, but the ♂ antennal joints appear *ophthalmica*. to project slightly less and the hindtarsus may be a trifle longer (slender, fully  $\frac{3}{4}$  tibia); ciliation somewhat above diameter of shaft. The cloudings and irroration of the forewing give a suggestion of the *fibulata* group; median line rather less thick and more distally placed, postmedian with the tooth at 1st radial rather longer; terminal line broken into dots. Hindwing much less dusted than in *fibulata*. Celebes: Bonthain (type) and Paloe.

**S. ocellata** *Warr.* (20 k). Named from the greyish ring which encircles the black cell-dot of the forewing; *ocellata*. distal area, with subterminal, much as in the more brownish- or yellowish-white *praesignipuncta*. Ciliation of antenna in ♂ rather long, hindtibia not greatly shortened. Sambawa (type) and E. Java.

**S. alboverticata** *Warr.*, founded on a dark ♀ from Oinanisa, Dutch Timor, may be an extremely heavily *alboverti-* irrorated form of *ocellata*; lines weak, cell-dot without ring (but this may be obliterated by the irroration), sub- *cata*. terminal line bordered proximally with blackish. A still more melanic ♀ from E. Java is probably an *ocellata*.

**S. nigrocellata** *Warr.* (20 k). Termen of forewing somewhat less oblique than usual. Recognizable at *nigrocellata*. once by the enlarged and ocellated black cell-marks. Dammer Island, only 1 ♂ and 1 ♀ known. Hindtibia of the ♂ with the hair-pencil thick; tarsus  $\frac{2}{5}$  or scarcely.

**S. fluidaria** *Swinh.* (20 k). More brownish than *sybillaria*, the terminal area not (or in the ♀ weakly) *fluidaria*. darkened, the subterminal line therefore inconspicuous. Cell-dots generally, especially in the ♀♀, with some greyish suffusion around them, occasionally with indefinite ring suggesting that of *ocellata*. Hindtarsus of the ♂ short, much less than  $\frac{1}{2}$  tibia. India, in the lowlands; also Ceylon. Described from Poona. — ♀-ab. loc. **subfasciata** *nov.* Both wings with much strengthened and generally a little broadened grey shade between the *subfasciata*. postmedian and the subterminal, the latter conspicuous, at the folds enlarged. On the underside, where typical *fluidaria* shows no bandlike clouding, the distinction is still more striking. Ceylon: Maskeliya, including the type; Haputale, etc.

**S. amphiphracta** *sp. n.* (20 k) should probably be placed about here, although the somewhat more irre- *amphiphrac-* regularly crenulate margin of the hindwing recalls the *ornata* *Scop.* group of the Palaearctic Region. The ♂ has the ciliation rather long, tarsus  $\frac{2}{3}$  tibia. Irroration quite sparse, but the broad grey (blue-grey rather than brown-grey) median and subterminal shades on the creamy ground-colour give a characteristic tone to the wings. Otherwise similar to *fluidata* ab. *subfasciata*, though very much larger; cell-dot very small and weak; postmedian of hindwing dentate but unusually direct. Underside very heavily marked, particularly the sub-terminal bands. Paloe, W. Celebes (J. P. A. KALIS), 900—3700 feet, a short series of ♂♂; type from Gunong Rangkoenau.

**S. bispurcata** *Warr.* (20 k). ♂ with antennal ciliation rather long, hindtarsus scarcely over  $\frac{1}{2}$  tibia. *bispurcata*. Easily distinguished by the form of the dark postmedian spots on the forewing and their smaller accompanying spots close to the termen. Khasi and Kachin Hills and (one only, perhaps a rather more dark-marked race) from Ceylon.

**S. monosema** *Prout* (20 l). Ciliation scarcely so long as in *pulchellata*, hindtarsus a little longer; lines *monosema*. less sinuous, subapical mark similar, the blotches of the outer area replaced by an almost uniform, rather indistinct, grey shade. Kashmir, 1 ♂.

- pulchellata*. **S. pulchellata** F. (= *addictaria* Walk., *metaspilaria* Walk.) (20 k). Another easily distinguishable species. The slender white line at the proximal edge of the terminal line, the continuation of the latter round the apex, the presence of the subapical spot, the shape of the postmedian and its dark maculation are all characteristic. The size and coloration vary. The African forms, which have been called *rufinubes* Warr. (see Vol. 16, p. 69), perhaps yield a higher percentage of reddish forms but are nearly synonymous. "India" (type), with Ceylon Malaya, Siam, Hainan and Bali. Also on Minikoi atoll, Laccadive Islands. — ab. **grandicularia** Swinh. is a large whitish, rather strongly grey-clouded form with the cell-spots large, the subterminal brown spots not so conspicuous as in the cleaner, more typical forms. Described from Poona.
- idearia*. **S. idearia** Swinh. (20 l), also described from Poona, is smaller than *pulchellata* (forewing slightly narrower), glossy, slenderly marked, the distal area more recalling *monosema* than *pulchellata*; so similar, however, that it might have been treated as a further aberration of *pulchellata* if the genitalia had not indicated a separate species. Central and N. India, rather rare except at Deesa.
- eleina*. **S. eleina** sp. n. (20 l). Both sexes small. In a measure intermediate between *pulchellata* and *misera*, having the clean appearance of the former but the subordinate markings reduced, though the blackish marks (dashes or pairs of dots) at each inward curve of the postmedian of the forewing remain strong; cell-dot of forewing usually concise, punctiform, occasionally somewhat more diffuse. ♀ with the band-like grey shading between postmedian and subterminal stronger and more continuous. Paloe, W. Celebes (J. P. A. KALIS): Gunong Rangkoenau, 900—1800 feet, abundant; Tompoe, 2700 feet, 2 only taken. Collected for the Tring Museum.
- misera*. **S. misera** Walk. (20 l) represents *pulchellata* on the Lesser Sunda Islands from Sumba and Sumbawa to Alor, the type from Flores. The grey shading between the postmedian and the subterminal is complete and strong in the ♀ (obliterating the separate grey subapical and brown postmedian spots of *pulchellata*, except that the latter are suggested by slight thickenings of the postmedian itself), but is generally quite slight in the ♂; subterminal with the macular expansions at both folds strong. The Timor specimens are sometimes browner, resembling the following. — **subtineta** Warr., from the Tenimber Islands is browner, with the sexual dimorphism generally less pronounced, though similar in its nature. — ab. (?) **denubilata** Warr. has the same brownish tone but almost entirely lacks the dark subterminal shades. A pair from Larat.
- subpulchellata*. **S. subpulchellata** Prout (20 l). Rather larger and paler than most *pulchellata*, the ♂ hindtibia less strongly fringed above, its hair-pencil whitish (in *pulchellata* ochreous), the tarsus a trifle longer. Genitalia very different, the valves far less asymmetrical, the socii long (in *pulchellata* short, horny processes), etc., altogether nearer those of *misera*. Markings closely as in *pulchellata* but with those of the distal area weaker and less variegated. Hainan, often occurring together with *pulchellata*.
- spilodorsata*. **S. spilodorsata** Warr. (20 l). Somewhat broader-winged than *pulchellata* and its nearest allies, terminal line less continuous (more broken into lunules or subtriangular spots), not continuing round the apex, subapical spot wanting, posterior subterminal spot less near tornus, fringe with distinct, though minute, dots at the vein-ends. Abdomen in the typical race (from Timor) with more conspicuous black spots (large dots), which, however, are discernible in many of the group. In the type, the spots outside the postmedian are inconspicuous and a tendency to a reduction of these, together with a whitening of the ground-colour, is perhaps characteristic of the Timor forms, especially the ♂♂; but there is a good deal of variation. The Sumba specimens before me agree with this name-type. — **cosmeta** subsp. nov. (20 l). In a long series from Hainan, besides the few specimens before me from Malaya and the Khasis (where *spilodorsata* seems much scarcer), I do not find a single example in which the markings, or at least the two outer spots of the forewing, are not well developed; the postmedian line of the hindwing also is darkened (commonly thickened) at both folds, thus showing distinct traces of a corresponding maculation to that of the hindwing. Abdominal spots often weakened or reduced in size. Type a ♂ in the Tring Museum, from Mt. Wuchi, Hainan. — Borneo, Banka, Java, Kangean, Bali and Celebes probably call for some further subspecies, but seem to produce mainly intermediates between the two extremes. The genitalia show close affinity to those of *nictata*.
- perlincata*. **S. perlincata** Walk. (= *spatiosaria* Walk.) (20 l). Cell-dots nearly always larger or more intensely black than in *spilodorsata*, terminal line more punctiform and not accompanied proximally by any definite white line, spots outside the postmedian scarcely ever developed, their position indicated by punctiform thickenings of the line itself; the ♀, however, generally and the ♂ occasionally with greyish subterminal shades (f. *spatiosaria*). Abdomen very rarely with any trace of dorsal spots. Represents the preceding in the Moluccas, New Guinea and its islands as far as the Louisiades. The respective types came from Ceram and New Guinea. — ab. **maculata** nov. may denote the rare aberration which has developed spots outside the postmedian similar to those of *spilodorsata*. Type a good ♂ from Batjan; occasional examples from New Guinea and its islands have been noticed and there are, naturally, some intermediates. — ab. loc. (? subsp.) **discata** Warr., from the Trobriand Islands,

has the cell-dots strong, more or less enlarged, the antemedian line and subterminal shades very weak or obsolete, the postmedian slender, without any thickening or blackening at the folds. To 2 ♂♂ the whole of this differentiation applies, to 1 ♂ and 1 ♀ the last distinction only; more material from the locality is needed. — **obdiscata** *obdiscata*. *subsp. nov.* (21 a). General tendencies as in *discata*, except that the dark postmedian dots remain prominent (though never developing ab. *maculata*); ground-colour occasionally clean white, but nearly always inclining towards yellowish or stramineous, never (unless perhaps on New Britain and French Islands) showing a trace of the fleshy tinge which characterizes the preceding forms. Admiralty Islands to New Ireland and (with so few modifications that I have not yet been able to demonstrate any further subspecies) throughout the Solomons. Type ♂ from Feni Island, off New Ireland. — **spilotis** *subsp. nov.* (21 a). Lines and shades weak (including *spilotis* the postmedian), cell-dot and the dark markings of the postmedian relatively very strong, the latter generally manifest even on the hindwing; a black antemedian dot on hindmargin of forewing frequent. Dorsal spots of abdomen generally developed. — As might be expected, ab. **maculata** *nom. coll.* occurs among *maculata*. this race, which is frequent on the Tenimber Islands and provides an interesting transition between *perlineata* and the *spilodorsata* series.

**S. graphidata** *Prout* (21 a). Larger than *perlineata*, as white as the less yellowish of the *obdiscata* forms, *graphidata*. but slightly roughened with minute black irroration. Antemedian line better developed, dark-dotted on the veins, median line angled outward on the 2nd submedian vein, postmedian more deeply sinuate, etc. Celebes.

**S. nictata** *Guen.* (= *ligataria* *Walk.*) (21 a). Hindwing somewhat more quadrate than in the preceding *nictata*. group, the angle at 3rd radial strengthened. Tone somewhat brownish; dark markings at the postmedian nearly always well developed on the forewing and very commonly (though smaller) on the hindwing; median line generally slender, denticulate; spot in cellule 6 of forewing close to termen conspicuous: India, common (including the type), Ceylon, Burma, Hainan. Also "Formosa", 1 ♂, determined by BUTLER (1880) as *perlineata*. — **takowensis** *form.* (? *sp.*) *nov.* Generally smaller; the spots outside the postmedian line weakened. As the *takowensis*. ground-colour is slightly deepened, the impression is of a much less variegated insect than typical *nictata*. Formosa, distributed; a long series in the Tring Museum from Takow (WILEMAN) has been made typical. — **semperi** *subsp.* (? *sp.*) *nov.* (= *miseria* *Semp. nec Walk.*) (21 a). There are at least two species of the *nictata* *semperi*. group on Luzon, and it is not yet certain that either is conspecific with *nictata* but as the present form seems to agree therewith in structure and is in some measure connected by *takowensis* I incline to refer it here. Always small (length of a forewing 9 or 10 mm), at least as brown and still more weakly marked, in particular without any clear development of the subapical spot of cellule 6. Luzon, in several localities, the type series in the Tring Museum from Klondyke, Benguet; also at Taytay, N. Palawan. A single ♂ from Paloe (Celebes) at 2700 feet may represent a further subspecies.

**S. caeria** *sp. n.* (21 a). Superficially more like *n. nictata* than is *semperi*, except that the forewing is relatively *caeria*. a trifle narrower. Antennal joints of the ♂ more markedly dentate, hindtarsus less abbreviated (over  $\frac{1}{2}$  tibia). Abdomen with black dorsal spots. Wings rather whiter than in most *nictata*; median line on forewing scarcely dentate, its anterior angulation acute, on hindwing rather broad, predominantly more proximal (in relation to the cell-dot) than in *nictata*. Benguet, Luzon: Klondyke, 800 m, 15 March—7 April 1912, type ♂ and 2 others, collected together with *semperi*; Palali, 2000 m, 1 July 1913, 1 ♂. Type in the Tring Museum; all from the WILEMAN collection.

**S. nigridentata** *Warr.* (21 a) perhaps belongs to the following group, but is smaller; hindwing somewhat *nigridentata*. crenulate, well toothed at the 3rd radial. Hindtibia of ♂ moderately dilated, tarsus fully  $\frac{1}{2}$  as long as tibia. Larger than *caeria*, more brownish, the dark markings at the postmedian (both wings) as strong as in *nictata*, additional ones on forewing at both folds, but not in front of 1st radial; terminal and fringe-dots strong. Khasis.

**S. proximaria** *Leech* (Vol. 4, pl. 5 f). Somewhat similar to *moorei* (21 c) but much smaller, less dark- *proximaria*. dusted, the postmedian on both wings more strongly incurved between the radials, the spot near tornus of forewing larger, the underside more strongly marked. The fascicles of cilia of the ♂ antenna seem to be considerably less dense. Described from Ichang, known also from W. China. — **indigenata** *Wileman*, from Formosa, has *indigenata*. a browner tinge above and beneath, but otherwise I can find no constant difference; the one known ♀ (Kanshirei) has the cell-dot of the hindwing somewhat enlarged. — ab. (?) **tetrasticta** *nov.* has the black spots almost as large *tetrasticta*. as in *quadrimacula* and may be a third species, but is to some extent linked up with the ♂♂ by the already mentioned ♀. Kanshirei, 2 ♀♀ in the British Museum.

**S. voluptaria** *sp. n.* Expanse 36 mm. Very like a rather large strongly marked *walkeri* (21 b). Antenna *voluptaria*. with the fascicles of cilia less long (little longer than diameter of shaft); hindtibia rather longer and not quite so strongly dilated; hindwing a little more strongly crenulate; abdomen with the black dorsal spot on the 4th segment enlarged. The markings will perhaps prove variable, but both the known examples have the dentate

brown median line strong, the postmedian with its angle inward in cellule 7 of the forewing strengthened and darkened, its black proximal spots before and behind each fold and at hindmargin not duplicated in the interrupted brown shade which succeeds it distally (more as in typical *sordida*). Sungei Kumbang, Korintji, W. Sumatra, 4500 feet, April 1914 (ROBINSON and KLOSS), 2 ♂♂ in the Tring Museum.

- walkeri*. **S. walkeri** *Butl.* (= *extimaria* *Walk.*, nom. praeocc.) (21 b). Antenna of ♂ with fascicles of cilia about twice diameter of shaft; hindtibia long, strongly dilated, tarsus very short. Easily distinguished from *sordida* by the non-pectinate antenna; see further under that species. Only known from Ceylon. — ab. **rufilinea** *Warr.* has the markings of the postmedian at the radials more cinnamon. The type is apparently lost and as it was not compared in the original description with *walkeri* special distinctions are not indicated, but I have seen slight modifications of *walkeri* ♀ which fit it, the ground-colour more grey-brownish.
- sordida*. **S. sordida** *Warr.* (21 b). On the whole darker or duller than *walkeri*, particularly in the ♀, median shade thick, the characteristic markings of the postmedian only developed on its proximally side, forming pairs of dots. Antenna of the ♂ with short, fascicle-bearing pectinations. Described from the Nilgiris, also known from the Palnis and Cuddapah. — ab. **multiscriptata** *Warr.* All the lines accentuated, subbasal area nearly filled with dark grey, cell-spots and the geminate maculation of the postmedian strengthened.
- montivaga*. **S. montivaga** *Prout* (21 a). The size and coloration, with the position of the brown median shade, suggest a relationship with *sordida* and the long fascicles of cilia of the ♂ antenna, though arising from much shorter pectinations (or rather, teeth) further favour the position here assigned it. There is, however (at least in the unique type), no special postmedian maculation at the folds. Manusela, Central Ceram.
- bimacularia*. **S. bimacularia** *Leech* (Vol. 4, pl. 5 e). Larger than *proximaria*, the angle of the hindwing a little sharper, though not as in *acutaria*; forewing with termen and markings more oblique, the posterior blackish postmedian spot farther from the tornus. Hindtarsus in the ♂ about  $\frac{1}{2}$  hindtibia. Szechuan. The cleanest specimen suggests *stigmata* except that the hindwing is more angled.
- stigmata*. **S. stigmata** *Moore* (Suppl.-Vol. 4, pl. 5 d). Readily distinguishable from all the succeeding members of what may be called the “*extimaria* group” of (chiefly) North Indian species by the ample dark maculation which accompanies the black lunules of the postmedian of the forewing while the rest of the markings remain weak; cell-dot of forewing sharply black. Hindtibia of the ♂ with a black-grey hair-pencil. N. W. India: Solun. Masuri, Kasauli, etc. Certainly not a synonym of *extimaria*, as was formerly supposed.
- extimaria*. **S. extimaria** *Walk.* (21 b). Hindtibial tuft of the ♂ not quite so strongly black-mixed as in *stigmata*. tarsus perhaps a little shorter (scarcely  $\frac{1}{4}$  tibia). Black spots on abdomen generally stronger, that of the 4th tergite enlarged. The black marks on the postmedian are more inclined to break into dots, the brown marks which accompany them distally much smaller and less dark; terminal dots beneath more distinct. N. E. Himalayas: Sikkim and Assam. Rarer in the Punjab.
- ochricrinita*. **S. ochricrinita** *Prout* (21 b). Never very large. Hindtibial tuft of ♂ ochreous and whitish-buff, without any smoky admixture; hindtarsus still shorter than in *extimaria* (about  $\frac{1}{5}$ ); abdomen with the spots small. Forewing with the black scales sparser, no black subcostal antemedian dot, cell-mark less concise, postmedian with the black marks usually slighter; terminal dots weaker on both wings. Khasis.
- prosthio-  
stigma*. **S. prosthio-  
stigma** *sp. n.* (21 b). ♂, 39–40 mm. Antennal ciliation long (nearing that of *formosana*). hindtarsus about  $\frac{2}{5}$  tibia. Abdomen dorsally with rather strong irroration, the black spots fairly well developed. Forewing with the termen perhaps slightly more oblique than in most of the group; pale, with fleshy-brownish suffusions; altogether more sharply marked and variegated than any of its Indian allies; costal margin vinaceous grey; cell-spot blackish; median line (shade) fairly strong, its angle at 1st radial acute; postmedian with the dots on the veins strong; terminal marks large, in part triangular; dots on fringe well developed. Hindwing with the cell-spot intensely black, larger than a dot; markings corresponding to those of forewing. Under-side rather sharply marked; in the type the dark cell-spot of the forewing is concise, in the paratype the proximal suffusion is stronger, relatively weakening the cell-spot. Sikkim, probably the interior (MÖLLER), 2 ♂♂ from the ELWES collection. From *voluptaria* it differs in shape, colour, structure (antenna and hindleg) and various details of markings.
- melanstigma*. **S. melanstigma** *sp. n.* (21 b). On account of the confusion which has reigned over the numerous species and forms that have hitherto been associated as *moorei*, Mr. A. H. STRINGER, of the British Museum, has kindly examined with care the genitalia of a considerable number, including the type of *moorei* itself. With the aid of the notes and suggestions which he has placed at my disposal I have been able to make a preliminary revision of them, and hope this will pave the way for more intensive studies. The fairly common N. E. Himalayan

species which I have named *melanstigma* and the following one, which perhaps represents it in N. Burma, form, according to the narrower tegumen, with elongate, narrowed saccus, a group apart. Hindtarsus of ♂ shorter than in the *moorei* and *rufistigma* groups. In *melanstigma* the tarsus is barely over  $\frac{1}{4}$  tibia; abdomen with black-grey dorsal spots; colour of wings inclining to vinaceous buff; forewing with markings weak, even the blackish marks on the postmedian at both folds slender and not intense, the more cinnamon spots outside them appreciable but small, the terminal dots small (especially posteriorly), those on the fringe small, not deep black; hindwing with the cell-spot black, small but not extremely so, markings of forewing continued, the dark marks at the folds slight; underside weakly marked, the dark subterminal line widening gently between the veins, the dark dots scarcely standing out therefrom. Sikkim, British Bhotan and the Khasis, the type in the British Museum, from the Khasis.

**S. traducta** *sp. n.* (21 c). Hindtarsus of ♂ at least as short as in *melanstigma*; abdomen similarly spotted. *traducta*. Tone nearly as in *melanstigma* or perhaps slightly less cinnamon; postmedian with the dark markings perhaps even weaker, the brownish (rather than cinnamon) shading outside them faint, scarcely noticeable; course of the line itself possibly a little less sinuous; terminal dots small, but the series generally complete. Underside closely like that of *melanstigma*. Mishmi Hills, N. Burma, March 1935: Dingliang, 2450 feet, 4 ♂♂, Lohit River, 3 ♂♂, 1 ♀ (Miss M. STEELE), type ♂ and allotype ♀ in the British Museum. Except for a striking difference in the 8th sternite of the ♂ (right-hand ceras much stouter, in *melanstigma* longer and slender), supported by a difference in the shape of the process on the aedoeagus, I would treat this as a subspecies.

**S. acharis** *sp. n.* (21 c). Expanse 42—45 mm, thus conspicuously larger than *traducta*. Antennal teeth *acharis*. of ♂ perhaps somewhat stronger, fascicles about twice diameter of shaft; hindtarsus not extremely short (approaching  $\frac{1}{2}$  tibia). General tone at least as dark as in the most extreme forms of *rufigrisea*, the irroration more black-grey and more dense than in *traducta*. Abdomen above slightly more clouded, sometimes with vague indications of dark spots. Cell-spot of forewing large, but quite weak, that of hindwing a distinct black dot; median shade on the whole thicker than in *traducta*, especially so, on hindwing, the part which embraces the cell-dot. Mishmi Hills, 5 ♂♂ and 1 ♀ in the British Museum, the type, allotype and another from Lohit River, 2 from Dingliang, 1 from Chhaglon (Miss M. STEELE). According to the genitalia, STRINGER groups this with the 3 following species.

**S. rufigrisea** Prout (= *walkeri* Leech, nec *Butl.*) (Vol. 4, pl. 3 m, as *walkeri*). More greyish than *moorei*, *rufigrisea*. though retaining a slight reddish tinge; the cinnamon, dark-brown mixed, spots outside the postmedian of the forewing generally moderately well developed, contrasting with the ground-colour; cell-spot of hindwing red-brown, rather variable in size, overlaid except at its edges with black. Hindtarsus of ♂ approximately  $\frac{1}{3}$  tibia, in the type and several other examples apparently less, in a few examples more, so that there is possibly still a mixture of species. Central China: Chang Yong (type) and Ichang; also numerous localities in West China.

**S. moorei** Cotes & Swinh. (= *similaria* Moore, nec *Walk.*) (21 c). The type ♂, unfortunately only labelled *moorei*. "Bengal", is by no means one of the common forms, but the examination of the genitalia has shown its correct position. Rather large and relatively brighter in colour than *melanstigma* (nearer to "pinkish buff" than "pinkish cinnamon" of RIDGWAY), the irroration not conspicuous, mostly brownish, only here-and-there black-grey. Hindtarsus of the ♂ about  $\frac{1}{3}$  tibia. Forewing with the cell-mark weak, black marks on postmedian line inclined to break up into pairs (before and behind the folds) of rather large black dots, the cinnamon shading outside them noticeable, but not sharply defined, not or scarcely mixed with dark-brown; cell-dot of hindwing about as in *rufigrisea*; hindwing beneath with the postmedian line better developed than in most of the allies. We figure a ♂ from the Naga Hills which is an excellent match with the type, except that the cell-dot of its hindwing is slight — a purely individual aberration, as other Naga ♂♂ show it as strong as in the type. A ♀ from Darjiling (which may have been the type locality) may also be placed as typical. — **metarsia** *subsp. nov.* is less large (36 to *metarsia*. 38 mm), paler and more weakly marked; cell-dot of hindwing minute, sinuosities of postmedian line very slight; terminal dots slight, only showing on the anterior parts of the wings; terminal line of underside fine, not very black, not (or scarcely) swelling between the veins. Masuri, not uncommon, type in the Tring Museum. A damaged ♂ from „Sikkim (ELWES)“ quite agrees, thus the form may not be an absolutely fixed race.

**S. achrosta** Prout (Suppl.-Vol. 4, pl. 5 d). This rather large form, which I earlier supposed to be the *achrosta*. N. W. Himalayan race of *moorei*, is shown by the genitalia to be a separate species. Very much like a giant form of *metarsia* but still paler, smoother-looking (less irrorated), the few black markings (cell-dot of hindwing and pairs of postmedian dots of forewing) generally more sharply expressed. Kashmir (type) to Simla.

**S. trapezistigma** *sp. n.* (21 c). ♂ 37 mm, ♀ slightly smaller and broader-winged. Hindtibia of ♂ heavily *trapezistig-* dilated, the pencil mixed with brownish, tarsus very short (about  $\frac{1}{4}$ ). Abdomen with some black-grey *ma*. spots. Coloration more violet-grey than in the neighbouring species; scheme of markings the same; cell-mark

of forewing a more definite, open ring than in any of the preceding, that of hindwing slightly variable, but mainly trapezoidal, narrowly dark, filled in with ochreous; postmedian line with small black vein-dots, the markings at radial and submedian area not ample; terminal dots small, but strong; fringes dotted. E. Java: Nongkodjadar, 4000 feet, type ♂ and another; Djoenggo, Arjoeno, 4500 feet, 1 ♀ (J. P. A. KALIS). All in the Tring Museum, none very fresh, but obviously a distinct species.

*rufistigma*. **S. rufistigma** Warr. (21 c), earlier treated as a form of *moorei*, may be regarded as the type of STRINGER'S third group. Recognizable at once by the annular cell-spot of the hindwing — narrowly brown, with orange or bright ochreous interior; ground-colour generally pale. Hindtarsus of ♂ little over  $\frac{1}{4}$  tibia. Khasis (type). Sikkim and probably Tonkin and Perak. Single poor specimens from Vrianatong (Chinese Tibet) and Kinabalu may represent races.

*mishmica*. **S. mishmica** sp. n. (21 c). Rather larger than *rufistigma*, antenna and hindleg of ♂ similar. Colour almost as in some *rufistigma*, less whitish than the type form and a trifle greyer (less brownish) than the darker forms; forewing with cell-ring smaller and more ill-defined or virtually obsolete, median line beneath with an acute angle at 1st radial, while in *rufistigma* this is less acute, often markedly so, or the extreme tip of the angle indefinite; hindwing in both the known specimens with the cell-spot small (in *rufistigma* variable). Underside with terminal line of forewing very slender, the interneural spots standing out as conspicuous triangular projections, for the most part fairly high (in *rufistigma* this line is relatively broader and the dots inclined, under the lens, to appear as mere undulations). The left-hand ceras of the 8th sternite is fairly long (reaching about to the end of the mappa), while in *rufistigma* it is very short; the saccus also differs. Mishmi Hills, N. Burma (Miss M. STEELE), 2 ♂♂ in the British Museum.

*formosana*. **S. formosana** Prout (= *orientalis* Prout, nec Alph.) (21 d). Very near *rufistigma* and *rufigrisea*, but distinct. Hindtarsus of the ♂ almost  $\frac{1}{2}$  tibia, antennal ciliation long. Intermediate in colour, generally rather nearer to that of the latter. Abdomen with black dorsal spots. Cell-dot of hindwing red-brown, with black admixture (sometimes only a few scattered black scales). Formosa.

*aratreces*. **S. anatreces** Prout (21 d). Antenna with about 12 of the proximal joints black-dotted. Hindtarsus of the ♂ slightly longer than in *formosana* (almost  $\frac{1}{2}$  tibia), forewing a trifle narrower, hindwing slightly more angled, cell-dots black, postmedian more deeply bent between the radials, median shade on forewing more dentate, on hindwing straighter, underside more strongly marked. Formosa. In structure near the following species, but the hindtarsus perhaps scarcely so long.

*punctatissima*. **S. punctatissima** Bastelb. (= *quadrifaculata* Wileman) (21 d). Recognizable at once by the large dark cell-spot of the hindwing, the postmedian spot at the radials of the forewing also strong. Darker than *anatreces*, antemedian line more obsolete, postmedian of hindwing less distally placed. Formosa. The only similar form known is that described above (p. 201) as *indigenata* ab. *tetrasticta*, which is much smaller, without black cell-dot of forewing and of a different colour (more brown-grey).

*erubescens*. **S. erubescens** Warr. (21 d) may be known by its delicate fleshy tinge (pinkish buff to light pinkish cinnamon), which is much cleaner (less irrorated with grey) than in *sordida*. In the strong postmedian patches and the sparseness of its irroration, it more recalls *stigmata*; larger, the tibial hair-pencil pale, the termen of the forewing a little more oblique, lines rather thicker, terminal dots minute, on the underside scarcely showing, on an almost continuous terminal line. Hindtarsus of ♂ well under  $\frac{1}{2}$  tibia. Only known from the Khasis, not common.

*preumenes*. **S. preumenes** sp. n. Antennae lost. Hindtibia rather strongly dilated. Both wings with termen just appreciably more rounded than in *asparta*, reducing the acuteness of the angles at apex of forewing and 3rd radial of hindwing. Tone a shade more pinkish than in *asparta*, irroration weak or moderate; terminal dots fairly well developed anteriorly and traceable throughout (on underside both species show a brownish terminal line, though it is weaker in *asparta*); cell-dot of hindwing sharply black, though small, of forewing also small, less black but quite manifest; lines weak, the median shade on the forewing less thick than in *asparta*, on the hindwing likewise somewhat so, well bent just behind the median, so that its principal part curves inward round the cell-dot, though there are traces also of a line curving on the opposite side of the dot; postmedian of forewing with the usual two blackenings, the red-brown spot distally to each small but quite noticeable. Underside with the forewing rather more heavily and less irregularly suffused than in *asparta* and with a narrow hindmarginal area remaining whitish; cell-dots here better developed, median shade and postmedian line much the same in both species. Vrianatong, Tibet, 1 ♂ in my collection. Greyer than *erubescens*, forewing a trifle shorter, cell-dots rather stronger, postmedian of hindwing straighter, postmedian of underside more proximally placed. The genitalia are quite distinct from any yet examined in the *extimaria* group.

**S. atriceps** *Hmps.* (21 d). Less large; white-grey or dirty white, without the brown tinge of the preceding *atriceps* group. Hindtarsus of ♂ about  $\frac{1}{2}$  tibia. Similar in shape, as well as in the pose of the transverse markings, to *erubescens*, but much whiter, the cell-dots indistinct, spots at postmedian wanting. N. W. India: Sabathu.

**S. asparta** *sp. n.* (21 d) can scarcely be a race of *atriceps*, although HAMPSON and WARREN treated it *asparta* as synonymous. Rather larger, ♂ hindtarsus somewhat shorter ( $\frac{2}{5}$  or scarcely). More tinged with pinkish-buff; markings thicker, the median shade of the hindwing straighter, its cell-dot dark, though still minute, a few minute black terminal dots present, at least on the forewing. Khasis, 3 ♂♂ in the Tring Museum. An aberration from Cherrapunji (SWINHOE collection) shows weak traces of the characteristic postmedian markings of *moorei*.

**S. linearis** *Hmps.* (= *linearia* *Hmps.*) (21 e) is also of only moderate size and is again distinguishable *linearis* by the colour; this shows a distinct yellow or ochreous, which is wanting in all the foregoing. Hindtibia of the ♂ with the pencils long and strong, whitish, tarsus greatly abbreviated. Lines fine, sinuous, but not or scarcely at all denticulate, a slight thickening or darkening of the postmedian at both folds reminiscent of the *extimaria* group. Distributed in India, the type from the Nilgiris.

**S. alstoni** *Prout* agrees in essentials, and in the yellow colour, with *linearis* and may well be a form of *alstoni*. it. Very distinct in appearance, the postmedian line being blackened between the radials and hindward from the 2nd median and accompanied distally by dark (black-irrorated) patches, which recall those of *stigmata*, etc., Ceylon.

**S. margaritaria** *Warr.* (21 e) reverts to the colouring of the group of *extimaria* and has a similar (irregularly dentate) postmedian to that species, but shows only very small remnants of the characteristic punctiform spots at the folds. WARREN differentiates it from *vacuata* by the greater slenderness of this line and the absence of the black teeth or dashes which emphasize it on the veins; he also points out the somewhat forward origin of the 2nd radial. Only known from Celebes. *margaritaria*.

**S. tenuispersata** *A. Fuchs* (21 e). "Size and shape of *marginipunctata*" (Vol. 4, pl. 4 h). "Differs in *tenuispersata* the very fine and sparse irroration, the obsolescent markings, but before all in its earthy, dirty yellow-grey tone, which almost recalls *beckeraria*" (Vol. 4, pl. 7 b), "though that is still yellower. Median shade indicated, the postmedian by some punctiform atoms, likewise distinct rudiments of the characteristic sinuous subterminal shades of *marginipunctata*", etc. Underside with the markings of the distal part somewhat more developed than above, the median shade (in which stands the cell-dot) discernible, the coloration decidedly yellowish, quite different from that of our *marginipunctata*. Gross-Atjeh, E. Sumatra, a ♀ in fairly good condition. The species which I have provisionally determined as this belongs to Sumatra and Kedah and is here figured; generally rather smaller than *margaritaria*, grey shades more developed, cell-dot of forewing black.

**S. leucopis** *Prout*. Expanse 30—31 mm. Hindtibia of ♂ elongate, tarsus considerably less than  $\frac{1}{2}$ . *leucopis*. Somewhat less broad-winged than *vacuata*, the hindwing with termen not appreciably bent. Whitish brown, with the lines brown, not very strong, formed much as in the 3 following. Characterized at once by having the face predominantly white, only darkened round the edges. Sarawak: Mt. Murud, at 6000—6500 feet.

**S. pallidiceps** *Warr.* (21 e) was unfortunately described from a specimen to which had been affixed a *pallidiceps* false head, apparently not even belonging to the present genus. It is therefore a mere coincidence that it has a near neighbour with a white face; here it is normal, i. e. blackish. Antennal ciliation longish (Javan ♂♂), hindleg almost as in *vacuata*, tibial pencil with ochreous admixture, a lateral tuft on 5th abdominal tinged with ochre. Perhaps further distinguishable from *vacuata* in that the postmedian is dotted before and behind the 2nd radial (as in *margaritaria* but more strongly). Abdomen with strong dorsal spots, at least on segments 3 and 4, while in *margaritaria*, *hyphenophora* and *vacuata* they are very small or obsolete. The type ♂ from Lombok; specimens from Java seem to agree perfectly.

**S. hyphenophora** *Warr.* (21 e). Closely related to the *subdecorata* form of *vacuata*, but with no dark *hyphenophora* pencil on the ♂ hindtibia; on an average larger and perhaps more weakly marked beneath; the black postmedian spot single, placed on the 2nd radial, often hyphen-shaped. Khasis (loc. typ.) and the Malay Peninsula. — **ambiguiceps** *subsp. nov.* Expanse 28—30 mm. The face (which in the type form, as also in *margaritaria*, *ambiguiceps* is deep black with only the lower edge white) less dark and progressively mixed with white from about the middle downward; markings rather strong, especially the median shade, above and beneath. Bali, 2500—5000 feet (J. P. A. KALIS).

**S. vacuata** *Guen.* (= *vagata* *Walk.*) (21 e). Easy to recognize among the Bornean species by the annular *vacuata* brownish cell-mark of the forewing, the black vein-dots or dashes on the postmedian line and especially, in the ♂, by the hindleg; this has the femur hairy, the long tibia, besides its terminal tuft, with a long, predomi-

- subdecorata*, antly blackish hair-pencil, the tarsus exceedingly short. Borneo, not rare, especially in Sarawak; — ab. **subdecorata** Warr. is evidently a large, heavily-marked ♀ with the cell-ring of the forewing reduced. Mt. Mulu, N. Borneo. I have also seen a similar ♂, but with the cell-ring normal, from N. Borneo.
- pauperata*. **S. pauperata** Walk. (= *vacuata* part. *Swinh.*, nec *Walk.*). Paler, more weakly marked, the cell-mark of the forewing ill-defined, not forming a ring, the postmedian line without the conspicuous black dot at the 2nd radial. Antennal ciliation still longer than in *vacuata*; hindfemur smooth, tibia greatly dilated, the pencil
- oedocnemis*, not dark, the terminal tuft wanting, tarsus about  $\frac{1}{3}$  tibia. Sarawak, 1 ♂. — ab. (?) **oedocnemis** Prout. Perhaps greyer, the subterminal line standing out distinctly on the somewhat darkened distal area. Lio Matu, Sarawak (type ♂) and Kabayau, near Kinabalu (1 ♂). Perhaps a synonym; WALKER's poor (and temporarily lost) type was overlooked when I described it.
- dimorphata*. **S. dimorphata** Snell. I have not seen the name-type from Celebes and am to that extent handicapped in working out the variation. The species, in its whitest forms, recalls the most weakly marked members of the *ornata* group, but has the margin of the hindwing smoother, excepting only the tooth at the 3rd radial. Hindtarsus of the ♂ very short, only  $\frac{1}{5}$  or  $\frac{1}{4}$  of the tibia (but this structure is closely approached in *deliciosaria*); antennal ciliation moderate. SNELLEN's type ♂, from Macassar, expanded "22 mm", was not quite so pure white as *agnes*, the proximal lines almost as faint, the postmedian strong and zigzag, the distal area of the forewing, in addition to the grey subterminals, with two elongate brown marks on the proximal one at radials and
- hainanica*, fold. — **hainanica** *subsp. nov.* (21 e). Probably very similar; smaller, perhaps purer white; cell-dots minute. often almost obsolete, terminal dots also reduced; dark marks outside the postmedian rarely quite so sharply
- suffidaria*, defined. Hainan, a good series in the Tring Museum, not very variable. — **suffidaria** *Swinh.* is more weakly marked distally than the other forms; median shade present; spots on the postmedian represented only by paired dots at the radials, the distal area greyish (less strongly coloured than in *propinquaria*, etc.) with distinct white
- agnes*, subterminal. Bali (type); known from Java to Flores and perhaps from E. Sumatra. — **agnes** *Bull.* (21 f) is pure white, the antemedian and median lines obsolete or nearly so; the only conspicuous markings, as a rule, are the cell-dots and on the forewing the composite postmedian spots. Described from Queensland; specimen, from British New Guinea are similarly pure white but very variable, sometimes almost without markings, as is very rarely the case in Queensland.
- eulomata*. **S. eulomata** Snell. (= *compressaria* Warr.) (21 f). Antennal ciliation of the ♂ moderate or longish; hindtarsus rather less than  $\frac{1}{3}$  tibia. In shape and a few other details it rather recalls *annularia* *Swinh.*, which HAMPSON even sunk to it (!). Apart from the differences which are quite obvious at first sight, the terminal line beneath is here continuous, in *annularia* punctiform. Distributed in Malaysia, chiefly on the islands; the respective types came from Java and Bali. 2 pale ♂♂ (in poor condition) from Lindoe, W. Celebes, 3700 feet, with larger cell-dot of hindwing, probably represent a separate subspecies.
- modesta*. **S. modesta** Moore (= *latimarginaria* *Hmps.*) (21 f). Distinct in its pale drab tone and darker, greyer distal area, on which the subterminal line only shows as quite disconnected spots. Underside paler, well marked. Ciliation of ♂ antenna long, hindtibia long, tarsus extremely short. Ceylon (*modesta*), the Nilgiris (*latimarginaria*) and the Palnis; I have found no racial difference.
- mecysma*. **S. mecysma** *Swinh.* (21 f). Darker, browner grey, somewhat variable in tone, but always pretty uniform, except that the costal margin of the forewing is darkened. The type is the darkest known form, perhaps even darker than the two following species. Commonest in the Khasis (loc. typ.) but known also from Nepal, S. Tenasserim and Formosa. — ab. **brunnescens** *nov.*, representing the opposite extreme of colour, is lighter and much
- brunnescens*, browner and seems to be the prevailing form in the Khasis, accounting for perhaps two-thirds of the specimens
- mesites*, or — including intergrades — at least three-fourths. — **mesites** *Prout.* Colour as in name-typical *mecysma*, proximal lines less rigidly straight, postmedian definitely sinuous, some ill-defined pale subterminal maculation indicated. Described from E. Java. A single specimen from E. Bali and a few from W. Celebes are nearer to this than to *m. mecysma*, but are smaller.
- violacea*. **S. violacea** Warr. Larger than *mecysma* and with a tinge of purplish; lines rather thick, antemedian of forewing bent on the median vein, median curved anteriorly, postmedian strongly sinuous. Sikkim, rare.
- plumbearia*. **S. plumbearia** *Leech* (Vol. 4, pl. 5 f). Closely like a small *violacea*; antemedian and cell-marks weak. Kiushiu.
- spissitarsata*. **S. spissitarsata** Warr. (21 f) should probably be placed near *vacuata* and *pauperata*, as the ♂ hindtibia is long and much swollen, the tarsus minute (about  $\frac{1}{6}$ ); tibial pencil black-grey. Termen of forewing not very oblique, 1st subcostal stalked well beyond the end of the areole, 2nd radial arising before middle of discocellulars. Costal edge darker than in *pauperata*, postmedian thicker, subterminal shades slighter. Sumatra, a series from Loeboe Rajah.

**S. albomaculata** Moore (21 f). Conspicuously distinct in its warm wood-brown colouring combined with *albomaculata*. the development of large white subterminal spots on both wings. Darjiling.

**S. marcidaria** Leech (Vol. 4, pl. 3 l) also shows some tendency for the white subterminal to become *marcidaria*. macular, but the white ground-colour, marked with thick ochreous lines or narrow bands, gives it a much more normally Scopuline appearance. Hindwing angled, though not acutely. Antennal ciliation in the ♂ long, hindtarsus considerably shorter than the tibia. W. China and the Kachin Hills. — ab. **intaminata** Prout has the *intaminata*. lines finer, brighter yellow, the yellow suffusion at the base of the forewing restricted to a streak along the anterior margin of the cell. Wa-shan, 1 ♂.

**S. polystigmata** Hmps. (Vol. 4, pl. 5 d). Hindwing somewhat quadrate, the termen being straightish *polystigmata*. on each side of the central angle. Tone very pale yellowish, sparsely irrorated, cell-dots rather strong and black, especially that of the hindwing; some characteristic blackish spots outside the postmedian, strongest posteriorly. Kashmir. — ab. **elyra** Swinh. is of a much deeper ochreous colour, but otherwise scarcely differs. *elyra*.

**S. rivularia** Leech (Vol. 4, pl. 3 e, 5 e). A large brownish species, with acute apex to the forewing and *rivularia*. moderately angled hindwing; markings thick, rather zigzag, the postmedian darkest, succeeded distally by a band of dark maculation (the proximal subterminal shade). West and Central China, the type from the former district.

**S. annularia** Swinh. (= *nigropunctata* Guen., nec Hufn.) (21 f). Characterized by the blackish cell-ring *annularia*. and median line of the hindwing, markings on the abdomen and (on both wings) at the hindmarginal end of the postmedian. Hindtarsus of the ♂ nearly as long as the tibia. GUENÉE'S type was of unknown origin, probably Indian, SWINHOE'S from Rangoon; known from Ceylon, Assam to Tonkin, Penang, Borneo, the Philippines, Celebes and probably Java. — **reducta** Rothsch., from W. Sumatra, is 'paler, discal spots considerably smaller'. *reducta*. Erected as a subspecies, but I suspect merely a slight aberration.

**S. perlata** Walk. (= *recessata* Walk.) (21 g). Recognizable among the similarly coloured Australian *perlata*. *Scopula* by the rather sharply angled hindwing. Lines slender, median shade generally thick, cell-dots small, but sharply black. Antennal ciliation of the ♂ not long, hindtarsus not abbreviated. Distributed from Tasmania (the type locality) to Queensland. In Tasmania the larva has been reared from the egg by F. LITTLER and found to accord well in build with those of its Palaearctic congeners.

**S. hanna** Butl. (Vol. 4, pl. 3 m), described from Japan, belongs chiefly to the Palaearctic Region, but *hanna*. reaches Szechuan. Ciliation of the ♂ antenna moderate, hindtarsus about  $\frac{1}{2}$  as long as tibia. A small species, with bluntly angled hindwing (not shown in our figure), the colour varying from light fleshy ochreous to more whitish, the median shade moderate, on the forewing oblique, the lines rather weak, more punctiform.

**S. nigropunctata** Hufn. (Vol. 4, pl. 4 k) **subcandidata** Walk. (= *vagata* Leech, nec Walk., ? *imbella* Warr.) *subcandidata*. (21 g). This Chinese race, described from Shanghai, is extremely variable, but the genitalia, with their curiously asymmetrical valves, remain so constant that it has not been found possible to make any separation of species. On the whole smaller than the European *nigropunctata*, cell-dots relatively smaller, median shade on the whole less strong, often less oblique. — f. **subalbulata** Sterneck. More whitish than *n. nigropunctata*, cell-dots sharper, *subalbulata*. median shade conspicuous, slender, terminal line more punctiform, underside (especially of hindwing) decidedly weaker marked. Omih sien, etc. — f. **ochrea** Sterneck. Reddish ochre-yellow instead of white-grey, termen of *ochrea*. hindwing somewhat more strongly bent than usual. A ♀ from Kwanhsien, Szechuan. — f. **rubella** Sterneck is *rubella*. likewise reddish ochreous, on an average larger than *ochrea* and *subcandidata*, the markings more or less weak. Frequent at Kwanhsien, also received from Peking. — f. **nigrisignata** Prout (= *variegata* Sterneck, nec Steph.) *nigrisignata*. Size of *rubella* but very sharply marked, the markings black instead of grey, the median shade and postmedian line particularly prominent, the latter with the vein-dots strengthened; cell-dots large and black. Sunpanting and Omih sien.

**S. modicaria** Leech (Vol. 4, pl. 5 e). Very near *subcandidata*, ♂ hindtarsus less shortened, fully  $\frac{1}{2}$  tibia, *modicaria*. forewing without black cell-dot, a larger but ill-defined brown spot replacing it, postmedian line of forewing rather more incurved between the radials, that of the hindwing usually considerably straighter than in *nigropunctata*. China and Japan, the type from W. China. I am not certain that it may not prove a form of *apicipunctata*.

**S. apicipunctata** Christ. (= *arenaria* Leech) (Vol. 4, pl. 5 b). Rather small and whitish, but somewhat *apicipunctata*. variable both in size and tone. Generally easy to recognize by the restriction of the terminal dots to the apex of the forewing, but forms occur in which they extend further. Antennal ciliation of the ♂ about as long as diameter of shaft, hindtarsus about, or almost  $\frac{1}{2}$  tibia. The types came respectively from Ussuri and Japan. but the range extends to W. China.

- szechuanensis*. **S. szechuanensis** Prout (= *szechuanensis* Sterneck) (Suppl.-Vol. 4, pl. 5 c). Similar to the Palaearctic *umbelaria* Hbn. but smaller, especially in the ♀, the hindwing with the termen only very slightly bent, the ciliation of the ♂ antenna a little stronger, the hindtarsus perhaps relatively somewhat longer, the cell-dots extremely minute or wanting, the terminal dots also almost or altogether wanting except on the hindwing beneath. Szechuan.
- costata*. **S. costata** Moore (21 g). Very glossy white, with the costal edge of the forewing grey, the cell-dots minute, the lines rather straight, not strong. Hindtarsus of ♂ somewhat over ½ tibia. Ceylon.
- epigyppsa*. **S. epigyppsa** Meyr. (= *nivipennis* Butl., *cernea* Druce) (21 g). Not quite so glossy, the costal edge yellow, the lines very fine, wavy, the subterminals more or less broken into irroration. Antenna in the ♂ with fascicles of very long cilia, hindtibia long, tarsus about ½ tibia or scarcely more. Fiji.
- celebraria*. **S. celebraria** Walk. (21 g) is another glossy white *Scopula*, but quite different in shape (especially in the angled hindwing) and with moderately strong grey shades, the median oblique, the subterminals somewhat macular. The type came from "South Hindostan", probably the Nilgiris; I know it also from the Palnis.
- aleuritis*. **S. aleuritis** Turn. (21 g). Smaller, with small black cell-dots and fine ochreous-grey lines, the subterminals sometimes obsolete. Whiter than the other Australian *Scopula* of similar size and shape. Antenna of the ♂ with ciliation about as long as diameter of shaft; hindtarsus less than ½ tibia. N. Queensland to Port Darwin.
- pallida*. **S. pallida** Moore (= *peralba* Swinh.) (21 g). Variable in size, but probably never so small as *aleuritis*; termen of forewing slightly straighter and more oblique; lines distinct; underside of forewing strongly suffused with brown. Ciliation of ♂ antenna rather long, tarsus scarcely shortened. N. W. India to the Shan States, the type from Thundiani.
- nitidissima*. **S. nitidissima** Prout. Larger than *pallida*, purer white and even more glossy. Lines almost entirely obsolete; terminal dots not, or scarcely indicated. Kashmir, occurring with *pallida*. Structure similar, but I have not seen intermediates.
- luteicollis*. **S. luteicollis** sp. n. (21 g). Head (including the face) and body white, the palpus partly black, the tegulae in front ochreous. Antenna with very short pectinations, which bear fascicles of long cilia. Hindtarsus about as long as tibia. Wings above shining white, the forewing anteriorly and the hindwing in the greater part with slight and very inconspicuous grey irroration; no markings except the minute cell-dots. Underside also with the cell-dots; forewing costally and in the cell with red-grey suffusion, which fades out beyond the cell but continues to tinge the veins. Tibet: Rongshar Valley, 9500 feet, 25 June 1924 (Major R. W. G. HINGSTON, Everest Expedition), 2 ♂♂ in the British Museum.
- tensipallida*. **S. tensipallida** sp. n. Expanse 24 mm. Closely similar to small *pallida*, including the structure, though the ♂ hindtibia may be less heavily fringed; tarsus fully as long as tibia. Forewing with apex somewhat less acute, anterior part of termen less oblique; hindwing with termen straight (or extremely weakly concave) between 2nd subcostal and 3rd radial, here with a very definite, though obtuse angle, thence again straight to tornus. Lines slightly browner-tinged than in *pallida*, the postmedian, even on the hindwing, not appreciably incurved between the radials. Forewing beneath with the dark suffusion more partial, the median line, as well as the dentate postmedian and the somewhat macular proximal-subterminal shade distinct. Type ♂ in the British Museum, merely labelled "Burma", but I learned from Mr. G. TALBOT that the collection was made on the Yunnan frontier, near Teng-yueh-ting. A second example from the same source, though much damaged, confirms the general constancy.
- sedataria*. **S. sedataria** Leech (Vol. 4, pl. 7 c) has also the angled hindwing and similar structure but is considerably larger, more glossy white, the lines much less straight, generally more slender or weaker; cell-dots wanting. W. China.
- leuraria*. **S. leuraria** Prout (Vol. 4, pl. 3 m, as *sedataria*). Hindwing not angled, cell-dots often indicated; extraordinarily like a large, very white *superior* Butl. but with the face black. Chiefly Palaearctic, the type from Corea; I have recorded it from Ichang, but it is just conceivable that the specimen from thence (a ♀) is a large *klaphecki* (Suppl.-Vol. 4, pl. 5 b).
- superior*. **S. superior** Butl. (Vol. 4, pl. 4 m) differs from all the similar *Scopula* in its white face; cell-dots usually sharply black. Antennal ciliation not long, hindtarsus of the ♂ quite short. Described from Japan, but occurs right across China. — ab. **sancta** Butl. is very weakly marked, cell-dots slight, terminal dots wanting.
- albilavata*. **S. albilavata** Warr. founded on a ♂ from Keelung, Formosa, taken in August, has not been matched from that country, but may be a weakly marked *nupta* in poor condition. Expanse 26 mm. White, almost

entirely without markings; ciliation somewhat longer than diameter of shaft, hindtarsus very short (apparently only about  $\frac{1}{3}$ ); hindwing bluntly elbowed in the middle. I formerly suggested that it might be a form of *pudivaria*, but the antenna is not black-dotted and the 8th sternite has closely the formation of *nupta* (see Suppl.-Vol. 4, p. 41).

**S. pudicaria** *Motsch.* (Vol. 4, pl. 4 i). Distinguishable from the similar species by the black scaling on *pudivaria*. the antennal shaft. Chiefly Palaearctic, but its distribution in China necessitates its mention here.

**S. lutearia** *Leech* (Vol. 4, pl. 3 l). Yellowish, without cell-dots, the median and subterminal shades *tutearia*. rather broad. Ciliation of ♂ less long than in *marcidaria*, hindtibia more strongly abbreviated. Central and West China.

**S. flavifurcata** *Prout* (21 h) is also yellowish, but smaller, the ♂ hindtarsus little abbreviated (perhaps *flavifurcata*.  $\frac{3}{4}$  tibia). Hindwing with termen bent. Cell-dots present. Forewing beneath with median and postmedian shades well developed, smoky, the postmedian rather more proximally placed than above. Sabathu.

**S. atridiscata** *Warr.* (21 h). Brownish rather than yellowish, the postmedian line almost as sinuous *atridiscata*. as in *linearis*, but rather distally placed, the subterminal shades almost or altogether obsolete; the large and very black cell-dots of the upperside are outstandingly conspicuous. Hindtarsus of ♂ almost as long as tibia. Khasis, rare.

**S. semispurcata** *Warr.* (21 h). Remarkable in its colour-scheme, the markings of the forewing merely *semispurcata*. deeper yellow, while those of the hindwing are much darkened with heavy grey irroration; on the underside this is more intense, so as to cloud most of the wing (except base and termen) with blackish. New Guinea.

**S. chydæa** *sp. n.* (21 h). Very near *semispurcata*; ♂ ciliation not quite as long. Very distinct in the *chydæa*. different distribution of the black (which in both becomes solidly black on the underside); on the hindwing it is more equal in intensity and leaves free a somewhat broader distal area; on the forewing it is also represented, reaching from near base to subterminal and from hindmargin to subcostal and forms a better developed (though always interrupted) terminal line. W. Celebes: G. Rangkoenau, Paloe, 900 feet, 9 ♂♂ in the Tring Museum.

**S. discrepans** *Prout* (21 h). Antennal ciliation of the ♂ long; hindtarsus nearly  $\frac{3}{4}$  tibia. The wing-*discrepans*. shape and somewhat unusual pattern render this also an unmistakable species. New Guinea and Dampier Island, the type from Kumusi River, British New Guinea. — **infirmata** *subsp. nov.* A ♀ from New Ireland (coll. *infirmata*. Tring Mus.), probably a race but possibly the normal ♀-form, has the postmedian more curved, without the black spots, on the hindwing more distally placed, a median shade developed. In some respects nearer the following, if the shape is a ♂ specialization.

**S. ætheomorpha** *Prout*. Termen of forewing with deep excavation anteriorly and sharp point at the *ætheomorpha*. 3rd radial, hindwing with corresponding exaggerations of the irregularity of its shape. In colour and in the absence of the black spots of the postmedian nearer to *infirmata*, but with the dark outer shade stronger and nearer to the termen. Scarcely an extraordinary "sport" of *discrepans*, with which the unique type was taken (a ♂, Kumusi River).

**S. aequidistans** *Prout*. About the size and colour of *atridiscata* (21 h) or slightly browner; wings broader, *aequidistans*. cell-dots minute, postmedian slightly less sinuous, a curved antemedian well developed on forewing, the median shade about midway between the lines; subterminal shading slightly better developed than in *atridiscata*. Dutch Timor, only the type ♀ known.

**S. deflavaria** *Warr.* (21 h). Much smaller than *atridiscata* and *aequidistans*, more yellowish, cell-dots *deflavaria*. intermediate between those of the said species, postmedian line fine, sinuous and denticulate, subterminal shades more as in *aequidistans*, termen with small but distinct black dots; ♂ hindtarsus very short. Tenimber Islands. — **calorifica** *Warr.* is a trifle less yellow and perhaps a little narrower-winged, but possibly the dis-*calorifica*. tinctions will not hold. Single specimens from Bali (type) and Sambawa, probably also Java and Timor. — **relevata** *subsp. nov.* Somewhat lighter and less brownish yellow, postmedian line rather less slender, both the *relevata*. subterminal shades rather strong and complete, the true (pale) subterminal conspicuous between them. Paloe, W. Celebes, sea level to 1800 feet on Gunong Rangkoenau, a series in the Tring Museum.

**S. butyrosa** *Warr.* (21 h). Although simple in shape and pattern, this little species is not difficult to *butyrosa*. recognize by its cream-buff colour and entire lack of dark irroration; markings extremely weak, only of a slightly deeper shade of buff, even the (somewhat diffuse) cell-mark merely of this latter tone. Ciliation of ♂ shortish-moderate; hindtarsus short, though not very extreme. Punjab to Upper Burma, the type from Sikkin.

**S. furfurata** *Warr.* (21 h). In shape and markings almost the counterpart of *butyrosa*, though the lines *furfurata*. may be on an average a little better expressed; different in colour — pinkish buff, with the markings more

cinnamon-buff. It can scarcely be a form of *butyroga*; I have seen no intermediates and the hindtarsus seems a little less shortened. Simla (type) and the Khasis.

- coangulata*. **S. coangulata** Prout (21 i). Slightly narrower-winged than *butyroga*. Antenna of the ♂ with the fascicles of cilia rather long, about twice diameter of shaft; hindtarsus about  $\frac{1}{2}$  tibia. Cream-colour, somewhat clouded with buff; sparse black irroration present, also (unless on the forewing of some ♀♀) black cell-dots, that of the forewing placed on a small buff spot; the highly irregular postmedian line recalls that of *inangulata*. Only known from the Khasis.
- albiflava*. **S. albiflava** Warr. Very small (18 mm), somewhat narrow-winged, hindwing with excision between the radials well marked; suggestive of a *Sterrha* ("Ptychopoda"), in which genus WARREN inadvertently described it, notwithstanding the venation, the 4-spurred hindtibia and the terminal dots (on the wings, not the fringes). White, with black cell-dots and rather thick yellowish lines and subterminal shades. Termen of hindwing rounded. Khasis, only the type known.
- sublutescens*. **S. sublutescens** Prout (21 i). Ciliation scarcely longer than diameter of shaft; hindleg about as in *coangulata*. The yellow ground-colour considerably whiter than in *butyroga*, a few small blackish scales generally discernible, in any case forming some minute terminal dots; the yellow lines less sinuous than in *butyroga*; forewing beneath more suffused with reddish-smoky than in that species. Also confined to the Khasis.
- complanata*. **S. complanata** Warr. (21 i). Less weakly marked, especially as to the subterminal shades, which enclose a definite, sinuous white subterminal; black cell-dots (especially on hindwing) generally well developed, also some (minute) terminal dots. The light-brown (rather than yellow) lines on a white ground-colour distinguish it from *sublutescens* and the ♂ hindtarsus and antennal ciliation may be somewhat longer. Punjab to Upper Burma, the type from the Khasis. Somewhat variable; the darkest-marked specimens can be confusingly like *undulataria*.
- unilineata*. **S. unilineata** Warr. (21 i). This name was given in order to indicate the obsolescence of the antemedian line and the strongly band-like formation of the median and both subterminals, so that only the postmedian can be called a line; this is unusually proximally placed and is in the type ♀ fine and (on the forewing) slightly black-marked between the radials. Khasis. My Darjiling ♀, here figured, lacks this mark and has the minute black cell-dot of the hindwing placed on the postmedian, thus scarcely noticeable. Hindtarsus of the ♂ somewhat shorter than hindtibia.
- undulataria*. **S. undulataria** Moore (21 i). On the whole larger than *complanata*; more irrorated with grey and more coarsely marked. Variable but generally recognizable by a thickening of the postmedian line and very often a proximal suffusion of the forewing on the upper side, though not so intense as on the under. Hindtarsus of ♂ somewhat shortened. Sikkim to Upper Burma.
- seductilis*. **S. seductilis** Prout (21 i). Close to the following, perhaps hardly more than a subspecies. Antennal ciliation of the ♂ a little longer. Forewing, at least in the ♂, a little broader. Colour paler, median shade on the forewing less thick, less brown, rather less strongly curved, on the hindwing closer to the cell-dot, curved basewards in the cell so as to escape it; cell-dot of hindwing on an average less large. W. Sumatra.
- consimilata*. **S. consimilata** Warr. (21 i). Antenna of ♂ dentate-fasciculate, hindtarsus at least  $\frac{3}{5}$  as long as tibia. Somewhat ochreous, the blackish or fuscous irroration strong, the lines pale brown, the postmedian rather distally placed, marked with black dots on the veins. Underside pale, with the outer lines strongly marked, the forewing in part suffused. Khasis. — ab. (?) **aggravata** Warr. was described, also from the Khasis, as a separate species, but is at most a more strongly irrorated aberration, perhaps a synonym — 1 ♂ in fresh condition.
- parodites*. **S. parodites** Prout. Also very near *consimilata*, somewhat browner, the median shade more slender, the fringe unspotted; antennal joints in the ♂ scarcely projecting, ciliation very little longer than the diameter of the shaft; hindtarsus of ♂ scarcely over  $\frac{1}{2}$  tibia. Selangor: Kuala Lumpur. 1 ♂; a ♀ from Mergui is slightly paler.
- inangulata*. **S. inangulata** Warr. (21 i). Antennal joints of ♂ projecting, ciliation rather long; hindtibia moderately dilated, tarsus at least  $\frac{1}{2}$ , perhaps rather more. Akin to *consimilata*, but easily distinguished by less broad wings and by the postmedian line, which is more proximally placed; the sinuous subterminal is strong, placed between grey shades. Khasis.
- corrupta*. **S. corrupta** Prout. Expanse 24 mm. Narrower winged than *consimilata* and *seductilis*, forewing shaped more as in *nigristellata* (21 k) and *perfilata* (21 k) but with the tornns slightly less prominent, hindwing with the angle at 3rd radial extremely slight. Antenna subserrate, ciliation fairly long; hindtarsus fully  $\frac{2}{3}$  tibia. Wings much more suffused than in *consimilata* (though irregularly), markings similar, but — excepting the sharp

black cell-dots and terminal dots — much less distinct; median shade and on the hindwing the postmedian somewhat avellaneous or wood-brown. Forewing beneath suffused almost throughout. Korintji (W. Sumatra), 1 ♂.

**S. perfilata** Prout (21 k). Distinguishable at a glance from *consimilata* by the shape, which somewhat recalls the African *sublobata* (Vol. 16, pl. 7 g). ♂ ciliation nearly twice diameter of shaft, hindtarsus somewhat over  $\frac{2}{3}$  tibia. Java, locally common.

**S. desita** Walk. (21 k). Termen of the forewing more oblique, especially in the ♂♂. Greyish, the lines on the forewing slender, rarely well defined, yet very characteristic, especially the postmedian, which is very oblique, strongly zigzag and more or less connected, between its very acute tooth at the 1st radial and the terminal dot of cellule 7, by an oblique (often interrupted) dark line; black dots or dashes generally develop here and there on the lines. Java and through the Lesser Sunda Islands to Queensland and New South Wales, the type from Moreton Bay. Specimens from the Kei and Tenimber Islands look slightly less narrow winged, more brownish and more weakly marked, but I have not seen fresh specimens. — **luzonica** Prout. On an average markedly smaller (16—22 mm), both wings slightly less elongate costally; slightly more brownish; forewing with apical dash obsolete, costal dot of postmedian generally better developed. Luzon. Possibly a separate species.

**S. idnothogramma** *sp. n.* (21 k). Considerably less brown-tinged than *desita*; impure white, with rather sparse black irroration. Face and upperside of palpus black; vertex white; collar light brown. Antenna of ♂ with ciliation fully as long as diameter of the rather broad shaft; hindtarsus well under  $\frac{1}{2}$  tibia. Lines sharper than in *desita*. Forewing with antemedian very acutely angled, its angle very near the cell-dot, its anterior arm with a black subcostal dot or tooth; median far beyond cell-dot, sinuous, sharply angled about 1st radial, its anterior part weak; postmedian partly blackened, with an acute angle inward in front of 3rd radial, anteriorly zigzag; subterminal shades brownish; terminal dots strong, subtriangular, a fuscous spot adjoining the 2nd dot proximally. Hindwing with the markings much more regular. Paloe, W. Celebes: Biromaroe, sea level and G. Rangkoenau, 900—1800 feet (J. P. G. KALIS), ♂♂ abundant, ♀♀ much scarcer.

**S. nigrstellata** Warr. (21 k). Slightly paler grey, wings less elongate than in *desita* ♂, much simpler in pattern: cell-dots sharply black; postmedian line, and on forewing an antemedian, formed of black vein-dots, the postmedian of the forewing near the termen, with the dot on the 2nd radial strongly displaced proximally, closely approaching the very oblique median shade. Antennal ciliation of the ♂ long, hindtarsus short, probably about  $\frac{1}{3}$  tibia (broken in the type). Batjan. Single specimens from Ron Island and Humboldt Bay seem to agree. — **nivimontium** *form. (? subsp.) nov.* Cleaner whitish, the postmedian dots slightly connected by a very fine greyish line. Hindtarsus as given under the type form. Dutch New Guinea: Upper Setekwa River. Snow Mountains, 5 ♂♂, including the type, in the Tring Museum; Mount Goliath, 1 ♂.

**S. delospila** Warr. (21 k). Certainly near *nigrstellata*, almost agreeing in structure, though the ♂ hindtarsus is a little less shortened (almost  $\frac{1}{2}$  tibia). Very variable in size and moderately so in colour, but generally considerably larger and decidedly greyer; dots connected by lines, often quite strongly; postmedian rather less near the termen, subterminal shades developing between; median shade of forewing more sinuous, less oblique, of hindwing generally well developed. New Guinea, Goodenough Island and New Ireland, the type from Biagi. — ab. **griseella** Warr., also from Biagi, has the grey irroration intensified and all the lines thickened.

**S. castissima** Warr. (= *exangulata* Warr.) (21 k). Antenna about as in the two preceding; ♂ hindtarsus a little less shortened. Face with perhaps a larger part white. Ground-colour white; markings much as in *delospila*, median on the whole a little more slender and dentate, subterminal shades as a rule relatively well developed. North Queensland (the type of *castissima*), British New Guinea, Sudest, Dampier and the Bismarck Islands.

**S. griseolineata** Rothsch. Closely similar to a small, rather dusky *delospila*. Apex of forewing less pointed, expanse not quite 18 mm, median shade stronger, less sinuous. Dutch New Guinea: Oetakwa River, 3000 feet. only the ♀ known.

**S. paradela** Prout (21 k). Larger than *delospila*; ♂ antenna similar, hindtarsus considerably longer (over  $\frac{3}{4}$  tibia). Ground-colour slightly more creamy; black basal dot behind median vein wanting; antemedian line not black-dotted; median shade less incurved; fringe without definite vein-dots. Biagi, Mambare River.

**S. homaema** Prout (21 k). Close to *paradela*, but hardly a subspecies. Hindtarsus of ♂ scarcely  $\frac{3}{4}$ . Wings slightly broader still; whiter, with sparse irroration; postmedian with deeper lunules between the teeth; terminal dots elongate; dots on fringe perceptible. Solomon Islands.

- capnosterna*. **S. capnosterna** *sp. n.* (22 a). Longer-winged than its neighbours and with a slightly greyer tone. Hind-tibia of ♂ with hair-pencil, tarsus fully as long as tibia. Face and upperside of palpus black. Collar brown. Thorax beneath, with parts of legs darkened. Wings without irroration; cell-dots strong; lines thick, grey, with a slight suggestion of olive-grey, postmedian with teeth outward on the veins, the whitish band outside it on the forewing broader and more dentate than the subterminal. Underside with cell-dots, terminal line and dots; forewing with strong dark suffusion from costa to fold, postmedian and outer markings as above; hindwing white, with faint, slender postmedian. Lindoe, W. Celebes, 3700 feet (J. P. A. KALIS), 3 ♂♂, 1 ♀, in the Tring Museum.
- destituta*. **S. destituta** *Walk.* (= *cretata* *Warr.*) (22 a). In shape and colour near *homaema*. Hindtarsus of ♂ shorter (only about  $\frac{1}{2}$  tibia). Markings much less sharp, the median and postmedian less sinuous, the latter on the forewing less dentate. Xulla (= Sula) Islands.
- succrassula*. **S. succrassula** *Prout* (= ? *densicornis* *Semp.*, nec *Warr.*) (22 a). Similar in shape and structure to *destituta*, the fascicles of cilia of the ♂ antenna probably longer (I have no undamaged ♂ of *destituta* for comparison), here nearly twice diameter of shaft. More grey or drab, the postmedian line, at least in the ♀, thicker and still less dentate, the median of the hindwing more as in *paradela* and *homaema*. Philippines, the type series from Mindanao.
- densicornis*. **S. densicornis** *Warr.* (22 a). Antennal fascicles of ♂ very long, tarsus quite short, postmedian (especially of hindwing) more curved inward between the radials; otherwise closely similar to *succrassula*. — ab. **fumigrisea** *Warr.* Strongly suffused with brownish, the pale subterminal broken into spots which stand out distinctly between the well-developed subterminal shades. Both forms were collected together on Sumba. Known also from Sambawa (1 ♂) and possibly Timor (1 ♀, anomalous).
- sublinearia*. **S. sublinearia** *Walk.* (22 a). Generally smaller than the preceding group, forewing less shortened anteriorly. More definitely grey (occasionally whitish-grey), the markings well developed, the postmedian sharply black-dotted on the veins (the dots much less out of alignment than in the larger, broader *delospila*). Distributed in Queensland (type from Moreton Bay), West Australia and the Tenimber Islands. — **massimensis** *form. nov.* is small and (especially in the ♂♂) almost white and will probably prove a separable race, although at present I know only the type pair (Sudest I.) and a ♂ from St. Aignan, all in the Tring Museum.
- oppilata*. **S. oppilata** *Walk.* (= *crossophragma* *Meyr.*) (22 a). Moderately variable in the strength of the markings, but apparently not geographically; easily known by the strong line which traverses the fringes; cell-dot of hindwing generally elongate or rather large. Underside at least as strongly marked as upper. Hindtarsus of the ♂ short. Extremely widely distributed from Bali and Toekan Besi eastward, reaching the Loyalty Islands.
- didymosema*. **S. didymosema** *Lower* is unknown to me and its exact systematic position unknown to TURNER. “♂. 23 mm. Light fuscous, ochreous-tinged; a well developed, nearly straight denticulate dark-fuscous line from beyond  $\frac{1}{3}$  of costa to middle of inner margin; a similar line, more oblique, from costa beyond  $\frac{2}{3}$  to inner margin at  $\frac{2}{3}$ , curved inwards on posterior half, a well developed transverse discal spot midway between these two lines, a blackish terminal line; somewhat interrupted by veins; fringe dark-fuscous. Hindwing with termen rounded; colour and lines as on forewing.” Glen Osmond, South Australia, 10 October, 1 ♂. “Could easily be mistaken for *rubraria*, but differs considerably in position of lines and discal dot and especially by the shorter antennal ciliations” (twice diameter of shaft).
- rubraria*. **S. rubraria** *Dbl.* (= *figlinaria* *Guen.*, *repletaria* *Walk.*, *attributa* *Walk.*, *acidaliaria* *Walk.*) (22 a). Variable, but generally easy to recognize by the long antennal ciliations and very short hindtarsus of the ♂ and the strong markings on a rather warm ground. New Zealand, Australia, Norfolk I. and the Kermadacs. If the New Zealand should become differentiable from the Australian forms, the former will stand as *rubraria*, the latter as *figlinaria* (Tasmania).
- hypocallista*. **S. hypocallista** *Lower* (22 a) evidently belongs also to the *rubraria* group; antennae of the only known ♂ broken, hindleg not mentioned. Distinguished by the rather broad wings, the purple-reddish and somewhat diffuse lines of the forewing, the postmedian more or less macular on the veins. Fringes long, the proximal half light reddish, the distal half dark, particularly on the forewing. We figure a ♀ from the MEYRICK collection. Founded on 6 specimens from Goolwa, South Australia.
- lydia*. **S. lydia** *Bull.* (22 b ♂ ♀). Forewing somewhat elongate, especially in the ♀, which slightly recalls the Palaearctic *Anthometra plumularia* (Vol. 4, pl. 7 c), though less glossy. ♀ rather pale, with the dark markings band-like, conspicuous, approximately parallel (excepting the antemedian) with the distal margin; ♂ much darker, often almost unicolorous, though the paler line outside the postmedian is generally discernible. Widely distributed in Australia, the type from Peak Downs. — ab. **jessica** *Bull.*, collected with the type ♀, is a small ♀ with the subterminal and (especially) the postmedian band narrowed and not very strongly developed. placed somewhat nearer the termen than usual.

**S. neoxesta** *Meyr.* Expanse "29 mm". Face ferruginous above, more whitish below. Vertex ferruginous. *neoxesta.* Antennal ciliation  $1\frac{1}{2}$ ; hindtarsus  $\frac{3}{4}$  tibia. Very pale whitish-ochreous with the cell-dots minute and the lines very faint, the antemedian obsolete, the subterminals suffused, hardly traceable, the terminal line ochreous; median and postmedian lines twice sinuate outward. Hindwing with margin rounded. Duaringa, Queensland, the type ♂ apparently still unique.

**S. placida** *Warr.* (22 b) also has the lines very faint, only the median and postmedian visible, parallel *placida.* to each other; but differs in that the cell-spots are large and black. Hindtibia of the ♂ probably less strongly dilated; tarsus not quite  $\frac{1}{2}$  tibia. Choiseul, Solomon Islands.

**S. planidisca** *Bastelb.* (22 b). Characterized by the strikingly large cell-spot of the forewing, black in *planidisca.* a yellowish-brown circumscription. Well irrorated, costal edge of forewing yellowish-brown; ante- and postmedian lines dentate, subterminal thicker, marginal shade about 1 mm wide, the extremely fine black terminal line strengthened behind the apex by 2 black interneural dots. Perak, 1 ♂.

**S. oppunctata** *Warr.* (22 b). As free from irroration as *placida* but with well developed brown-grey *oppunctata.* markings, bluntly angled hindwing and shortened ♂ hindtarsus. Solomons, the type from Kulambangra. This form, which occurs also on Bougainville, Choiseul, Gizo and Vella Lavella, has a very characteristic black subterminal spot on the 1st radial of the forewing. — **plenistigma** *Warr.*, from New Georgia (type ♀) and Rendova *plenistigma.* (a series), agrees closely except that the black subapical spot is wanting.

**S. saphes** *Prout* (22 b). Antennal ciliation over twice as long as diameter of shaft, tarsus a little over *saphes.*  $\frac{1}{2}$  tibia. Slightly more olive-tinged than *amala*, the irroration less extremely sparse; markings greyer, cell-dots larger, terminal dots strong though small. British New Guinea.

**S. amala** *Meyr.* (= *recessata* *Meyr.*, *Turn.*, nec *Walk.*) (22 b). Variable in tone, in any case with ex- *amala.* tremely little irroration; lines moderate, less bent than in *oppunctata*, cell-dots smaller, etc. TURNER distinguishes it from *perlata* by the much less angled hindwing and the shortened ♂ hindtarsus ( $\frac{1}{2}$  tibia). Antennal ciliation of the ♂ moderate. Widely distributed, Tenimber, Queensland and from the Moluccas to the Solomons; the originals from Port Moresby. — ab. **lacteisabulosa** *Rothsch.*, a ♂ from the Oetakwa River, at sea level, is rather *lacteisabu-* *losa.* a clean-looking specimen with the markings somewhat weakened, at least subterminally.

**S. heba** *Prout* (22 b). Smaller than *amala*. Forewing with the lines finer, especially the postmedian, *heba.* which is also less wavy; median line more oblique than postmedian, whereas in *amala* the two are parallel. Hindwing with termen less noticeably bent than in *amala*, the lines finer, the postmedian less incurved between the radials. Bougainville (loc. typ.) to Guadalcanar; also on the Bismarcks, Woodlark and the Louisiades.

**S. actuaria** *Walk.* (22 b). As the type, from Ceylon, was unfortunately a ♀, it is not yet certain whether *actuaria.* the current usage of the name is correct, but there is not at present any reason for upsetting it. The group is an excessively difficult one and needs much more study, but the present species can in any case be distinguished from the *minorata-remotata* assemblage by the shorter hindtarsus of the ♂ and the anteriorly curved postmedian line of the forewing. The latter character has already been used in Vol. 16 (p. 73) to separate *lactaria* *Walk.* from *minorata*; but *lactaria* has not the yellowish or fleshy tone which is usually observable in *actuaria* and has a less shortened hindtarsus. Widely distributed from India to Formosa, Malaysia, the Philippines, Celebes, the Moluccas, etc. — **nigranalis** *Warr.* (= *parumnotata* *Warr.*) is characterized by the development of a dark *nigranalis.* spot at the posterior end of the postmedian line and represents *actuaria* on Java (the type locality of *parumnotata*) and the Lesser Sunda Islands as far as Wetter and Timor (the type locality of *nigranalis*), but as weakly marked aberrations lose this mark, while some *a. actuaria* from Borneo begin to develop it, the races do not seem quite sharply defined.<sup>4</sup>

**S. inactuosa** *Prout* (22 b). Similar to *actuaria*, the ♂ hindleg with the knee-pencil more conspicuous, *inactuosa.* apparently longer, oftener drawn out from the abdominal cavity, the wings more glossy, on an average more weakly marked. Forewing with apex a little more rounded, termen rather less oblique, postmedian line thicker, less angled, not black-dotted; hindwing with postmedian thickened. Forewing beneath with dark glossy suffusion. Lesser Sunda Islands, Kei Island, Toekan Besi and perhaps Saleyer; type from Sambawa.

**S. sinopersonata** *Wehrli* (Suppl.-Vol. 4, pl. 4 i). Closely similar to *actuaria*, but with the hindtarsus *sinoperso-* *nata.* about  $\frac{3}{5}$  hindtibia. The costal angulation of the median and postmedian lines is even more striking on the underside than on the upper. Canton, Omei-shan, etc.

**S. remotata** *Guen.* (Suppl.-Vol. 4, pl. 4 i). Only positively known from the type ♂, said to come from *remotata.* North India, without exact locality. Antennal shaft, more slender than in *minorata*, ciliation longer (nearly  $1\frac{1}{2}$ ), palpus slightly longer, hindtarsus shorter; median and postmedian of forewing more widely separated, etc.

- minorata*. **S. minorata** Bsd. (= mauritiata Guen., consentanea Walk.) (Vol. 16, pl. 7 g). Of this species, to which also *ochroleucaria* H.-Sch. (Suppl.-Vol. 4, pl. 4 h) can now definitely be referred, some examples are known from the Punjab and I have a fine series from Pusa. I had supposed these to represent *remotata* Guen., the more so as one or two specimens show a similar pose of the markings; but as the hindtarsus is almost as long as the tibia and the ♂ antenna seems to agree with that of *minorata*, that determination is debarred. An extremely widely distributed species in Africa, the Mediterranean countries and Western Asia.
- personata*. **S. personata** Prout (Vol. 4, pl. 7 a). Sometimes extremely like certain forms of *actuaria* or *minorata*, the postmedian as a rule almost as little bent as in the latter. Antennal ciliation of the ♂ longer, hindtibia not very strongly dilated (tarsus not abbreviated), coloration generally paler than in them, underside weakly marked. Described from Japan, distributed also in China and Formosa. Perhaps a subspecies of the following.
- hypochra*. **S. hypochra** Meyr. (22 c). Structure as in *personata*, unless the antennal ciliation is a little longer still. Coloration and strength of markings more as in *actuaria* and *minorata*, rather variable. Distributed from North Queensland to South Australia, the type from Duaringa; closely similar forms are known from Norfolk Island, New Guinea and even the Philippines, Java and the Andamans.
- lechrioloma*. **S. lechrioloma** Turn. Narrower winged than *hypochra*, the termen more strongly oblique; white, with very little irroration, the cell-dots and terminal dots black, the antemedian line obsolete, the other lines parallel with the termen. ♂ ciliation about twice diameter of shaft, hindtarsus  $\frac{2}{3}$  tibia. N. Queensland and perhaps St. Aignan, New Guinea and Amboina. Possibly a form of the following, more whitish and perhaps on the underside less suffused.
- quinquestriata*. **S. quinquestriata** Warr. (22 c). Easily recognized among the Indian *Scopula* by its narrow wings and straightish lines; structure about as given under *hypochra*, unless the antennal ciliation is shorter (damaged in the only ♂ before me); cell-dots minute in the type, never large. Underside similar to upper, except that the forewing is more suffused, at least in the cell. Khasis (type) and Upper Burma, perhaps also on Sumatra.
- unisignata*. **S. unisignata** Prout (22 c). Systematic position uncertain; the shining white wings, with very little black irroration, the weakly marked forewing, with the postmedian line accentuated by blackish vein-dots and with an acute angle outward at the 1st radial, and the large, subtriangular black cell-spot of the hindwing are its principal features; underside white. Hparè, Upper Burma, only the type ♀ known (misprinted "♂" in the original description).
- campbelli*. **S. campbelli** Prout (22 c). An inconspicuous little species, brownish white, with the irroration minute and weak, scarcely noticeable, the cell-dots faint, especially on the forewing, the lines of the forewing oblique, rather regular, the antemedian almost obsolete anteriorly, the proximal subterminal very near the postmedian; terminal black dots minute, fringes rather long, unmarked. Forewing beneath mostly darkened, especially in the ♂, but variable, showing a whitish subterminal and hindmargin, sometimes also the pale area between median and postmedian. Hindtarsus of ♂ a little over  $\frac{1}{2}$  tibia — less short than in *aspilataria*. Palni Hills.
- dotina*. **S. dotina** sp. n. (22 c). Expanse 24—26 mm. Perhaps related to *campbelli*, less pallid, more glossy, forewing with costa slightly more arched distally, hindwing with termen not at all sinuous; cell-dots wanting, median shade heavy, especially on forewing, where it is noticeably more oblique than the postmedian, the latter on both wings almost exactly parallel with termen; terminal line weak but continuous, with scarcely any indication of defined dots between the veins. E. Java: Tosari, 4 and 6 July 1910 (E. A. COCKAYNE), 2 ♀♀ in my collection.
- benguetensis*. **S. benguetensis** Prout (22 c). Wings shaped, coloured and marked about as in *aspilataria*, ♂ ciliation rather less long, hindtarsus more as in *campbelli*; from *pallidilinea*, which also occurs on Luzon, it is distinguishable by these structural characters, the sharper (though minute) black cell-dots, postmedian of forewing not or scarcely incurved at costa, etc. Luzon, at 5000—7000 feet.
- aspilataria*. **S. aspilataria** Walk. (22 c). Much more widely distributed than *campbelli*. Ceylon (type) to Bhutan and Assam. Less whitish, the cell-dots obsolete, the median line not more oblique than the termen, postmedian rather less crenulate, on the hindwing more incurved between the radials, proximal subterminal normal.
- pallidilinea*. **S. pallidilinea** Warr. (= *aspilataria* Meyr.) (22 c). I have not found any structural distinction from *aspilataria*, of which this may be a subspecies, perhaps susceptible of further subdivision. Typically somewhat less weakly marked, the cell-dots generally indicated, though minute (black), the Javan specimens often more whitish. Java (loc. typ.), the Malay Peninsula, the Philippines and Sambawa are the hitherto known localities.

**S. isodesma** *Lower*. Unknown to me and to TURNER, founded on 2 ♀♀ from Broken Hill, New South Wales. Forewing elongate triangular, whitish ochreous, lines fuscous, gently waved throughout, antemedian at  $\frac{1}{4}$ , median beyond middle, 3rd and 4th close together soon after, 5th near termen. cell-dot very small; hindwing rounded, wanting the 1st line.

**S. homodoxa** *Meyr.* (= *remotota* *Rbl.*, err. transcr. et det.) (22 c). Two or three very similar *Scopula homodoxa*, seem to have been originally confused under this name, but as MEYRICK gives the ♂ hindtarsus as  $\frac{1}{3}$  tibia the name must be restricted to the Pacific species, with Tonga as type locality. Not unlike a diminutive *aspilataria* but with black cell-dots. Known from the Loyalty, Fiji, Samoan and Friendly Islands.

**S. coundularia** *Warr.* (22 d). Hindtibia of ♂ strongly dilated, tarsus greatly shortened (about  $\frac{1}{4}$ ). A very small, rather round-winged species, the black cell-dots minute, the wavy lines parallel, very equal in expression, the base of the forewing sometimes with an illusory suggestion of two further lines, so that WARREN writes "seven lines" (!). Sumba.

**S. thysanopus** *Turn.* (22 d), from N. Queensland, has the same leg-structure as *coundularia* and may well be a representative or local race of it. Variable in size, at times larger, apparently always relatively somewhat longer-winged; lines, excepting the subterminals, perhaps a little straighter, notably the antemedian. North Queensland to Port Darwin, apparently not infrequent.

**S. pseudodoxa** *Prout* (22 d) belongs to the same group as the two preceding. Build rather more robust than in *coundularia*, apex of forewing slightly less rounded, scaling less glossy, groundcolour sometimes paler, markings less uniform, median line often weaker, the space between this and the postmedian often extended, postmedian in general somewhat more sinuous, proximal subterminal shade showing more tendency to break up into spots. Forewing beneath more or less markedly infuscated. Woodlark Island (type), the Louisiades and Bismarck Archipelago. Probably also MEYRICK's "*homodoxa*" from New Guinea belonged here; see above.

**S. inficita** *Walk.* (22 d). This is certainly not, as has sometimes been supposed, the same species as *inficita*, *coundularia*, though probably related. Hindtibia of ♂ much swollen, with dense pencil, tarsus minute; ♂ antennal ciliation rather longer than diameter of shaft. On an average less fleshy tinted than *coundularia*, but more so than *actuaria*, postmedian line straighter than in the latter. Bali to Tenimber, the type from Flores. — **philippina** *Prout* is brighter brownish or more fleshy, with more sharply expressed lines. Luzon. Almost the same form occurs on Cagayan Sulu and in North Borneo and may be expected from other islands of the Philippines.

**S. despoliata** *Walk.* (22 d), founded on a ♀ from Moreton Bay, Queensland, which has not in my experience been precisely matched, is apparently correctly identified by TURNER, in which case it is the same species which WARREN subsequently named *crurata*. It evidently approaches *inficita* very closely, though whiter and with somewhat firmer lines, etc.; TURNER describes the ♂ hindleg as having the "hindfemur short, tibia  $2\frac{1}{2}$  times femur, swollen, tarsus  $\frac{1}{10}$  tibia" (the latter probably an under-estimate); he distinguishes it further from its Australian allies by its straightish, cloudy lines, the postmedian lines not denticulate. The type is larger than most specimens of the following form and has the postmedian line more bent, but this difference is partly sexual. — **crurata** *Warr.* (22 d), founded on a ♂ from Stephansort, N. E. New Guinea, also from New Hanover and Queensland, has the lines (or at least the postmedian) of the forewing more oblique than in *despoliata* type, the cell-dots sometimes obsolete, terminal dots punctiform (in *despoliata* sometimes slightly elongate).

**S. tumiditibia** *Prout* (= *optivata* *Hmps.*, nec *Walk.*) (22 d). Ciliation of ♂ antenna about 2; hindtibia enormously developed, about as long as abdomen, dilated and with long ochreous-tinged pencil, the tarsus extremely short. Forewing rather narrow, hindwing relatively large, at least in the ♂. Christmas Island, in the Indian Ocean.

**S. optivata** *Walk.* (22 d), an abundant Australian *Scopula*, is very variable in size and colour and it will possibly be discovered that two or more species of closely similar structure are at present mixed, but there is as yet no evidence of this; in any case, excepting the very short ♂ hindtarsus (about  $\frac{1}{5}$  tibia), it has nothing in common with *tumiditibia*, the shape and markings being always more typical of the genus. The type form is pale ochreous, sometimes more fleshy-tinged, sometimes more whitish. — ab. **amathodes** *Turn.* is browner and with the markings obsolete. Founded on 2 ♂♂ from Lancefield Junction, Victoria. — ab. **polia** *Turn.* has the body and wings grey. Birchip, Victoria, a ♂. — Distributed from Port Darwin and Cape York to Tasmania.

**S. prosoeca** *Turn.* (22 d). Colder white-grey than *optivata*, on an average larger, cell-dots on the whole stronger; easily distinguished by the less shortened hindtarsus of the ♂ (about  $\frac{2}{5}$  tibia). North Queensland, the original series bred by F. P. DODD from Townsville; a preserved larva in the Tring Museum is extremely

elongate, dull reddish brown, irregularly marked with black, which forms no definite pattern. The foodplant is not indicated.

*coenona*. **S. coenona** *Turn.*, founded on 1 ♂ from Townsville, is differentiated from *amala* (= *recessata* *Turn.*) by the rounded hindwing (not bent in the middle) and slightly longer ♂ hindtarsus ( $\frac{3}{5}$  as against ca.  $\frac{1}{2}$ ). Ochreous-whitish with a very few scattered black scales, minute cell-dot (forewing) and terminal dots; lines pale grey, the antemedian and median faint, the others more distinct. Expanse 20 mm. A ♀ from Dawson district, determined by MEYRICK as *amala*, fits the description fairly well, but its lines are more ochreous and the cell-dot is present on both wings.

*liotis*. **S. liotis** *Meyr.* (= *compensata* *Walk.*, nom. praecoc.) (22 e). One of the largest of the Australian *Scopula* (see also the following). Antenna of ♂ with rather long ciliation, hindtarsus about  $\frac{2}{3}$  tibia. Smooth-scaled, weakly marked, with scarcely any black irroration, postmedian marked with very small vein-dots. Tasmania (loc. typ.) 2000—3000 feet; also Mount Kosciusko and Mount St. Bernard, at higher altitudes.

*axiotis*. **S. axiotis** *Meyr.* (22 e), which has been misidentified by TURNER, has almost the same structure as *liotis* and is similarly weak-marked. Less large, more ochreous-tinged; collar concolorous (in *liotis* darker brown); fringes less clear, showing indications of proximal dark dots at the vein-ends. Geraldton and York, West Australia.

*synthes*. **S. synthes** *Turn.* ♂, 30 mm. Antenna in ♂ serrate, ciliations  $2\frac{1}{2}$ . Forewing costa gently arched, apex tolerably pointed, termen slightly bowed, slightly oblique; pale grey; lines very faintly marked; antemedian obsolete or nearly so; a very slender, finely dentate, sinuous line from  $\frac{2}{3}$  costa to  $\frac{3}{5}$  hindmargin, a similar line from  $\frac{3}{4}$  costa, forming minute dots on veins; a very faint, whitish, dentate subterminal line; a terminal series of interneural dots. Hindwing with termen rounded; as forewing, but some grey irroration towards base, lines even less distinct. Very like *liotis*, but greyer, without any fuscous irroration, posterior tarsi of ♂ rather shorter relatively to tibiae ( $\frac{1}{2}$ ). Cell-dots present. Waroona, West Australia, 1 ♂.

*subcandida*. **S. subcandida** *sp. n.* Face fuscous; vertex white; collar ochre-brownish. Antennal ciliation of the ♂ about as long as diameter of shaft; hindtarsus less than  $\frac{1}{2}$  tibia. Forewing with costa a little straighter and termen perhaps slightly less oblique than in the neighbouring species, hindwing with termen rounded; white with coarse, irregularly disposed dark irroration; cell-dots and terminal dots small; lines brownish, dentate, the median and the proximal subterminal rather thick, not sharply defined proximally; the white subterminal conspicuous, almost free from irroration; fringe well irrorated. Forewing beneath a little more suffused proximally, cell-dot and the 3 outer lines developed; hindwing paler, with only the cell-dot and postmedian at all well developed. W. Australia: Sherlock River, type ♂; Roebourne, a pair; all in the Tring-Museum. WARREN's manuscript labelled this neat little species *candidaria*, but he has used that name for an African *Pylarge*, now merged in *Scopula*.

*subcarnea*. **S. subcarnea** *Warr.* (22 e). Hindtibia of the ♂ moderate, tarsus well over  $\frac{1}{2}$  (rather longer than in *nesciaria*). Rather more suggestive of *undulataria*, of which indeed WARREN made it an aberration (!). Somewhat pointed winged for the group, lines moderately firm, nearly parallel with the termen (their incurvature rather slight). The straight termen and (except costally) median shade and the heavily suffused proximal part of the forewing beneath distinguish it from *nesciaria*. Khasis, the type from Shillong.

*clarivialis*. **S. clarivialis** *Prout* (22 e). Structure nearly as in *nesciaria*. Larger, the ♂ hindtibia without a definite distal process, the tarsus perhaps relatively a trifle longer; median shade of forewing more sharply angled and more oblique, the space between this and the postmedian rather conspicuously pale; hindwing with the termen somewhat less bent than in *nesciaria*, but scarcely so round as in *subpartita*, which it recalls in markings, especially on the underside, but which has a shorter ♂ hindtarsus. Korintji, W. Sumatra.

*ocheracea*. **S. ocheracea** *Hmps.*, founded on a ♀ from the Nilgiris and afterwards suppressed to *nesciaria* (as a form with "a flesh-coloured tint"), may well be a mere colour-form thereof, differing chiefly in its warmer tone, but awaits closer study. Rather large and broad-winged, strongly marked, in the type with the postmedian looking more dentate and sinuous than usual, the terminal dots above and beneath extremely minute, almost wanting; but a Cawnpore ♀, in most respects agreeing, has these dots normal, while Dharmasala ♀♀ with the same colour are still more similar to normal *nesciaria*. I noted a Pusa ♂, determined for the Agricultural Research Institute, as having the colour slightly deeper still, the median shade rather thicker and greyer, the postmedian (at least of the hindwing) markedly sinuous, the structure apparently as in *nesciaria*.

*nesciaria*. **S. nesciaria** *Walk.* (= *negataria* *Walk.*, *remotata* *auct.*, nec *Guen.*) (22 e). The first two names cited here refer respectively to ♀ and ♂, both described from Ceylon. As the exceedingly similar *attentata* *Walk.* occurs also on Ceylon and I rely chiefly on ♂ characters for the differentiation, the ultimate location of the name *nesciaria* is not yet absolutely assured. Antenna of ♂ with the joints somewhat projecting, the ciliation

longish, hindtibia thick, fairly smooth, tarsus about  $\frac{1}{2}$  tibia, with 1st joint twice as long as 2nd. Hindwing with termen so weakly bent as to appear almost regular. Somewhat variable in size, ground-colour and strength of markings. General in India and Malaysia and perhaps extending as far as Sambawa and Sumba. — ab. **subcarnea** Warr., described in 1900 as an aberration of *furfurata*, apparently belongs here, somewhat *subcarnea*. flesh-coloured and weakly marked, but not needing a separate name. Calcutta, 1 ♂. If it has a higher rank it will require a new name (compare *subcarnea* above, which dates from 1896). — **absconditaria** Walk. (22 e) *absconditaria*. probably represents *nesciaria* in S. E. China and Formosa, unless its hindtarsus is a trifle longer. On an average somewhat larger, the hindwing perhaps still more weakly bent. A few from Kanshirei (one of which is here figured) seem to agree very perfectly with WALKER'S Fu-chow type. I believe the same race is common on Hainan, but it has not been throughly investigated.

**S. sauteri** Prout (22 f). Hindtarsus of ♂ not quite  $\frac{1}{2}$  tibia, its 1st joint not more than  $1\frac{1}{2}$  times 2nd joint. Rather more ochre-brown than *nesciaria*, median shade thicker, more oblique, postmedian nearer distal margin. Formosa. I have recorded it also from Sumatra, but, unless it is much overlooked elsewhere, such a distribution seems highly improbable; I now suspect they are a form of *attentata* (22 f). *sauteri*.

**S. delitata** Prout (Vol. 4, pl. 7 b) is fully described in Vol. 4, p. 61 and is distinguishable from nearly all the group by the almost entire absence of any yellow tinge, being pale glossy whitish grey, the markings very weak. Hindtarsus of the ♂ apparently somewhat longer than in *nesciaria*. Szechuan: Chow-pin-sa, few specimens yet known. *delitata*.

**S. ignobilis** Warr. (Vol. 4, pl. 4 m, 5 b), described from Japan and known from Corea, is perhaps chiefly a Palaearctic species but a few examples from Ningpo, Ichang and Szechuan and from Formosa seem to be referable to it. Structure of the ♂ hindleg about as in *nesciaria*, hindtibial pencil strong. Hindwing perhaps more noticeably bent at 3rd radial than in that species. Generally rather large, with little of the ochre or fleshy tinge of most of the allies, but not so pale and weakly marked as *delitata*. Postmedian line as a rule somewhat farther from the termen than in *nesciaria*, on the underside of the forewing commonly followed by better developed subterminal shading. *ignobilis*.

**S. humilis** Prout (Suppl.-Vol. 4, pl. 6 g). Erected as (doubtfully) a race of *ignobilis*, a little more slenderly built and more smoothly scaled, with paler and more weakly marked hindwing beneath, etc.; but proved to be certainly a good species. Hindtarsus of the ♂ shorter (scarcely over  $\frac{1}{3}$  tibia). 8th sternite with the righthand ceras longer, the left-hand one wanting. N. W. India: Dharmsala, etc. *humilis*.

**S. hesycha** Prout (Suppl.-Vol. 4, pl. 4 i). Antennal joints of ♂ scarcely projecting, cilia scarcely longer than diameter of shaft, shorter than in *delitata*. Further distinguishable from that species by the shorter hindtarsus (well under  $\frac{1}{2}$  tibia), more noticeably bent hindwing, slightly more brownish tone and somewhat less weak markings; white subterminal rather conspicuous. Underside more as in *humilis*, which is differently shaped, more buff-coloured, with thick median shade and larger cell-dots. Chang Yang (loc. typ.) and Moupin. *hesycha*.

**S. subpartita** Prout (22 f). Antennal joints slightly projecting, ciliation almost 2. Hindtibia with rather long whitish pencil, tarsus about  $\frac{1}{3}$  tibia or perhaps a little more, its 2nd joint  $\frac{2}{3}$  of 1st joint or somewhat less. Abdomen with ill-defined dorsal spots. Slightly darker and rougher-looking than most of the *nesciaria* group, on account of the strengthened suffusions and irroration; markings rather strong but with nothing particularly distinctive in their form; underside of forewing characterized by strong brownish-smoky suffusions from base to median shade, except along hindmargin. Khasis, only ♂♂ definitely known. *subpartita*.

**S. inflexibilis** Prout (22 f). Apparently very near *attentata* (22 d), but on an average smaller, the hindtarsus of the ♂ (not "hindtibia", as unfortunately printed in the original description) not quite so short, the forewing shorter and broader, the colouring rather warmer, the irroration sharper but sparser and less evenly distributed, the postmedian less incurved between the radials, especially beneath. The ♂ antennal joints project very little, the hindtarsus is  $\frac{2}{5}$  tibia or almost, with the 2nd joint  $\frac{2}{3}$  as long as 1st joint. Andamans. *inflexibilis*.

**S. attentata** Walk. (22 f). Puzzlingly similar to *nesciaria*, but with the ♂ hindtarsus only about  $\frac{1}{3}$  tibia, its 1st joint only about  $1\frac{1}{4}$  times as long as 2nd joint; perhaps on the whole smaller (21—24 mm), median shade perhaps more oblique, postmedian line typically a little more dentate; underside on the whole better marked, the postmedian accentuated with blackish dots on the veins. It must be admitted, however, that the assemblage is still in considerable confusion and the fact that the type (from Moulmein) was, like that of *nesciaria*, a ♀ adds to the difficulty of undertaking a satisfactory revision. By the genitalia it is an "*Ustocidalia*" (Suppl.-Vol. 4, p. 34), *nesciaria* a true *Scopula*. *attentata*, as at present understood, extends from Ceylon and India, through Tonkin and S. China to Formosa, perhaps also on most of the Sunda Islands; we figure a ♂ from Hainan. — *attentata*.

- nicobarica*. **nicobarica** *subsp. nov.* The specimens from the Nicobar Islands are so clean-looking and sharply marked, both above and beneath, the hindwing generally with larger cell-dot, that I suspected them of being a separate species, but the genitalia seem to agree with examples from the Andamans, Burma, etc., unless a less pointed and curved extremity of the penis is significant, but this structure is matched in a Karwar ♂ of, apparently, the name-typical form.
- tenuimedia*. **S. tenuimedia** *sp. n.* (22 f). Evidently distinct from *attentata*, notwithstanding the general agreement in structure. Expanse 27—28 mm. Rather more slenderly built; forewing with termen appreciably more oblique, postmedian a little more distal, median more slender and sharply defined, strongly oblique, acutely angled at 1st radial; hindwing with termen noticeably bent, with median shade continuing slender. Underside more recalling the differently shaped *subpartita*, the forewing being suffused with smoky or brownish from costa to fold (or especially to median vein) between base and median shade; cell-dots, terminal dots and postmedian line well developed. Tone more fleshy than in any but very rare aberrations of *attentata*. Khasis: Cherrapunji (type) and Shillong, a few in the Tring Museum.
- seras*. **S. seras** *sp. n.* (22 f). Generally larger than *attentata* (25—27 mm), hindtarsus of the ♂ a little shorter, the 1st joint nearly of the combined length of the other four; antennal fascicles of cilia well developed. Wings broad, more creamy in colour than in *attentata*, generally very weakly irrorated (beneath very clean and weakly marked); terminal dots connected by a definite grey line. Dutch Timor: Dili, May 1892, a series in the Tring Museum (DOHERTY).
- annexata*. **S. annexata** *sp. n.* (22 f). Again somewhat larger (28—30 mm). Has perhaps been confounded with *nesciaria*, notwithstanding its larger size and slightly different shape: termen of forewing a little straighter and more oblique, of hindwing slightly more bent in the middle; in these respects and in its pallid colour and almost complete absence of black scaling (which shows only in the minute cell-dots and almost invisibly small terminal dots) beginning to approach the rare *atriceps* *Hmps.* (21 d). Further distinguishable from *nesciaria* and the other similar Indian species by the longer ♂ hindtarsus (between  $\frac{1}{2}$  and  $\frac{2}{3}$  tibia), the less dentate and less sinuate postmedian line and generally more oblique median; postmedian nearer to termen than in *atriceps*, proximal subterminal shade not so broad and macular; the very fine grey terminal line similar in both. Nilgiris, type and others in the Tring Museum. I have a ♂ believed to come from Gooty (W. H. CAMPBELL) and have seen a ♀ from Malabar.
- tosariensis*. **S. tosariensis** *Prout* (22 g). Smooth-scaled and not strongly marked, more recalling, in its oblique and straightish median shade, such species as *kagiata* and *ambigua*, but rather smaller, paler or greyish, often less strongly marked and somewhat less brownish than most of them and with much less extremely shortened ♂ hindtarsus — about  $\frac{1}{3}$  tibia; 2nd joint of tarsus  $\frac{2}{3}$  of 1st joint or slightly more. Antennal ciliation of the ♂ little longer than diameter of shaft. E. Java (loc. typ.) and Bali.
- wegneri*. **S. wegneri** *Prout* (22 g). Near *tosariensis*, together with which it was taken in E. Java. Face with slightly more extended white or whitish lower part; hindtibial pencil of ♂ stronger; forewing with a slightly browner tinge and generally with stronger irroration, postmedian line appreciably farther from the termen and with a deeper sinus between the radials, median shade much less straight than in *tosariensis*, terminal dots sharper on the underside, well isolated, where in *tosariensis* they are connected by a line.
- parasira*. **S. parasira** *Meyr.* (22 g). Generally distinguishable from *amala* by its larger size, more yellowish head, serrate ♂ antenna (with "ciliations 2") and rounded hindwing; antemedian line of forewing angled near costa, postmedian punctiform on the veins. Hindtarsus of the ♂  $\frac{3}{5}$  tibia. British New Guinea: Port Moresby and district.
- undilinea*. **S. undilinea** *Warr.* (22 g) is still little known, but WARREN's suggestion that it is "perhaps a form of *parasira*" can scarcely be correct, as (inter alia) the ♂ hindtarsus seems to be only about  $\frac{2}{5}$  tibia. It apparently belongs to the *nesciaria* group, not very broad-winged; rather fleshy in tone, especially the second example, which is here figured. Loyalty Islands.
- emma*. **S. emma** *Prout* (Suppl.-Vol. 4, pl. 5 d). Somewhat shorter-winged than *nesciaria*, yet with the apex of the forewing rather acute; median shade oblique, almost obsolete anteriorly; hindwing, at least in the ♂, without noticeable bend at the 3rd radial; hindtarsus of ♂ about  $\frac{1}{3}$  tibia. W. China. — **jordani** *West* (22 e), from Formosa, is more warmly coloured, perhaps as the most extreme forms of *nesciaria*.
- defectiscripta*. **S. defectiscripta** *Prout* (22 g). Antennal ciliation of the ♂ fully as long as diameter of shaft; hindtarsus somewhat less than  $\frac{1}{3}$  tibia, its 1st joint little longer than the 2nd. Erroneously erected as a (constant) "form" of *kagiata*, smaller, less strongly irrorated, the lines less grey, generally weaker, the median shade more slender, on both wings entirely without black vein-dashes. Formosa.

**S. ambigua** Prout (Suppl.-Vol. 4, pl. 5 d). Larger than the two preceding and with the termen of the *ambigua*, forewing more oblique. Colour generally about as in *defectiscripta*, median shade of forewing more oblique. Hindtarsus of ♂ considerably shorter than in either, only about  $\frac{1}{5}$  tibia. Szechuan, several localities, the type-locality Kwanhsien.

**S. kagiata** Bastelb. (22 g). Closely similar to *ambigua* and with equally short ♂ hindtarsus. Generally *kagiata*, less pale; median shade stronger, still more oblique, at least anteriorly. The ♂ genitalia show it to be a separate species; the cerata, which are very unequal in *ambigua*, are here about equal. Formosa. Two worn ♂♂ in my collection, from Hpimaw Fort, Upper Burma, perhaps represent a subspecies, superficially even nearer to *ambigua*.

**S. detentata** Prout (22 g). Smaller than *patularia*, less ochreous, less robust, the hindwing less bent. *detentata*. Antennal shaft marked with black from near base to beyond middle. Hindtarsus of ♂  $\frac{1}{4}$  tibia, thus relatively shorter than in *detentata*, to which small specimens of the present species show much resemblance, though generally a little paler, the underside more strongly marked. Upper Burma (loc. typ.), Assam and Sikkim.

**S. patularia** Walk. (= *opsinaria* Swinh.) (22 h). One of the largest of the group, though WALKER's type *patularia*, — unfortunately without exact locality — is less large than most and in some ways not very exact to the ordinary *opsinaria* form of the Khasis. Hindwing more bent (bluntly angled) than in the rest of the group. Hindtarsus of the ♂ scarcely, if at all, longer than in *ambigua* and *kagiata*. Ground-colour warm; median line well developed, but not broad; terminal line beneath uninterrupted, typically not or scarcely black-dotted between the veins. North India.

**S. brachypus** Prout (22 h). Very near the preceding, but apparently distinct in that the antennal teeth *brachypus*, and ciliation of the ♂ are slightly longer and its hindtarsus even shorter (about  $\frac{1}{6}$  tibia). Forewing with the apex minutely produced, hindwing with the termen more rounded, its cell-dot enlarged. Underside distinguishable at a glance from that of *patularia*, the terminal line being replaced by sharp, isolated, interneural dots; post-median line of hindwing obsolete (usually well developed in *patularia*). Hpimaw Fort, Kachin Hills, Upper Burma.

**S. pulverosa** Warr. This was very inadequately described by WARREN as an aberration of the smaller, *pulverosa*, whiter and in several respects quite dissimilar *undulataria* Moore. I published a fuller account of it in 1926 under the name of *straminea* (which represents a different aberration, see below), overlooking that it was pre-occupied. Unfortunately *pulverosa* type is a peculiar, slightly pinkish specimen, which has remained unique. The species is best recognized by the extremely short ♂ hindtarsus, which is otherwise only found in the larger and much less pale *brachypus*; termen of forewing rather straighter than in that, of hindwing very slightly bent, lines straighter (especially the postmedian of the hindwing) terminal dots weak. — ab. **straminea** Warr. (nec *straminea*, Feld.), also described as an aberration of *undulataria*, is scarcely dark-irrorated and is also a somewhat infrequent form, though occurring from Sikkim to Burma. The name is not available in any higher category than that of aberration and it might have been better to replace it by another. — ab. **occupata** nov. (22 h). This *occupata*, seems to be the commonest form of the species and is distinguished by the stronger irroration, which gives it a greyer tone. Type from the Khasis, in the Tring Museum. If the original of *pulverosa* should prove to be a different species, the name of *occupata* will have to be employed for the present insect. The Khasis appear to be its headquarters.

### 36. Genus: **Glossotrophia** Prout.

(See Vol. 4, p. 82 and Suppl. p. 47; Vol. 16, p. 75.)

A Palaearctic offshoot of *Scopula*, with one or two stragglers in India and Africa. Most characters as in that genus but the tongue exceptionally (sometimes excessively) long, the hindtibia of the ♀ with terminal spurs only; ♂ hindtibia with varying armature, as in *Scopula*, but the hindleg never aborted.

**G. eurata** Prout (Suppl.-Vol. 4, pl. 5 e). Hindtibia of the ♂ with both the terminal spurs present; other- *eurata*, wise similar in structure to the Palaearctic *confinaria* H.-Sch. (Vol. 4, pl. 4 i), the antennal joints of the ♂ perhaps slightly more angularly projecting and with stronger ciliation. Variable in colour, though not quite so extremely as in *confinaria*. Described from Transcaspia and recorded also from N. Persia, but it (or an exceedingly similar species) occurs about Srinagar, the source of the figure cited above.

**G. rufotinctata** Prout (Vol. 4, p. 83). Antennal joints of the ♂ without the angular projections (the *rufotinctata*, word "nicht" was unfortunately omitted from the German translation of the differentiation from *rufomixtata* [Rmb.] Stgr.); hindtibia of the ♂ with only 1 spur. Similarly coloured to the reddish forms of *rufomixtata*, but more uniformly, no part of the wings (unless the extreme base of the hindwing) remaining white, while the

dark dusting is less intense and more reddish. Wings slightly narrower than in the most typical *Glossotrophia*. Type locality: Aksu, E. Turkestan. I have seen also a ♂ from Peshawar, which I referred without any detailed comment to this species, but cannot now compare it.

*jacta*. **G. jacta** Swinh. (22 h). Evidently a *Glossotrophia* by shape, venation, antenna, tibial armature (♂ with 1 spur, ♀ with 2) and pattern, but the tongue seems definitely less long than usual; otherwise it might almost be a form of the same species which is called *disparata* on Sokotra and *somaliata* in Somaliland. Only known from Karachi.

### 37. Genus: **Zygophyxia** Prout.

(See Vol. 16, p. 75.)

Tongue slender. Antenna of the ♂ ciliate. Hindtibia in both sexes with terminal spurs only. Wings elongate, generally quite narrow; 2nd subcostal of hindwing separate at its origin from 1st radial. This last character distinguishes it at once from the name-typical section of *Sterrha*, which has similar leg-structure. Chiefly African, adapted to arid country; two species, however, occur in suitable localities in India and one of them has, in some unexplained way, got transplanted to some very remote localities. Genotype: *relictata* Walk.

*conscensa*. **Z. conscensa** Swinh. (22 h). Less elongate winged than *relictata* and without the extremely oblique line of the forewing. Variable in colour and in the strength of the markings. The ♀ narrower-winged than the ♂. Central and South India and I think Ceylon, the type from Poona.

*relictata*. **Z. relictata** Walk. (= *demissus* Swinh., oöptera Turn.) (22 h). Abdomen elongate. Both wings very narrow, especially in the ♀. Distributed in Africa (see Vol. 16, p. 75; Abyssinia and probably Kalahari have since been added to its range) and in India and Ceylon; it has also been taken in Formosa and in Queensland.

### 38. Genus: **Sterrha** Hbn.

(See Vol. 4, p. 89, as *Ptychopoda*; Suppl. Vol. 4, p. 50; Vol. 16, p. 76.)

Palpus short. Antenna of the ♂ ciliated (pectinate in a very few species). Hindtibia of the ♂ with 2 spurs (chiefly in Palaearctic species) or spurless; of the ♀ with 2 spurs. Forewing with areole single, occasionally wanting, either through failure of the 1st subcostal to anastomose or through the stalking of all subcostals. Hindwing with 2nd subcostal more or less long-stalked with 1st radial; in a very few species with costal anastomosing strongly with the cell, as in the Larentiinae. The early stages of the Indo-Australian species are almost entirely unknown; for the Palaearctic see Vol. 4.

A. Section *Sterrha*: ♂ hindtibia with terminal spurs present.

*euclasta*. **S. euclasta** Turn. "24—26 mm." Antenna with fine short pectinations (one-half diameter of shaft) bearing tufts of long cilia (3 times diameter of shaft). Forewing rather narrowly triangular; ochreous-whitish, with slight grey suffusion and a very few fuscous scales; cell-dot minute; median line (shade) suffused, grey, from  $\frac{5}{6}$  costa to middle of hindmargin; postmedian and 1st subterminal "similar", running from apex; distal subterminal close to termen. Hindwing with termen rounded; cell-dot present; a straight grey line from apex to  $\frac{3}{4}$  abdominal margin; a faint line beyond it. Mount Kosciusko (3500—5000 feet), only ♂♂ known. Unknown to me; possibly a *Zygophyxia*?

*delibata*. **S. delibata** Prout (Suppl.-Vol. 4, pl. 5 g). Very like the well-known Palaearctic *rufaria* Hbn. (Vol. 4, pl. 4 b), possibly a race of it. More glossy, forewing slightly shorter, median line stronger and somewhat thickened, postmedian and subterminals weakened, fringe with small dark dots; hindwing with termen slightly more sinuous, cell-dot strong. Underside sharply marked. Kashmir.

*mesodela*. **S. mesodela** Prout (22 h). Antennal joints in ♂ not projecting, ciliation even, about 1; hindtibial spurs rather long. A rather narrow-winged, quite inconspicuous species, but easy to recognize (unless there exist aberrations which are as yet unknown) by the firm, straightish median line of the forewing; in any case, as the Section *Sterrha* is almost unrepresented in India, the ♂ hindleg gives an important aid to the determination. Srinagar, etc.

B. Section *Ptychopoda*: ♂ hindtibia with terminal spurs wanting.

*grisescens*. **S. grisescens** Warr. (22 i). Hindtarsus of the ♂ as long as tibia. Easily known by the confluent cloudings between the postmedian and the subterminal of the forewing. Glossy, the underside weakly marked. Described from the Khasis; extends westward to Kashmir.

**S. humeraria** *Walk.* (= *cerussina* *Butl.*) (22 i). Probably related to *grisescens*. Hindleg similarly formed. *humeraria*. Less glossy, the subterminal dark patches weaker and more separated, characteristic dark shading present at the costa of the forewing, especially proximally. N. W. India.

**S. inaudax** *Prout* (22 i). Probably nearest to *delicatula* *Warr.* and *dilutaria* *Hbn.* (Vol. 4, pl. 4 f), slightly *inaudax*. narrower-winged, the costa of the forewing a little straighter. Hindtarsus of ♂ almost as long as tibia. Lines weaker than in *delicatula*, the postmedian straighter, minutely dotted on the veins; subterminal and its shades much as in *dilutaria*. Hindwing marked much as in *dilutaria*, termen less smooth, more as in *delicatula*. Kumaon (loc. typ.) and Dalhousie.

**S. delicatula** *Warr.* (Suppl.-Vol. 4, pl. 6 e). Expanse 19—22 mm. Hindwing with the termen somewhat *delicatula*. sinuate between the radials and again, though very feebly, near the anal angle. Distinguishable from the other similar glossy, yellow-whitish *Sterrha* by the sinuous band-like shade proximal to the subterminal on both wings; though narrow and not very dark, this seems always well developed. Hindtarsus of ♂ little shortened. Punjab and Kashmir Valley, the type from Dalhousie.

**S. carpheraria** *Hmps.* (= *unipuncta* *Swinh.*) (22 i). Less small, relatively somewhat ampler-winged, hind- *carpheraria*. wing with termen scarcely sinuate. Very distinct in the bright yellow margins, obsolescence of the lines, slenderness and indistinctness of the subterminal shade, intensity of the black cell-dots, etc. Distribution similar; both the types came from Kashmir. — ab. **concatenata** *nov.* is a striking and rare form (though recurrent *concatenata*. at Gulmarg) with a distinct, narrow, grey-brown band on both wings, marking the proximal boundary of the subterminal.

*S. muricata* *Hufn.* (Vol. 4, pl. 4 b) **minor** *Sterneck* (22 i). Generally a good deal smaller than the well- *minor*. known European race, though an occasional aberration can reach the size of that and no other distinction has yet been noticed. Inhabits Japan, Ussuri, Corea and a considerable part of China, perhaps also Saghalien; chiefly Palaearctic, but its occurrence in Szechuan makes it desirable to notice it in the present volume.

**S. sinicata** *Walk.* (22 i). Apparently a rare or much overlooked species. ♂ hindleg slender, not long, *sinicata*. tarsus almost as long as tibia. Smaller and narrower winged than *muricata* and not so bright; broader than *marcidaria* (22 k), less glossy, the yellow brighter, the pink markings far more extended, the subterminal band near the termen, sharply contrasting with the clean yellow border. S. E. China and Formosa, the type from Foochow, Fokien.

**S. flavisinuata** *Warr.* (22 i). Colours about as in *muricata*, shape entirely different, yellow border of *flavisinuata*. forewing strongly sinuous-edged proximally: ♂ more pinkish, ♀ (except where the ground-colour meets the yellow border) much darker, purple. Hindleg of ♂ less slender than that of *muricata* but with similar proportions (tarsus not abbreviated). Khasis.

**S. roseolimbata** *Pouj.* (Vol. 4, pl. 5 d). Another brightly coloured species but larger, the ground-colour *roseolimbata*. stramineous, the distal area rose-pink, with interrupted subterminal of the ground-colour; costal margin of forewing rosy, with some dark irroration. Hindtarsus not abbreviated. W. China.

**S. impexa** *Butl.* (Vol. 4, pl. 7 c). A small, glossy relative of *jakima* (see below), the lines and cell-dots *impexa*. always weak or wanting, a narrow dark submarginal band always developed, on the hindwing close to (commonly reaching) the termen, on the forewing receding a little from the termen in its anterior half, so as to leave a very narrow terminal half-band of the ground-colour. Hindtibia of the ♂ rather long, clothed with hair, tarsus shortened. Described from Japan and chiefly Palaearctic; known, however, from Ningpo and Szechuan. — **paraula** *Prout* (22 i), from Formosa, is perhaps merely a race of *impexa*, though I noted the ♂ hindleg as "longer- *paraula*. haired". Hindwing perhaps not quite so fully rounded. Both wings with markings less obsolete, somewhat more reddish or purplish, distal band not quite so near termen. JOANNIS records it from Tonkin.

**S. jakima** *Butl.* (Vol. 4, pl. 5 b). Markings somewhat as in *roseolimbata*, colouring much duller; ground- *jakima*. colour more brownish, borders rarely with any definite pinkish tinge, that of the forewing usually clouded with fuscous in its posterior part and often narrowly so nearly to costa, the rest of the anterior part remaining of the ground-colour. Postmedian line conspicuous, median often conspicuous, on forewing, but quite slender, generally strengthened at costa. Hindleg not hairy, tarsus not shortened. Range about as that of *muricata minor*. — ab. **obliterata** *Leech* lacks the lines of the upperside and has the dark border weakened. *obliterata*.

**S. parallela** *Wilem. & South.* (22 i). Closely similar to *jakima*, but with the hindwing reproducing the *parallela*. distal markings of the forewing. Antennal ciliation of the ♂ much shorter, hindtibia dilated, with long pencil, tarsus about  $\frac{1}{2}$ . Formosa.

**S. charitotes** *Prout* (22 k). Colouring of *parallela*, forewing with termen more oblique, hindwing rela- *charitotes*. tively smaller, more weakly marked; postmedian line of forewing less sinuous. Antennal ciliation of the ♂ simple; hindtarsus slender, not shortened. Khasis. Possibly a subspecies of the following.

- lineata*. **S. lineata** Hmps. Very similar to *charitotes*, antemedian line of forewing better expressed, scarcely oblique, distal area of forewing dark, with interrupted pale subterminal, not (as in *charitotes*) differentiated into a light anterior and a dark posterior part. Ceylon (type) and S. India. As both HAMPSON (1895) and SWINHÖE confused this with *chotaria* I add a somewhat full differentiation: longer-winged (at least in the ♀), less *belemiata*-like in maculation, abdominal region of ♂ hindwing more hairy beneath, ♂ hindtibia fringed above, tarsus fully as long as tibia, termen of hindwing virtually rounded (in *chotaria* concave at the radials), dots on fringes less heavy.
- franconiaria*. **S. franconiaria** Swinh. (22 k). Antennal ciliation long. Hindleg slender, aborted. Cell of forewing over  $\frac{1}{2}$  wing-length. A rather brightly coloured species, with olive-brown cell-dots and sinuous bands, on the forewing arising from black costal marks, formed of close irroration. Underside pale fleshy grey, unmarked. Only the type known, a ♂ from Sherlock River, W. Australia.
- ferrilinea*. **S. ferrilinea** Warr. (= *cletima* Turn.) (22 k). Although diminutive, this is a striking and unmistakable species, with a sprinkling of metallic scales and with the irregular lines, or slender bands, in part mixed with ferruginous; underside pale, almost unmarked. Antennal ciliation of ♂ shortish, hindleg very short, with the tarsus slender, about  $\frac{2}{3}$  tibia. North Queensland (type) and Port Darwin. Moderately variable.
- pseliota*. **S. pseliota** Meyr. (22 k) was founded on a ♀ and the ♂ has never yet been described. Very distinct in the heavy dark shades which accompany the lines on their reverse sides (the outer ones weakly reproduced on the underside also); but its great rarity, combined with a very wide distribution, suggest the possibility that it might be a striking aberration of some common species. "Victoria" is given as the type locality; it has occurred singly at Brisbane, Melbourne, Gisborne and Adelaide.
- sillemi*. **S. sillemi** Wehrli (24 a). Length of a forewing 10 mm. Costa of forewing less arched than in *sarthularia* Stgr. (Vol. 4, p. 113), hindwing with termen excised between the radials, at least as strongly as in *incisaria* Stgr. (Vol. 4, pl. 3 g). Dirty light grey-white, nearest to *conioptera* Hmps., but at once distinguished by the much smaller cell-dots and the presence of a rather broad, weakly dentate median shade; fringes with dark dots and dashes at the vein-ends (WEHRLI). The unique type is a ♀ from Panamik, Nubra Valley, Karakoram, 3350 m, 10 July 1929.
- conioptera*. **S. conioptera** Hmps. (Vol. 4, pl. 7 d). Very close to the Palaearctic *descitaria* Christ. (Vol. 4, pl. 3 h), generally distinguishable by the more strongly excised hindwing, the less brownish grey colour and usually the less close approximation of the postmedian line of the hindwing to the cell-dot. Kujjar, Kashmir, at nearly 2000 m. STERNECK records from Tatsienlu a ♀ which may be referable either to this or to *descitaria* (see Suppl.-Vol. 4, p. 58). The structure of the ♂ hindleg does not give so good a clue as would be inferred from my original accounts; "tarsus extremely short", given for *descitaria*, was misleading, for it is, in both the species (or forms) in question, almost  $\frac{1}{2}$  the tibial length.
- infuscaria*. **S. nudaria** Christ. (Vol. 4, pl. 3 h) **infuscaria** Leech (Vol. 4, pl. 3 h). Antenna of ♂ rather stout, ciliation of medium length; hindtibia short, strongly thickened, tarsus quite short. Wings strongly glossy, quite weakly marked, the lines not very sinuous, cell-dots wanting; colour variable but almost always darker, especially in the ♂, than in the ochreous name-typical race from the Amur-Ussuri district. *infuscaria* was described from Japan, but extends to W. China.
- obfuscaria*. **S. obfuscaria** Leech (22 k). Darker, more blackish brown and still more weakly marked, the lines scarcely discernible. As indicated in Vol. 4 (p. 115), it seems highly probable that it may be a very extreme aberration of the same species; no structural difference has yet been found. Ningpo.
- semilinea*. **S. semilinea** Warr. (22 k). Median shade strong on the hindwing only, straight; further unmistakable on account of the conspicuous tridentate subterminal mark of the forewing (costa to 1st radial only). Antennal ciliation of ♂ rather short, hindtarsus shorter than tibia, but not extremely so. Khasis and Karen Hills.
- leucozona*. **S. leucozona** Hmps. (22 k). Much smaller than *nudaria*, narrower winged, broadly whitish between the median shade and the distal area and less definitely so in parts of the proximal area, especially on the hindwing. Hindtibia thick, with a long pencil from its base; tarsus much shortened. 2 ♂♂ from Bernardmyo, Burma. —
- luteata*. **luteata** Warr., from the Khasis, is less small and of a brighter yellow colour, but otherwise agrees so accurately that I feel no doubt about the union, especially as some examples from N. W. India are somewhat intermediate, though nearer to *luteata*.
- aurieruda*. **S. auricruda** Butl. (= *plumboscriptaria* Christ.) (Vol. 4, pl. 3 i). Glossy pale brownish ochreous, characteristically marked with strongly sinuous darker bands, which are somewhat variable in width. Underside of the forewing somewhat paler, but similarly marked; of the hindwing much paler, the markings slight. Leg-structure much as in *leucozona*. Chiefly Palaearctic (BUTLER's type from Japan); known also from Szechuan. The Japanese *remissa* Wilem., quite erroneously called *insuavis* in Vol. 4 (p. 123), is not known from the Indo-Australian Region; for the true *insuavis* see below.

**S. homalorrhöe** *Prout* (22 k). Hindleg whitish, a long ochraceous-tinged pencil from the femoro-tibial joint, the tibia expanding distally into a broad flap or sheath, from the end of which projects a tuft of long scales as far as the end of the aborted tarsus. Greyer than *auricruda*, the pale parts being reduced to the dimension of lines or very narrow bands, the markings much straighter than in that species; forewing with pale costal edge and subcostal line. Founded on 2 ♂♂ from Kedah Peak. *homalorrhöe*.

**S. muricolor** *Warr.* The type ♂, from the Mauson Mountains, Tonkin (2000—3000 feet), is somewhat worn, but shows about the shape (or is slightly shorter-winged still) and colour of *remissa* *Wileman*, i. e., broader and darker than *auricruda*. The pale lines are straightish, as in *homalorrhöe*, but extremely slender, scarcely discernible without a lens, which reveals two, both in the outer half of the forewing. Hindleg more as in *leucozona* and *auricruda*. I have seen similar specimens from Formosa and perhaps Upper Burma and Borneo, but none good enough to allow of definite recognition. *muricolor*.

**S. costiguttata** *Warr.* Smaller and narrower-winged than the 3 preceding, the forewing almost as acuminate as in *rubridentata* (23 f). Colouring much as in *remissa*, the 3 pale bands broadened at costa of forewing, otherwise quite slender; they are sinuous, not — as in *homalorrhöe* — straightish. Antennal ciliation moderately long; hindlegs lost in the type, a ♂ from the Khasis; a single ♂ from Kanshirei, Formosa (probably conspecific) has them short and weak, the tarsus about as long as the tibia. *costiguttata*.

**S. sabulosa** *Prout* (Vol. 4, pl. 7 d). Expanse 19—21 mm. Hindwing almost fully rounded, only a little less so between the radials and from the first median to anal angle. Ciliation of ♂ antenna scarcely longer than diameter of shaft; hindtibia with strong pencil, tarsus extremely short. An inconspicuous grey species (tinged with brown), with the cell-dot of the forewing large, the lines somewhat strengthened at costa, the subterminal strongly sinuous, bounded by darkish shades. Kashmir and Kulu. *sabulosa*.

**S. perpulverea** *Hmps.* (Vol. 4, pl. 5 e). Much more flesh-coloured than *sabulosa*, the irroration olivaceous brown, markings not strengthened at costa, median shade obsolescent, cell-spot of forewing elongate, dots at base of fringes conspicuous. Kashmir: Gurais Valley, only the type ♀ known. *perpulverea*.

**S. marcidaria** *Walk.* (22 k). Very different from the two preceding in its strong gloss, the markings reddish, generally rather weak excepting the fine postmedian line and the subterminal, which is placed between complete or almost complete shades. Hindwing somewhat gibbous in the middle, especially in the ♂; in this sex the antennal ciliation is long, the hindleg short, tibia with strong fringe above. Ceylon (loc. typ.), the Nicobars, Burma, Penang and Borneo. *marcidaria*.

**S. swinhoei** *Prout* (= *rufula* *Swinh.*, nec *Warr.*) (22 k). Broader-winged than *marcidaria*, postmedian line less distally placed, the band beyond it well separated (in *marcidaria* usually touching it), weak, forming a strong spot at tornus. Hindwing with the discocellulars biangulate almost as in *Eupithecia*. Underside weakly marked. Tibial fringe in ♂ slighter, tarsus about  $\frac{2}{3}$  (in *marcidaria* about  $\frac{1}{2}$ ). Borneo (loc. typ.), Philippines, Tonkin, Hainan, S. China and Formosa. *swinhoei*.

**S. afflata** *A. Fuchs.* This and the two following are unknown to me, but should be mentioned here. Length of a forewing 7 mm. "Straw-yellow, weakly suffused with violet-red, with 5 lines, fine black cell-dot and marginal dots. Character of *infantilaria* but more brightly coloured, in particular with the termen and fringes in certain positions glistening violet-reddish, the lines more distinct, the 3rd finely dentate, also (though more slightly and irregularly) the 1st; irroration sparse, only noticeable with the lens. Fringes with 2 indistinct dividing-lines, tips lighter. Termen of hindwing more distinctly concave before the anal angle than in *infantilaria*, so that this appears produced; underside lighter grey, more whitish, lines much more distinct than in that species. In its entire facies sharply distinct from *obsoletaria*" (Vol. 4, pl. 4 e). An excellent ♂ from Gross-Atjeh, E. Sumatra. Presumably near *swinhoei*. *afflata*.

**S. infantilaria** *A. Fuchs.* a pair from the same locality as *afflata*, agrees therewith in size but is light straw-yellow, the 5 lines (on the hindwing 4) very indistinct, scarcely darkened. A little smaller still than *obsoletaria* (Vol. 4, pl. 4 e), anal angle of hindwing sharp, slightly produced, the concavity before it less pronounced than in *afflata*. The wings are rather narrow in the ♂, short and broad in the ♀. Only the cell-dot and terminal dots are distinct. *infantilaria*.

**S. salebrosaria** *A. Fuchs.* Also of the same size and from the same source, 1 ♀. Distinguished from its relatives by its strikingly coarse scaling and irroration. "Dirty grey-yellow, the brown (black) irroration dense and granulated; lines quite indistinct, the 3rd the least so, looking finely dentate but under the lens merely provided with dark dots; the black cell-dot fine, the terminal spots prolonged into dashes; fringe in place of the dividing-line with scattered black dots." *salebrosaria*.

- chotaria*. **S. chotaria** *Swinh.* (= *pallidivestis* *Warr.*, *remissata* *A. Fuchs*) (23 a) somewhat suggests, in its pattern, a miniature *dimidiata* *Hufn.* (Vol. 4, pl. 4 c) or often — in the strongish posterior mark of the hindwing — *belemiata* *Mill.* (Vol. 4, pl. 3 i). Antennal ciliation of ♂ long, hindtibia with strong pencil, tarsus short. Widely distributed from Ceylon to Central India, Hainan, Luzon, Sumatra to Timor and perhaps Celebes; the three type-localities respectively Poona, E. Java and E. Sumatra.
- probleta*. **S. probleta** *Turn.* “♂, 21 mm. Antenna in ♂ with moderate ciliations (1½). Posterior legs minute, tibia very small and slender, tarsus ½, slender. Forewing: costa with basal half nearly straight, then strongly arched, termen bowed, oblique; ochreous-whitish, suffused with pale grey; an ochreous-whitish costal streak from base nearly to apex; costal edge reddish”; ante- and postmedian lines represented by dots, the postmedian from 4/5 costa, sinuate; greyish subterminal shades, terminal line grey, interrupted at the veins. “Hindwing with termen rounded, strongly projecting between veins 2 and 5; colour and markings of forewing, but ante- and postmedian faintly indicated by grey lines.” Lorne, Victoria, in February, 1 ♂. Nearest to *nephelota*, distinguished by reddish costal edge of forewing and shape of hindwing.
- nephelota*. **S. nephelota** *Turn.* Smaller (17—18 mm). Leg-structure apparently similar, costa of forewing distally less strongly arched, hindwing rounded. Suffusions purplish grey; basal line wanting, median distinct, fine, acutely dentate, from near costa at 2/3 to middle of hindmargin, proximal subterminal shade broad, cloudy, purplish-grey, proximally ill-defined, distally dentate, subterminal line fine, sharp. Gisborne.
- pachydelis*. **S. pachydelis** *Meyr.* (23 a). “♂. 15 mm. Antenna serrate, ciliations 2. Posterior tibia very short, loosely short-haired above, tarsus 1/3. Hindwing with termen rounded, much bent obtusely between veins 3 and 4, inner margin short. Ochreous-whitish, with a few scattered black scales; lines cloudy, irrorated with black”; fringes with a cloudy grey interrupted central line. Perth, West Australia, one specimen in November.
- epicyrta*. **S. epicyrta** *Turn.* “♂, 19 mm. Ciliations in ♂ 1. Posterior pair of legs subaborted, tibia hairy, without spurs, tarsus short. Ochreous-whitish; first line (on forewing only) indicated by 3 fuscous dots on veins; discal dots and median line obsolete; postmedian indicated by a series of fuscous dots on the veins; subterminal whitish, dentate, very obscure; a very faint interrupted grey terminal line. Hindwing subquadrate, prominent and bent on vein 4.” Mc. Kosciusko, 3500 feet, one specimen. “Easily distinguished from *philocosma* by the obsolescence of median line and the very differently shaped hindwing.”
- trissorma*. **E. trissorma** *Turn.* “♂, 22 mm. Head and collar fuscous. Antenna fuscous, dentate, ciliations 1½. Posterior tibia without spurs, rather short, smooth, somewhat dilated before apex, tarsus 2/3. Forewing brown-whitish, costal edge before middle fuscous; 3 series of dark fuscous dots, the third, at 3/4, rather more distinct; a pale subterminal line very faintly indicated towards costa, preceded by slight fuscous suffusion; some dark fuscous dots on termen. Hindwing strongly rounded so as to project somewhat in middle, but not angled; as forewing. Underside similar, but markings on forewing and 1st line on hindwing obsolete.” New South Wales: Ebor Scrub in January, the type only.
- philocosma*. **S. philocosma** *Meyr.* (23 a). Ciliation of ♂ antenna about 3/4; hindtibia very short, tarsus as long as tibia. Some other distinctions from *epicyrta* have been noted by TURNER under that species. Distributed, Queensland to South Australia and Tasmania, the type presumably from New South Wales.
- punctatissima*. **S. punctatissima** *Warr.* (= *philocosma* part., *Turn.*, nec *Meyr.*) (23 a). Much more sharply marked than *philocosma*, to which TURNER has sunk it, but I think incorrectly. Very like *mundaria* *Walk.* and with similarly formed ♂ hindleg, but the vertex is more fuscous, the median line (shade) less diffuse and less sinuous, the abdomen with dorsal dots, etc. Founded on 2 ♂♂ from “Queensland”; a worn ♂ from Milne, Bay is larger, with whitish vertex, but otherwise seems to agree with them or still better with TURNER’s description of *delosticta*.
- delosticta*. **S. delosticta** *Turn.*, 1 ♀ from Kuranda, is perhaps the same, but the description implies a whitish vertex, the median dots well beyond the cell-dot and the postmedian so distally placed as to be called “subterminal”; “a median basal dot” (on forewing) perhaps a slip for “subbasal”.
- mundaria*. **S. mundaria** *Walk.* (= *sextinotata* *Warr.*) (23 a). Hindleg of ♂ weak and curved, tibia not much thickened, tarsus short. Areole, at least in the typical form, small, all the subcostals well stalked, the 1st arising only just before the 5th. A tinge of pink in the grey ground-colour (when fresh) and the punctiform lines give some suggestion of a tiny *Anisodes*. Borneo and Malaya, WALKER’s type from Sarawak, WARREN’s from Penang.
- maculata*. **S. maculata** *Warr.* (23 a). Ciliation of ♂ nearing twice the diameter of the shaft; hindleg very short, the tibia dilated, perhaps 2/3 femur, the tarsus little shorter than the tibia. Hindwing with 2nd subcostal very long-stalked. The unique type has the forewing rubbed, and the strong interruption of the markings perhaps not natural; but their irregular, macular character on both wings, as well as the coloration, should render recognition easy. Khasis.

**S. phaeocrossa** *Prout* (23 a). Structure much as in *maculata* or with tarsus shorter; stalking of 2nd subcostal of hindwing normal (to about  $\frac{1}{2}$  its length). Variable, but easily recognizable by its dark terminal border, etc. Smaller and paler than *ocnera*, a defined median band developed, sometimes strong, underside almost as sharply marked as upper. Distributed in Malaya, also known from Tonkin; type from Penang.

**S. halmaea** *Meyr.* (= *prosaula Prout* olim, err. det.) (23 a). Decidedly variable, sometimes coloured nearly as in *phaeocrossa*, sometimes paler, but never without some pinkish or reddish tinge. Structure much as in the two preceding. By a misinterpretation of GUEST's very brief description, I recorded this species (*Lep. Cat.*, pars 63, p. 386) as *prosaula*, but I have since learned from a specimen in the British Museum that the reference was really to *Scopula lydia*. *halmaea* is distributed from Queensland to Tasmania. The typical form has only faint indications of dark subterminal spots. — ab. **epicrossis** (*Meyr. M. S.*) *nov.* has conspicuous dark spots at the tornus and between the radials of the forewing, with faint — or even conspicuous — connective shading, more or less recalling *phaeocrossa Prout* or *marginata Swinh.*

**S. fucosa** *Warr.* (23 a) is, as TURNER says, "a small, delicate and inconspicuous species, but very distinct in the pale rippled ochreous markings, absence of fuscous scales, and antenna of ♂", which is serrate and with long tufts of cilia; hindtibia of ♂ very small, not dilated, tarsus of about the same length. Queensland.

**S. costaria** *Walk.* (= *albicostata Turn.*, olim, nec *Walk.*) (23 a). There was formerly much confusion regarding this species and *inversata*, but it has been cleared up. *costaria* is the greyer (less pinkish) of the two, with the costa on an average less sharply whitish; the vertex is whitish, whereas in *inversata* it is dark. The ♂ hindleg is quite different, the tibia short and slender, tarsus a little longer, slender. Forewing with all the subcostals stalked beyond the areole. Widely distributed in Australia, from Queensland (type) to Tasmania.

**S. isomorpha** *Meyr.* (23 b). ♂, 16 mm. Differs from *albicostata* only as follows: antenna filiform, ciliations 1; posterior tibia very short, tarsus as long as tibia; wings greyer, with a pale postmedian band, 2nd line consisting of a series of black dots, subterminal forming a narrow grey fascia; cilia whitish, with an obscure grey line". One specimen, from Mount Lofty, S. Australia. Venation nearly as in *inversata*, the 1st subcostal of the forewing stalked appreciably beyond the 5th, but that is a redder species, with quite different hindtarsus.

**S. inversata** *Guen.* (= *albicostata Walk.*, *costaria Turn.*, olim, nec *Walk.*) (23 b). For the differentiation of the true *costaria* see above. Costal edge of forewing and front part of thorax above strikingly whitish. The hindleg of the ♂ has never, I think, been described, though TURNER keys the species among the group with "♂ hindtibia more or less dilated and distorted"; tibia short, with a slight tuft at the end, tarsus rather long, greatly dilated (recalling that of the Palaearctic *filicata Hbn.*, Vol. 4, pl. 4 f), tapering to a very small point at the end. Forewing with all the subcostals stalked beyond the areole, the 1st beyond (generally much beyond) the 5th. Distribution as wide as that of *costaria* and perhaps including also Port Moresby, but I suspect an accidental introduction there. GUENÉE's type was erroneously believed to come from Brazil; WALKER's was from Sydney.

**S. catopolia** *sp. n.* (23 b). In the ground-colour and the weak markings reminiscent of *inversata*, but with the costal border of the forewing dull purple instead of whitish buff. Vertex similarly darkened. Antennal fascicles of ♂ very long (at least 3), slender; midtibia normal, hindtibia with strong pencil and heavily fringed, sharply bent near its end, tarsus very short, with its 1st joint slightly hairy. Abdomen beneath whitish, and even on the upperside with some whitish admixture; in ♂ with buff-tinted lateral tufts on 3rd and 4th segments. More pinkish than *halmaea*, ciliation still longer, hindleg different. Remarkably like *crinipes* (23 i) except in the leg-structure. British and Dutch New Guinea: Hydrographer Mountains (type), Kumusi River, Snow Mountains and Mt. Goliath.

**S. iodesma** *Meyr.* (23 b). "♀, 16 mm. Whitish, sprinkled with faint whitish-ferruginous; 1st line ferruginous, rather irregular, not reaching costa; 2nd line thick, ferruginous, bisinuate, not reaching costa"; terminal line incomplete; fringe whitish. Hindwing with the postmedian band broadened, "an interrupted dark fuscous terminal line; cilia ferruginous-whitish". Brisbane, 1 specimen (TURNER suggests "probably" Southport). Likened somewhat to *Scopula innocens*.

**S. stenozona** *Lower.* Ochreous-whitish, forewing sparsely irrorated with dark fuscous; a well-marked dark fuscous, dentate postmedian line from  $\frac{5}{6}$  costa to  $\frac{3}{4}$  hindmargin, continued on hindwing. Broken Hill, New South Wales, 1 ♀. LOWER adds that there are small terminal dots on both wings and a faint dark cell-dot on the hindwing.

**S. argophylla** *Turn.*, founded on 2 ♀♀ from Evelyn Scrub, Herberton, N. Q., and measuring 18 and 20 mm, is said to be readily distinguishable from the following by the grey head. Shining white, without cell-dot or irroration; costal edge of forewing grey; both wings with 3 slender, finely dentate lines. Is it an aberration of the following?

- chloristis*. **S. chloristis** *Meyr.* (= *prionosticha* *Turn.*) (23 b). Head white. Palpus short. Antennal ciliation of ♂ moderate; tibia fairly long, with hair-pencil, tarsus very short (MEYRICK says " $\frac{1}{5}$ ", TURNER " $\frac{1}{2}$ ", perhaps  $\frac{1}{4}$  is about right). Queensland (*chloristis*) and Port Darwin district (*prionosticha*); I have seen specimens determined by MEYRICK. — ab. (?) **polygramma** *Lower* seems likely, from the description, to belong here, but should have the face and an interrupted terminal line more fuscous and the underside unmarked. A ♀ from Cooktown, measuring "12 mm".
- dolichopis*. **S. dolichopis** *Turn.* The largest Australian *Sterrha* (22—29 mm). Antennal ciliation of ♂ about as long as diameter of shaft; hindtibia well developed, broad, laterally compressed, rough-scaled; tarsus  $\frac{1}{5}$ . Termen of forewing bowed, very oblique, of hindwing sinuate; ochreous-whitish; lines pale greyish; cell-dots wanting; a very oblique median shade, obsolete towards costa of forewing; postmedian from  $\frac{5}{6}$  costa, dotted with fuscous on the veins; subterminals cloudy. Bundaberg. Brisbane.
- nitidata*. **S. nitidata** *H.-Sch.* (= *tectaria* *Leech*, nom. praecoc.) (Vol. 4, pl. 4 f). Essentially a Palaearctic species, described from Hungary and reaching the Amur-Ussuri district and Corea; but as LEECH's type of *tectaria* came from Chang-Yang it should be mentioned here. Distinct from all other known *Sterrha* in the absence of one of the subcostal veins of the forewing (see Suppl.-Vol. 4, p. 65).
- indecorata*. **S. indecorata** *Warr.* (Suppl.-Vol. 4, pl. 6 f) is perhaps related to the Palaearctic *inornata* *Haw.* (Vol. 4, pl. 4 g), which the type, a pale, thinly scaled ♀ from Simla, recalls in its weak markings, though the postmedian line is somewhat more proximally placed. Forewing with termen scarcely sinuous, median line brown, placed beyond the cell-dot, postmedian grey, lunulate-dentate; hindwing just noticeably bent in the middle. Hindtibia of ♂ with strong pencil, tarsus quite short. Known also from Gurais Valley, Kashmir.
- indeterminata*. **S. indeterminata** *Warr.* (Suppl.-Vol. 4, pl. 6 f). In a measure intermediate between *indecorata* and the *actiosaria* group. Larger, paler and more weakly marked than *actiosaria*, termen of forewing slightly more oblique, both wings with termen very slightly and irregularly waved. Median line of forewing almost crossing the very small cell-dot, postmedian slightly sinuous, subterminals generally fairly strong. Structure near that of the preceding, antennal joints of ♂ somewhat less prominent, hindtibia perhaps relatively somewhat longer and more heavily tufted. Simla and its vicinity.
- infortunata*. **S. infortunata** *sp. n.* (23 b). Expanse 20 mm. Antennal ciliation of ♂ about 1; hindtibia much longer than femur, both densely clothed with long scales and hair, tarsus short (about  $\frac{1}{2}$ ). Extremely like *inaudax*, except in leg-structure; cleaner and glossy, almost entirely without the dark irroration, even the fringe-dots weak; subterminal perhaps rather thicker, but not so thick and sinuous as in *indeterminata*, which also has termen of hindwing more sinuous and stronger tufts on the ♂ hindtibia. Gurais Valley, Kashmir, September 1897, type ♂ in the British Museum. A ♀ from Masuri, September to October 1920 agrees well. *decidua* is smaller, with denser, more brownish leg-tuft, postmedian of forewing curved in anterior half, then straightish, that of hindwing probably more sinuous.
- ingloria*. **S. ingloria** *Prout* (23 b). Expanse 22—25 mm. Antennal joints not projecting, ciliation scarcely longer than diameter of shaft. Abdomen somewhat elongate. Hindleg somewhat bent, tarsus about  $\frac{2}{3}$  tibia; tibia with long, strong tufts which reach nearly to the end of the tarsus. Wings not very opaquely scaled; irroration and markings weak, median shade the best developed; postmedian scarcely crenulate, its sinuosities slight. Distinguished from *indeterminata* by its darker, browner colour, more minute cell-dot, stronger median shade, more suffused forewing beneath, etc. Upper Burma: Hpimaw Fort, 1850 feet, 6 miles from Yunnan frontier; only ♂♂ are known.
- scelisca*. **S. scelisca** *Prout* (23 b). Size of *ingloria* or a little larger. Antennal ciliation longer (about 2), fasciculata; hindleg short, tibia little thickened, tarsus less than  $\frac{1}{2}$  tibia. Forewing with areole narrow, open or scarcely closed; both wings with cell-dot sharp, median shade close to it, not strong, postmedian somewhat nearer to the termen than in the two preceding and marked with more distinct dots on the veins, dots at base of fringe also stronger than in them. Kumaon: Muktesar, 7000 feet, only ♂♂ known.
- obliquilinea*. **S. obliquilinea** *Warr.* (23 b). Smaller and rather narrow-winged, more thickly scaled and more ochreous-brown. Very distinct in its heavy, straight, oblique median line; postmedian extremely slender, other markings scarcely noticeable. Underside similar, on a slightly paler ground-colour, the proximal subterminal line at times better indicated. Khasis (type) and Sikkim. Hindleg of ♂ weak and curved, femoro-tibial pencils extremely long and strong.
- profanaria*. **S. profanaria** *Walk.* (23 c). Very near to *actiosaria* and with similar leg-structure, but both the hindtibia and hindtarsus of the ♂ seem relatively longer. Face of the ground-colour (in *actiosaria* black). On an average larger than that species, at times more reminiscent of the Palaearctic *aversata* *L.* (Vol. 4, pl. 4 g), the

type, indeed, being — as in that — a banded form. Forms with the median line strong are not infrequent. — The plain, *actiosaria*-like form may, by analogy with *aversata*, be known as ab. **remutata** *nov.* — “South India”, WALKER’s type probably from Coimbatore or perhaps the Nilgiris; these and the Palnis are its best-known localities. *remutata.*

**S. improvisa** *sp. n.* (23 c). Variable in size (21—24 mm) and in colour (as bright as *profanaria* or nearly *improvisata* like *actiosaria*). In structure closely like *actiosaria*; hindwing somewhat more bent at 3rd radial. Cell-dots strong; postmedian of forewing distinctive — angled near costa; underside also distinctive — forewing suffused as far as the median or postmedian, postmedian of both wings strong. Khasis, a few of each sex in the Tring Museum.

**S. taiwana** *Wilem. & Sth.* (23 c). Founded on a ♀ from Arizan, Formosa, to which was added a ♂ from *taiwana*. the same locality, I think correctly referred. I doubt whether it is anything more than a rather dark and on the whole rather large form of *actiosaria*, with distal area well marked. The hindleg of the ♂ is at least very similar, the femoro-tibial pencil somewhat ochreous, reaching almost to the end of the very short tarsus, the other tufts more dusky.

**S. indigata** *Wilem. & Sth.* Also founded on the ♀ (Rantaizan, Formosa) and this in very poor condition. *indigata.* Its author regarded it as “allied to *aspilataria* Walk.”, which is very wide of the mark, as that is a *Scopula*. Possibly a rubbed *taiwana* (the name unfortunately prior to that), with the cell-dots almost obliterated, but as the postmedian line looks somewhat less punctiform and slightly nearer to the termen I admit the probability of a separate species, the more so as the forewing looks rather more acute and the margin of the hindwing more irregular, with a more pronounced sinus between the radials.

**S. actiosaria** *Walk.* (23 c). Not much attention has yet been paid to this somewhat unattractive species *actiosaria.* and its nearest relatives; probably little progress can be made in our knowledge of them until they have been bred, or at least subjected to careful anatomical studies. Antennal ciliation of the ♂ about as long as diameter of shaft; hindtibia rather long, with a long, dark pencil from base and a further tuft posteriorly, partly concealing the very short tarsus. Vertex about the colour of thorax, collar more brown. Wings somewhat glossy, both with termen almost smooth, though the hindwing shows extremely weak sinuosities; areole small, all the subcostals stalked well beyond it. Colour light brownish, generally with an inclination towards light pinkish cinnamon; irroration inconspicuous, cell-dots small but generally sharp; lines and shades moderate or rather weak, the postmedian of the forewing sometimes a little blacker at costa, sometimes marked with fairly strong (though very small) vein-dots throughout; fringes with minute though distinct dots proximally, opposite the vein-ends. Ceylon (loc. typ.), apparently widely distributed in India, Burma, Malaya, Borneo, Java and Bali and believed to reach parts of China and probably Formosa (see above); perhaps also Celebes and Saleyer. — ab. **rasa** *Warr.* is extremely glossy and weakly marked, excepting the cell-dots; the lines faintly *rasa.* visible in certain lights. As its gloss (with a slightly violaceous tone) is induced by a copious overlay of iridescent light-bluish scales and the few known specimens are in very perfect condition, it is quite possible that breeding will show that this is actually the typical form. Khasis (type) and probably Darjiling and (?) Ceylon. — ab. **squamipunctata** *Warr.*, from Mt. Ardjoeno, Java, is small and weakly marked, but I do not think it *squamipunctata.* needs a separate name; perhaps it is like the following aberration (?), which I have not been able to compare side by side. — ab. (?) **renunciata** *Walk.*, a ♀ from Sarawak, is probably nothing but another rather small *renunciata.* *actiosaria*, the fringe-dots weak, the underside more poorly marked than in the type; but perhaps the postmedian line is somewhat more distally placed than usual.

**S. damnata** *Walk.* (= *indotaria* *Walk.*), also from Sarawak (both the types ♂, in poor condition), may *damnata.* also belong to *actiosaria* but is more doubtful. The antennal ciliation looks somewhat longer and the hindleg less heavily clothed. Markings weak, the postmedian line the most noticeable, cell-dots and terminal dots present.

**S. rubellata** *Warr.* (23 c). Very close to *actiosaria*, but I think it has the femorotibial hair-pencil still *rubellata.* longer; HAMPSON sinks it to *ptyonoptera*, but the midtibia of the ♂ is not hairy. Colour nearly as in *profanaria*, distal area always sufficiently suffused to bring out sharply the pale, highly sinuous subterminal line; the proximal shading of this line is often bandlike, so as to recall *delicatula*. Khasis.

**S. semisericea** *Warr.* (23 c) seems only to differ from *actiosaria* in its relatively shorter wings, pale colour and stronger gloss. Described from the Khasis; examples from Sikkim and the Kachin Hills which I refer here show scarcely a trace of fringe-dots, but are not very fresh. *semisericea.*

**S. comparanda** *Warr.* (23 c) is also nearly related to *actiosaria*, of which HAMPSON considered it a colour-form. Tone more as in *semisericea*, from which WARREN differentiates it chiefly by the hindtibial pencil of *comparanda.*

- the ♂, which is wholly ochreous, not (as in *semisericea* and *actiosaria*) largely mixed with fuscous. Lines rather thick, both the ante- and the postmedian of the forewing darkened at costa and hindmargin. WARREN further notes that the terminal dots are placed on the wing-margin, not, as in most *Sterrha*, on the fringe close to its base; strictly speaking, they encroach slightly on to the base of the fringe, but the differentiation is interesting and valuable. Ceylon. — **trettesensis** *subsp. nov.* Less glossy, with increased (though minute) dark irroration; lines moderate to rather strong, the postmedian slightly angulated outward at 1st radial and sinuate between the radials. Trettes, E. Java, 3000 feet, May 1932 (J. P. A. KALIS), 4 ♂♂, 1 ♀ in the Tring Museum. Possibly a separate species. — **neanica** *subsp. nov.* (23 c). Also less glossy than the name-type, but in addition so different in colour that it may well be another species; the ♀ (here figured) is perhaps even more reddish than *profanaria* and *rubellata* and the ♂♂, although not quite so extreme, approach that tone. The abdominal margin of the hindwing is perhaps a little less elongate than in *c. comparanda*. North Borneo: Tenom (E. WAHR), 2 ♂♂, 1 ♀ in the Tring Museum. — Single specimens of *comparanda* (sens. lat.) from Sambawa and Luzon, both discoloured or worn, show that the assemblage has a wider range, but are not fit for describing.
- phoenicoglauca*. **S. phoenicoglauca** *Hmps.*, a ♀ from Maskeliya, Ceylon, looks like an almost melanic aberration of one of this group, rather dark brownish drab, only the distal margin and fringes and a slight subterminal line pale; fringe-dots placed as in *actiosaria*, otherwise the shape and the strong gloss would make one think of *comparanda*.
- themeropis*. **S. themeropis** *West* (23 d). Colouring about as in *actiosaria* or slightly less yellow-brownish (more grey-brown), more sharply marked, both above and beneath. Apparently variable; median line slender, postmedian slightly curved and subrenulate, in the unique type (a ♀ from Haight's Place, Pauai, Benguet, Luzon) developed into a very narrow band, appreciably pale-edged distally. — **ethima** *form. nov.* (22 m) is the ordinary form from the type locality, large, with the lines almost equal in expression, subterminal shades appreciable. The ♂ hindleg seems still more heavily tufted than that of *actiosaria*. As it is not absolutely certain that it is conspecific with WEST's type, I have given it a name which it can in any case retain. Type series in the Tring Museum. — **obrepta** *subsp. nov.* As large as *ethima* and with the same hindleg structure and broadish forewing, but with more of the brown tone of *actiosaria*; cell-dots relatively large. Postmedian line generally the strongest, but a rare aberration has a strong median line, recalling that of *obliquilinea*. Kinabalu, recorded by me as *themeropis*.
- indeprensa*. **S. indeprensa** *Prout* (23 d). Ciliation of antenna about as in the *actiosaria* group. Hindtibia of the ♂ dilated, with strong, pale hair-pencils, the tarsus minute. Forewing with termen straightish; areole moderate, the 1st subcostal stalked just beyond it; hindwing strongly convex, rather prominent about the 3rd radial and 1st median. The pale ground-colour mostly with greyer suffusion, the band between median and postmedian remaining clear; distal area relatively dark, suggesting that of *palniensis*. Underside of forewing with the contrasts still stronger. Darjiling, not uncommon.
- palniensis*. **S. palniensis** *Prout* (23 d). Hindleg of ♂ not unlike that of *indeprensa*; antenna with the joints triangularly projecting, ciliation nearly 2. A greyer, rougher-looking insect, occasionally more brownish. Palni Hills.
- marmorata*. **S. marmorata** *Hmps.* (23 d) more recalls, in its mottled wings and the shape of the subterminal line, a rather long-winged member of the *eburnata* group of the Palaearctic and African Regions, but has a somewhat smoother wing-texture and a much specialized hindleg; the tarsus is modified into a (stridulating ?) process, with the tibial pencils on two sides of it. Described from Cuddapah; since received from Pusa and from Mughal Sarai, Benares. Probably rather strongly variable.
- acquisinuata*. **S. acquisinuata** *Warr.* (23 d). Another strongly glossy species; easily distinguished by the conspicuous strengthening of the subterminal shading at the hindmargin, where it forms a dark spot, followed by a smaller one at the termen; the lines on the forewing arise from dark costal marks. Costal edge of forewing and a great part of the fringes (both wings) more tinged with ochreous. Structure about as in *actiosaria*. Khasis; once or twice also in Bhotan and N. Burma.
- decidua*. **S. decidua** *Warr.* (= *holosericeata* *Butl.*, err. det.) (Suppl.-Vol. 4, pl. 6 e). Similar to the Palaearctic *biselata extincta*, but smaller and with the hair-pencil of the ♂ hindtibia a good deal less strongly developed, brighter ochreous. Colour lighter, with scarcely any dark irroration, markings weak, excepting the cell-dots; even the dots at the base of the fringes very small and weak. N. W. Himalayas, the type from Dharmasala.
- denudaria*. **S. denudaria** *Prout* (= *nudaria* *Püng.*, err. det.) (Suppl.-Vol. 4, pl. 6 e). Somewhat narrower-winged than *decidua*; whitish ochreous, the cell-dots and dots at base of fringe very small or wanting, lines very slender, commonly obsolete, in which case the wings are almost unicolorous, only the forewing with the costal margin more definitely ochreous. Leg-structure much as in *decidua*. Distributed in China, the types from Ningpo. Possibly a race of *decidua*.

*S. biselata* Hufn. (Vol. 4, pl. 4 f) **extincta** Styr. This widely distributed race, which is noticed in Vol. 4, *extincta*, p. 127, was described from Amurland and is chiefly Palaearctic (Japan, Corea, N. China, etc.), but is known from some localities in Szechuan. Less small than *decidua* and *denudaria* the species is further known by the densely tufted hindfemur and tibia of the ♂, most of the hair pale in colour; antennal ciliation rather short. The *extincta* form differs from the name-type in lacking the dark subterminal shades.

**S. invalida** Butl. (Vol. 4, pl. 3 h, as *invalidaria*). Range similar to that of *extincta*, but not yet definitely *invalida*, known from Manchuria; the type came from Japan. More brownish than *biselata*, the markings rather weak; antennal ciliation of the ♂ perhaps a little longer, outer tuft of ♂ hindtibia not quite so strong, femoro-tibial apparently longer than in *biselata*. — ab. **lauta** Warr. Lines on both wings strengthened by black vein-dots, *lauta*, dots on fringe also stronger than in the type. — ab. (?) **infuscata** Sterneck. Distinguished by the presence of *infuscata*, a strong dark subterminal shade, which reaches almost to the postmedian line; fringe-dots sharply black. Corresponds to typical *biselata*, while the name-type of *invalida* corresponds rather to *extincta*. Omihien (W. China) and Pekin are the recorded localities of the form.

**S. exempta** Warr. (23 d). Founded on a ♀ from Angabunga River, the ♂ later brought from Biagi, *exempta*. Belongs perhaps to the same group as *gravipes* (genus *Argyroscelia* of WARREN), but is smaller, brighter and with other obvious differences, particularly the whitish band between median and postmedian; probably near *elaphrodes*. Midleg of the ♂ simple; hindleg with a very large and dense femoro-tibial pencil and with further tufts at the end of the tibia, the tarsus quite short.

**S. elaphrodes** Turn. (23 d). A diminutive species, otherwise very similar to several of the foregoing, *elaphrodes*. ♂ ciliation about as long as diameter of shaft; hindtibia moderately long, clothed above with hairs, ending in an apical tuft, femoro-tibial pencil long, tarsus about  $\frac{1}{2}$ . Dots on fringe at vein-ends developed. North Queensland.

**S. elachista** Turn. Near *elaphrodes* or still smaller (12 to 13 mm). Easily distinguished by the ♂ antenna, *elachista*, which has fascicles of long cilia, about 3 times diameter of shaft. Hindleg of ♂ very short, tibia longer than femur, slightly thickened with scales on upperside, tarsus  $\frac{1}{3}$ . Markings weak and slender; antemedian line wanting, only represented by a dot at  $\frac{1}{3}$  costa; postmedian arising from a similar dot at  $\frac{2}{3}$ . North Australia: Darwin.

**S. sublactifera** Warr. (23 d). Midtibia simple, ♂ hindtibia enormously tufted; hindwing beneath, *sublactifera*, especially in the ♂, with specialized glaucous-whitish scaling nearly throughout, little or no hair-scaling. Only known from Rossel Island.

**S. gravipes** Warr. (23 e). The type of the "genus" *Argyroscelia* Warr., "distinguished by the armature *gravipes*, of the hindlegs of the ♂; these have a very large and dense tuft of hair from the femoro-tibial joint as long as the tibia itself; the tarsus and tibia are externally fringed with long hairs and internally clothed with smooth, very glossy silvery scaling, the end of the tibia bearing a flap-like process, which is capable of lateral expansion." A little larger and more greyish brown than *sublactifera*, postmedian straighter between the radials, dots on fringes (in *sublactifera* on termen), hindwing beneath less white. Biagi.

**S. bipartita** Warr. (23 e). Very distinct in the conspicuous, straight red-brown median line, which on *bipartita*, the forewing touches the black cell-dot. Although the originals are 3 ♀♀ (not "1 ♂, 2 ♀♀", as published) I assume it has similar structure to *gravipes*. Angabunga River, British New Guinea.

**S. carnearia** Warr. (= *carneola* Warr.) (23 e). This and the 3 following forms are more flesh-coloured *carnearia*, than the *actiosaria* group, with which they agree in general in having all the subcostals stalked considerably beyond the areole. Forewing somewhat broader, cell-marks not black. *carnearia* is a relatively rather large species and recognizable by the ventricose termen of the ♂ hindwing. Antennal ciliation in the ♂ extremely short; hindtibia long, heavy, thickened distally, tarsus extremely short. Described from Borneo, recorded also from Penang, Langkawi and Mindanao; Tring Museum has 1 ♂ from Sangir and has recently received a long series from W. Bali.

**S. perspersata** Warr., a ♀ from Oinanisa, Dutch Timor, is probably merely a local form, or even a synonym, *perspersata*, of *uniformis*; no further material has been received from that source. The dark irroration is perhaps denser than in typical *uniformis* and *rufula*.

**S. uniformis** Warr. (23 e). Also founded upon a ♀ and, as this is in poor condition, possibly I have *uniformis*, not formed a correct conception of it. It seems to be definitely less rufous (paler greyish fleshy) than *rufula* and (equally with *perspersata*) to have the lines extremely weak. Mackay, Queensland; our figured ♂, from the same locality, perhaps confirms the colour, but is much rubbed.

- rufula*. **S. rufula** Warr. (23 e). This name, erected in 1899, will perhaps sink to *uniformis* (1896), but until the status of this latter is placed on a surer foundation. I prefer to conserve the safer name. Perhaps on the whole more cinnamon than the preceding forms, and with the irroration and the lines rufescent; lines fairly well developed. Underside ochreous-fleshy, without markings. The ♂, which is rarer in collections than the ♀, has the antennal ciliation less short than in the larger *carnearia* (about 1); hindwing not ventricose. Solomons (the type from Tulagi), New Guinea and its islands, the Kei Islands, Fiji and perhaps Buru. The ♀♀ which I have recorded from Samoa and the New Hebrides now seem to me more likely to be ♂-forms of *rhipistis* (section *Pythodora*).
- scintillans*. **S. scintillans** Warr. (23 e). Expanse 15 mm. Antenna "sharply but minutely serrate"; hindleg extremely short, the tibia thickened. Ochreous, with a rufous tinge, costal edge reddened; the lines differentiated by the absence of the rufous irroration, the postmedian arising from a pale spot; terminal line darker. Named from the glistening upperside. Queensland: Coomoboolaroo, Dawson district, 1 ♂, September 1890. A second ♂ is only labelled "Queensland". Related forms perhaps occur in Dutch New Guinea and Vulcan Island.
- mitlphrica*. **S. mitlphrica** Turn. (23 e). The copious sprinkling of metallic silvery scales on the grey ground and the thick, sinuous orange-cinnamon lines render this an unmistakable species although the ♂ is still unknown. Port Darwin.
- scaura*. **S. scaura** Turn. is unknown to me, but is said to be "near *eretmopus* but greyer, the ♂ hindtibia similar, but the tarsus much smaller and not dilated into paddle-shaped organs". Expanse 18 mm. Cilia of ♂ antenna  $1\frac{1}{4}$ . Forewing rather narrow, the lines faintly darker, dentate, minutely dark-dotted, pale-edged distally; hindwing with termen rounded. Herberton, North Queensland.
- eretmopus*. **S. eretmopus** Turn. (23 e). Expanse 15—18 mm. More whitish than *scaura*, ♂ ciliation shorter; closely similar to *philocosma* but readily distinguished by the remarkable hindleg of the ♂ — tibia short and stout, with a large dense tuft of very long hairs springing from inner side of base, tarsus broadly flattened and paddle-shaped. I have only seen the ♀. Queensland, in several localities.
- perdulcis*. **S. perdulcis** Turn. "♀, 20 mm. Forewing costa straight to near apex, termen slightly curved, moderately oblique; grey-whitish, a fine, wavy, outwardly oblique fuscous-brown line from  $\frac{1}{4}$  hindmargin reaching half across disc; a fuscous-brown subterminal line, broadly suffused in disc, three times sinuate, with angular slight projections distally; a moderately broad terminal grey suffusion." Hindwing rounded, terminal suffusion broad, the band median, with two angular projections. Dalby, Queensland, only the type known. I have not seen it; the pattern seems to have much in common with *Dithalama cosmospila*.
- methaemaria*. **S. methaemaria** Hmps., founded on a rubbed ♀ from Sikkim, has the termen of the forewing less curved and with tornus less rounded than in *gemmaria*, the outer band less broad and less irregular (though sinuous), continued to the costa, the hindwing coloured more as in *lacteipennis*, with only a narrow band just beyond the cell-dot remaining clear yellowish. A second ♀ comes from Hu-pe and a ♂ from Formosa.
- lamprotis*. **S. lamprotis** Prout (23 e). ♂ unknown. The strongly glossy wings and their general scheme of coloration and markings recall *Lipomelia* or still more some South American *Acratodes* or *Crypsityla*, but the generic affinities can scarcely be questioned. Moderately robust, smooth-margined, areole ample, 1st subcostal and 5th both arising close to its apex; hindwing with 2nd subcostal stalked to about  $\frac{1}{2}$  its length. Htawgaw, Kachin Hills, 1 ♀.
- lacteipennis*. **S. lacteipennis** Butl. (23 e). Antennal ciliation of the ♂ not long; hindtibia short, slightly swollen and tufted; tarsus quite short ( $\frac{1}{2}$  or less). Forewing somewhat elongate, very pale buff, with a small cell-dot and an incomplete, sinuous dark red-brown postmedian, accompanied distally by a diffuse band-like shade. Hindwing with a similar but more complete postmedian, which leaves free little of the ground-colour except centrally. Dharmasala (type) and Simla.
- gemmaria*. **S. gemmaria** Hmps. (23 f). Another pretty *Sterrha*, only known to me in a small series from Ceylon (including the type) and 1 ♂ from Madras. The areole is very small, though apparently always present (all the subcostals stalked beyond it), and recent investigations have convinced me that it should have been placed close to *egenaria*, perhaps hardly more than a race. Half-band of forewing rather broad, more proximally placed than in that, violet-mixed centrally, somewhat dark-mixed distally, with a sharp projection between the medians. Band of hindwing broad, its anterior half darkened distally.
- sarcozona*. **S. sarcozona** sp. n. Expanse 16 mm. Forewing somewhat less elongate than in *gemmaria*, areole larger; ground-colour about as in that of *lacteipennis*, markings more fleshy-tinged; a slender sinuous antemedian line from cell to hindmargin; median line faint anteriorly, stronger from about the base of 1st median vein to hind-

margin; postmedian traceable almost to costa, excurved between 3rd radial and 2nd median, incurved behind, reaching hindmargin rather near tornus; area between these two lines, from the radials hindward, bandlike though not quite solid (somewhat mixed with the ground-colour); some faint subterminal shading; cell-dot blacker. Hindwing with termen rounded; only the basal area, subterminal and terminal lines and fringe remaining of the ground-colour, the rest fleshcolour, in part pale-irrorated. Underside pale, with the dark part faintly indicated. Antenna of the ♂ serrate, ciliation moderate; hindleg rather weak, the tibia elongate and somewhat heavily clothed, the tarsus very short. Dutch New Guinea: Mt. Goliath, 5000 feet, February 1911 (A. S. MEEK), the type ♂, in fair condition; Oetakwa River, 3000 feet, January 1913 (A. F. R. WOLLASTON), a ♀, rubbed and with the hindwings torn; both in the Tring Museum.

**S. ocnera** Prout (23 f). Superficially similar to *vacillata* (23 g), the purple tint of the borders duller, *ocnera*. the body somewhat dark. Hindleg of the ♂ short, with long hair-like scaling but without the heavy tufts of *vacillata*. Venation the same. Terminal band of forewing without the acute proximal projection. Hindwing of the ♂ without the rough hairy clothing of *vacillata*. Some aberrations have the terminal borders more or less narrowed, sometimes recalling those of *impexa* and *paraula*. Only known from the Kachin Hills.

**S. proximaria** Leech (Vol. 4, pl. 7 c). Similar to *craspedota* (23 h) but generally larger, forewing always *proximaria*. with a well developed cell-dot; in any case easily distinguishable by the venation, as *craspedota* lacks the areole, which is developed in *proximaria*. Hindtarsus of the ♂ laterally compressed, clothed on the outside with specialized grey scaling. Not rare in Szechuan.

**S. coercita** T. P. Luc. (23 f). Hindleg of ♂ formed much as in *proximaria*. Much narrower-winged, the *coercita*. ♂ hindwing with termen sinuate, tornus somewhat produced and on the underside with a dense patch of specialized scaling; the greyish-drab ground-colour in this sex is almost uniform, the pale lines very slender or almost obsolete. The ♀ is, according to Dr. TURNER, an elegant insect, of more normal shape, paler (grey-whitish faintly purplish-tinged) with costa more purple, the 3 pale lines well developed, edged with grey distally, the terminal line purple-grey, the fringe brown-reddish. Brisbane district and reaching northward to Kuranda, N. Q. Should evidently be placed with the *simplex* group (see below) in spite of the different shape.

**S. eucrossa** Turn. "♀, 26 mm. Head whitish, fillet and face dark fuscous. Forewing costa straight to *eucrossa*.  $\frac{3}{4}$ , thence arched, termen slightly rounded, moderately oblique, finely crenulate; whitish with scanty grey irroration becoming fuscous towards base; a grey discal dot, 3 slender faint crenulate lines, 2nd and 3rd approximated, curved, subterminal; termen faintly purple-tinged; cilia with a dark fuscous basal line. Hindwing strongly rounded. The curious margins of the wings are distinctive. Katherine, N. Australia in July."

**S. protensa** Butl. (Vol. 4, pl. 7 c). Smaller than *proximaria*, termen of forewing more sinuous, of hind- *protensa*. wing bent in the middle; terminal dark line less developed but with proximal projections at radials and tornus; postmedian line much stronger. Vertex white. Hindtibia of ♂ longer than femur, clothed with partly expansile hair, tarsus short, its 1st joint slightly thickened. Dharmasala (type) to Assam. I do not know the Ta-tsien-lu species which STERNECK has referred tentatively to *protensa* and of which he has discussed some venational anomalies in his only specimen (a ♀); it should be recognizable from his circumstantial description and the reader should refer to Iris, Vol. 41, p. 167—169 and fig. 6 and 7.

**S. castelli** Prout (23 f). Similar to *protensa* but duller. Hindtibia of ♂ slightly swollen, especially *castelli*. posteriorly (where it is clothed with a hair-tuft much as in that species), tarsus over  $\frac{1}{2}$ , the long femoro-tibial pencil reaching well beyond its middle. Forewing with termen somewhat less sinuous than in *protensa*, almost straight; colour more tinged with fleshy or rufous, dulled by strong irroration; terminal line weaker, slender, in the ♂ partly obsolescent; fringe paler. Hindwing with termen irregularly sinuous, median shade strongly angled behind cell-dot. Kachin Hills. Also a pretty typical ♀, in the British Museum, from Sikkim (F. MÖLLER). — **pertensa** form. nov. (23 f), perhaps the predominant ♀-form about Darjiling (possibly yet another species), *pertensa*. is distinguished chiefly by its rather larger size, brighter brown colour (and less irrorated, rather recalling that of *acuminata*); median shade of hindwing almost straight. Type ♀ in the Tring Museum, labelled Sikkim. 25. 4. 89 (J. G. PILCHER). The ♂♂ which probably belong to it look paler but are worn and seem to have slightly longer antennal ciliation than the type ♂ of *castelli*.

**S. falcipennis** Warr. (23 f). Easily known among the falcate-winged *Sterrha* by its dusky grey-brown *falcipennis*. tone and conspicuous white subterminal; the ordinary dark lines of the generic pattern, not shown in our figure, are also traceable, though they can be quite indistinct. Of the typical, N. E. Himalayan *falcipennis* (Sikkim to N. Burma) I know only ♀♀; a ♂ from "Calcutta"; which is accepted as belonging here, has the antennal ciliation rather short, even, hindtibia longish, dilated, tarsus quite short.

**S. persimilis** Warr. (23 f). WARREN does not specify to what species he considers this "very similar". *persimilis*. Its postmedian is much straighter than in *acuminata* and farther from the termen, a dark patch developed in

the distal area between 3rd radial and 2nd median, the cell-dot small and concise, and the wing-shape itself is not so extreme. The ♂ is not certainly known, but a worn one which probably represents it has hair-pencils from the tibia extending for a distance along the tarsus. Khasis (type) to N. W. India.

- acuminata*. **S. acuminata** Moore should perhaps have been brought into immediate juxtaposition with *castelli*: the colour is somewhat brighter brown and the falcation of the forewing — especially in the type ♀ — is somewhat more extreme, the hindwing not sinuate between the radials; transverse lines weak or almost obsolete; the terminal line forms an irregularly broadened dark shade, instead of being connected with the postmedian by two longitudinal patches. Darjiling, type ♀, expanding 23 mm. — form. (?) **actiuncula** nov. (23 f) is smaller (ca. 20 mm), less glossy, apex of forewing somewhat less produced, dark borders less broad, postmedian line posteriorly less irregular; vertex perhaps more whitish. Khasis (type ♂ in the Tring Museum) to Htawgaw, Kachin Hills; possibly a separate species. ♂ hindleg much as in *castelli*.
- rubridentata*. **S. rubridentata** Warr. (23 f) combines the shape (almost) of *acuminata* with the gay colouring of *flavisinuata* or of *Chrysoerapeda*. The short hindtarsus of the ♂ separates it structurally from *flavisinuata*; further, the marginal yellow extends round the apex and the distal part of the costa. All the subcostals are stalked beyond the areole, which is often small. Khasis. — ♀-form, **saturata** nov. Colour dull purple-grey (little brighter than the "dark vinaceous-grey" of RIDGWAY) instead of the far more pink hue of the typical forms. 1 ♀ from Htawgaw (Upper Burma), in my collection; the only *rubridentata* yet known from the district, but I do not anticipate that it will prove to be a race.
- ruptifascia*. **S. ruptifascia** Warr. (23 g). Deviates from all the foregoing "*Janarda*" (falcate-winged *Sterrha*) in the oblique, irregular pale fascia which, after running between the median and postmedian lines, turns outward to the termen along the costa. Khasis; WARREN says "several" but I know only the type ♀ and, in the British Museum, 1 ♀ from Sikkim.
- carneofasciata*. **S. carneofasciata** Warr. Narrower-winged than *lineata* Hmps., to which it bears some resemblance. postmedian more sinuous, hindwing with termen more concave between the radials, more prominent at 3rd radial to 1st median. Mt. Ardjoeno, E. Java, the type ♀ unique.
- alopecodes*. **S. alopecodes** Meyr. (23 l), founded on 1 ♀ taken at Geraldton, West Australia in November, was unknown to TURNER, but I am now able to figure the type. Expanse almost 16 mm. Head ochreous on crown, fillet broadly ochreous-white. Forewing almost sufficiently narrow and pointed for a "*Janarda*", though not actually falcate: whitish-ochreous, mixed with dirty ochreous; median line straightish, indistinct; postmedian well defined, almost straight, rather distally placed; a very indistinct dark subterminal shade; an interrupted terminal line. Hindwing narrow, apex broadly rounded, termen thereafter almost straight as far as an obtuse bend at the 1st median, the hind part of termen cut away so that it almost seems to become part of the abdominal margin: pale whitish ochreous, distally with some fuscous irroration; lines indistinct, parallel with margin.
- violacea*. **S. violacea** Hmps. (23 g). The type of a genus *Andragrupos*, since abandoned. Its chief distinction is the curious contorted and pointed flap which in the ♂ represents the outer part of the extremely short hindmargin and the end of the excessively oblique termen. There are perhaps several races: in the type, from the Nilgiris, the "flap" is acute and somewhat darkened, in the Sikkim specimens which I have seen blunter and more rufescent; in the Khasis there occurs a large form (here figured). Also recorded from Tonkin and Hainan and recently received from E. Java. The colour of the dark border varies from reddish or vinous to greyish brown, the latter colour belonging chiefly to ♀ forms.
- diphyes*. **S. diphyes** Prout (23 g). Evidently a specialized development of *swinhoei* (22 b). Antenna of ♂ dentate, fascicles of cilia well exceeding diameter of shaft; hindtibia rather short, broad and flattened, partly hollowed, with projecting scale-tuft. Forewing rather broad in the ♂, narrower in the ♀; hindwing in the ♂ with a fringe of long buff hair from the proximal part of the costal margin extending obliquely across the broadened pale hind area of the underside of the forewing (on the middle of which stands a rough patch of bright buff specialized scaling), abdominal area folded and fringed. ♀ darker, with hindwing concolorous throughout with forewing. Luzon.
- amplipennis*. **S. amplipennis** Butl. (Vol. 4, pl. 7 c). Forewing of the ♂ extraordinary broad, on account of the development of an enormous lobe on the hindmargin; termen in consequence somewhat sinuous, but very little oblique. More ochreous than *proximaria* and *protensa*; dark distal shading little noticeable in the ♂, more so in the ♀ but more diffused than in those species. Both sexes with the hindwing less strongly convex than in *protensa*. Dharmasala, only one of each sex yet known.

**S. thricophora** *Hmps.* (23 l). Also characterized by the ♂ forewing; this has "a small patch of long *thricophora*, hair on inner margin below, just beyond the middle, and long cilia on the outer half of the inner margin. Hind-tibia with a reddish tuft at the end, forming a cavity facing the tarsus and covered by the long pale femoro-tibial pencil." Shape distinctive; markings extremely weak. Bernardmyo, Burma (♂ type) and E. Pegu (1 ♂); no others known.

**S. vacillata** *Walk.* (= *phoenicozona* *Hmps.*) (23 g). Easily known by the cloudy median band and the *vacillata*, shape of the dark borders. Hindwing of ♂ hairy beneath, midtibia with the inner spur very long, hindleg enormously tufted. Borneo (loc. typ.), the Malay Peninsula and from Sikkin to Tonkin.

**S. velutina** *Warr.* (23 g) may be placed about here on account of the hairy underside of the ♂ hindwing: *velutina*, this hair is strongest on the (ample) abdominal region and the fringe is, on this margin, very long and specialized. The hindtibial pencils are partly pale, partly blackish, the tarsus quite short, slightly hairy. As will be seen from our figure of a topotypical ♀, no tangible distinction can be found in the markings from the palest, shortest-winged *actiosaria*: WARREN, indeed, labelled the ♀ as such. Batjan (loc. typ.) and Amboina. — **vulcani** *subsp. vulcani*, *nov.* is a dwarfed form (15—16 mm), with the hair on the hindwing beneath rather less highly developed, but I can see no further distinction unless the "blackish" hindtibial hair is less dark (shining lead-grey); the type ♂ shows the postmedian line of the forewing strengthened at the hindmargin and there unusually oblique, but this is not noticeable in other examples. Vulcan I., 5 ♂♂, 1 ♀, in the Tring Museum.

**S. simplex** *Warr.* (23 g). Smaller than *coercita*, the ♂ darker, with slender hindtarsus. Easily known *simplex*, by the short costal and long, slightly concave abdominal margin of the hindwing, and the coarse dark tufting of the ♂ tornus. Hindleg of ♂ short, with strong hair-pencil, tarsus about  $\frac{1}{3}$  tibia. The ♂ sometimes has the buff markings very weak. The ♀ is paler, with dark lines edging the (here indistinct) pale markings; it is apparently dimorphic, though not quite sharply so: one form (including all the 9 which are known from Sudest and the 2 from the Hydrographer Mountains) is more purple-grey, with the lines not outstandingly strong; the other paler, of a more fleshy tone, with the lines moderate (ROSSEL) or strong (the 2 Kumusi River ♀♀ of *s. lividula* and the majority of the 6 from Upper Aroa River); thus I cannot correlate them definitely with the ♂♂ of the assumed races. The ♂♂ of *s. simplex* have the termen of the hindwing appreciably convex. Louisi-des, the type from S u d e s t I. — **lividula** *Warr.* (23 g ♂, ♀). On an average a little larger, the apex of the ♂ *lividula*, forewing slightly more produced, the termen of its hindwing straight or almost. New Guinea, the type series from Upper Aroa River. Some outliers (Dampier and Vulcan Islands and New Hanover) are too few or too poor to be dealt with at present. — **liparota** *Turn.*, only known to me from TURNER'S description, a coloured *liparota*, figure of his type ♂ and a ♂ in very poor condition, is clearly a form of the present species and as the termen of the hindwing is "rounded", with the projection at the tornus "slight", it should perhaps be sunk to *s. simplex*, though the expanse is as in average *lividula*. Kuranda, N. Queensland. The rounded hindwing is perhaps exaggerated in the drawing which I have mentioned; it is extremely unlikely that there are two closely similar species at Kuranda and the given measurements (♂ ciliation 1; hindtarsus slender,  $\frac{1}{3}$ ) agree with *simplex*.

**S. informis** *Warr.* (= *insuavis* *Hmps.*, nec *Bull.*) (23 g). This and the next few species have the ♂ much *informis*, less dark grey than *simplex*, the termen of the hindwing more or less strongly produced about the 3rd radial and 1st median. They are obviously near relatives of *remissa* *Wileman* and its neighbours, but are placed here on account of the specialization of the ♂ hindwing. This consists, in *informis* (the type of a "genus" *Strophoptila* *Warr.*), in a folding of the abdominal margin beneath, from which arises a quantity of spreading hair. Khasis (type) and Sikkin, variable in size. — **sinuata** *Wilem. & Stb.* (23 l), a very large ♀ from Rantaizan, Formosa, *sinuata*, is probably a local form, or even a synonym, of *informis*; rather dark, the median pale line rather strong and straightish.

**S. insuavis** *Bull.* is also founded on a unique ♀ and this I formerly (Vol. 4, p. 123) regarded as a form *insuavis*, of *auricruda*, erroneously sinking to it *remissa* *Wileman*; HAMPSON treats it as the same as *informis*, which is more feasible, but at present seems too unsatisfying. The specimen is fairly large and broad-winged, washed-out looking, with the pale lines very slender; not yet matched. Dharmasala. Smaller and rather narrower-winged ♀♀ from Sabathu may belong to it, but are more likely ♀♀ of *triangularis*.

**S. triangularis** *Hmps.* (23 h) has the pale colour of the group with which I have placed it, but reverts *triangularis*, in the shape of the ♂ hindwing, to the triangular form, even more produced at tornus than in *simplex*; under-side of ♂ hindwing with specialized glittering scaling which becomes strong and dense towards the tornus; fringe of upperside similarly specialized. ♀ generally with pale bands. Assam, N. W. India, Malaya, E. Java, Bali, probably also Tonkin and Siam. — **glabripennis** *Warr.*, single specimens from Java (type) and Pulo Laut, *glabripennis*.

is probably nothing more than an aberration of *triangularis* ♀, virtually unicolorous; possibly, however, the ♀ to *deleta*.

- deleta.* **S. deleta** *Wileman*, only known in 2 not very fresh ♂♂, is very close to unmarked *triangularis*, with the same glittering scaling beneath and on the fringes, but with the hindwing less produced to tornus. here apparently less tufted. Formosa: Kanshirei (type) and Taiko.
- phoenicoptera.* **S. phoenicoptera** *Hmps.* Areole very small. Hindwing of the ♂ even more acutely produced posteriorly than in *triangularis*, termen from 1st radial hindward folded over beneath. Coloration more reddish. Ceylon (loc. typ.) and Bombay. Hindleg not quite so heavily clothed as in *opsitelea*. The name-typical race has the pale bands quite narrow. — **tuita** *subsp. nov.* (23 h) has the bands broader, the outer one, at least, almost twice as broad as in *ph. phoenicoptera*. Kuala Lumpur (H. M. PENDLEBURY), both sexes taken at light, besides 1 ♂ on Bukit Kutu. 3500 feet; type in the British Museum. A similar ♂ in the Tring Museum from Trettes, E. Java.
- opsitelea.* **S. opsitelea** *Prout* (23 h). Hindleg of ♂ very heavily tufted, tarsus weak, curved. Colour somewhat variable, the ♀ paler, notably in a band between the median and postmedian lines, which is sharply contrasted with the band-like antemedian suffusion. The ♂ is coarsely scaled and less clearly marked, but with the 3 buff costal streaks more conspicuous: readily distinguished from *phoenicoptera* by the shape, the abdominal region of the hindwing folded, with a fringe of hair. Malay Peninsula: Kedah Peak. Subsequently taken in the Larut Hills, Perak. — **monodia** *subsp. nov.* is apparently a separable race, duller and more uniform in aspect and less variable, the dark antemedian band and costal commencement of postmedian less strongly developed. ♀♀ are not rare in the Khasis, but the only ♂ yet known (collected with 1 ♀) is from E. Pegu (DOHERTY); I therefore make this the type locality.
- ziczacata.* **S. ziczacata** *Warr.* (23 h). The type of a superfluous genus *Thysanotricha* *Warr.*, which was merely diagnosed thus: "The hindwing of the ♂ has the abdominal margin thickened and contorted, slightly swollen at middle; from near the base of the wing rises a pencil of hairs, contorted parallel to the margin, under the fold of which they are sometimes hidden." The midlegs are lost in the only known ♂ and will perhaps prove to be hairy (sect. *Xenocentris*); hindleg of ♂ slender, tarsus aborted, antenna with moderately long and even fascicles of cilia. A simple little white species, the 3 dark lines strengthened by vein-dots. Ysabel Island.
- purpurea.* **S. purpurea** *Hmps.* (23 h). the type of a "genus" *Lophophleps*, has approximately the coloration and pale bands of *triangularis* and numerous other *Sterrha*, but is unmistakable in the ♂ by reason of the posteriorly strongly lobed distal area of the forewing and the curled and roughly clothed apical region of the hindwing, which wing, in this sex only, has the costal vein anastomosing to near the end of the cell. The ♀ resembles a small dark *triangularis* ♀, but is somewhat rounder-winged; lines of forewing broadened costally. Known from Ceylon, India, Selangor and Formosa, the type from the Nilgiris.
- andamanica.* **S. andamanica** *sp. n.* (23 h). In the absence of the ♂, the position of this little species is somewhat uncertain, but I judge from its small size (ca. 17 mm) and dark colour that it is probably related to *purpurea* (very likely a race) rather than to *triangularis*; colour still deeper, outer band broader, pale spots close to termen developed. S. Andamans: Mt. Harriet, etc., at light, 4 ♀♀ in my collection and that of the Agricultural Research Institute. Pusa.
- trypheropa.* **S. trypheropa** *Meyr.* (♂ = *floccosa* *Pagenst.*, ♀ = *angustipennis* *Warr.*) (23 h ♂, ♀). Again a potential genotype. MEYRICK having proposed for it the name *Mnesterodes*, which has been adopted by TURNER. Hindwing of ♂ "with a large glandular swelling beneath in middle of disc and a long extensile pencil of hairs from base of costa above"; the forewing beneath has a glittering, scaleless area to accommodate this pencil. Midleg simple, hindtarsus of ♂ much shortened. Forewing with all the subcostals stalked beyond the areole. Sexual dimorphism strong. Apparently a much more extreme development from the *Cacorista* stock (see Vol. 16, p. 80, *S. amputata*). Distributed from N. Australia and Timor to the Bismarck group: the 3 named types respectively from Port Moresby, N. Queensland and New Britain.
- robusta.* **S. robusta** *Warr.* (23 l). ♂ antenna dentate, with long fascicles; midtibia somewhat hairy, hindtibia with strong, predominantly dark pencils, the tarsus much as in the *actiosaria* group or *carnearia*. The distal margin of the hindwing is rather strongly convex, though not ventricose as in *carnearia*. Seems to link that group with "Xenocentris", but is still little known: Philippines: Negros, only the type.
- trisetata.* **S. trisetata** *Prout* (Suppl.-Vol. 4, pl. 6 d). This and the following species (as far as *villitibia*) perhaps form a natural group (*Xenocentris* *Meyr.*), characterized by the hairy midleg of the ♂, often correlated with highly specialized scaling on the hindwing beneath. *trisetata*, which was described from Japan, suggests a miniature *biselata* *Hufn.* or *invalida* *Butl.* of the Palaearctic Region, but is slightly narrower-winged and with

the dark markings rather weak. It occurs also in E. China and Formosa; WILEMAN seems to have overlooked it as a small form of his *taiwana*.

**S. ptyonopoda** *Hmps.* (23 h). Closely similar to *biselata extincta* *Stgr.* (Vol. 4, p. 126), but the midtibia of the ♂ is strongly fringed with more or less vinaceous hair; tuft on hindtibia enormously developed, also largely vinaceous-tinged. Postmedian line weak, with slight vein-dots, the cell-dots strong. N. India (type from Bhotan), Perak, Pahang and possibly China.

**S. mimica** *Warr.* Unfortunately the type, a ♂ from Penungah, N. Borneo, is in wretched condition. Its antennal ciliation is very long, otherwise it looks very near *ptyonopoda* and *procrossa*, the costal margin of the forewing perhaps less leaden-tinged than in the former but less mixed with red than in the latter. A second ♂, from Mount Dulit, mentioned in the original description, is missing from the Tring Museum.

**S. procrossa** *Meyr.* MEYRICK, generally an excellent observer of structural characters, strangely overlooked the midlegs in his type ♂ and referred this to "*Eois*" (*Sterrha*) instead of to *Xenocentris*. It is smaller and relatively shorter-winged than typical *ptyonopoda*, the costal margin proximally more mixed with reddish, the midtibial hair perhaps less vinaceous; postmedian of forewing with a conspicuous dot at costa. Sumbawa. Single specimens from Java and Sumatra and perhaps even "Ceylon" (in Mus. Tring) agree essentially with it, though showing some small and unimportant deviations.

**S. sericeipennis** *Warr.* (= *subrubellata* *Warr.*, *subcolorata* *Prout*) (23 i). WARREN founded his *sericeipennis* on the ♀ (Fergusson Island), his *subrubella* on the ♂ (Milne Bay) and recognized their close relationship, but overlooked the strongly fringed midtibia in the latter. I therefore imagined that I had detected a new *Xenocentris* in a collection from Goodenough Island and created another absolute synonym. Underside with vinaceous suffusion on a great part of the forewing and on two ill-defined distal bands on the hindwing. New Guinea and the D'Entrecasteaux Islands.

**S. biagita** *Warr.* (23 i). Antennal ciliation moderate; midtibia with the hair strong, spurs very unequal, midtarsus long, its 1st joint not specialized. Coloration of *phoenicoptera*, but with broader pale costal streak, hindwing with termen well rounded, both wings with subterminal as conspicuous and nearly as broad as the postmedian, more zigzag. Biagi, British New Guinea, only the type ♂ known.

**S. pilosata** *Warr.* (= *epipasta* *Turn.*) (23 i): Midleg of ♂ with the elongate 1st joint of the tarsus, as well as the tibia, rather strongly fringed with hair; underside of hindwing also, in its posterior half, clothed in the ♂ with specialized hairy scaling, hindmarginal fringe very long. Markings generally weak or obsolescent, excepting the cell-dot, fringe-dots and postmedian line, the latter on the forewing generally well-marked throughout or at least at costa and hindmargin. Hindwing with termen more produced in the middle than in the following. Queensland (the type locality for both names) and New South Wales, also Mefor Island to the Bismarek Archipelago and apparently Guadalcanar (1 ♂ with midlegs lost).

**S. nanata** *Warr.* (= *incolorata* *Warr.*) (23 i). Smaller than *pilosata*, often more ochreous-tinged; markings more equally developed, including the subterminal shades, though in occasional aberrations one or another marking may be accentuated. Easily distinguished by the ♂ legs: midtibia with its inner spur exceptionally long, the hair very long and dense, midtarsus hairy nearly to its extremity, the hair very long on the 1st joint, gradually reducing; hindtibia with vinaceous hair. Tenimber Islands (*nanata*), Kei Islands (*incolorata*) and Tenimber; forms from Java and Bali scarcely differ. — ab. **taeniata** *Warr.*, from the Kei Islands, has the markings mostly feeble, the cell-dot unusually large, the proximal subterminal shade developed into a sinuous fuscous band. — **oenopus** *Lower* (= *meleta* *Turn.*, *MS.*) is certainly conspecific, perhaps not even racially separable, but seems to be on the whole more variegated, with a rather clear pale space between the median shade (which is at times broad) and the postmedian. The type came from Cooktown and the range is from Port Darwin to Queensland. — ab. **marginata** *nov.*, mentioned by TURNER as "ab. a", is analogous to *n. nanata* ab. *taeniata*, but has both the subterminal shades strongly darkened, so as to resemble, in miniature, the Palaearctic *biselata* ab. *fimbriolata* *Steph.* (Vol. 4, p. 127).

**S. zonata** *Prout* (= *fasciata* *Warr.*, nom. praeocc.) (23 i) is superficially very distinct from all the allied forms in the darkened median fascia, but as the structure seems to be like that of *nanata*, I shall not be surprised if it is found to be a large and striking aberration of that species. The only known specimens are ♂♂ from Rockhampton (type) and Kuranda, Queensland.

**S. fuscicosta** *Warr.* "16 mm. Forewing shining ochreous, brownish-tinged; the costa brown, containing 2 brown dots, indicating origin of inner and outer lines, which, as well as the others, can be just traced, wavy, across the wings; cell-dot brown, distinct; fringe with very minute brown dots at base. Hindwing with brown cell-dot, the lines hardly visible. Hair tufts of legs wholly ochreous, neither black (as in *velutina*) nor reddish

(as in *nanata*). The dark costa is distinctive. Teoor Island. The midleg is tufted, the tarsus very strong, its 1st joint long, its 2nd also strongly clothed -- probably also the 3rd and 4th: possibly another form of *nanata*.

*rhypidura*.

**S. rhypidura** *Meyr.* (23 i). The type ♂ came from Port Moresby and I have seen a ♂ from Sariba Island; Swinhoe erroneously sank to it *sericeipennis* and *subrubellata*. It is almost exactly like a diminutive *crinipes* (23 i) except that the ♂ genitalia are enormously developed, with spreading coremata. I quote the description. "14 mm. Forewing with costa almost straight, termen bowed, rather oblique; pale whitish-ochreous, suffusedly irrorated with pale crimson; lines represented by irregular series of blackish dots; a dark grey discal dot; faint traces of subterminal lines. Hindwing with termen rounded, first line obsolete, pale lines more distinctly indicated; an interrupted dark crimson-fuscous terminal line."

*crinipes*.

**S. crinipes** *Warr.* (= *catacoma* *Turn.*) (23 i) differs from all the previous "*Xenocentris*" (except *rhypidura*) in its reddish colour, combined with a "ploughshare-shaped" hindtarsus and very long antennal ciliation in the ♂. Misled by a lapsus (scarcely possibly an error of observation) of WARREN'S, TURNER assumed that there were two Queensland species involved here, which is definitely not the case; WARREN wrote that the "fore" tibia of the ♂ was densely hairy, a character which really belongs only to the middle tibia and proximal part of midtarsus. N. Queensland; also known from the Louisiades.

*rhopalopus*.

**S. rhopalopus** *Turn.* Hindleg similar to that of *crinipes* but ending in a large obtuse club (somewhat damaged in both the original specimens); in any case easily distinguishable by its much shorter ciliation (1) and its ochreous-whitish colour. 15-16 mm. "Forewing antemedian line from  $\frac{1}{3}$  costa bent inwards at a right angle in disc, and again at a right angle to end in  $\frac{1}{4}$  hindmargin; median line from midcosta to  $\frac{2}{3}$  hindmargin; postmedian, subterminal and submarginal lines faintly indicated; an interrupted fuscous terminal line; fringe with fuscous irroration." Hindwing similar, with termen rounded. Founded on 2 ♂♂ from Townsville; later recorded from Herberton, N. Q.

*dasyptus*.

**S. dasyptus** *Turn.* is also unknown to me. Expanse 18 mm. Hindleg with the tibia and tarsus much dilated, forming an obtuse club. Antennal ciliation shorter than in *rhopalopus* ( $2\frac{2}{3}$ ). Pale pinkish, with very indistinct indications of the three principal lines in pale fuscous. Hindwing rhombiform, "strongly bowed and very prominent on vein 5". Kuranda. 1 ♂. The peculiar shape of the hindwing should render recognition easy.

*villitibia*.

**S. villitibia** *Prout.* Expanse 22 mm. I described this as "apparently a highly specialized development of *proximaria* *Leech* (Vol. 4, pl. 7 c), the hindwing shape recalling that of *informis* *Warr.*". Midleg densely clothed with partly floccous and partly long suberect hair, hindleg short, weak, hairy. In some respects conformable to the description of *dasyptus*, but with the hindwing narrowed, its prominence at the medians instead of the radials, its underside densely clothed with specialized scaling, both wings with cell-dot present and a narrow dark distal border, rather irregular and not sharply defined proximally, in its widest parts less than 1 mm in breadth. Szechuan: Kwanhsien, 1 ♂.

*rhypistis*.

**S. rhypistis** *Meyr.* (23 l). For this species was proposed a genus *Pythodora* *Meyr.*: "Antenna  $2\frac{3}{4}$  of forewing, in ♂ with 2 tufts of long cilia ( $2\frac{1}{2}$ ) on each joint. Posterior legs of ♂ with tibia and tarsus wholly absent, femur with a fan of extremely long projecting scales from whole length. Forewing with vein 6 remote from 9, areole single, 1st subcostal generally stalked beyond 5th. Hindwing normal, the stalking of 2nd subcostal with 1st radial generally short. Unless the *Cosymbia*-like reversal of the positions of the 1st and the 5th subcostal be considered generic there is no need to separate it from *Sterrha*; the ♀ hindleg has the normal 2 spurs and the assumed absence of the tibia in the ♂ must have been due to its being appressed to the femur and concealed by the remarkably strong fan from the femoro-tibial joint. The type ♂ is a beautiful, broad-winged specimen, but I think the subsequently determined material is correctly identified. Fiji. Some more ochreous-tinted ♀♀ from Samoa perhaps also belong here (see under *rufula*, above); the ♂♂ will elucidate their position.

*bathromyses*.

**S. bathromyses** *Prout* (23 i). Rather longer-winged, not quite so glossy, the lines much less parallel with one another and with termen, the costal spots (of which there is no trace in *rhypistis*) well discernible even in the most worn examples. Fiji: Vunidawa (type) and Suva, Viti Levu, only ♀♀ yet received.

*dicenea*.

**S. dicenea** *Prout.* The ♀ differs from *bathromyses* as follows: More fuscous-suffused (sometimes almost wholly so); cell-dots more minute; postmedian line more distally placed, at least as far from cell-dot as from termen, between the radials not incurved, at costa of forewing not forming such a large black spot; subterminal expanding into conspicuous white spots at both folds, the one between the radials touching the postmedian line. Vunidawa. An extremely wasted ♂ has the antennal fascicles at least 2 (thus almost as long as in *rhypistis*) the hindleg with a very strong red tuft, also approaching that of *rhypistis*. The hindwing in the present species has the 2nd subcostal generally better stalked than in the two preceding, but in all three the character is too variable to be entirely dependable.

**S. testacea** *Swinh.* (23 i). In this species and those which follow (as far as *macrospila*) the areole is wanting, all the 5 subcostals stalked together. This specialization has clearly arisen independently, but there may be some practical convenience in grouping them together. The ♀ type of *testacea*, from Poona, has the dots of the postmedian, also the median shade of the hindwing, rather stronger than in the topotype here figured, but otherwise agrees. A diminutive form from Sokotra is also a good match, especially one of the ♀♀; the ♂ which apparently belongs to them has unfortunately lost its hindlegs.

**S. egenaria** *Walk.* (23 l). Very like *gemmaria* (23 f), the shape on the whole not quite so extreme, the colouring not quite so variegated. The typical form is smaller, but this is not a constant distinction. Nearly always it can be separated by the absence of the areole, but I find that even this is not absolutely constant, out of 5 specimens collected together at Klondyke, Luzon, one shows on both forewings a very small, very narrow areole, of which I have seen no remnant in any other example. Hindleg of the ♂ dilated and heavily clothed, with the exposed (smooth) part of the tarsus extremely short. Borneo (type from Sarawak), Luzon and Formosa; variable.

**S. pulchrifascia** *Hmps.* (23 k), founded on a ♀ from "Sikkim", 1800 feet, has not been since matched, but may possibly be a local form of *egenaria*. Rather large and variegated, the bands narrow, their edges more fuscous than red; the median of the hindwing is more definitely a line than in any other of the group. A ♀ from Muang Awm, Laos (900 m) which is probably conspecific, has the cell-spot of the forewing better developed, the half-band broader, its proximal part forming a sinus between 2nd radial and 2nd median; the hindwing with cell-spot and hind median spot large, cinnamon, the postmedian heavily dark-clouded from costa about to 2nd radial.

**S. onchnophora** *sp. n.* (23 l). Wings somewhat narrower and more pointed than in the allies, the cell-spots standing out conspicuously. that of the hindwing elongate, tapering proximally. Red-brown suffusions ample, on the hindwing extending nearly to the base, on the forewing showing some extensions from the (proximally ill-defined) "half-band" into the apical region. India: Pusa, 23 March 1916 (U. BAHADAR), type ♀ in my collection; ? Travancore (PLACE), a much damaged ♂ in the Tring Museum, probably (by its narrowed wings and extension of the red-brown cloudings) the same species, but impossible to identify certainly.

**S. craspedota** *Prout* (= *marginata Swinh.*, nom. praeocc.) (23 k). A neat little species, nearest like *proximaria* *Leech* (Vol. 4, pl. 7 c) but considerably smaller and easily distinguished by the absence of the areole. Ciliation of the ♂ antenna about as long as diameter of shaft, hindleg with the tarsus enlarged into a strong, clubbed process. Assam (type from Cherrapunji), Tonkin, the Andamans, Malaysia and Bali. There may be some slight geographical variation.

**S. celativestis** *Prout*. At first sight scarcely distinguishable from *craspedota*. Venation the same. Hind-femur more swollen, purple-reddish. Forewing with a pronounced costal spot (sometimes well developed, however, in *craspedota* also), beneath as far as the postmedian strongly suffused with reddish grey. Hindwing beneath with an extended fringe of long hair from just behind the median vein and the base of its 2nd branch, directed hindward and outward so as to cover most of the hind area of the wing except the tornus. Bukit Kutu, Selangor, 3500 feet, only the type ♂ known.

**S. chrysocilia** *Hmps.* (23 l). A very distinct species, with nearly the shape of a "*Janarda*" (compare *acuminata*), the forewing venation of the present assemblage, "the costa clothed with rough hair" and the coloration reminiscent of such species as *flavisinuata* *Warr.*, etc., the straight dark line on forewing distinctive. Antenna of ♂ serrate-fasciculate, hindleg much reduced, with strong hair-tufts, hindwing with 3rd radial and 1st median shortly stalked. Nilgiris, only the type ♂ known.

**S. macrospila** *Prout* (23 k). A very small, but attractive species, very easily recognizable from the figure. The variegated and in part metallic colouring of the postmedian patches suggest a possible relation to *gemmaria* or *egenaria pulchrifascia*. In addition to the loss of the areole, it shares with *chrysocilia* the stalking of the 1st median of the hindwing. Ciliation of the ♂ shortish-moderate, hindleg weak, strongly tufted. Bombay (type), Coimbatore and the Andamans.

**S. micra** *Hmps.* (23 k). Clearly related to *macrospila*, venation of hindwing the same, but the forewing has retained the areole. The different disposal of the dark markings makes confusion impossible. Hitherto only known from Ceylon.

**S. bilinea** *Swinh.* (23 k). Small and exceptionally narrow-winged, this is at present the only Indian representative of the *lilliputaria* group of Africa (see Vol. 16, p. 81 and pl. 7). Their most noteworthy features are the long cell of the forewing and the strong anastomosis of the costal vein of the hindwing with the cell and although this latter has not proceeded quite as far in *bilinea* as in its African relatives it is usually quite

characteristic; in the ♀ the anastomosis is often short and occasionally reduced to a mere point, as in typical *Sterrha bilinea* was described from Poona and is known also from Bombay and Gooty and from Ceylon. The strongly 2-lined forms are commonest in the ♂ but occasional also in the ♀, which is, moreover, still longer-winged than the ♂. — ab. **planissima** (Warr., MS.) *ab. nov.* is an extreme form, with the lines absolutely wanting, thus unicolourous excepting the cell-dots. Type a very perfect ♀ on the Tring Museum, from Bombay.

### 39. Genus: **Eupithecidia** Hmps.

An offshoot of *Sterrha*, most characters agreeing. Antenna of the ♂ with short very slender pectinations, which are surmounted with fascicles of very long cilia. Hindtibia of the ♂ slender, spurless, the tarsus extraordinarily long. Hindwing with the discocellulars more or less markedly biangulate — a character so rare in the *Sterrhinae* that it alone would have justified the genus but that *S. swinhoei* (an obvious *Sterrha*) also shows it. Wings elongate (especially in the ♀), of a peculiar texture, tough but not robust. Only one species known.

*variegata.* **E. variegata** Hmps. (23 k). Variable, some specimens considerably infuscated and with the markings very weak. In any case easily known by the structural characters. Perhaps confined to the Nilgiris.

### 40. Genus: **Lycaugidia** Hmps.

(See Vol. 16, p. 81.)

Palpus minute. Tongue vestigial. Antennal pectinations of the ♂ long. Hindtibia in both sexes with terminal spurs. Wings still more elongate than in *Eupithecidia*; areole double; costal vein of hindwing anastomosing to beyond middle of cell. Only one species, which inhabits arid localities in Central India, E. Africa, the Transvaal and the Kalahari. For some unexplained reason, nearly all the known examples are ♀♀; the type ♂ has only 1 hindtibial spur (so on both legs) and it will be interesting to learn whether this is constant for the sex.

*albatus.* **L. albatus** Swinh. (Vol. 16, pl. 7 m). Also unmistakable by the structural characters; wings pale and almost unmarked; abdomen with a pale mediodorsal line. Described from Poona, known also from Karachi, but its head-quarters seem to be in Africa.

### 41. Genus: **Notiosterrha** Prout.

This genus was erected for a rare Australian species (*rhodocosma* Lower) which does not fit well into any other known genus and it was suggested that 3 other little-known species, also Australian, might well belong to it. Face rounded, protuberant, smooth-scaled. Antenna of ♂ with fascicles of long cilia. Hindtibia of the ♂ (and probably of the ♀) with terminal spurs only. Forewing with costa rather strongly shouldered at base, otherwise very straight, termen rather short, nearly straight; cell long (nearly  $\frac{3}{5}$ ); areole simple, ample. Hindwing with costal margin elongate, cell at least  $\frac{1}{2}$ ; 2nd subcostal very shortly stalked. Distinct from *Sterrha* in the face, the wing-shape and texture (which is more like that of *Rhodometra*), the very short stalking of the 2nd subcostal, etc.

*interalbulata.* **N. (?) interalbulata** Warr. (23 k). Only the ♀ known; this has 2 spurs on the hindtibia. Very distinct in the white hindwing and the white bands of the forewing. The unique type is from Condon, N. W. Australia.

*triglypta.* **N. triglypta** Lower, only known to me from the description, was described as a *Dichromodes* but transferred to *Sterrha*; probably related to *interalbulata*, though much larger (unless "28 mm" is a misprint). Forewing elongate, triangular, costa nearly straight, termen oblique; brownish-ochreous, a thick erect black ante-median from  $\frac{1}{3}$  hindmargin, hardly reaching costa, postmedian at  $\frac{2}{3}$ , moderately thick, black, irregularly waved, with a sinuation outward in the middle, edged distally with clear white, proximally with dull ferruginous; a clear white subterminal at  $\frac{5}{6}$ , before the middle strongly sinuate inward and thickened, a dark proximal-subterminal shade throughout; termen with fine white dots. Hindwing whitish, with faint cell-dot and 2 pale fuscous lines beyond (at  $\frac{2}{3}$  and  $\frac{3}{4}$ ). Dundas, West Australia, 1 (? ♀) in November.

*aglaodesma.* **N. aglaodesma** Lower, also placed in *Sterrha* by TURNER, may also belong here, as the hindwing is whitish, with only one line (from tornus to near apex). The type is a ♂ from Eucla, West Australia, the size not given, nor the venation of the hindwing. The forewing is more ochreous, with 5 or 6 dark lines, a distinct white one (obviously the subterminal) accompanied proximally by a dentate.

*rhodocosma.* **N. rhodocosma** Lower (23 k). Bright rose-colour, with the forewing beneath paler and much duller, the abdomen and hindwing whitish; when fresh, with a "magnificent lustre"; markings of forewing a little darker than the ground-colour; 2 faint dusky lines sometimes visible on the hindwing. S. Australia: Torrens Island and Semaphore, beaten from *Salicornia arbuscula*.

42. Genus: **Pseudosterrha** Warr.

(See Vol. 16, p. 81.)

Similar in most characters to *Rhodometra*, but with flat face, narrow wings and long cells. The costal vein of the hindwing, as in that genus, anastomoses strongly with the cell. The type form, described below, is Indian; in Africa, perhaps in a differentiable race though certainly very close, it is known as *philaearia* *Brabant* (= *gayneri* *N. C. Rothsch.*).

**Ps. paulula** *Swinh.* (= *ochrea* *Warr.*) (23k). Forewing pale ochreous, with a slender, highly oblique *pautula*. and slightly sinuous dark line, which on the underside is weak or almost obsolete; hindwing white, becoming tinged with ochreous posteriorly. SWINHÖE described from Mhow, WARREN from Campbellpur; Deesa (including a unicolorous aberration), Gooty and Anantapur are other known Indian localities. Bender Abbas (S. Persia) and some localities in Arabia have also produced this species.

43. Genus: **Rhodometra** Meyr.

(See Vol. 4, p. 153; Vol. 16, p. 82.)

Face protuberant. Antenna of ♂ strongly pectinate. Hindtibia in both sexes with all spurs. Forewing with areole single, ample. Hindwing with costal vein anastomosing strongly with the cell, as in the *Larentiinae*. A predominantly African genus; only the well-known migrant *sacraria* has occurred in the Indo-Australian Region.

**Rh. sacraria** *L.* (= *sacralis* *Thnbg.*) (Vol. 4, pl. 6 a). For an account of this migrant the reader is referred *sacraria*. to Vol. 4, p. 153, with some additions in Suppl.-Vol. 4, p. 69. In the Indo-Australian Region it has scarcely spread beyond the confines of India itself. The following list of authenticated localities will show the wideness of its range, but I have as yet no information regarding its migrations or breeding-stations within the Empire. Quetta; Peshawar; Campbellpur; Srinagar; Lyallpur; Firozpur; Mandi; Simla; Sabathu; Dharmasala; Chausa. Dheena and Pahara (miles 417 to 499 on the East Indian Railway); Pusa; Darjiling; Karachi; Deesa; Bhuj-Kutch; Jabalpur; Belgaum; Gooty; Nilgiris; Ramandravy (S. India); Giant's Tank (Ceylon); Rangoon. STEVENS (Kelley-Roosevelt expedition) took 3 large specimens in S. W. Szechuan at between 8000 and 9000 feet. — ab. **labda** *Cram.* (Vol. 4, pl. 6 a). Light brownish rather than yellow, the oblique stripe brown-grey to blackish, *labda*. not rosy. Frequent, especially in the ♀ sex. Excepting this form, I have no records from the Indo-Australian Region of any of the named aberrations.

44. Genus: **Anomocentris** Meyr.

Face rounded, nearly smooth. Palpus rather short, rough-scaled. Tongue wanting. Antenna in the ♂ pectinate throughout, the branches ending in tufts of long cilia; in the ♀ ciliate, the cilia about 1. Legs slender, tarsi very long, hindtibia with terminal spurs only. Abdomen not crested. Wings with smooth scaling. Forewing with cell considerably over  $\frac{1}{2}$ , narrowing at distal end, 1st. discocellular developed; areole simple, long; 1st. median arising far from 3rd. radial. Hindwing with cell long, discocellulars little oblique; costal anastomosing with cell to near its end, 2nd. subcostal long-stalked, 1st. median well separate. Only two species known; type, *crystallota* *Meyr.* Described, on account of the hindwing venation, as Larentiine, but really of quite unascertained affinities; possibly they may be found among the *Asthena* group, which are traditionally retained there, but the long cells seem quite inconsistent therewith. Any one of the outstanding characters of *Anomocentris* (in tongue, antenna, legs, venation) can be matched in one or another of the last Sterrhine genera, but the ensemble is entirely distinctive. The ♂ genitalia, examined in *trissodesma*, throw no definite light on it: extraordinarily simple (? degenerate); tegumen a thin strip, uncus, gnathos, etc. wanting, valve moderately broad, produced to a point at its end; no chitinized anellus.

**A. crystallota** *Meyr.* (24 a). Pattern almost as exceptional as the generic structure. Sexes nearly alike. *crystallota*. the ♀ somewhat more elongate winged. Carnarvon, W. Australia.

**A. trissodesma** *Lower* (24 a). Smaller, the pattern simpler. Sexes dissimilar, the ♀ being white. Not *trissodesma*. rare at Broken Hill, New South Wales.

4. Subfamily: **Larentiinae**.

This subfamily, the *Hydriomenidae* of MEYRICK's and other revisions of the New Zealand and Australian faunae, is far more extensive numerically than either of the preceding and more universally distributed, being particularly characteristic of New Zealand and well represented in the Hawaiian Islands and the extreme south

of South America, just those regions where the three previous subfamilies are scarcely or not at all in evidence. It has been pointed out in the introductions to Vol. 4 and Vol. 16 that it is on the whole characteristic, at least in its more typical forms, of high altitudes or latitudes, but many of the large genera or groups — for instance, those typified by *Lobophora* and by *Chloroclystis* — are equally at home in the tropics and produce in the Indo-Australian Region many extremely interesting and characteristic developments.

Of well over 250 genera hitherto recognized in the subfamily, about two-thirds belong, exclusively or in part, to this region; of a considerable percentage of them little is as yet known and one is tempted to repeat what was said of the Geometrinae in Vol. 4, that little more can at present be attempted than to give an illustrated catalogue of them.

Very roughly, the subfamily seems to fall into two groups, the one with protuberant or rough (often tufted, sometimes shaggy) face, the other with smooth or flattened face, generally also with smooth scaling and delicate build. The latter, as was pointed out in Vol. 16, p. 48 and 83, at times approximates to the Sterrhinae, but it is not yet certain how far this is due to close affinity, how far to convergence. In any case the two subfamilies have definitely a good deal in common; and if there had been any justification (which I do not grant) for TURNER'S recent proposal to create some separate families among the Geometridae, he could have obtained less unsatisfactory results by treating the Sterrhinae and Larentiinae as constituting one family and the Oenochrominae and Geometrinae as another.

The principal characteristics of the Larentiinae are the almost constant anastomosis of the costal vein of the hindwing with the subcostal for a considerable distance (a condition which only occurs sporadically in the other subfamilies); the presence of all the 12 veins of the forewing, with the costal almost always free, the subcostals almost always anastomosing so as to form one or two areoles; and the almost complete loss of the gnathos of the ♂ genitalia (characteristic also of a section of the Sterrhinae). Tongue almost always developed, frenulum generally. Hindleg generally fully spurred. Cells usually shortened, even as compared with the Sterrhinae, 1st radial of the hindwing generally, of the forewing very frequently, stalked with last subcostal, discocellulars of hindwing often oblique, with 2nd. radial arising before the middle, in certain groups biangulate, with 2nd. radial arising behind the middle (or at least behind the cell-fold). For a strange anomaly in the forewing venation see *Antimimistis*.

### 1. Genus: **Dasyuris** Guen.

This genus and the four which follow are distinguished from the rest of the Indo-Australian Larentiinae by their more hairy or even shaggy vestiture. Breast and coxae densely hairy; face and palpus more or less hairy. Antenna of the ♂ ciliated. Forewing with double areole. Hindwing with discocellulars not biangulate. Belongs chiefly to New Zealand, with a few species in Australia, one in Hawaii. The Holarctic *polata* Dup. group (see Vol. 4. p. 234) is also referred to this genus.

*holombra.* **D. holombra** Meyr. (24 b). A rather large species, of a dark colour, the hindwing almost unicolorous, the forewing with the median band further darkened, except its central part. Hawaiian Islands. Maui, at 5000 feet.

*octans.* **D. octans** Huds. (24 a). Smaller than *austrina* and with much narrower and more strongly dentate median band; dark lines on the underside much heavier than in that, outer margin of median band less angled. Discovered near Lake Manapouri, Hunter Mountains, New Zealand, at 3500 to 4000 feet. It flies over an outcrop of lichen-covered rocks on a sunny slope (CLARKE).

*hectori.* **D. hectori** Bull. (24 f). The true *hectori* is a fine large species and cannot, I think, be confounded with any other. It seems to be rare and the earlier records, as well as HUDSON'S in 1928, confuse with it the following. BUTLER calls it a high mountain form and difficult to catch. I have it from Macetown. This and the next three *Dasyuris* have the ♂ antenna fusiform (sect. *Stathmonyma* Meyr.).

*austrina.* **D. austrina** Philpott (= *hectori* Meyr., part.) (24 b). Less large than *hectori*, forewing otherwise similar, hindwing with the postmedian much less irregular, etc., forewing beneath with more continuous (whitish) subterminal, both wings with the dark lines much more slender. New Zealand: Bold Peak; Lake Wakatipu (loc. typ.); summit of Ben Lomond, 5700 feet (perhaps now extinct); Mount Cook; probably also The Hump, Waiau (PHILPOTT), a slightly different form.

*anceps.* **D. anceps** Bull. (24 b). Hindwing and underside ochreous, the underside unmarked, or only very weakly marked, as far as the cell-dots, postmedian fine or moderate, more or less angled in cellule 3, an interrupted or macular blackish subterminal shade and narrow, irregular terminal one. New Zealand, distributed, 4000 feet and upward. MEYRICK calls it "constant", which is approximately correct. — ab. **grisescens** nov.,

with almost the colouring of *austrina*, scarcely a suspicion of yellowish remaining on either surface, therefore requires a name, as at first sight it looks like a separate species; markings, however, typical. Type ♀ from Hector, in my collection.

**D. enysii** *Butl.* (24 b). The type ♀, collected with 2 others by J. D. ENYS at altitudes of 3000—5000 feet ("New Zealand", locality not recorded), has the forewing closely like that of *anceps*, its costa perhaps still more shouldered at the base, its postmedian without the projection at 1st. radial; its hindwing much brighter orange, much more weakly marked, on the underside less weakly than above, apparently with its (very slender) postmedian rather more strongly angled. The Tring Museum has one from the Greymouth district. Probably, as has always been assumed, merely an extreme aberration of the species subsequently named — **homomorpha** *Meyr.* This is said to be "readily identified by the postmedian line of the hindwing" which is here angulated, remote in middle from median" (in *anceps* "curved, parallel to median"). The significant detail given regarding the hindwing is: "bright orange; basal space up to 1st. line mixed with dark fuscous; a second, more obscure line beyond and parallel to this, a third irregularly angulated and subdentate beyond middle, a narrow irregular interrupted subterminal fascia. Mount Hutt, 4 specimens, rather small (28 mm). Since recorded from Nelson. *enysii.* *homomorpha.*

**D. partheniata** *Guen.* (24 c). A rather common New Zealand species, the hindwing predominantly bright orange, the ground-colour of the forewing also more or less orange, its base and median area almost wholly darkened, or with some orange persisting in the central part, particularly around the cell-spot, occasionally invading almost the entire central area except its bordering lines. Hindwing beneath a little paler, its markings cut by pale longitudinal streaks. The larva feeds on *Aciphylla squarrosa* and is in certain attitudes well protected; light-brown, variable and sometimes tinged with grey-green; an ochreous subdorsal line, a dark-brown and a creamy-yellow lateral one. — **catadeës** *form.* (? *sp.*) *nov.* (24 a). A remarkable specimen in the Tring Museum, unfortunately the only one known to me from Mount Peel, has the areole simple on the right forewing, double — though with the distal very small (2nd. subcostal stalked) — on the left, the orange parts paler, almost white, the outer band very slender, on the hindwing curving more slightly; underside also whitish, the presubterminal dark band of the forewing broadened from 2nd. subcostal to 3rd. radial and again at the medians. *partheniata.* *catadeës.*

**D. fulminea** *Philpott* (24 a). "24 mm." According to its author nearest to *callicrena* but with the lines different and the fringe unicolorous orange; *callicrena*, however, is a *Dasystemica* by venation. The unique type (a ♂ which has lost its antennae) was captured on Bold Peak (head of Lake Wakatipu) in February. Lines yellowish, not white, the antemedian with a striking inward angle behind the cell. *fulminea.*

**D. (?) strategica** *Meyr.* (24 c). "35 mm." We copy HUDSON'S figure of the unique type; it only deviates slightly from MEYRICK'S description in that the antemedian should be "somewhat irregular, slightly curved" and the yellowish median shade "well defined". Hindwing beneath suffused with golden-yellow; markings as above. Lake Guyon, South Island; hardly an extraordinary aberration of *Dasystemica callicrena* with straighter proximal lines? *strategica.*

**D. transaureus** *Howes* (= *transaurea Meyr.*) (24 a). A pretty little species, easily distinguished by the (often broad) longitudinal interruption of the median area, the end of the median vein and the space about its branches here being yellow like the ground-colour. New Zealand: Garvie and Humboldt Mountains, also Flagstaff Hill (Dunedin) and Mount Cook; type from Nevis. *transaureus.*

**D. micropolis** *Meyr.* (24 b). According to MEYRICK this has been confused with *leucobathra* but differs in its small size, different underside and absence of yellow on the abdomen; subterminal line macular or sub-obsolete; fringe white, barred with grey. Underside with the white extended, especially on the hindwing distally. Arthur's Pass, 5000 feet. *micropolis.*

**D. leucobathra** *Meyr.* (24 c). Larger (21—25 mm). The underside affords an easy distinction from *micropolis*: forewing dark grey, with veins, a costal band and 2 incomplete lines (presubterminal and terminal) yellow, the other lines white; hindwing blackish, with similar scheme, the veins and longitudinal streaks (on subcostal, median and hindmargin) yellow. Distinct from the *mechanitis* group of *Notoreas* in the fringes, which are chequered with white at the base instead of having the basal part wholly dark. Otira River (type), Lake Wakatipu, Hunter Mountains. Arthur's Pass and Mount Arthur tableland, i. e. up to 4500 feet. *leucobathra.*

**D. pluviata** *Huds.* (24 c) is compared with *fulminea*, but has the lines more slender, quite differently formed (especially the antemedian) and perhaps whiter. If the (very short) ♂ pectinations have been overlooked it will be a *Notoreas* near *chioneres* (24 f) but blacker, the lines finer and whiter, the median faint (on hindwing wanting), the postmedian slightly incurved anteriorly, then almost direct (not angled outward), *pluviata.*

the central subterminal spots wanting, the costal subterminal spot apparently not V-shaped; fringes smoky grey, only on hindwing barred with whitish. Hindwing beneath almost wholly yellow. Field Peak, Tararua Range, 4500 feet, quite abundant in the (rare) intervals of sunshine.

- metanchlaena*. **D. melanchlaena** Turn. (24 c). Recognizable at once by its black-brown colour, with dark markings scarcely discernible; on the upperside of the forewing the boundaries of the median area are indicated by slender white lines and there are also still slighter, more interrupted, subbasal and subterminal. Palpus long. Mt. Kosciusko, N. S. W., at 5000 feet, in December.
- decisaria*. **D. decisaria** Walk. (24 c). Not quite so dark and much more variegated, the postmedian line on both wings deeply sinuous, the subterminal, except in the darkest specimens, accompanied proximally by a partial or complete band of dark shading. Palpus moderate. Described from Tasmania and reaching Victoria.
- monacmaria*. **D. monacmaria** Mab. (24 c), described as a *Camptogramma* and erroneously supposed to come from "West Africa", is either a large aberration, race or close ally of *decisaria*, browner both above and beneath. the paler area outside the postmedian broad and rather well defined, the dark presubterminal shade on the underside neither strong nor broad.
- cuesia*. **D. caesia** Turn. "Closely allied to *decisaria* (24 c); but the forewings are narrower and much paler, the postmedian line with median projection less marked, and the hindwings have termen not wavy, and the postmedian line not angled." The type, a ♀ from Kewell, Victoria, expands 22 mm and is described as whitish or whitish grey, the markings grey, terminal area of forewing "suffusedly darker", of the hindwing forming a broad dark band.
- phaeoxutha*. **D. phaeoxutha** Turn. (24 d). Another elongate-winged species, the markings variable in detail; the orange-brown hindwing above and beneath (nearly "sayal-brown" of RIDGWAY), with suffusions of the same on the more variegated forewing are distinctive, as also the pale "halo" which surrounds the cell-dot of the forewing. Palpus long. Mount Kosciusko, in December.
- euctidiata*. **D. euctidiata** Guen. (24 d). Smaller than *decisaria* and much more sharply marked, the hindwing above and both wings beneath with a good deal of yellow (occasionally whitish-yellow) admixture. Best known from Victoria; also New South Wales, and TURNER records taking in abundance in October at Warwick, Queensland, flying actively in the bright sunshine, attracted by the flowers of Galium. Somewhat variable.—
- glyphicata*. ab. **glyphicata** Guen. is simply a rather small, extra sharply marked aberration, with the hindwing blackish except the clear yellow median band.
- hedylepta*. **D. hedylepta** Turn. (24 d). Much larger, reaching or even surpassing the expanse of the New Zealand *anceps* and with similar colouring, but not so broad-winged, the postmedian of both wings more outbent in the middle. Less strongly hairy than typical *Dasyuris*, indeed transitional (face and palpus) to the *Euphyia* group. A mountain species, discovered on Mount Erica, Victoria, at 4500 feet, since taken on Kosciusko, 5000—6000 feet. January to March.

## 2. Genus: **Notoreas** Meyr.

Antenna of the ♂ bipectinate. Otherwise it has not yet been demonstrated to differ at all from *Dasyuris* and when only ♀♀ have been accessible incorrect guesses have not infrequently been made concerning the generic position. According to some systematists, therefore, *Notoreas* should be regarded as a section of *Dasyuris*. Excepting the first species, all belong to New Zealand.

- aethalopa*. **N. aethalopa** Turn. 18 mm. Antennal pectinations very long. Forewing with termen long, bowed, oblique; dark fuscous, sparsely irrorated with white; a median ochreous spot near base; some blackish suffusion beyond this; antemedian line ill developed, but edged distally with ochreous; median area paler; postmedian line fine, blackish, slightly dentate, obtusely angled in disc. broadly edged proximally with ochreous; cell-dot and a small median spot at hindmargin blackish. Hindwing rounded; uniform dark fuscous; lines blackish, suffused. Underside blackish, with rather dense white irroration except on 3 lines. Zeehan, Tasmania, 1 ♂ in November.
- omichlias*. **N. omichlias** Meyr. (24 d). Glossy dark grey, somewhat as in *hectori* or the Palaearctic species of *Dasyuris*. Markings rather weak, especially on the upperside. Underside paler. Type locality Castle Hill, at about 5000 feet; also from Tararua, Humboldt Range, Hunter Mountains and Mount Holdsworth; not common, 4000 feet and upward. The form from Mt. Holdsworth is perhaps a distinct race, the boundaries of basal and median areas marked by slender light dull ochreous fasciae.

**N. vulcanica** *Meyr.* Rather smaller ("22 mm"), the forewing with irregular blackish subbasal, ante-*vulcanica.* median and postmedian bands, the hindwing in basal half wholly dark fuscous, its outer edge twice deeply sinuate, the rest deep orange with fuscous markings, namely: a line near and parallel with the edge of the basal area; an irregular dentate subterminal band, partly confluent with a terminal one. Both wings beneath light orange, with 2 postmedian lines, subterminal and terminal band; forewing further with 2 incomplete, straight proximal lines, hindwing with a dentate antemedian. Kaweka Range (Hawke's Bay district); HUDSON adds the lower slopes of Mount Ruapehu and in South Island at Macctown.

**N. brephosata** *Walk.* (= *catocalaria Guen.*, *brephos Feld.*) (24 d). One of the commonest and best-*brephosata.* known *Notoreas*, distributed in open country from sea level to 4000 feet; somewhat variable in the strength of the black markings and also in the colour of the forewing, which may be greyer or browner. Generally easy to distinguish from *vulcanica*, as described by MEYRICK, in that the hindwing retains much orange in the basal half and has the subterminal line slight or obsolescent, well free from the dark border. I have, however, a few interesting aberrations which bridge the distinctions; a ♂ from Roxburgh, taken with a typical *brephosata* ♀, has the proximal half of the hindwing heavily dark-marked (but retaining some orange), the subterminal band almost confluent anteriorly with the terminal; 2 ♂♂ from Taihape (determined by Mr. W. G. HOWES as *vulcanica*) show a still further advance in the darkening, one of them, indeed, almost (not quite) fulfilling MEYRICK's condition ("basal half wholly dark fuscous"), but both having the shape of the median line quite normal, not "twice deeply sinuate". Possibly *vulcanica* is only an extreme local form of the present species (?).

**N. zopyra** *Meyr.* (24 d). "The smallest of the group" and constant. HUDSON sunk it to *brephos*, though *zopyra.* pointing out very accurately the distinctions; but PHILPOTT has demonstrated pronounced differences in the ♂ genitalia. HUDSON calls it "a small form, often met with on mountains or in river beds, forewing almost blue, transverse lines rather distinct, hindwing very bright orange with very narrow black markings". Founded on ♂♂ from Mount Hutt. The egg is oval, bright orange-brown with a depression on its upperside and with fine, hexagenal reticulation.

**N. ferox** *Butl.* (24 e). Forewing weakly marked, hindwing with two straight median lines, the *ferox.* proximal one heavy, the succeeding lines more dentate. Both wings beneath bright orange, marked approximately as the hindwing above, but with a characteristic whitening of the ground-colour distally, so that at least the line between subterminal and terminal may almost be called white. Type probably from Castle Hill. Recorded also from Mount Earnslaw.

**N. simplex** *Huds.* (24 e), of which the ♀ type, from Mount Arthur, near Nelson, still remains the *simplex.* only specimen known, is distinguished by the unmarked hindwing and especially the unmarked buff apical region of the forewing, the last 3 dark lines not reaching the costa. In the absence of the ♂ the placing is only conjectural; the pose of the lines, with their sharp white edging, somewhat recalls *Arctesthes perornata*.

**N. fulva** *Huds.* (24 d). This anomalous species was described as a *Lythria*, first removed by MEYRICK *fulva.* to *Notoreas*, later by the same author to *Dasyuris*. The ♂ pectinations are stout and not very long. In somewhat more than half of the specimens which I have examined the areole is double; but in 2 ♂♂ (out of 8) and 5 ♀♀ (out of 10) it is single or virtually so, transitions occurring. Thus evidently a link between *Notoreas* and *Arctesthes*. Mount Ida, Central Otago at 3500 feet; locally abundant at Cromwell; also recorded from Alexandra.

**N. niphocrena** *Meyr.* (24 e). An attractive species, characterized by the white subbasal, antemedian *niphocrena.* and postmedian lines of the forewing above and the white postmedian of both wings beneath. The original 2 ♀♀ were taken on the mountainside above Arthur's Pass 4500 feet; other known haunts are the Tararua Range, Mount Arthur and Bold Peak.

**N. ischnocyma** *Meyr.* (= *isoleuca Huds. olim, nec Meyr.*) (24 e). 20 mm. Dark fuscous with some *ischnocyma.* scattered yellow-whitish scales; lines slender, white; median line indistinct, outbent before middle; postmedian waved throughout, angulated in middle, indented behind middle; subterminal irregularly waved; fringes white, basal half chequered with dark fuscous. Castle Hill, Craigieburn Range, ca. 5600 feet. Easily known by the postmedian line.

**N. ortholeuca** *Huds.* Pectinations about 3 times diameter of shaft. Expanse slightly over 1/2 inch. *ortholeuca.* Forewing elongate, apex produced; black with 3 almost straight white bands, the 2nd. slightly dilated in the centre, the 3rd. very slightly curved, strongly dilated in disc; subterminal rudimentary. Hindwing black, with a broad white stripe beyond the middle. Glenorchy, Lake Wakatipu, 6000—7000 feet, 1 ♂.

**N. paradelpha** *Meyr.* (24 e). Rather long-winged, brown, all the pale markings whitish, the subterminal *paradelpha.* on both wings somewhat broad and strikingly zigzag. Generally distributed, at least in South Island, 2000 to 5000 feet.

- hexaleuca*. **N. hexaleuca** *Meyr.* (24 d) The smallest of the *mechanitis* group and perhaps with relatively less short pectinations (antennae lost in both the specimens before me). Further distinguishable by the rather strong white (or almost white) markings; almost straight antemedian, slender angulated median and thick excurved postmedian. Fringes barred, and at base somewhat darkened, with fuscous. Underside with the white markings a little more extended. Ben Lomond (loc. typ.) and Flagstaff Hill, Dunedin, 1000—3500 feet, rather sparingly. I only know the Flagstaff form, which is said to differ slightly from the type. Its larger relatives with straightish antemedian (*isomoera* and *chioneres*) differ from it in the fringes, the median and the postmedian lines, *isomoera* in the colour also.
- isoleuca*. **N. isoleuca** *Meyr.* (24 e). Founded on a ♀ from Castle Hill, with an expanse of 20 mm and admittedly nearly allied to *mechanitis*, "but differing especially in the single well-defined median streak, which in *mechanitis* is replaced by two cloudy streaks of yellowish suffusion", this was temporarily suppressed by its author in 1905 as only a form, "the chief differences being due to a diminution of the yellow suffusion"; but in 1911, after close study of the group, he reinstated it as "smaller and shorter-winged (20—22 mm), blackish with little or no yellow admixture; the lines white, antemedian curved, postmedian angulated in middle, others slender and sometimes partially obsolete; cilia with basal half dark fuscous, outer half whitish, obscurely barred with grey". The Mount Arthur ♂ which we figure, determined by Mr. MEYRICK himself, shows the less denticulate antemedian, much less irregular postmedian and more interrupted subterminal which generally distinguish the species. Mt. Peel and Arthur's Pass are also known localities.
- isomoera*. **N. isomoera** *sp. n.* (24 f). 22—23 mm. Very near *isoleuca*, so determined in the HOWES collection. Pectinations of ♂ slightly shorter. Markings broader, yellow; forewing with median line definitely and the postmedian rather acutely angled, subterminal extremely slight except anteriorly and as a dot in cellule 3; hindwing with similar distinctions. Queenstown, type ♂ and allotype; Obelisk Range, 1 ♀; all in my collection.
- galaxias*. **N. galaxias** *Huds.* (24 f), a single ♀ from Old Man Range (Central Otago), ca. 4000 feet, seems very distinct in having on the forewing only white bands, the 1st. spotted with black, the 2nd. broad and very strongly outbent, continued on the hindwing. More recalls some Palaearctic *Epirrhoë* aberrations.
- arcuata*. **N. arcuata** *Philpott* (24 f), founded on 2 ♀♀ from Arthur's Pass and one (the type) from the St. Arnaud Range, Nelson, was compared with *mechanitis*, although it was admitted that in the absence of the ♂ its generic position was not quite certain. Forewing with fringe strongly chequered, postmedian line quite distinct in form, proximally black-margined, followed by narrow yellow margin indented before and behind middle; ground-colour dark fuscous, densely irrorated with yellow.
- chioneres*. **N. chioneres** *sp. n.* (24 f). A little larger than our figured *isoleuca* (23 mm); forewing with subbasal and antemedian lines somewhat oblique inward from median vein hindward, the antemedian not curving inward anteriorly, median line much thicker, postmedian more distal, with projection slightly larger, subterminal extremely slender, excepting a white V between costa and 1st. radial and a white spot in cellule 3; hindwing with vague whitish suffusions instead of 1st. line, postmedian angled; fringes wholly white. Obelisk Range, Central Otago, February 1912 (W. G. HOWES), 1 ♂ in my collection.
- mechanitis*. **N. mechanitis** *Meyr.* (24 f) is always quite distinct from *paradelpha* (24 e), both wings being definitely less elongate, the antemedian of the forewing more curved, the postmedian with a stronger projection in the middle and not indented before and behind the projection, the distal half of the fringes white, not dark-barred. The original series of 15, from Arthur's Pass and Mount Hutt, was believed to be homogeneous, but numerous puzzling forms and close relatives (see above) have since been met with and there are probably still some awaiting differentiation. Generally, the very strong yellow suffusions of the true *mechanitis* and its strongly curved antemedian are distinctive.
- blax*. **N. blax** *sp. n.* (24 f). Possibly a dwarf race (20—22 mm) of *atmogramma*, of which I have seen only the ♀ here figured (24 f), but which is shown by HUDSON's figures to be very variable. Underside closely like that of *atmogramma*, the ground-colour being pale, the forewing with strong cell-dot, angular postmedian and more or less interrupted and macular subterminal shade, the hindwing with no definite markings except a cell-dot. Upperside paler-mixed and somewhat less brown than in typical *atmogramma*, antemedian more oblique inward in its posterior part. Fringes above and beneath white, scarcely at all suffused in their proximal half (in *atmogramma* the proximal half is brown, very conspicuously so beneath). Bold Peak, Lake Wakatipu, 4 and 10 February 1913 (W. G. HOWES), 2 ♂♂ and 2 ♀♀ in my collection. PHILPOTT, certainly in error, determined one of these for me as "*paradelpha* ♀, rather small and rather more yellowish than usual". Wings less elongate, underside quite different, etc.
- atmogramma*. **N. atmogramma** *Meyr.* (24 f), first described as a well-marked local form of *mechanitis* but afterwards given the status of a species, is larger (25—28 mm, while true *mechanitis* does not exceed 23), duller and with

less yellow intermixture, but specially characterized by the obsolescence of the black lines on the underside of the hindwing, which are strongly marked in all South Island *mechanitis*. Mount Holdsworth, Tararua Ranges, 4000 feet.

**N. anthracias** *Meyr.* (24 e). Wings elongate, with somewhat sinuous distal margins and prominent *anthracias*. apices. Pectinations rather long. Ground-colour somewhat as in *omichlias*, but with whiter (bisected) band bounding the median area of the forewing. The ♂ considerably darker than the ♀. Found on open mountain-sides, from 2000 to above 5000 feet, South Island.

**N. incompta** *Philpott* (24 g). Considerably larger than *anthracias* (26—31 mm), the markings less *incompta*. clearly defined. Hardly distinguishable in coloration from *orphnaea* (24 g) but easily separable by the rather short antennal pectinations of the ♂ and the lesser development of the hairs of the palpus. As the wings are described as “white, densely irrorated with black, especially on median band and terminal area” and the underside grey-whitish, I suppose it is less extremely dark than most *orphnaea* (especially *orphnaea* ♂♂); both species show brownish suffusions in places. Kepler Mountains, at about 3000 feet, 2 of each sex. Since found on Arthur’s Pass and the Hunter Mountains.

**N. opipara** *Philpott* (24 g). Expanse 18—21 mm. A very distinct species, probably nearest to *orphnaea opipara*. but very much smaller; from *anthracias*, to which it also shows some affinity, it is distinguished by its broader wings, darker colour, presence of reddish markings (though these are not always as strong as in the figured specimen) and longer hairs of the palpus. Underside fuscous, postmedian and on forewing basal half of costa broadly ochreous. Stewart Island: Table Hill and Rakiatia, 2000 feet, on open hilltops.

**N. orphnaea** *Meyr.* (24 g). A large and rather shaggy species, the ♂ with long pectinations. The wings *orphnaea*. in this sex always very dark, at times almost black, so that the markings become quite weak; the ♀, as with *anthracias*, less dark. Fringes strongly chequered, blackish and white. Distributed locally in the mountains. 3000 feet and upward.

**N. villosa** *Philpott* (24 g). Expanse of ♂ 35—38 mm; pectinations 2 mm, “their highest development *villosa*. [in *Notoreas*], and it is significant that this is coincident with the semiapterous condition of the ♀”. The ♂ forewing is light ochreous-brown, often densely irrorated with white, markings white, antemedian bent outwardly near costa, then oblique inward, distally dark-edged, postmedian broad, oblique inward, bisinuate. dark-edged proximally, subterminal broad, waved; hindwing rather narrow, brownish fuscous, densely irrorated with grey-whitish to  $\frac{2}{3}$ ; one or two curved white fasciae beyond middle. ♀ 16 mm, wings oblong, narrow, apex of forewing subacute, termen and abdominal margin of hindwing slightly concave; white, minutely speckled with dark fuscous. (Abridged from PHILPOTT.) South Island: The Hump (Waiau) and Hunter Mountains, common in well-grassed situations at 3000 to 4000 feet. Probably an offshoot of *orphnaea*.

**N. insignis** *Butl.* (24 g). Strikingly distinct and needing no detailed description. The ♀ is considerably *insignis*. smaller and much paler than the figured ♂. South Island especially the Lake Wakatipu district. The originals were perhaps from Castle Hill. ENYS, according to BUTLER, took one at 6000 feet.

**N. synclinalis** *Huds.* (24 h) is much smaller and darker and equally unmistakable in its wing-markings. *synclinalis*. It was described from near Invercargill and is apparently confined to the south-western coastal region, including Stewart Island. Common in suitable localities, inhabiting boggy country and the bare tops of some low hills. In the most exposed situations generally reduced in size.

### 3. Genus: **Dasy sternica** *Turn.*

Characters of *Dasyuris*, except that the areole is simple. In *callicrena*, but apparently not in the genotype *tristis*, the femora, in addition to breast and coxae, are hairy. Only 4 species are recognized as belonging here, the first from New Zealand the other 3 from Victoria and Tasmania; but in view of the occasional variability of the areole in the group (see *D. berthia* and *Notoreas fulva*) it is legitimate to question the ultimate validity of the present classification.

**D. callicrena** *Meyr.* (24 h). Very distinct in its relatively large size, dark ground-colour and broad *callicrena*. whitish markings. Variation not important, though the subterminal may be either conspicuous or slight and a more proximal position of the postmedian occasionally narrows the central area. New Zealand, distributed in the mountains of South Island, 3000—4000 feet.

**D. tristis** *Butl.* (24 h). The smallest, darkest and most obscurely marked of the genus, the hindwing *tristis*. elongate costally and on the upperside almost unicolorous, the median band of the forewing widening very little, the 4 lines marked by whitish dots on the costa, otherwise very weak or obsolescent. Victoria: Melbourne and a few other localities, not common.

- bertha.* **D. bertha** *Swinh.* (= *crypsiphoena* *Turn.*) (24 g). Considerably more variegated, in some specimens with some reddish scales intermixed in the dark markings. Described from a single ♀, from Mount Wellington, Tasmania, which has the areole single, hence no comment was made on the venational inconstancy; of 9 ♂♂ which TURNER examined later, 5 have the areole simple on both forewings, 2 double on both and 2 asymmetrical; of 10 ♀♀, 9 have it simple on both wings while 1 is asymmetrical. All come from Tasmania.
- pericalles.* **D. pericalles** *Turn.* Expanse 23—27 mm. Antenna of ♂ thickened and slightly laminate, the ciliation minute. Forewing fuscous, with brownish and whitish irroration in part; bands darker, the subbasal excurved the ante- and postmedian (forming the boundaries of the pale-centred median area), the former excurved and with its proximal edge twice indented and whitish, the latter with a small tooth outward before the middle and a large bidentate prominence in the outer area very weakly marked. Hindwing orange, in the ♂ with 3 fine dark lines (which are strongly angled in the middle) and a dark terminal band, in the ♀ with only the band and this much narrower. Underside ochreous, the ♂ forewing with a postmedian fascia which expands strongly behind, joining a terminal fascia, hindwing with a postmedian line and terminal fascia, these markings more rudimentary in the ♀. Cradle Mountain, Tasmania. only one pair known.

#### 4. Genus: **Acalyphes** *Turn.*

A curious development of *Dasyuris* and *Dasystemica*, differing in the venation: Forewing with areole open, the 1st. subcostal failing to touch the stalk of the succeeding ones; hindwing with cell very long ( $\frac{3}{4}$ ), 2nd. subcostal not or only very shortly stalked. Erected for a single Tasmanian species.

- philorites.* **A. philorites** *Turn.* Expanse 22—24 mm. Palpus twice diameter of eye. Antenna of ♂ simple. Forewing with termen scarcely oblique; fuscous, in the disc with some whitish irroration; an ill-defined whitish subbasal spot; lines dark fuscous, the antemedian somewhat dentate, suffusedly margined with white, the median angled outward in the middle, sometimes indistinct, the postmedian irregularly dentate, with a strong median tooth outward, edged distally by a broad white line; suffused dark subterminal spots at the radials and near tornus. Hindwing strongly rounded; fuscous, disc in ♀ suffused with whitish-ochreous; a strong white or whitish postmedian line, strongly angled in the middle and again at tornus. Also founded on one pair from Cradle Mountain.

#### 5. Genus: **Arctesthes** *Meyr.*

This genus has been sunk to the Palaearctic *Lythria* *Hbn.* (see Vol. 4, p. 155) but should, I think, be resuscitated, the connection being by no means so close as has been assumed. It consists of a few species which resemble *Notoreas* in all characters except the areole, which is here always simple. Pectinations much shorter than in *Lythria*. Scaling normal (in *Lythria* predominantly long, hair-like). Fringes long (in *Lythria* shortish-moderate). Venation more normally Larentiid than in that genus: areole ample, with 1st. subcostal well before its end. 1st. median of both wings arising near 3rd. radial, 1st. discocellular of forewing undeveloped (1st. radial connate, or almost connate, with subcostal stalk), cell of hindwing decidedly less than half the wing-length. Structure of the genitalia entirely different: saccus normal; uncus well developed; no projections anally of the tegumental ring; valves more normally shaped, "anellus lobes" (?) developed. Endemic in New Zealand. Genotype: *capapyrrha* *Butl.*

- siris.* **A. siris** *Huds.* (24 h). Small, brightly coloured, median band of forewing grey, extremely angled distally, hindwing orange, with the base and a broad distal border grey, the postmedian line acutely angled. Old Man Range, Central Otago, at about 4000 feet.
- catapyrrha.* **A. catapyrrha** *Butl.* (= *euclidiata* *Huds.*, nec *Guen.*) (24 f). Still smaller, the wings relatively more elongate. It bears a good deal of superficial resemblance, both on the upper- and on the gay and variegated underside, to the Australian *Dasyuris euclidiata* *Guen.* and was formerly confused with it, but, apart from the structural distinctions, it differs in lacking the antemedian band of the underside of the forewing and in the red or reddish colouring especially on the costal and distal borders of that of the hindwing. Widely distributed in open country and often plentiful. — ab. **fasciata** *nov.* has the median area of the forewing entirely blackened; according to PHILPOTT it only occurs in mountain localities. — **kaikourensis** *subsp. nov.* According to HUDSON (1928) "a local variety occurs in the Kaikoura Mountains, having the upperside of the hindwing bright orange".
- chrysopeda.* **A. chrysopeda** *Meyr.* (24 h), restricted, so far as is known, to Mount Arthur at altitudes of 3000 to 4000 feet and the Tararua Mountains, is on the whole less small, has the antennal pectinations shorter and is abundantly distinct in the orange bands (or, correctly speaking, ground-colour) of the forewing, differently shaped postmedian and other details. A curious venational irregularity occurs in a specimen in my collection:

on the left forewing (but not on the right) the costal vein anastomoses at a point with the anterior wall of the areole.

**A. perornata** *Walk.* (24 h). By some inadvertence, or possibly the existence of a venational anomaly *perornata*. (compare *N. fulva*), MEYRICK referred this common species to *Notoreas* and it remained there until 1918; in every specimen which I have seen, the areole is undivided. Very variable in size and in the markings of the upperside; beneath more constant, resembling a well-marked specimen of the *N. paradelpha* group; on both surfaces the course of the median dark band of the hindwing is distinctive. The highly developed (very heavily chitinized) genitalic segments of the ♀ are always more or less exposed and are a curious feature of the species. Distributed up to 4300 feet. The form from the Lake Wakatipu district is said to be considerably larger than the northern one, but no correlated difference has yet been discovered. The larva is stout, cylindrical, tapering very rapidly at head and tail, variable, one form being pale green with yellow-brown head and broken white lateral line, marked with black at the segment-incisions, the other form orange-brown with broad paler dorsal stripe, etc. On *Pimelia prostrata*; very sluggish.

**A. regilla** *Philpott* (24 h). 24—28 mm. Very near *perornata*, to which MEYRICK would with confidence *regilla*. sink it. Forewing with apex slightly more rounded; pale bands more uniformly orange-yellow, only at hinder end inclined to become whitish, 4th. (i. e., outermost) complete band slightly less angular, subterminal often punctiform, in any case forming a streak-like or wedge-shaped longitudinal mark in cellule 3; fringe with the white spots narrowed and generally more tinged with yellowish. Hindwing with first dark band or line slender, nearly straight. Underside very sharply marked; the subcostal sinus of the subterminal line slightly less deep than in *perornata*. Dun Mountain (Nelson) etc.; "not very common, but probably to be found in all subalpine localities in the Nelson Province" and reaching Mount Cook.

## 6. Genus: **Xanthorhoë** *Hbn.*

(See Vol. 4, p. 222; Vol. 16, p. 84.)

Face with projecting scales or tuft below. Palpus moderate or rather strong, rough-scaled. Antenna of ♂ pectinate (sections A and B) or more or less dentate and ciliate (section C). Forewing with areole double. Hindwing with discocellulars oblique, 2nd radial arising before the middle, or in any case not behind the cell-fold, 1st median not stalked. A genus of almost worldwide occurrence, very prominent in the New Zealand fauna. Type of the genus: *montanata* *Schiff.*

A. Section: antenna of ♂ with 2 pairs of pectinations to each joint (*Diploctena* *Turn.*).

**X. pantoea** *Turn.* (24 h). Very variable, but much smaller than the other species of the section, the *pantoea*. pectinations long, especially those of the outer series. Forewing glossy dark brown, with the median area little differentiated, the cell-spot large. Hindwing paler, the principal lines indicated. In one aberration the cell-spot is white or whitish, dark-outlined. In another the whole of the disc except the base, anterior part of median band, and a terminal band are brown-whitish. Victoria: Lorne (loc. typ.) and Ebor. — **viridicans** *subsp. nov.*, *viridicans*. from Queensland National Park (3000 feet), is very different in aspect but has the same structure and seems clearly conspecific. "Distinctly green, with well-defined basal patch and median band fuscous-brown, but the latter sometimes incomplete; minute white dots are sometimes present on the subterminal line" (TURNER).

**X. nephodes** *Meyr.* (24 i). Large in the ♂, sometimes much smaller in the ♀, the wings strikingly elongate *nephodes*. costally, especially the hindwing; altogether with the facies of an *Ortholitha*, of which genus it should probably, in strict logic, be made a section. Pectinations somewhat shorter than in *pantoea*, equal. New South Wales and Victoria, type from Mount Kosciusko, 6500 feet.

**X. argocyma** *Turn.* (24 i). Pectinations comparatively short and the proximal pair on each segment *argocyma*. shorter than the distal pair, thus assimilating to the formation found in a few African *Xanthorhoë*. Coloration and pattern also more normal for the genus than in either of the preceding. Hindwing beneath with the dark subterminal clouds at the radials and hindmargin stronger than above. The type ♂ came from Mt. Ellery, Victoria. Subsequent material from Mt. St. Bernard and Mt. Kosciusko shows the ♀♀ (as also in the preceding species) to be considerably smaller than the ♂.

B. Section: antenna of ♂ with 1 pair of pectinations to each joint (*Xanthorhoë*).

**X. stinaria** *Guen.* (= *stinata* *Fereday*) (24 k). Distinct in its colour and especially in the clear white *stinaria*. postmedian line of the forewing and its extremely bent antemedian, which becomes indistinct — often almost obsolete — in its anterior part. South Island. New Zealand, at least from Christchurch to Invercargill; HUDSON adds one or two North Island localities. Frequents rough herbage in the vicinity of forests.

- occulta.* **X. occulta** Philpott (24 k). Pectinations very short. Palpus long. Hindwing elongate after the manner of *Ortholitha*. The wings in the ♀ are narrower than in the ♂, with the apices rather acutely produced, perhaps in process of becoming semiapterous as MEYRICK (Trans. N. Z. Inst., Vol. 64, p. 151) records an extreme case (perhaps teratological) where the power of flight was evidently already lost. Very glossy, almost unmarked above, cell-dots and postmedian shown beneath, where moreover the wings are more alike in colouring (lighter than the forewing above) and the forewing has some greyish suffusion as far as the postmedian. New Zealand, widely distributed in Otago; in the North Island it has been found in the Tararua Ranges.
- mnesichola.* **X. mnesichola** Meyr. (24 k). Broader-winged and paler, the markings of the forewing above less obsolescent, both wings beneath a little more strongly marked than above. Antennal pectinations normal. Mount Arthur, 4000 to 4800 feet.
- oxyptera.* **X. oxyptera** Huds. (24 k) has been placed provisionally here, but its author writes: "As it is represented by a single specimen only, I am unwilling to denude the wings. Hence I cannot be sure that it is correctly referred to *Xanthorhoë*." Pectinations long, black; wings elongate, narrow, forewing extremely acute; greyish brown (forewing rather dark), very glossy, forewing with a black cell-dot. Auckland Island.
- nephelias.* **X. nephelias** Meyr. (24 k). Wings strongly glossy; probably better an *Ortholitha* by shape; in the ♀ very narrow although not so extreme as in the ♂ *oxyptera*. A little larger than most of the similarly coloured species. Somewhat intermediate in aspect between *L. sericodes* and *L. exoriens*, much less weakly marked beneath than the former, but not so heavily as is usual in the latter; costal part of forewing pale and weakly marked. Above Arthur's Pass, 4600 feet.
- subflava.* **X. subflava** Howes is said to resemble *L. aegrota* in colour and markings "but is  $\frac{1}{3}$  larger and the underside is free from marking". Variable in the extent of the markings of the forewing. HUDSON sinks it to the preceding, which is plausible, as the series (5 ♂♂) came also from Arthur's Pass (4000 feet); but Mr. PHILPOTT wrote me that, judging by a single example which he took in the same locality, he believed it was a good species. Perhaps more ochreous and with the postmedian of the forewing more distal and the subterminal marks of the hindwing stronger; moreover typical *nephelias* has irregular longitudinal white streaks and blackish dashes on the hindwing beneath.
- helias.* **X. helias** Meyr. (24 k). This and some of the succeeding species have also, more or less, the costally elongate hindwing which should characterize *Ortholitha*, but it is obvious that the wing-shape alone is not sufficient to justify a separation, all intergradations occurring; attempts to divide the African "*Ortholitha*" from *Xanthorhoë* have not been successful and it seems useless to repeat them in connection with the New Zealand and Australian forms. *helias* is a rather glossy species, forewing pale yellowish, more deeply ochreous at the costa and termen of the forewing; median band darkening in its outer half; proximal subterminal shade darkened against the subterminal line. Hindwing ochreous tinged, generally rather bright. Underside reddish. Dunedin (loc. typ.) and the Hunter Mountains.
- aphelias.* **X. aphelias** *nom. nov.* (= *obscura* Philpott, nec *Butl.*) (24 i) was published as a race of *helias*, with the comment, "I should not hesitate to accord this form specific rank but for the fact that some of the specimens, by loss of the fuscous colouring, approach the typical *helias*". Later (in 1926) PHILPOTT wrote me "I now consider it to be quite worthy of specific rank". As "*Scotocoremia*" *obscura* *Butl.* (1882) at present stands in *Xanthorhoë*, a new name is required for this. Forewing dull fuscous, shading to ochreous along the costa. Hindwing with the postmedian (dark, edged distally with white) conspicuous. Underside much as in *helias*, with darker suffusions. The Hump (Waiiau, Southland), the ♂ fairly common in a damp scrub-filled gully, late in February. Only one ♀ was taken and this is remarkable in having both wings much narrowed.
- frivola.* **X. frivola** Meyr., a single ♂ from Invercargill, may conceivably be a remarkable aberration of *helias*, with which it seems to agree in structure: palpus scarcely over 2 (MEYRICK gives " $2\frac{1}{2}$ "), pectinations about 6 (outer series) and 4 (inner series). Small, unusually pale, the median area of the forewing narrowed, its boundary lines and the cell-dot strong, all the other markings shadowy. Underside (as always in *helias*) more suffused with reddish than upperside. Antemedian line of forewing more curved than in normal *helias*, postmedian with the central projection sharper in front of the 1st median than behind it (in *helias* about equal i. e. bilobed). I have 2 worn *Xanthorhoë* from Nevis which look somewhat intermediate between this and *helias*.
- stricta.* **X. stricta** Philpott (24 i). 38—39 mm. "Nearest to *cataphracta* but distinguished by the absence of the white fasciae and the somewhat longer antennal pectinations." The postmedian line is merely sinuous, not angled, and the aberrations in which the many wavy lines are almost equal in expression (not forming definite bands) are slightly reminiscent of overgrown *venipunctata*. Bold Peak, Humboldt Range (loc. typ.) and Hunter Mountains at 3000 feet.

**X. cataphracta** *Meyr.* (24 i). A large and quite *Ortholitha*-like species, the median band of the forewing *cataphracta*. broadly broken into two, the rather strong distal bands cut by a conspicuous oblique apical mark. Palpus rather short. The original description, made from ♀♀ (which are generally smaller than the ♂♂), seems to cover both this and the following species, but the first mentioned locality (Arthur's Pass) should point to the present species as type, and the name has been restricted in this sense. Occurs also in the south.

**X. declarata** *Prout* (24 l). A link between *cataphracta* and *clarata*, having more nearly the colouring *declarata*. of the former, the markings of the latter. Lake Wakatipu district: Ben Lomond and Queenstown; also recorded from the Takitimu Mountains.

**X. clarata** *Walk.* (24 l). Easily distinguished by the ochreous or yellow tone, which is very pronounced *clarata*. on the almost unicolorous hindwing above and on parts of the forewing beneath. Palpus longer than in the two preceding, at least twice the diameter of the eye. Widely distributed in New Zealand, up to 4700 feet. Specimens from high altitudes are said to be larger and of a lighter colour.

**X. citroena** *Clarke* (24 l) is "evidently allied to *clarata*" but immediately recognizable by its deep orange *citroena*. colouring. ♂ 32—36 mm. ♀ 28—30 mm. Forewing suffused with deep orange; 2 or 3 whitish arched fasciae near base, 2 median, attenuated or more or less interrupted in middle, partly bordered with brownish; beyond middle a whitish fascia, wavy, angulated about middle; a wavy subterminal; fringes barred with brownish. Hindwing deep orange, with lighter suffusion alternating with brownish. Several taken at the edge of the Franz Josef Glacier, Westland (N. Z.); evidently local, no links with *clarata* known.

**X. glaciata** *Huds.* (24 l). Expanse almost  $1\frac{1}{4}$  inch. Forewing with costa strongly arched near apex; *glaciata*. bright yellowish ochreous, with blackish-brown and bluish-white markings, the basal patch being of the latter colour, a dark terminal patch similar to that of *prymnaea*; centre of median area bluish-white, heavily dark-sprinkled. Hindwing pale brownish ochreous, with a broad suffused terminal band; a grey discal dot. Mount Moltke, S. Westland, 5600 feet. A "beautiful species", conjecturally placed here.

**X. prymnaea** *Meyr.* (24 l). Another very pretty species with the general colouring yellow, the median *prymnaea*. band of the forewing broad, containing a clear white area; the terminal clouding behind the apex is obliquely bounded anteriorly, reminiscent of the *Lygris-Eustroma* group of the Palaearctic Region. Mount Arthur Tableland, New Zealand, 3600—4200 feet.

**X. cymozeucta** *Meyr.* (= *obarata* *Meyr.*, nec *Feld.*) (24 l). This and the following have been confused. *cymozeucta*. The species, with the highly sinuate and crenulate distal margins and with the less bright colouring, which MEYRICK determined as *obarata*, is not that of FELDER according to the type, but is conspecific with the form from Ohakune, of which MEYRICK's later description (1913), though not very perfect, is quite good enough: he himself and HUDSON, HOWES and PHILPOTT are in agreement as to its belonging here. I have a good series from Temuka and MEYRICK's first revision (accompanied by an excellent description of the present species as "*obarata*") gives "Wellington, Christchurch and at the foot of Mount Hutt; a plain-frequently species especially attached to gorse-hedges". HUDSON gives a wide distribution but indicates that it has become scarcer of recent years.

**X. obarata** *Feld.* (= *chorica* *Meyr.*) (25 a). Shape less extreme, both wings above with some brighter *obarata*. brown suffusions, forewing with a dark terminal patch nearly as in *prymnaea*, underside with some bright reddish distal shades. MEYRICK, having (in 1884) misidentified FELDER's rather poor figure, separated off (in 1888) the wrong species as new, probably without consulting afresh the said figure. Very local, though found here and there from Ohakune to Invercargill. FELDER's type was not localized; MEYRICK's came from Akaroa.

**X. bryopis** *Meyr.* (25 b). Expanse 29—32 mm. The olive-greenish tinge in the yellow ground-colour *bryopis*. may probably be more vivid in freshly emerged specimens. Palpus moderate, heavily scaled. Antenna with the pectinations of the outer series long, of the inner moderate. A very distinct species. Described on ♂♂ from Mount Arthur, 4500 feet. — **cosmodora** *Meyr.*, 1 ♀ taken with *bryopis*, may be its ♀; 27 mm; much paler, basal *cosmodora*. and median areas edged with black and again with white, postmedian line with stronger prominences than in *bryopis*, white central band of median area interrupted in middle, hindwing better marked.

**X. nebulosa** *Philpott*. Expanse 34 mm. Pectinations rather short. Forewing with costa strongly arched, *nebulosa*. sinuate in the middle, termen slightly sinuate; ochreous grey-whitish, distal margin broadly greyish-fuscous; lines brown, antemedian irregularly subdentate, curved, postmedian irregular, with slight triple projection in the middle. Hindwing with median and broad terminal bands. Marlborough district, New Zealand. Near *subobscurata*, but smaller and differently marked.

- subobscurata*. **X. subobscurata** Walk. (= *ascotata* Feld., *petropola* Meyr.) (25 b). One of the largest *Xanthorhoë*, further recognizable by its grey colour and almost solid dark border; darker beneath, the forewing with white apex. Not common, Otira River, Bold Peak, Queenstown, etc.
- clandestina*. **X. clandestina** Philpott (25 b). Much smaller (35 mm), similarly coloured, but without the admixture of ochreous and whitish scales; blue-grey, with the lines faintly darker, no dark terminal band; cell-mark of forewing rather elongate, dark. Arthur's Pass, the type a ♂.
- umbrosa*. **X. umbrosa** Philpott (25 b). Varies from 33 to 40 mm. Antennal pectinations moderate. Termen of forewing waved, of hindwing rounded, crenate. At once distinguished from the other greenish New Zealand species by its much larger size. Underside grey, with similar markings, paler and rather sharply marked on the hindwing. Mount Cleughearn, Hunter Mountains, at about 3250 feet; ♂♂ common at flowers of *Dracophyllum longifolium*, ♀ rare.
- cedrinodes*. **X. cedrinodes** Meyr. (25 b) approaches *umbrosa* in size and shape, but has the forewing brown, the postmedian of the hindwing more strongly sinuous. Pectinations quite short. The type is a mountain form: Mount Arthur tableland (type), Mount Cook, Bluff, Invercargill, Stewart Island. — ab. **undulata** Philpott, described from Tisbury (Invercargill) has the median band of the forewing almost obsolete, a large irregular dot at the base of the 2nd median and conspicuous blackening of the 3rd radial and the medians as far as the postmedian line. I have a similar ♂ from Queenstown. — **episema** subsp. nov. (25 a) is, according to HUDSON, the lowland form, found around Dunedin, lighter and brighter, yellow brown with the basal patch and median band rich chocolate brown. Type and others in my collection, from Flagstaff Hill, Dunedin.
- ida*. **X. (?) ida** Clarke (25 a). Venation of hindwing not given, so I leave it provisionally here; its shape begins slightly to approach that of *dissimilis* but the warm colouring and the pattern are entirely different. Pectinations very long. Forewing brown, median band not sharply differentiated, its outer central lobe weak; a more reddish band between postmedian and subterminal. Hindwing pale ochreous, weakly marked; subterminal macular. Eweburn Stream, near Mount Ida, Central Otago. A remarkable ♂ from Motupiko River, Nelson, is assigned to this species as a striking variety and said to differ in having the posterior half of the median band of forewing occupied by a conspicuous white blotch and the terminal area of the hindwing somewhat streaked brown; analogous to a form of variation found in some New Zealand *Chloroclystis* species.
- dissimilis*. **X. dissimilis** Philpott (25 c). Readily distinguishable by the wing-shape and markings, the hindwing recalling *Xyridacma veronicae* (p. 136). Described from Ben Lomond. My specimens are from Queenstown and Arthur's Pass.
- chionogramma*. **X. chionogramma** Meyr. (25 a). Pectinations of the ♂ rather long and widely spaced. Forewing rather broad, coloration nearly as in *cedrinodes*; the broad median band not sharply defined proximally, distally bounded by a very characteristic white line from costa to the projection at 3rd radial. Underside more strongly marked. Founded on 2 ♂♂ which were collected in a wooded gully on Mount Hutt. Our figure is from an Egmont ♀. Further distributed in the mountains from the Tararua Range to Wakatipu.
- camelias*. **X. camelias** Meyr. (25 a). Smaller than *chionogramma*, costa of forewing still more arched distally, termen markedly sinuate, the white postmedian mark wanting, etc. Pectinations shorter. Whangarei, Otira River, etc., the type a ♂ from the first-named locality.
- periphaea*. **X. periphaea** Meyr. (25 a). Wings longer and narrower than in the two preceding, pectinations much as in *chionogramma*. Another rather inconspicuous brown species, but the white dots and dashes, chiefly on the veins, are well noticeable. Lake Wakatipu district, not common.
- chlorocapna*. **X. chlorocapna** Meyr. (25 c). ♂, 24—26 mm. Palpus long. Pectinations very long. "Very distinct; the nearest New Zealand species is perhaps *periphaea*" (MEYRICK). As is shown by our figure, the dark smoky wings, with only the fringes and on the forewing some costal spots pale, give it a distinctive appearance. Underside with the double pale costal mark outside the postmedian stronger and with a corresponding rather broad pale band on the hindwing. Hindwing with the 2nd radial from about the centre of the discocellulars; scarcely a true *Xanthorhoë*. Chatham Islands.
- semisignata*. **X. semisignata** Walk. (= *punctilineata* Walk., *dissociata* Walk., *similisata* Walk., *corcularia* Guen., *cinerearia* part. Meyr. olim, nec Walk.) (25 c). Larger than the similar *Larentia* species which were at one time confused with it and with more joints of the ♂ antenna pectinate (about 28, against 21 or 22 in them); the same characters, as well as the tone of colour, separate it from the only similar New Zealand *Xanthorhoë* (see *plumbea* below). It is therefore really an unmistakable species and by no means so variable as to justify the long synonymy. Widely distributed in both islands, from sea level up to 3000 feet.

**X. infantaria** *Guen.* (= *plumbea Philpott*) (25 c). Closely similar to *L. cinerearia* and with nearly the same antennal structure; easily separated by the venation; further, the clear grey ground-colour lacks altogether the brownish suffusion, except that a faint indication of such is occasionally observable on a narrow subterminal band. Queenstown, November to early in January. Also common in January on Mount Cook. GUENÉE'S type, not exactly localized, which has been assumed to belong to *L. cinerearia*, is really a small, somewhat faded ♀ of the present species.

**X. (?) suppressaria** *Walk.* (25 c). Founded on 2 ♀♀ from Auckland, the type in good condition except that it (as also the paratype) has lost its abdomen. I feel pretty confident that it is misplaced and should be a *Euphyia* or *Horisme*, closely related to the Australian *E. severata* *Guen.*, with which it agrees in palpus, venation, etc. I suppose it is distinguishable from that variable species, and not an accidental introduction into New Zealand; the distal margins seem somewhat more crenulate and the oblique ochraceous-buff streak is broader and clearer, the underside rather darker.

**X. venipunctata** *Walk.* (= *psamathodes Meyr.*, *lucidata Huds.*, nec *Walk.*) (25 c). Unmistakable on account of the almost straight termen and markings of the forewing; postmedian edged with white dots on the veins. Palpus and pectinations long. Widely distributed in New Zealand, including Stewart Island; also on the Chatham Islands.

**X. lucidata** *Walk.* (= *robustaria Walk.*, *practica Meyr.*) (25 c). Much more variegated, generally in the ♂ with a good deal of white in the distal area (WALKER'S type of *robustaria* shows this); postmedian line of forewing sinuate. New Zealand, the WALKER types (as usual) without exact location; *practica* was described from the Motueka Valley, near Nelson. Distributed but rare, Auckland to Dunedin. — ab. **plurimata** *Walk.* is a ♀ form with the median area strongly blackened.

**X. cinnabari** *Howes* (= *cinnabaris Meyr.*) (25 d) is a pretty, yellow species, evidently an intruder between *lucidata* and its near ally *rosearia*, but I have conserved as nearly as possible MEYRICK'S sequence. The type has on the forewing a strongly darkened median band, but the commoner forms retain here more nearly the ground-colour, except on the dark bordering lines; in either case the area is edged on each side with white. — Only in ab. **obsoleta** *nov.* do the dark and the white lines become practically obsolete, leaving only very shadowy traces of a median band. Garvie Mountains; the type ♂♂ of both forms are from Nevis, in my collection. The underside is in all *cinnabari* very weakly marked.

**X. rosearia** *Dblld.* (= *ardularia Guen.*, *inamoenaria Guen.*) (25 d). Variable, but readily distinguishable from *lucidata* on the upperside by the strongly curved proximal edge of the median band; the band itself is less strongly developed, sometimes very little darkened, commonly only darkened about its 2 or 3 proximal and 3 distal lines. When freshly emerged, both sexes are brighter, the ♂ more rosy-tinged, the ♀ yellow-green rather than yellow. Palpus somewhat over twice diameter of eye; pectinations rather long. Widely distributed and common in New Zealand. Larva light green, with indistinct longitudinal whitish lines, the head greenish-yellow. Feeds on watercress. Pupa very dark brownish-black, glossy, spun-up among debris on the surface of the ground.

**S. subductata** *Walk.* (25 d) is separated by MEYRICK from *rosearia*, on 1 ♀ from Auckland, with no comparative description; perhaps he relied on the only "slightly" curved antemedian and possibly the "yellow-greenish" tone, his *rosearia* ♀♀ being discoloured to ochreous or yellowish. I figure the original, which is also an Auckland ♀; it will be seen that it has quite the normal antemedian of *rosearia*, but only measures 23 mm (MEYRICK'S ♀ 26 mm); its underside has just the same reddish tinge as in all *rosearia*. HUDSON says it has occurred also at Kaeo and "appears to be confined to the extreme north of the North Island", but strongly (and very justifiably) doubts its validity as a species; he figures as *subductata* a pale ochreous brown ♀, certainly not like the original (!).

**X. homalocyma** *Meyr.* (= *rosearia* part., *Meyr. olim*, nec *Dblld.*) (25 d), from the Chatham Islands, expands 22 to 28 mm, the ♂ generally the larger, antennal pectinations long. "Somewhat intermediate between *rosearia* and *subductata*; markings much as in *subductata*, but forewing without the characteristic yellow-greenish mixture", distal edge of median band much less prominent in middle. "It also approaches the larger Tasmanian *centroneura*, which however is reddish-tinged and has distinct band of median striae on hindwing", etc. Hindwing here very weakly marked. Founded on 27 specimens.

**X. orophylloides** *Huds.* (= *orophylloides Meyr.*) (25 d). "Very closely allied to *orophyla* [*Larentia*] and *orophylloides* *rosearia* but with narrower wings"; forewing pale bluish grey, median band generally paler and browner than the rest of the wing; hindwing pale grey. Auckland Island and Campbell Island; generic position uncertain (the species unknown to me).

- metoporina*. **X. metoporina** *Turn.* Founded on 2 ♀♀ collected on Mount Kosciusko, 2 March 1912. 32 mm. Palpus 2¼. Forewing broadly triangular, termen straight, oblique, crenulate; brown-whitish; markings fuscous; median band moderately broad, proximal edge excurved, ill-defined, distal edge with a large acutely-angled central projection; finely waved lines precede and follow the band. Hindwing with termen gently rounded, crenulate; pale grey, with indications of fine lines towards hindmargin. (Abridged from TURNER.)
- vicissata*. **X. vicissata** *Guen.* (25 e). Pectinations shortish-moderate. Recognizable at once by the yellow hindwing, brown-bordered but otherwise devoid of markings, and the straight postmedian of the forewing. New South Wales to Tasmania. The larva when newly hatched, is slender, glaucous green. Later (when ¾ inch long) stumpy, the segmentation distinct; fuscous, with black dorsal line, cinereous subdorsal (double) and lateral lines, the latter black-edged above; it hibernates and grows very slowly.
- heliacaria*. **X. heliacaria** *Guen.* (25 e). Generally smaller; forewing with more white in the median band, the postmedian strongly angled; hindwing with more markings than in *vicissata*. Described from Tasmania, extending to Victoria and on Mount Kosciusko.
- pyrrhobaphes*. **X. pyrrhobaphes** *Turn.* ♂, 34 mm. Palpus 2½. Pectinations 10. Forewing broad, apex subrectangular, termen slightly oblique; very pale reddish (in an aberration grey, with the reddish suffusion almost confined to basal patch), costal edge rather deeper red; median band moderately broad anteriorly, much narrower posteriorly, its edges formed respectively of 2 and 3 dark lines with their interspaces in part red, the antemedians slightly excurved, the postmedians angled before middle; cell-dot blackish; a crenulate subterminal shade; paired terminal dots. Hindwing rounded; grey-whitish, with fine dark lines from costa; terminal dots as on forewing. Underside pale reddish, with cell-dots and interrupted postmedian line. Moina, Tasmania, in January. The differently shaped wings obviates any possible confusion with *Acodia pauper*. (Abridged from TURNER.)
- amblychroa*. **X. amblychroa** *Turn.* Smaller (26—28 mm). Pectinations shorter (6), with apical ⅓ simple. Forewing elongate, with pointed apex and oblique, nearly straight termen; brown-whitish, with fuscous irroration and markings; costa with numerous short strigulae; 3 suffused subbasal lines; a slightly dentate antemedian at ⅔; postmedian at ¾, wavy, better defined, white-edged distally, central projection obtuse; cell-dot obscure, with a small brownish mark behind it; terminal line blackish, interrupted; fringe mixed with brownish-fuscous. Hindwing with termen rounded, wavy; whitish-grey, with cell-dot and obscurely dark postmedian and subterminal lines. Underside similar, markings of hindwing better defined. Hobart, in December, 2 ♂♂. (TURNER.)
- agelasta*. **X. agelasta** *Turn.* ♂, 24 mm. Palpus 2½. Pectinations 6. Forewing with termen almost straight, markedly oblique; ochreous whitish with fuscous lines and irroration; subbasal line excurved; median band darker, except in centre, which contains the cell-dot; band obscurely edged with ochreous-whitish, the proximal edge from ⅓ costa to ⅔ hindmargin, curved, the distal at ¾, with short obtuse projection, an indentation before the projection, a sinus behind; pale subterminal line slender; terminal line interrupted. Hindwing with termen slightly rounded; ochreous whitish, with dark cell-dot and nearly complete postmedian line (not quite reaching costa); subterminal set in a slight dusky suffusion. Both wings beneath nearly as hindwing above. Sale, Victoria, the type. 2 ♂♂ from Launceston have the postmedian line much less developed, the underside suffused with fuscous. (TURNER.)
- rhodacris*. **X. (?) rhodacris** *Lower.* ♂ unknown. ♀ with palpus moderate (about 2). According to TURNER "distinguishable by the reddish-ferruginous forewing, with apical patch of same colour on underside, and the very distinct subterminal line on both wings". Expanse 22 mm. LOWER considers it evidently related to *hyperythra*. Penola, S. Australia, 1 ♀, in November.
- hyperythra*. **X. hyperythra** *Lower* (25 d). Pectinations of the ♂ long, the outer series, according to LOWER, 8 times the diameter of the shaft. Palpus almost 2. Wings somewhat elongate. Forewing fuscous, with the lines ochreous-whitish to golden-ochreous; antemedian oblique inward anteriorly; postmedian with the anterior and central projections not large; apical dash visible. Hindwing paler, glossy, very weakly marked. Underside with strong reddish suffusion, the hind wing the more marked. Adelaide (type) and Victoria. Said to be variable.
- castanea*. **X. castanea** *Warr.* (Suppl.-Vol. 4, pl. 12b). Probably Palaearctic in origin, looking like a somewhat narrower-winged outlier of the *munitata* (*Hbn.*) group or perhaps a pectinate relative of *designata* *Hufn.* (Vol. 4, pl. 9 e). Smaller than *Euphyia subangulata* (Vol. 4, pl. 12 b), which it somewhat resembles in colouring; distal area and hindwing (at least in the ♀) darker, underside without bright brown subterminal shade. Kashmir.
- oligepes*. **X. oligepes** *sp. n.* (25 e). Somewhat recalls *Colostygia austriacaria* *H.-Sch.* (Vol. 4, pl. 9 b), though not quite so long-winged nor so extremely glossy, the markings a little stronger. Head and palpus nearly concolorous with thorax; palpus nearly 2. Pectinations rather long, suberect, widely spaced, numbering about 25 in each series. Band with projections very weak, markings on either side of it punctiform; a few of the subterminal

lunules (rarely all) dark-filled proximally. Hindwing whitish, weakly marked excepting the cell-dot. S. Tibet: Nam La, Tsangpo Valley, 14 000 feet, 24 July 1924 (J. Kingdon WARD), 7 ♂♂ in the British Museum. Probably nearest the *tianshanica* (*Alph.*) group (Vol. 4, p. 224). — **phariensis** *subsp. nov.* (25 e). Slightly narrower-winged, *phariensis*. costa relatively more elongate; 1 or 2 more joints of the antenna pectinate. Forewing with median area slightly broader, scarcely differentiated from the rest except by the very highly developed white and dark vein-dots (or short dashes) of the adjoining areas. Tibet: Phari, 16 000 feet, 19 July 1924 (Major R. W. G. HINGSTON, Everest expedition). Aspect very different, more recalling some *Coenotephria ludificata* or even light *Colostygia multistrigaria* (Vol. 4); I should unhesitatingly regard it as a good species but that a ♂ from the same expedition, 21 July at 14 000 feet (antennae broken) has the shape of *oligepes*, the median area slightly more band-like than in *phariensis* type.

**X. aemyla** Prout (Suppl.-Vol. 4, pl. 18 f) is another high-altitude Tibetan *Xanthorhoë* (Poshō, E. Tibet, *aemyla*. 16 000 feet). Hindwing somewhat elongate near costa (approaching the shape of an *Ortholitha*) and with the 2nd median arising from the middle of the discocellulars, thus appreciably behind the cell-fold; uniformly whitish, with interrupted dark terminal line. Forewing, on the other hand, relatively short and broad, the scaling, the pattern of definite lines and the browner shades totally unlike those of *oligepes*; postmedian approximately parallel with termen, its sinuosities weak, the median band brownest at its proximal and especially at its distal border.

**X. molata** Feld. (25 e ♂, ♀). By far the commonest of a small group of S. Indian species whose differ- *molata*. entiation may perhaps give some trouble. On the whole smaller than the rest. Discocellulars normal for *Xanthorhoë*; ♂ pectinations rather long, but not extraordinarily. Attention may be called to the sharply white apex of the forewing beneath and the dark subterminal shades of both wings, above and beneath. Forewing extremely variable, particularly as regards the median band; this can be dark or mottled and may enclose a very ample or a narrow or incomplete pale-grey or white area, often limited to an encirclement of the cell-dot (the name-typical form). Hindwing above very weakly marked, pale in the ♂, dark in the ♀. Underside with the strongly darkened subterminal shade of the forewing nearly reaching the termen, which it touches behind the white apical spot. Ceylon (type) and S. India. — ab. **coarctata** *nov.*, parallel to some Palaearctic aberrations thus *coarctata*. named, has the median band extremely narrowed, strongly darkened, basal patch normal, the rest of the markings somewhat blurred. Hindwing with suggestion of a still narrower band. Nilgiris, 1 ♀.

**X. trusa** *sp. n.* (25 f). Expanse 33—35 mm, about as in the largest *molata*. Pectinations extremely long *trusa*. (8 or 10 times the diameter of the shaft), the difference from those of *molata* readily observable even with the naked eye. No other infallible distinctions can yet be demonstrated, but the following indications should be found useful. Forewing with the antemedian somewhat more curved (yet not nearly so much bent as in the rest of the group); the area just outside the median band decidedly tinged with brown (in *molata* nearly always white); fringe less strongly chequered. The hindwing above and both wings beneath are a little less white than in most *molata*, but extremely similar thereto. Palni Hills (W. H. CAMPBELL), the exact situation not given (from Kodaikanal, at 7000 feet. I have seen only *molata* itself). The type ♂, in the British Museum, is a beautiful form, with the central band of the median area broadly white, the rest of the wing predominantly dark; of 2 ♂♂ in my collection (both with the antemedian slightly more curved), the one here figured has the white of the median area less pure than in the type, interrupted behind the middle, the other has the pale central parts of the area further reduced and grey, not white, therefore not very conspicuous. Some ♀♀, probably collected with these (W. H. CAMPBELL), are much darker and cannot yet be distinguished from some *molata*.

**X. greeni** *sp. n.* (25 f). Size of *trusa*, perhaps relatively a little longer-winged. Antenna of the ♂ with *greeni*. the pectinations decidedly long, though not equalling those of *trusa*; usually with rather more joints pectinated (about 37, against about 32), but curiously inconstant. Tone more brownish, especially of the hindwing, which usually shows on the upperside 3 lines, besides indications of the subterminal shading. On the forewing the chief distinction is in the angulated antemedian, but the subbasal is also slightly more angular than in the two preceding and the interrupted subterminal develops at least a clean white dot in cellule 3. Underside more dark-shaded than in *molata*, the subterminal bands much less conspicuous, apical spot of forewing less white, sometimes wanting, the hindwing characterized by the well-developed lines of the proximal part. Discocellulars of the ♂ hindwing not biangulate, but occasionally showing a very slight tendency to approach that form (2nd radial arising just behind end of cell-fold). Founded on 5 very good specimens (4 ♂♂, 1 ♀), in the British Museum, from Namunkuli, Ceylon, February 1910 (E. E. GREEN); also 2 ♂♂ from Maskeliya, February and July (G. C. ALSTON) and a ♀ from Patipola, March. One aberration has the band of the forewing more uniformly darkened; in another it contains a pale patch round the cell-spot.

**X. magnificata** Walk. (25 f). Larger (36 to 42 mm), less brown than *greeni*, notably on the underside, *magnificata*. which is more mixed with whitish and has a fairly broad subterminal band, though less dark than those of

- molata* and *trusa*: postmedian line, particularly of the hindwing underside, with a deeper curve inward between. HAMPSON notices a remarkable venational anomaly in so-called *magnificata*, but inaccurately attributes it to the ♂ only; the discocellulars of the hindwing are somewhat, or even quite strongly, biangulate, though decidedly variable, and I suppose he compared with the anomalous *albilinea* and ♀♀ of the very closely allied *fumipennis*, which he has sunk. The present species is also variable in wing-markings, although (judged from a far shorter series) less so than *molata*. The type is a large ♂ with white patches in the median band, that which surrounds *albilinea*. the cell-spot large. — ab. (?) **albilinea** Hmps., only known from the type ♀, is large, cleanly marked and as it has actually non-biangulate discocellulars and shows a brown suffusion on the cell-mark of the forewing, which otherwise I have only noticed in the type ♂ of *fumipennis*, it may have to be removed to that species notwithstanding that the hindwing seems too light. Median band broad, its pale patches reduced, greyer, its distal boundary-line clear white. — ab. **subseparata** Walk., founded on a rubbed ♂, has the band more uniformly darkened than in the type, almost solid. Discocellulars of the hindwing strongly biangulate. — ab. **inspurcata** Walk. is a ♀, not very fresh, the brownish parts still greyer, the hindwing rather more dusky, but may be considered as the corresponding ♀ to the preceding. Discocellulars similar.
- fumipennis*. **X. fumipennis** Hmps. (25 f). Generally easy to distinguish by its dark colouring, very notable on the hindwing. Discocellulars not biangulate. ♂ pectinations less long (about 6:8), antemedian of forewing less bent outward. Nilgiris.
- griseiviridis*. **X. griseiviridis** Hmps. (= *curcumata* Moore part., nec typ.) (25 f). Pectinations quite short, terminating in tufts of cilia. Hindwing and underside in both sexes dusky; forewing with outer lobe of median band longer than in *molata*. Fresh specimens show some olive-green admixture in basal and distal areas of forewing. The type form has a characteristic grey suffusion in the distal part of the median band. — ab. **aequifasciata** nov. has the median band uniformly darkened throughout. — Bhotan to Simla, the type of *griseiviridis* from Bhotan, that of *aequifasciata* from Darjiling.
- cybele*. **X. cybele** Prout (25 f). Near *griseiviridis* but with the pectinations still shorter (less than diameter of shaft), the fascicles of cilia longer than themselves. Forewing with median band wholly dark, its proximal edge twice indented, as in *formosicola*, its distal almost as strongly produced behind the 3rd radial as in *griseiviridis*. Hindwing rather more uniformly dusky than in *formosicola*. Formosa: Arizan. Not difficult to distinguish from the last-named by its smaller size, more projecting postmedian and especially the subpectinate-fasciculate ♂ antenna.
- curcumata*. **X. curcumata** Moore (= *placida* Prout) (25 g). MOORE mixed no less than 3 species under his *curcumata*, his "type" (holotype) being a Darjiling ♀ of the present species, his allotype a ♂ of *griseiviridis*, while another ♀ of his original series belongs to *formosicola*. Much confusion has resulted and HAMPSON determined yet a fourth species as *curcumata* (see *hampsoni*). The true *curcumata* is rather large, the median band less broad than in the similar forms, with its distal lobe very slight, the hindwing largely glossy white; both wings beneath with the postmedian much less projecting than in *hampsoni*. Pectinations about as in *hampsoni*, secondary processes apparently more developed. Sikkim to N. E. Burma, the type from Bhotan.
- hampsoni*. **X. hampsoni** Prout (= *curcumata* part., Hmps., err. det.) (25 g). Very similar to *curcumata*, on the whole smaller (33 mm), hindwing with more suffusion and markings, postmedian different (see above). Antennal pectinations a little longer than in *griseiviridis* (about 1½); slight secondary processes present, somewhat as in *fluctuata* L. (Vol. 4, p. 223). Simla (type) and Dalhousie.
- hyphagna*. **X. hyphagna** Prout (25 g). Rather smaller than *hampsoni* and structurally quite distinct in that the ♂ pectinations, though slender, are rather long; palpus little over half as long again as diameter of eye. Hindwing in the ♀ a little less clear than in the ♂ (here figured). Java (type) and W. Sumatra.
- fissiferula*. **X. fissiferula** sp. n. (25 g). Larger than *hyphagna* (♂ fully as large as the largest ♀♀ of that species), palpus and pectinations rather longer. Forewing with termen rather longer and more waved; median vein and its fork (to the end of the median area) ochreous, strikingly conspicuous; median band much broader than in *hyphagna*, its proximal edge with blunt indentation at each fold, its distal irregularly dentate but without any large projections. Hindwing much less pure white than in *hyphagna*, its proximal and posterior parts, with the tornus, having considerable smoky suffusion, on which some lines are traceable. W. Sumatra: Sungei Kumbang, Korintji, 4500 feet, April 1914 (ROBINSON and KLOSS), only the type ♂ known (Mus. Tring).
- hedyphaës*. **X. hedyphaës** Prout (25 g). Palpus nearly twice as long as diameter of eye. Antennal pectinations long. Forewing green, with the markings blackish; basal patch less oblique-edged than in the following, with a rather deep indentation on the median vein; median band constricted in the middle, its coloration variegated; distal area with some variegated patches on the green ground. Manusela, Central Ceram, 6000 feet. Great as is the variability of many Larentiinae, it does not seem feasible to regard this as an aberration of the following.

**X. callisthenes** Prout (25 h). Structure and wing-shape about as in *hedyphaës*, apical dash and terminal markings similar. Variable, but always with more or less strong rufous suffusions; median band of forewing broad, notably in anterior half, antemedian line only gently curved, central part of band generally pale. Under-side strongly rufous-tinged with black cell-spots, otherwise weakly marked. ♀ more uniformly rufous. Manusela, with the preceding. — ♂-ab. **albifusa** Prout is a very beautiful aberration, with the pale parts almost clear white.

**X. ludifica** Warr. (25 g). Palpus moderate. Pectinations of the ♂ antenna long. A glossy species, with less brightly coloured forewing than either of the three preceding. Variable; hindwing in both sexes whitish or pale above, more suffused and better marked beneath; forewing in the ♂ with median band dark, at least at its borders, and sharply (sometimes rather broadly) bordered with white; in the ♀ more sombrely and uniformly coloured; median band with the central projection in its distal part quite weak, especially in the ♂. Locally common in the mountains of E. Java up to 9000 feet. — ♀-ab. **incognita** Warr. is the ordinary, almost unicolorous form of the ♀, merely with the edges of the median band and the subterminal line a little paler. Name-typical ♀♀ (i. e. with the coloration of the ♂, only with the median band broader) are quite rare.

**X. nubilosa** Warr. (25 h). Possibly, as WARREN supposed, a remarkable dimorph of the preceding, together with which it is generally taken; but amongst very large numbers I have not found a single example that links them. Band of forewing shaped more as in *callisthenes*, much broader anteriorly than posteriorly, commonly with a slight additional projection distad just before it begins to narrow; its white edgings slight. Very variable as regards the filling-in of the band, which may be complete and intense or slighter, or confined to broad or narrow ante- and postmedian stripes, which may be confluent behind the median vein; more rarely the whole wing is suffused, though with the band darker than the rest. — **klossi** *subsp. nov.* (25 h). Greyer, especially on the hindwing; antemedian of forewing straighter, postmedian perhaps scarcely so strongly lobed, postmedian of the hindwing, on the other hand, somewhat more sharply bent than in *n. nubilosa*. Korintji, W. Sumatra (ROBINSON and KLOSS) 2 ♂♂ and 1 ♀ at 7300 feet; also 2 larger ♀♀ (35 to 36 mm) from Sungei Kumbang, in the same district, at 10 000 feet.

**X. pratti** Prout (25 h). Structure as in *hedyphaës*, from which it differs as follows. Forewing nowhere clear green, only in the subbasal and the narrow band beyond the postmedian shaded with brownish olive; basal patch more uniformly mixed with red-brown, less deeply indented; an ill-defined band in the succeeding area; median band shaped more nearly as in *callisthenes*, or as in *ludifica*, its colour less variegated than in *hedyphaës*; white subterminal line continuous, though rather irregular, accompanied by irregular brown shadings and between the radials proximally by well-developed black spots; terminal line broken into pairs of sharply black dots. Manusela, Central Ceram, 2 pairs, the ♀♀ larger (34—35 mm), slightly darker, the band of the forewing considerably broader.

**X. dissociata** Warr. (25 h). Another variable species, rather large, the palpus longish-moderate, the pectinations long, the median band moderate in the ♂, very broad in the ♀. Luzon. In the type form the median band is reddish, the lines well developed. — In ab. **nigrimedia** Warr. the lines are evanescent, the median band black-brown. — In ab. **ruptifascia** Warr. the forewing is wholly dull reddish brown, the lines faintly darker, the band brown-shaded towards costa, with a black horizontal blotch across it in front of the median and a smaller, less complete one behind the submedian; transitions occur.

**X. simplicata** Prout (25 h). Antenna pectinate (only the stumps remaining). Apparently intermediate between *callisthenes* and *subidaria*, nearer to the former except in its small size. Forewing pale grey, the markings fuscous, mixed with red and black; median band, as in *callisthenes*, considerably broader anteriorly than posteriorly, the first postmedian line similarly very oblique outward from costa and sharply bent subcostally. Hindwing above and both wings beneath with rather large cell-dot; and weak waved lines. Buru: Gamoe Mrapat, 5000 feet, only the type ♂ known.

**X. everetti** Warr. (= *roseopicta* Warr.) (25 i). Suggestive of the Palaearctic *Cidaria cupreata* H.-Sch., though with more of the *Xanthorhoë* facies and with well (moderately) pectinate ♂ antenna. ♀ rather larger with more uniformly lined median area. Celebes. I have sunk *roseopicta*, which is not even an aberration though (being in good condition) its rosy flush is rather more noticeable.

**X. sodaliata** Walk. (= *divisata* Walk., *urbana* Meyr.) (25 i ♂, ♀). Very near *subidaria*, of which it was formerly supposed to be a ♀ form, this being the more easily differentiated sex. It differs from ♀ *subidaria* in its almost uniform dark suffusion. The ♂ (*divisata*), as TURNER says, "has a uniformly dark median band on the forewing, without brown or purplish tinge, while the terminal area is paler or even whitish". I believe a further synonym is *multifilaria* Walk. (Tasmania, as "*Panagra*"!), but the type ♀ is rubbed and weakly marked and will need to be subjected to a more thorough examination. *sodaliata* is distributed from N. Queensland to

Tasmania and perhaps West Australia; further known from Lord Howe and Norfolk Islands and eastern New Guinea.

- subidaria*. **X. subidaria** Guen. (= *regulata* Walk., ♀ = ? *multifilaria* Walk., *gelidata* Walk., *algidata* Walk., M. S., Turn.) (25 i). Antennal pectinations in ♂ long. Common and extremely variable, so that, even after the elimination of *sodaliata*, it has still an extensive synonymy. Palpus fully twice diameter of eye; pectinations long.
- relictata*. GUENÉE's type form has the median band of the forewing dark or blackish, solid. — ♂-ab. **relictata** Walk. (= *acutata* Walk.) has a pale (in the subaberration *acutata* white) patch surrounding the cell-dot of the forewing. Both the types, together with that of *regulata*, came from Sydney. — ab. (?) **cymaria** Guen. It is not quite clear on what grounds GUENÉE separated this from *subidaria*, as he makes it a species and does not even compare the two. A nearly typical *subidaria* ♀ in his collection is labelled "*cymaria*?", but I gather that its median band should be "a little paler in the middle" and that therefore it may have to supplant ab. *relictata* or even ab. *irrepleta*; it may, however, represent the usual ♀ form of *subidaria* (which was founded on 6 ♂♂), generally distinguishable by its broader median band and darker hindwing. — ♀-ab. **permissata** Walk. has the brown parts suffused with dull red, the outer lobe of the median band rather acute, the white band beyond it strong. Type from Sydney. — ab. **irrepleta** nov. is a frequently recurring aberration with the median band ill developed, expressed chiefly by some dark shading on the antemedian and postmedian groups of lines and even this shading, in the ♂, almost confined to the anterior half, blackest about the median and 3rd radial veins. This rather strongly recalls the commonest form of *rosearia* except in its less curved antemedian and less rosy-tinged underside. — *subidaria* is common and widely distributed in Australia, except the more tropical parts.
- epia*. **X. epia** Turn. (25 i). ♂ and ♀, 29 to 34 mm. Palpus 3. Pectinations in ♂ 6. Forewing with apex pointed, termen bowed, oblique; grey, with numerous fine oblique fuscous lines, more or less reddish tinged; a small basal patch and a median band darker, the latter moderately broad anteriorly, from middle to hindmargin narrowing to  $\frac{1}{2}$  the breadth, proximal edge slightly curved, distal very obtusely exangulated in middle. Hindwing rounded, grey, posteriorly with commencements of alternately darker and paler lines. Mt. Kosciusko 5000 feet. Nearest *centroneura* (25 i) but much less pale, with less contrasted band and without the blackish vein-dots.
- centroneura*. **X. centroneura** Meyr. (25 i). Palpus a little over twice diameter of eye. Pectinations at least as long as in *epia*. For the differentiation see above. Median band in general little darkened except on its edges, which show some red or dark markings; characteristic are the blackish vein-dots of the forewing, particularly outside the median band. Described from Mount Wellington, Tasmania; perhaps confined to that island.
- bituminea*. **X. bituminea** Turn. Described from 2 ♀♀ from Rosebery, Queensland, of which TURNER says: "though the ♂ is unknown, I think this species is allied to *centroneura* and *epia*". 30 mm. Forewing with costa nearly straight to near apex, apex acute, termen sinuate, oblique; fuscous, obscurely marked with slender wavy darker lines; median band hardly darker, defined distally by a very slight whitish line from  $\frac{5}{6}$  costa to  $\frac{4}{5}$  hindmargin. Hindwing with termen crenulate, only slightly rounded; grey, with the beginnings of obscure slender lines from abdominal margin. Underside fuscous, the hindwing better marked, with blackish cell-dot and 3 dark lines distally thereto. The second specimen is a well-marked aberration, the forewing with brown ante- and postmedian bands, the latter bifurcating near costa, its outer branch running to apex.
- aphanta*. **X. aphanta** Turn. Position quite uncertain. The unique type, a ♀ from Lord Howe Island, was first recorded as "*Cidaria*?" (*Euphyia*), then described as "*Xanthorhoë*?". Expanse 24 mm. "An inconspicuous species of ordinary facies." Palpus  $2\frac{1}{2}$ . Forewing apex round-pointed, termen slightly bowed, moderately oblique; ochreous-whitish, the markings grey, mixed with brownish; basal patch moderate, dentate-edged; median band broad, proximal edge curved, distal with a single, prominent, rather obtuse tooth; cell-mark linear, set in a paler space; 3 rippled lines between postmedian and the interrupted, dentate subterminal. Hindwing whitish, with grey suffusion. Both wings with terminal dots.
- xerodes*. **X. xerodes** Meyr. (25 k ♂, ♀). Palpus scarcely over twice diameter of eye. Pectinations  $2\frac{1}{2}$  or scarcely (MEYRICK, who gives 3— $3\frac{1}{2}$ , must have measured from a narrower diameter of the shaft), continuing almost to the apex. Forewing variable; veins sometimes partially marked with ferruginous; numerous irregular dark lines on a whitish or ochreous-mixed ground-colour, the median band a little darkened; antemedian very oblique inward at hindmargin; postmedian with a short, but moderately acute central projection; fringe rather dark, marked with whitish. West Australia: Albany. 2 ♀♀, from Perth and district, are much whiter, with strongly contrasting median band, extremely like a well-known form of *Larentia severata* Guen., but I accept MEYRICK's determination, as I notice that they have the angle of the postmedian in front of 1st median sharper than in *brachyctena*, most *severata*. — **brachyctena** Turn. (25 d) is probably a synonym, at most a very slight geographical modi-

fication. TURNER, misled by MEYRICK's inexact estimate of the antenna of *xerodes*, which he (TURNER) had not seen, assumed that he had a separate species; I can see no material distinction between the few specimens which I have been able to compare. Black Rock, near Melbourne.

**X. anaspila** *Meyr.* (25 i). Palpus and pectinations moderate. Hindwing with a rather pronounced *anaspila*. emargination between the radials. Variable in size and in the degree of suffusion in the median band which is slight in the (small) originals and renders very clear the characteristic dark spot outside the postmedian. MEYRICK says this "species has so much general resemblance to some Boarmiadae [Geometrinae], that it is difficult not to infer intentional mimicry"; to me it looks much more like a pectinate *Horisme*. New South Wales (type ♂ and ♀), Victoria and Tasmania.

**X. brujata** *Guen.* (= *repentinata* *Walk.*, *breviaria* *Walk.*) (25 k). Variable, especially in size, but easily *brujata*. known by its shape (hindwing somewhat crenulate, etc.), its glossy wings, the form of the markings and the structure; face smoother than in true *Xanthorhoë*, palpus shortish, ♂ pectinations rather long. Perhaps the genus *Visiana* *Swinh.* (type *sordidata*) will have to be revived for this group. Superficially *brujata* somewhat recalls the much less glossy, non-pectinate *stellata* *Guen.* of the New World. Widely distributed in Australia and common, the type from Tasmania. The ♀♀, as also in the rest of the "*Visiana*", are less contrastingly coloured and marked than the ♂♂.

**X. vinosa** *Warr.* (25 k). Much like smaller *sordidata* or (in its less angled postmedian, at least on the *vinosa*. hindwing) heavily marked and more variegated *brujata*. Pectinations about as in *brujata*. Underside on an average more reddish. The type has the median band of the upperside rather redder and less dark than usual, but most specimens are nearer *brujata* in this respect. Forewing with outer prong of the median band sharp, generally looking single rather than bifid; postmedian of hindwing usually more angled behind the 3rd radial, but variable in both species. Mountains of British New Guinea, the type from Biagi. — **ranensis** *subsp. nov.* *ranensis*. Rather larger, forewing with the outer prong of the median band scarcely so acute, proximal line of hindwing slightly less crenulate, its postmedian fairly well incurved in posterior part. Buru: Rana, type in the Tring Museum.

**X. sordidata** *Moore* (25 k). Except in its large (sometimes very large) size, very similar to the brownest *sordidata*. and least strongly glossy *brujata*, but with much more irregular postmedian line. Generally rather strongly marked, both above and beneath. N. India (the typical form) and from Sumatra to Sambawa. — ab. **fuscata** *fuscata*. *nov.* is almost uniformly infuscated, the markings scarcely (on the hindwing not) discernible, with the exception of the white vein-dots or dashes, the forewing slightly browner between the postmedian and the subterminal. A ♂ from the Khasis, in the Tring Museum. — **robinsoni** *subsp. nov.*, from Sungei Kumbang, Korintji, W. Su- *robinsoni*. matra (ROBINSON and KLOSS) differs chiefly in that the antemedian of the forewing is acutely angled at both folds; usually, moreover, the underside shows a rather strong vinaceous tinge, especially outside the postmedian, where that of *s. sordidata* is quite pale. The type series is in the Tring Museum. — **inimica** *Prout.* Smaller *inimica*. (36—37 mm), darker, much less brown, well marked above, rather weakly beneath, but with large cell-dots; antemedian line less acutely angled than in *robinsoni*. W. Bali: Mondoktoempang, 2500 feet, the type ♂; E. Java: Nongkodjadar, 4000 feet, 2 ♂♂, somewhat less fresh; all in the Tring Museum, sent by J. P. A. KALIS. I have a ♂ from Tosari (E. A. COCKAYNE). — **tamborica** *subsp. nov.* reverts to the coloration of *s. sordidata* or, *tamborica*. in its tendency to show some vinaceous tinge, *robinsoni*, but is not, or scarcely, larger than *inimica* (♂ 36 to 38 mm, ♀ 40 mm) and has the cell-dot of the forewing large, broad; the wings, at least in the ♀, are slightly broader than in the other forms; antemedian line about as in *s. sordidata*. Tambora, Sambawa, 2500—4000 feet 3 ♂♂, 2 ♀♀, in the Tring Museum. A worn ♂ from Lombok seems to agree.

**X. hyperctenista** *sp. n.* (25 k). Easily known from the rest of the group by its exceptionally long pect- *hypercteni-* *sta*. inations. As dark as *inimica*, the ♀♀ even approaching *sordidata* ab. *fuscata* but with additional median white vein-dots and more continuous subterminal line. Forewing with antemedian notably oblique outward from costa to near cell-dot and with an acute subcostal tooth, posteriorly oblique inward and denticulate; postmedian with the double lobe weak, the white distal edging strengthened at the veins; subterminal, especially in its posterior half, rather conspicuous. Hindwing with the postmedian as little bent as in *brujata*, or even less. Both wings beneath with dark suffusion, particularly from the postmedian to near the median. Vulcan Island (the typical series) and Dampier Island (a pair), collected on MEEK's expedition of 1913—1914.

**X. gigantis** *sp. n.* (25 l). Similar to the *brujata* group in the many-lined, *Horisme*-like pattern of both *gigantis*. wings, but very different in the palpus, which is elongate and heavily clothed with long hair-like scales, and in the less broad wings, the forewing with more oblique termen, the hindwing strongly crenulate; abdomen less robust. Antennal pectinations long, about as in *hyperctenistis*. Paler and more greyish than the *brujata* group, the hindwing beneath notably whitened, not (as in them) concolorous with the forewing. Postmedian

line of hindwing as irregular as in any *sordidata*, that of forewing much less so. Mount Goliath, Dutch New Guinea, January 1911, only the type ♂ known. It may be regarded as a link with *Aeschrostoma*.

- caustoscia*. **X. caustoscia** *Meyr.* (25 l). The largest Hawaiian *Xanthorhoë* and distinguishable by its dentate hindwing. Otherwise not at all a striking species, though some slight reddish or purplish suffusion relieves the dark ground-colour. The pale subterminal line is in the ♀ better developed and forms a conspicuous white dot behind the 3rd radial. Pectinations of the ♂ antenna fairly long. Maui and Lanai, 3000 to 5000 feet.
- insularis*. **X. insularis** *Butl.* (25 l). Less brown than *caustoscia*, the wings elongate, the termen of the hindwing scarcely waved; median band distally much more sinuate and lobed. Variable, the ♀ smaller, whiter and more sharply marked than the ♂. Hawaiian Islands, at high altitudes.
- ioxantha*. **X. ioxantha** *Meyr.* (25 l). Distinguished at once by the orange ground-colour of the forewing; hindwing except at abdominal margin, paler. Our figure shows the type of maculation. A ♀ from Kaholuamano, Kauai (Hawaii), 4000 feet. In the absence of the ♂, the systematic position is uncertain. Perhaps related to *Euphyia leucoxylla*.
- finitima*. **X. (?) finitima** *Walk.* (25 l), founded on 4 ♀♀ from the Isle of Pines (Kuni) has also been tentatively referred to *Xanthorhoë* but may probably, like "*X.*" *leucoxylla* *Meyr.* (*Euphyia*), be found to have simple ♂ antenna. Excepting the type, which has lost one hindwing, all are torn and more or less rubbed, but they evidently do not vary and our figure of the type will make it recognizable. Face with pointed cone; palpus about twice diameter of eye, 2nd joint heavily long-scaled. Distal margins almost smooth; hindwing somewhat elongate anteriorly. Median band of forewing little narrower posteriorly than anteriorly, in part pale, at least round the minute cell-dot, 2 or 3 antemedian and 3 postmedian lines on it fairly distinct. Underside weakly marked.
- pallida*. **X. pallida** *Rothsch.* (25 l). Palpus nearly 2, rough-scaled. Pectinations longish (4 or 5), apical  $\frac{2}{7}$  of antenna non pectinate. Abdomen slender. Scaling smooth and thin. The hindwing, which is white and almost unmarked above, is adorned beneath with a very characteristic fuscous subterminal band its proximal boundary (near the postmedian) a merely waved and very little curved line, its distal (indicating the white subterminal line) very irregularly and strongly dentate the prongs coming between the veins. The forewing beneath is also more strongly marked than above and the hindwing (though unfortunately rubbed) shows the remains of several dark lines between the base and the postmedian. Dutch New Guinea: Carstensz Peak, Oetakwa River, 13 000 feet, February-March 1913 (A. F. R. WOLLASTON), the unique type on the Tring Museum. The texture and facies show the characteristics of a high-mountain species.
- vulgaris*. **X. vulgaris** *Rothsch.* (26 a). Palpus about as in *pallida*, pectinations somewhat longer and continued to nearer the tip of the antenna. A very simple and unostentatious brown-grey species, showing very little variation. Underside with the forewing less, the hindwing more, strongly marked than above. Dutch New Guinea: Oetakwa River in numbers, from 4000 to 6000 feet; also 2 ♀♀ have been taken on Mount Goliath, 5000 to 7000 feet.
- albiapicata*. **X. albiapicata** *Warr.* (26 a). This and the succeeding Papuan species, as far as *albirivata*, probably form a natural group, with the frontal tuft generally slight, the palpus shortish, the pectinations short or moderate, the coloration (as least of the hindwing and underside) dark and glossy. From the other 2 small species of the group, *albiapicata* is at once distinguishable by the sharply white mid-subterminal dot; there is usually also much pale or white marking in the apical region (but this is variable) and always the pure white anterior half only of the postmedian line arrests attention. Owen Stanley Range and Mount Goliath.
- fulvinotata*. **X. fulvinotata** *Warr.* (26 a) has more white markings than any of its neighbours and the large "fulvous" brown patch between the postmedian and subterminal of the forewing always stands out conspicuously. Angabunga River and Biagi. with *albiapicata*.
- bifulvata*. **X. bifulvata** *Warr.* (26 a). Much darker, the bright brown outer shade less conspicuous but extended into a band, a similar proximal one replacing the much greyer band which occupies the same position in *fulvinotata*. Underside without the white mid-subterminal spot which is reproduced from the upperside in *fulvinotata* and with the hindwing more regularly rippled with whitish lines. Angabunga River.
- coeruleata*. **X. coeruleata** *Warr.* (26 a). Much larger, pectinations proportionally nearly as short as in *bifulvata*. The whitish markings on the wings strongly tinted with a somewhat metallic blue, the fringe-spots white; a warm brown patch on forewing placed as in *fulvinotata* but occasionally obsolete. Owen Stanley Range and Goodenough Island; type from Angabunga River.
- monastica*. **X. monastica** *Warr.* (26 b). Variable in size, otherwise almost constant. Forewing more unicolorous, the only strongly dark lines being the two which bound the median area and a median well outside the cell-mark;

indications of white lines (bordering the ante- and postmedian) become conspicuous only at their costal end. Angabunga River and 1 ♂ from Biagi.

**X. interrufata** Warr. (26 b), collected with the type series of *monastica*, is larger and more variegated, *interrufata*, with reddish-brown suffusions; the subordinate lines better expressed, notably just outside the postmedian, where a paler band is bounded by a dark line and bisected by another. Occurs also on Mount Goliath.

**X. cerasina** Warr. (26 b). An elegant species, the pale parts almost entirely suffused with pink, the *cerasina*, dark brown basal patch and broad median band with a tinge of olive. Angabunga River and district.

**X. succerasina** Prout, founded on a ♀ from Mount Goliath, is perhaps another form of *cerasina*. Larger *succerasina*, (48 mm), less bright, the pink suffusion slighter, a subbasal band-like shade obliterating it till near the median band; this band more uniform in width, the antemedian less angulated. Hindwing with the dark ground-colour clouding the pink part (recalling *interruptata*). A ♀ from Mount Tafa, N. W. Owen Stanley Range, agrees essentially, though the subbasal band is less strongly developed and the antemedian line somewhat more dentate, thus slightly intermediate.

**X. lucirivata** Warr. (26 b). Probably near *monastica*, but much more variegated. Forewing with basal *lucirivata*, patch and especially median band more definitely darkened; postmedian line running outward from costa to 3rd radial; distal area with conspicuous macular pattern accompanying the subterminal. Hindwing with postmedian strongly excurved in its central part; distal area paler, with macular subterminal markings. Upper Aroa River (type) and Biagi. — **buntibasa** *form. nov.* (26 b) will probably prove to be a separate race, or possibly *buntibasa*, even a species. Larger; forewing with antemedian line more direct, postmedian with its white accompanying line thickened anteriorly; hindwing with the central prominence of the postmedian less strong; both wings with distal area darkened, the subterminal and its spots almost obliterated. Buntibasa district, Kratke Mountains, 4000—5000 feet, July 1932 (F. Shaw MAYER), 1 ♀ in the Tring Museum.

C. Section: antenna of ♂ ciliated, generally in fascicles which arise from teeth or prominences.

**X. percrassata** Walk. (26 b). Readily recognizable by the sharply banded forewing with the markings *percrassata*, almost straight, including even the subterminal, which is bounded on both sides by complete dark shades; the median band usually consists of two stripes separated by a pale stripe, but occasionally forms a solid dark area. The type, from South Australia, is intermediate, the pale central part restricted to the region of the cell-dot. Tasmania to Brisbane.

**X. vacuaria** Guen. (26 a) is more variable, but the shape of the median band (though not its breadth *vacuaria*, nor its intensity) is tolerably constant; for the differentiation of *strumosata* see below. The name-type is the "fulvous" form with very little marking in the distal area and somewhat recalls the ab. *thedenii* of the Palaeartic *quadriasiata* Cl. (Vol. 4, p. 226), though the basal patch is also dark. — ab. **quartanata** Guen. (= para-*quartanata*, *delpha* Lower) (26 a) lacks the warm buff colouring and has a conspicuous, generally divided white band outside the median band and more or less strong dark shades bordering the subterminal. Intermediates are so rare that some authors have assumed that we were dealing with two species. Frequent in both forms from Tasmania (loc. typ.) to Victoria and in West Australia. WALKER's Tasmanian "*solutata*" belongs here and, through an error in labelling, must have misled TURNER into an inaccurate synonymy; the 3 typical *solutata* (both sexes) are *strumosata*.

**X. imperviata** Walk. (26 c) forms such an obvious link between *vacuaria* and *strumosata* that all three *imperviata*, must be referred to the same genus; perhaps a revision by the genitalia or other important characters will result in the transference of several other so-called *Euphyia* of the Australian fauna. Much smaller than either *vacuaria* or *strumosata* (the ♀ here figured is one of the largest examples known to me), nearest to *strumosata* in appearance; palpus less long (scarcely  $1\frac{1}{2}$ , as against almost 2), antennal teeth and ciliation of the ♂ intermediate towards those of *vacuaria*. The only further distinctions from *strumosata*, apart from size, seem to be the less sharply marked underside and the form of the median band, which is proximally more curved (but without the pronounced tooth at the fold) and throws out two longer teeth from its distal lobe, occasionally, though rarely, so long as to touch the first dark line of the distal area. South Australia (type from Adelaide) to New South Wales and West Australia.

**X. argodesma** Meyr. (26 c). Antenna of ♂ somewhat dentate, with the ciliation nearly 1. Not unlike *argodesma*, some *X. imperviata*, palpus similar (LOWER calls it 1, which is certainly an underestimate, while MEYRICK's " $1\frac{3}{4}$ " errs in the opposite direction) and I shall not be surprised if the two supposed species are found to intergrade. Characterized by the white ground-colour, the veins tinged with pinkish brown, some pinkish suffusion at the proximal and distal sides respectively of the ante- and postmedian white bands, the termen more definitely

- gypsomela*. dark-shaded — altogether a smoother-looking and more contrastingly marked insect. — ab. **gypsomela** Lower (the type ♂, from Blackwood, S. A.) has the median band interrupted, but this is quite exceptional. MEYRICK's type ♀, from Melbourne, here figured, has hitherto been unrecognized and the species has been called *gypsomela*.
- pentodonta*. **X. (?) pentodonta** Lower. “♂, ♀; 22, 24 mm. Palpus 2; ciliations  $\frac{1}{2}$ .” No affinities indicated, but the description would almost fit to small *gypsomela* except in the structural details (if accurate) and that the vein-streaks are called “ferruginous”; the postmedian line is more distal anteriorly (“from  $\frac{3}{4}$ ”) and has “5 rather sharp projections, one near costa, two contiguous in middle, anterior one longest, two posterior abbreviated”. Broken Hill, New South Wales. Should be distinguishable from *imperviata* (which is not uncommon there) by the ♂ antenna and the “snow-white” intermediate areas.
- strumosata*. **X. strumosata** Guen. (= *solutata* Walk., *intentata* Walk.) (26 d). Very similar on the upperside to *vacuaria* ab. *quartanata* though generally larger, the hindwing with more distinct markings, etc. Antenna in the ♂ with the ciliation shorter (scarcely as long as the diameter of the shaft) and arising from less well-developed lamellae. Underside very characteristic, much less uniformly brownish, sometimes pale, in any case strongly marked, with dark subterminal shading, irregularly developed, strongest in the anterior part of each wing, or
- solitata*. at least of the hindwing, commonly assuming a macular aspect. Tasmania to New South Wales. — ab. **solitata** Walk. is a dwarfed ♀ (? a 2nd brood), not much larger than *imperviata*; underside rather less variegated than in the type, the subterminal dark spots of the hindwing beneath perhaps less unequal in development (but the specimen is somewhat rubbed). “Australia.”
- formosicola*. **X. formosicola** Bastelb. (= *viridilineata* Bastelb., *viriditincta* Wileman) (26 c). Generally smaller than *curcumata*, especially in the ♂, which is further distinguished by the merely ciliate, not pectinate antenna. Otherwise extremely similar, but with more solidly dark, less red-mixed median band, generally deeper sinus before its (usually longer) postmedian lobe, and with the hindwing less clean white costally and apically; hindwing beneath also considerably less white. From its nearest Formosan relative, *cybele* Prout (see above) it differs in the ♂ antenna, the less small size, less strong central projection of the postmedian and generally less uniformly dark hindwing. Formosa and N. E. India.
- aridaria*. **X. aridaria** Leech (26 d). As this has not yet been figured (see Vol. 4, p. 253; the Kulu ♀ there mentioned is, I think, a dark-banded aberration of *griseiviridis*) and the group is almost exclusively Indian, we show the unique type here. Perhaps it is a large aberration or subspecies of *curcumoides*, with broad band and rather dusky underside; the form of the antemedian line, the dark hindwing and some other details do not accord so well with *formosicola*. The ♂ should throw some light on it. Wa-shan, 6000 feet.
- curcumoides*. **X. curcumoides** Prout (26 c). Distinct from *formosicola* in the longer, more fasciculate ♂ ciliation, paler distal area of forewing (with reduced markings) and darker, much more unicolorous hindwing. Antemedian without the angle outward at the fold; median band in the ♂ narrower, but not in the ♀, which otherwise resembles the ♂. Only known from the Khasis and a few specimens from Sikkim.
- saturata*. **X. saturata** Guen. (= *exlaturata* Walk., *livida* Butl., *inamoena* Butl.) (Vol. 4, pl. 7 f). Variable in size, on the whole less large than in the figured ♀, the ♂♂ usually the smaller sex and the Indian forms on an average smaller than the Eastern ones. Antennal ciliation of the ♂ short. Wing markings recalling the Palearctic *ferrugata* Cl. but with the band red-brown or brown-grey, apparently never purple-red or blackish. Very widely distributed. India, Tonkin, across China and in Japan and Formosa. The report of Africa (Vol. 4; p. 227) was due to the confusion of two distinct though closely allied species; see Vol. 16, p. 86, *X. exorista* Prout. GUENÉE's type of *saturata* came from Pondichery, *exlaturata* probably from the Nilgiris; the name of *livida* Butl. (Yokohama) will be available if the Japanese race is separable.
- mecoterma*. **X. mecoterma** Prout (Suppl.-Vol. 4, pl. 12 e) is more elongate-winged, the band narrower, differently shaped, more tinged with pink and broadly dark-edged anteriorly, the dark subterminal markings between the radials undeveloped. Recalls the Palearctic *designata* but with shorter antennal ciliation and straighter antemedian band. Kashmir.
- mediofascia*. **X. mediofascia** Wileman (26 c). Closely similar to *mecoterma* and to the Ussuri *rectantemediana* Wehrli (Suppl.-Vol. 4, pl. 13 c), especially — in the weakly defined posterior part of the postmedian — to *mecoterma*: more greyish, perhaps on an average smaller and with the band scarcely so narrow, the lines not quite so straight at their costal end. The ♂ antennal ciliation is apparently about as long as in *X. designata*. Formosa.
- elusa*. **X. elusa** sp. n. (26 d). Palpus strong. Antenna with paired fascicles of moderately long cilia. Forewing with median band twice as broad anteriorly as posteriorly, formed of partly connected dark bars, ante- and postmedian, which enclose in the anterior half a moderate white space, in which stands the weak cell-mark; antemedian well curved; 2nd and 3rd lines of postmedian connected by blackish shading, which in its anterior

half is partly solid, from the 3rd radial hindward restricted to vein-streaks; proximal and distal areas recalling those of *Euphyia subangulata* (Vol. 4, pl. 10 b), the brown much less bright, the subterminal forming some larger spots in the posterior half; terminal line forming paired spots at the veins. Underside of each wing with cell-dot, strong postmedian line and slight subterminal shading; forewing slightly suffused. Tibet: Tasam. Rongshar Valley, 12 000 feet. 20 June 1924 (Major R. W. G. HINGSTON, Everest expedition), type ♂ in the British Museum.

### 7. Genus: **Progonostola** *Meyr.*

Characters of *Xanthorhoë*, but the antenna of the ♂ unipectinate. Hindwing in the only known species crenulate. Genotype: *cremnopis* *Meyr.* from Hawaii.

**P. cremnopsis** *Meyr.* (26 d). Facies of *X. natalata* or, in the glossy scaling, of some of the *X. brujata cremnopsis* group. Not likely to be mistaken for any other known Hawaiian species. Olaa and Molokai.

### 8. Genus: **Hypycnopa** *Lower.*

Unknown to me. According to TURNER another development of *Xanthorhoë*. "bearing the same relationship to that genus that *Melitulias* does to *Hydriomena*". Antenna of ♂ bipectinate nearly to the apex. Hindwing with 2nd. radial arising near 1st.; in ♂ with a modified patch of yellow scales on the upperside.

**H. delotis** *Lower.* Expanse 26 mm. Pectinations of ♂ long (8 to 10). Grey-whitish, with fuscous *delotis*. irroration; lines blackish; forewing with subbasal slender, antemedian broader and very distinct, at  $\frac{1}{3}$ , slightly excurved, postmedian from  $\frac{2}{3}$  costa, with a slight subcostal projection, followed by a minute acute hook and by an obtuse central projection, three more or less distinct wavy lines beyond it, terminal line interrupted on the veins. Hindwing with termen slightly rounded; several fine dark lines beyond the middle; a large patch of yellow modified scales near the costa, less sharply defined than in the *Melitulias* species. Broken Hill (N.S.W.) and Birchip, Victoria. According to LOWER it somewhat recalls *Chloroclystis insigillata*.

### 9. Genus: **Aeschrostoma** *Warr.*

WARREN differentiates this genus from *Xanthorhoë* by the character of the palpus, which is elongate and very heavily tufted beneath, the face-cone likewise elongate. The bent termen of the hindwing gives it a somewhat distinctive facies. But as both palpus and wing-form show a good deal of variation in *Xanthorhoë*, it would not be difficult to include it therein as a section, especially as only one species is known, so that it does not provide any further grouping.

**Ae. marmorata** *Warr.* (26 c). The heavily marked hindwing and underside somewhat recall some *Horisme*, *marmorata*, but I know no species with which it could be confused; median band of forewing dull red (occasionally more brown) marked with blackish. Distributed in New Guinea.

### 10. Genus: **Nycterosea** *Hulst.*

(See Suppl. Vol. 4, p. 129; Vol. 16, p. 86.)

This genus was founded on the ubiquitous *obstipata* *F.*, under the synonym of "*brunneipennis* *sp. n.*", which differs from *Xanthorhoë* and *Orthonama* in that the 3rd radial and 1st median of the hindwing are almost always stalked, never well separate at their origin. Further distinctions are found in the nature of the sexual dimorphism, in the genitalia and in the sinuous termen of the hindwing. Antenna of ♂ with paired fascicles of cilia.

**N. obstipata** *F.* (= *fluviata* *Hbn.*, *gemma* *Hbn.*, *angustata* *Haw.*, *lapillata* *Guen.*, *baccata* *Guen.*, *obstipata*, *brunneipennis* *Hulst*) (Vol. 4, pl. 9 e, ♂ and ♀). ♀ darker than the ♂, much more reddish- or orange-brown, usually with a more conspicuous, commonly broader, blackish median band in which stands a white cell-spot. Both sexes are variable and some aberrations have received names (see Vol. 4, p. 228, Suppl.-Vol. 4, p. 129, Vol. 16, p. 86). Certainly a migrant, with an extremely wide range in America, the Atlantic islands, Africa and S. Europe and reaching N. Europe, Siberia, Corea and Japan. Into the Indo-Australia Region it has penetrated less, but it is widely distributed from Ceylon to the Himalayas and is known to me from S. China and the Philippines. We have at present no information as to its bionomics here. — ♂ ab. **inconspicua** *Warr.* presents *inconspicua*, rather a strange aspect on the forewing in that the dark median shade is wanting, so that the central area is merely defined by a curved antemedian line (proximal to the cell-dot) and a thick postmedian. A ♂ from the Khasis.

11. Genus: **Ortholitha** Hbn.

(See Vol. 4, p. 158; Vol. 16, p. 86.)

I have remarked elsewhere that it is doubtful whether this is a natural genus. Its differentiation from *Xanthorhoë* has been made dependent chiefly on the elongate costal margin of the forewing, but this shows every intermediate gradation in the African, Australian and New Zealand faunae. As regards the ♂ genitalia, the so-called canaliculus of PIERCE ("central projecting lip or groove of the juxta") was not considered by the late Mr. BURROWS a satisfactory character and the other given distinction — the broad, platelike chitinization of the costa of the valve — seems also too inconstant to be of use; indeed JANSE's investigation of the South African *Ortholitha* and *Xanthorhoë*, published since I dealt with them in Vol. 16, has discovered no definite line of demarcation between the two genera. I therefore only leave here the few Indian and Chinese species which may have real affinity with those that have been called *Ortholitha* in Vol. 4.

## A. ♂ antenna bipectinate.

- nasifera*. **O. nasifera** Warr. (Vol. 4, pl. 11 a) has quite the facies of several of the Palaearctic *Ortholitha*, but may easily be distinguished by the single sharply-pointed central projection of the median area distally; the median area, as in *similaria* and others, is divided by a whitish central stripe into two narrow dark bands; apical dash developed. Kashmir to Simla, local, type from Thundiani.
- similaria*. **O. similaria** Leech (Vol. 4, pl. 11 a) is lighter, browner, with the median area of the forewing broad at costa and at the bilobed central part, but with a rather deep curve inward between these two parts, though scarcely so deep in this W. Chinese race as in the subspecies *erschoffi* Alph. (Vol. 4, p. 161). Distributed in Szechuan.
- microgynaria*. **O. junctata** (Vol. 4, pl. 7 g) **microgynaria** Hmps. (26 d). Narrower-winged and somewhat greyer than the name-typical race, which was described from the Ala Tau and is widely distributed in Central Asia; cell-mark of forewing as a rule smaller than in any but rare aberrations of *j. junctata*. The ♀ is notably small and narrow-winged. Kashmir, chiefly in Gurais Valley.
- arthuri*. **O. arthuri** sp. n. (26 e). ♂ 40 mm, ♀ 37 mm. Evidently related to *microgynaria*; larger, costa of forewing and apices (both wings) somewhat more rounded, colour a little darker, greyer (less brown); forewing with subbasal line more curved outward, antemedian with a pronounced outward bay in the cell; fringe more noticeably chequered with brown, especially on its whitish distal half. Underside also dark compared with that of *microgynaria*, the postmedian line of the hindwing (when visible) more bent in the middle. Kashmir: Gurais Valley (type ♂) and Koksar (a pair) all from the LEECH collection, taken by H. MC ARTHUR.
- roseicilia*. **O. roseicilia** Hmps. (26 d). This very distinct species was referred by its author to the present genus, under its synonym of *Eubolia*, and is retained here until its affinities have been explored. Wings broader and of a more delicate texture, the unmarked hindwing and almost unmarked underside, as also the palpus, pectinations and venation, conformable to *Ortholitha*. Described from Bhotan, since received from Sikkim-Tibet, evidently a high-altitude species. — ab. **arrhodea** nov. absolutely lacks the rosy scaling of the bands and fringes, which remain of the ground-colour. Chumbitang, Tibet, 13 000 feet, a ♂ in the British Museum, collected with a typical, strongly rosy-marked ♂.
- roseifascia*. **O. roseifascia** Hmps. (26 e). Wings slightly less broad and more robust. Head, thorax and base of abdomen above more strongly suffused with rose-colour. Forewing very much yellower, the rosy bands more deeply coloured, the median decidedly broader and with its distal edge more sinuous, more strongly projecting between 3rd radial and 2nd median, subterminal white spots on the whole smaller, with scarcely any transverse connecting shade; forewing beneath with much less extended smoky suffusion. Sikkim, 12 000 feet (KNYVETT), type ♀ and another; Kulu (Capt. Graham YOUNG), 1 ♀. Notwithstanding the strong superficial dissimilarity, I feel confident that this will prove to be the ♀ to the preceding (of which I only know ♂♂), but as it bears the prior name I am loth to make the union until both sexes have been collected in one locality.
- duplicata*. **O. duplicata** Warr. (26 e) was another unmistakable species until the closely similar *eurypeda* (see below) was discovered. The name-typical form, here figured, has the hindwing very weakly marked on the upperside. Sikkim-Tibet; the originals came from the Chumbi Valley. — **subfimbriata** Prout (Vol. 4, pl. 12 b, as *duplicata*, Suppl.-Vol. 4, pl 7 b) has a better developed smoky band at or close to the termen of the hindwing above, divided by the white subterminal line; in the ♀, sometimes also in the ♂, the postmedian of the hindwing is also more or less developed on the upperside. Szechuan, etc.
- eurypeda*. **O. eurypeda** Prout (Suppl.-Vol. 4, pl. 8 g) is somewhat larger, the pale areas of the forewing almost entirely without a yellowish tinge, the hindwing very white, even more weakly marked than in *d. duplicata*, bands of forewing perhaps slightly browner, the whitish subterminal line more slender, generally continued

less far forward, the blackish dots between this and the blue-whitish terminal one scarcely ever developed. Szechuan and the adjacent part of Tibet.

**O. leucocypta** *Hmps.* (26 e). Much smaller than *duplicata*, narrower-winged, the dark markings less intense, the double band fused into a single large patch, which is extended to near the base (but ill-defined proximally), the divided white line outside the postmedian narrowed; cell-dot small, ringed with white. Cuddapah: Horsleykhonda. 3500 feet, the type ♂ unique.

**O. fissiferata** *Walk.* (= *intermixta* *Walk.*) (26 f) is the only known South Indian species with the unmistakable *Ortholitha* habitus. Palpus rough beneath. Pectinations moderate. Wings glossy, postmedian of forewing shaped nearly as in some of the *similaria* group, sinus at the radials not very deep, apical dash and proximal-subterminal shade developed. Both wings beneath with cell-dot and indistinct postmedian. Nilgiris, scarce.

B. ♂ antenna simple or ciliate.

**O. propinguata** *Koll.* (Suppl.-Vol. 4, pl. 7 i) may be regarded as the type of a very natural group, or perhaps genus, consisting of broad-banded, generally rather dark species with not very elongate costa of hindwing, distal area of forewing weakly marked, but very generally with very characteristic apical markings consisting of a short dash or triangle followed (somewhat more proximally) behind the 5th subcostal by a second one, which is occasionally, though seldom, confluent with the apical. Typical *propinguata* was described from Masuri and reaches Kashmir and Kumaon. — **epigrypa** *subsp. nov.* (26 f). Apex of forewing appreciably more falcate, the characteristic apical dark marks obsolete; on the whole the median band is less dark, but this varies. Sikkim, the type from Darjiling in the Tring Museum. Perhaps this and some at least of the other "subspecies" (see Suppl.-Vol. 4, p. 79) should rank as species. — **superlata** *Prout* (= *euchora* *West*) (26 f). Known at once by its larger size and relatively broader wings; definitely browner (less dark), the postmedian line on an average with less strong central projection; apex intermediate in shape between the two preceding, the 2 black marks developed. Luzon.

**O. corioidea** *Bastelb.* (26 f). In colour nearest *superlata*, apex more falcate, the two black marks wanting; distinguishable at a glance from all the *propinguata* forms by the straight postmedian line of the forewing. Formosa.

**O. dicaea** *Prout* (Suppl.-Vol. 4, pl. 8 a) also has the postmedian straight or almost straight, but the coloration and wing-shape of *p. propinguata* (or perhaps the forewing slightly broader still), the black marks in the apex developed. Szechuan.

**O. exacra** *Wehrli* (Suppl.-Vol. 4, pl. 8 a) differs from *dicaea* in that the distal edge of the median band forms an outward angulation in the middle and that the distal area of the forewing is white in its proximal part, grey-brownish in its distal. Szechuan: Kunkala-shan; also a series from Tupakö, near Mupin, 7400 feet (H. STEVENS).

**O. extrastrenua** *Wehrli* (Suppl.-Vol. 4, pl. 8 a) differs from both the preceding in the much narrower distal area of the forewing. In colouring it nearly approaches *exacra*, of which it may be a local modification, but the postmedian line is only weakly curved outward, not angled. Founded on 3 ♂♂ from Tse-ku.

**O. euthygramma** *Wehrli* (Suppl.-Vol. 4, pl. 8 a) is very like on diminutive *corioidea*, notably on the straight postmedian line of the forewing. Face with a projecting cones of scales; palpus a little longer than in most of the group. Distributed in China. Shanghai to Szechuan.

**O. latifusata** *Walk.* (= *latifuscata* *Walk. index*, *naemata* *Feld.*) (26 g ♂, ♀). WALKER's type from "Hindustan" and FELDER's from Narkundah are both ♀ and this sex, in the name-typical race from the N. W. Himalayas, is at once recognizable by the sharply white distal area. There is, however, very pronounced sexual dimorphism in this race and the ♂ has nearly the coloration of *propinguata*. The median band has not, however, the conspicuous blackening in its distal part, its central prong outward is a little more prominent and the white line beyond is double from the costa to the prong. Both sexes, however, show an important venational distinction which — if supported by biological characters — should justify its removal from *Ortholitha*: hindwing with discocellulars markedly biangulate. — **indecisa** *Prout* (Suppl.-Vol. 4, p. 79). from Szechuan, has the distal area in the ♀ less clean white (more tinged with brownish), the prong of the postmedian in both sexes considerably less strong, the white line beyond it single. Thus it more nearly approaches some forms of *propinguata* or even *exacra*, but the discocellulars (though somewhat less extreme) place it with *latifusata*. ♀ commonly very large.

## 12. Genus: **Larentia** *Tr.*

(See Vol. 4, p. 157; Vol. 16, p. 88.)

Typified by the Palearctic *clavaria* *Haw.*, which, so far as I know, stands somewhat isolated, this genus has been again extended so as to receive a few other Palearctic, several African and numerous Indo-

Australian species (chiefly New Zealand) and can now only be characterized as resembling the pectinate sections of *Xanthorhoë* and *Ortholitha* except in the discocellulars of the hindwing, which are here always definitely biangulate. Probably *X. magnificata* and *O. latifusata* should, in strict logic, be transferred to *Larentia*, but their taxonomy requires further elucidation and it is right to add that JANSE has merged the South African *Larentia* and *Ortholitha* under the latter name, while MEYRICK united all three genera (and others) as *Xanthorhoë*.

- oraria.* **L. oraria** *Philpott* (26 e). A very simple species, rather small, elongate-winged, the forewing glossy, yellowish, almost unicolorous, with a black cell-dot and at times faint traces of postmedian marking, the hindwing paler, unmarked, beneath with a cell-dot; forewing beneath with smoky suffusion in and beyond the cell, reaching forward at least to subcostal and its 5th branch. New Zealand: near Invercargill; also on Stewart Island. Mountain forms (Ben Lomond and especially Mount Earnslaw) are said to be still longer-winged. The ♀ is still undescribed and is suspected of being semiapterous.
- sericodes.* **L. sericodes** *Meyr.* (26 f). Extremely like a much overgrown *oraria*. Tone slightly more brownish, very strongly glossy, markings (except the cell-dots) still more obsolete, suffusion beneath rather less extended forward. Mount Earnslaw, ca. 3500 feet. — ab. **apicata** *nov.*, mentioned and figured by HUDSON (*Butterflies and Moths of New Zealand*, p. 121), has cloudy greyish apical spots.
- imperfecta.* **L. imperfecta** *Philpott* (26 e). Very distinct in its brighter colour and the characteristic costal markings of the forewing and in the spotted fringe. In the ♀ the dark markings are faintly continued across the wings. West Plains, near Invercargill (type); also near Dunedin.
- exoriens.* **L. exoriens** *Prout* (26 g). Variable, but generally distinguishable from *aegrota* by the strong reddish suffusion at the costal margin of the forewing and the less strongly spotted fringes; hindwing beneath not heavily marked. Pectinations a little longer. Lake Watatipu district: Glenorchy (type); also from Clyde, Nevis and Kinloch.
- albatineata.* **L. albatineata** *Philpott* (= *albilineata* *Meyr.*) (26 g). Recognizable on the upperside by the form of the lines which outline the median area, but particularly well characterized by the underside: forewing dark-suffused excepting the costa and apex, hindwing with 2 broad, very conspicuous brown streaks, which run longitudinally along the folds and are edged with white. Stewart Island, discovered on Table Hill, at about 2000 feet.
- aegrota.* **L. aegrota** *Bltr.* (26 g). A common and very variable species, distributed from the Wellington district to Stewart Island. Both wings beneath pale at costa, the hindwing broadly so; in well-marked examples, such as we figure the intricate pattern of this wing is very characteristic. According to HUDSON it "frequents rather open situations in the neighbourhood of forest" and is often found among *Discaria toumatou*.
- dionysias.* **L. dionysias** *Meyr.* (= *dionysius* *Huds.*) (26 h). Probably, as MEYRICK suggests, nearly related to *aegrota*, but (at least in the type) with the 2nd radial of the hindwing arising only a very little behind the end of the cell-vein, while in *aegrota* the typical *Larentia* venation is very pronounced. Markings of upperside stronger and more complete than in *aegrota*, the postmedian much less sinuous than in *exoriens*, the hindwing with a distinct cell-dot. Underside with the principal markings broader and more definite than in the allies. Old Man Range, Central Otago, 4000 feet.
- recta.* **L. recta** *Philpott* (26 h). Said to resemble *dionysias*, but the only specimen known to me is extremely like some *exoriens*, though with a few less pectinations, discocellulars biangulate; lines of forewing mostly straightish, but the postmedian, which is distinctive, has a bilobed projection in the middle and is bordered distally by a distinct white stripe. Hindwing beneath darker and more reddish than above. Ida Valley, Central Otago (loc. typ.), also about Dunedin and Invercargill.
- adonis.* **L. adonis** *Hudson* (26 h). An elegant species, easily known from the other green *Larentia* species by its bright colour and the black, white-edged markings. Distributed in South Island from Mount Arthur to Invercargill, but not common; it frequents mountain forests, 1000 to 4000 feet.
- beata.* **L. beata** *Butl.* (= *benedicta* *Meyr.*) (26 h). Locally common at Wellington, Tararua Mountains, etc., and at several localities (Greymouth, Christchurch, Dunedin, Invercargill, etc.) in South Island and not very variable. Attention may be called to the conspicuous, generally strigiform cell-mark of the forewing, nearly always placed on a white space, which may be quite small, but can be so extended as to form an uninterrupted central stripe of the median band. Egg green, highly polished, the hexagonal depressions very shallow. The larva, which has been reared on watercress, is about  $\frac{5}{8}$  inch long when full-grown; subcylindrical, flattened above, the lateral ridge very prominent and rugose; pinkish brown (rarely dull green), with V-shaped blackish dorsal markings and an interrupted blackish lateral line. It is very sluggish by day, feeding at night. The moth is beautifully protected when resting on moss-covered tree-trunks.

**L. philpotti** Prout (= *beata* Meyr., nec *Bull.*) (26 h) was long confounded with *beata* but was carefully *philpotti*. differentiated by the late Mr. A. PHILPOTT and is really quite easy to distinguish. Cell-mark wanting, hindwing tinged with vinaceous, at least distally and on the base of the fringe, discocellulars much less angulated than in *beata*. It occurs in some localities with *beata* (e. g. the Tararua Mountains and Invercargill), but is perhaps most prevalent in the Lake Wakatipu district.

**L. limonodes** Meyr. (26 h). Different from all the preceding *Larentia* in shape, the distal margins being *limonodes*. somewhat sinuous; this, and frequently a dark terminal patch behind a pale apical one on the forewing, give a somewhat *Asaphodes*-like appearance to it. Moderately variable, the dark lines of the forewing generally strongest anteriorly, the white lines more or less punctiform. Distributed in New Zealand, but not common.

**L. prasinias** Meyr. (26 h) is easily recognized by its bright ochre-yellow colouring and the strongly *prasinias*. spotted fringes. According to HUDSON, who gives as its distribution Mount Egmont and from Mount Arthur to Invercargill, it is usually found in beech forests or subalpine scrub at elevations of about 3000 feet and is particularly attached to *Coprosma parviflora*; but in the extreme south it becomes a lowland insect.

**L. farinata** Warr. (26 c). A simple grey species, the markings weak, least so at the costal margin of the *farinata*. forewing. The ♂ antennal pectinations are rather long, widely spaced and numbering little over 20 in each series. Wellington, taken in the Botanical Gardens. I do not know whether its native habitat has yet been discovered.

**L. cinerearia** Dbl. (= *invexata* Walk., *inoperata* Walk., *diffusaria* Walk., *infusata* Walk., *adonata* *cinerearia*. *Feld.*) (26 i). Much smaller, of a paler grey and with a tinge of brown; the markings stronger, with the central projections of the postmedian sharper. About as many antennal joints are pectinated. Common and very generally distributed in New Zealand.

**L. eupitheciaria** Guen. (26 i). Whiter than *cinerearia*, the markings weak except at the costal margin, *eupithecia-* where they are greatly strengthened. On an average larger, sometimes quite as large as *farinata*, but very *ria*. different in aspect. Local, in forest land at 2500 to 4000 feet altitude. Possibly a mountain form of *cinerearia*.

**L. orophyla** Meyr. (26 i). Easily distinguished from *semifissata* by its greyish colour and the straight *orophyla*. antemedian line. To students of the Palaearctic fauna it often slightly recalls *Xanthorhoe munitata islandicaria*, though with straighter antemedian. The largest and most similarly coloured examples of *X. rosearia*, with which MEYRICK compared it, have also a curved antemedian, besides longer pectinations and different hindwing venation. Distributed in the mountains of southern New Zealand, in open country, from 2500 to 4000 feet.

**L. semifissata** Walk. (♂ = *ypsilonaria* Guen., ♀ *delicatulata* Guen.) (26 i). Somewhat variable in colour, *semifissata*. especially the ♂, but constant in its pronounced sexual dimorphism. In the ♂ the median band is not broader than in *orophyla*, perhaps on an average not so broad, the areas on either side of it weakly marked; the ♀ is broader-banded, darker, with strong lines and shades in proximal and distal areas. Both sexes have the median vein and 3rd radial pale on the central band, also (at least in the ♀) the 1st median. New Zealand. Widely distributed and common, in open forest districts.

**L. lophogramma** Meyr. (26 i) differs from *semifissata* in the duller and darker ♂, with more indented *lophogram-* distal edge of the median band and without the black dots on the veins, the hindwing deep ochreous, without *ma*. markings; ♀ less sharply marked than that of *semifissata* and lacking the pale veins, while the hindwing is without the transverse lines. Castle Hill, Christchurch-West.

**L. chlamydota** Meyr. (26 i). Very distinct in the wing-form and the shape of the broad, richly coloured *chlamydota*. median band. Hindwing always orange-yellow, but usually clouded over with grey excepting a postmedian band. Both wings beneath are rather dark but variegated and have a striking series of white subterminal spots. Distributed in New Zealand from Christchurch to Invercargill; also Tokaanu, Waiouru & Wellington, North Island.

**L. bulbulata** Guen. (26 i). A rather small species, known at once by its clear orange hindwing, with *bulbulata*. narrow dark border or dark terminal line. Both wings beneath predominantly orange, though less vivid. Distributed in South Island, New Zealand, from sea level to 2000 or 3000 feet.

**L. petrodes** Turn. This was at first regarded as a variety of the following and merely differentiated *petrodes*. as having the "forewing grey rather than blackish, with pale ochreous-brown suffusion near base and in parts of disc". Later (Proc. Roy. Soc. Queensl., Vol. 29, p. 70) TURNER stated that it was "a very distinct species" and that "in addition to the differences in the forewing the hindwing is free from marking except close to dorsum [hindmargin] and termen, and in the ♂ there is a subcostal spot of modified ochreous scales on upper surface, to which there is nothing similar in *L. dascia*". Queensland: Warwick (loc. typ.) and Victoria: Gisborne.

- dascia*. **L. dascia** *Turn.* (= *extensata* *Meyr.*, nec *Walk.*) (26 k). A small, dark-marked species with rather short palpus and with the hindwing less elongate costally than in the somewhat similar ones which follow. Pectinations of the ♂ rather long, continuing to very near the apex. New South Wales to South Australia; it is not stated which is the type locality.
- cheimatobiata*. **L. cheimatobiata** *Guen.* (= *petrodora* *Meyr.*, M. S., *phrixopa* *Turn.*, M. S.) (26 k). Rather larger, palpus about equally short, pectinations a little longer. In addition to the relatively more elongate wings, easily distinguishable from *dascia* by its less dark colour and much less sinuate postmedian. Tasmania (type) and Victoria.
- extensata*. — ab. **extensata** *Walk.* is a rather small ♂, with narrowed median band. Tasmania.
- epicrossa*. **L. epicrossa** *Meyr.* (26 k). Palpus long. Hindwing with apex even more pointed than in *cheimatobiata*, termen more sinuate, the white lines on the forewing standing out more sharply, a more complete and uniform band between the postmedian and the subterminal, etc. New South Wales and Tasmania.
- aganopsis*. **L. aganopsis** *Turn.* Palpus in ♂ 1, in ♀  $1\frac{1}{4}$ . Pectinations in ♂ 5, extreme apex simple. Wings ochreous-whitish, markings pale grey, on forewing brownish tinged; forewing with basal patch very small, median band in anterior half broad, in posterior much narrower, on costa darkened, its proximal edge curved outward, its distal from  $\frac{2}{3}$  costa, with a slight bidentate central prominence, thence strongly oblique and dentate to middle of hindmargin, the indistinct subterminal with a slight proximal suffusion towards costa, terminal marks inter-neural, short, triangular or slender; hindwing rounded, with suffused median, postmedian and submarginal lines, terminal line as on forewing. Woodford, New South Wales, March and April. (TURNER.)
- oribates*. **L. oribates** *Turn.* ♂. Palpus  $1\frac{1}{4}$ , antennal pectinations 6. Forewing with apex pointed, termen longer than hindmargin, slightly oblique; whitish, with numerous fine fuscous oblique lines; costa irrorated; median band consisting of 3 or 4 close lines, the first nearly straight from midcosta to  $\frac{1}{4}$  hindmargin, the last from  $\frac{3}{4}$  costa to less than  $\frac{1}{2}$  hindmargin, slightly excurved in middle; the succeeding line thickened by some small dots; beyond this a further group of 3 close, wavy lines; an oblique shade from apex; terminal line interrupted. Hindwing rounded, the lines repeated, but obsolete in costal area, which is whitish, in the ♂ with an oval patch of specialized scales. Mount St. Bernard, Victoria, 1 ♂. (TURNER.)

### 13. Genus: **Kuldseha** *Alph.*

(See Vol. 4, p. 165; Suppl.-Vol. 4, p. 79.)

An Eastern Palaearctic genus, noticed here for the sake of its representatives in West China. It scarcely — if at all — differs from *Larentia* except in shape; the produced, or even almost pointed hindwing gives it a distinctive appearance.

- productaria*. **K. productaria** *Leech* (Suppl.-Vol. 4, pl. 8 b). The unique type, a ♂ from Ta-tsien-lu, has longer pectinations than typical *Kuldseha*, the shape of the hindwing slightly less extreme, the texture of the wings perhaps somewhat more delicate; median band of forewing broader, less irregular in shape and much less sharply differentiated than that of the typical group, rows of white vein-spots developed on the adjacent areas.
- lakearia*. **K. lakearia** *Oberth.* (Vol. 4, pl. 6 c). Hindwing perhaps more rounded than even in *productaria*, coloration rather dark, median band of forewing distally not so deeply concave between the radials as in the genotype *staudingeri* (Vol. 4, pl. 7 e; Suppl.-Vol. 4, p. 79), but more so than in *oberthuri*. Szechuan, few examples yet known to me.
- oberthuri*. **K. oberthuri** *Alph.* (Vol. 4, pl. 11 a). Two ♂♂ of this fine Palaearctic *Kuldseha*, which was described from N. E. Tibet, were collected at Teng, Arun Valley, S. W. Tibet, 11 000 feet on the Everest expedition of 1922. The determination of the Yatong ♀ (Vol. 4, p. 165) is still doubtful.
- dignitosa*. *K. loxobathra* *Prout* (Suppl.-Vol. 4, pl. 8 g) **dignitosa** *Prout* (= *lakearia* *Sterneck.* nec *Oberth.*) (loc. cit.). Larger than typical *loxobathra*, from Amdo, on the whole more variegated, cell-dots well developed. From true *lakearia* it differs in its paler colour, median band less solid, postmedian line straighter anteriorly, hindwing more pointed. Szechuan, the type from Ta-tsien-lu.

### 14. Genus: **Kyrtolitha** *Stgr.*

(See Vol. 4, p. 157; Suppl.-Vol. 4, p. 72.)

Differs from *Kuldseha* (with which probably it could be united) in the simple ♂ antenna. Distribution similar. The genotype, *obstinata* *Stgr.*, is Palaearctic.

- purpureo-tincta*. **K. purpureotincta** *Sterneck* (Suppl.-Vol. 4, pl. 7 d). Larger than the genotype. Palpus short. Antenna of the ♂ with the joints projecting and furnished with short ciliation. Whitish grey with reddish irroration, the markings grey-brown mixed with red; median band sharply defined, parallel-sided, sinuous. Szechuan.

**K. avulsa** Prout (Suppl.-Vol. 4, pl. 7 d). Near *purpureotincta*, but with the antennal joints less projecting, *avulsa*. ciliation minute. Forewing browner, more uniform, without red admixture; median band almost as narrow, its distal edge with small and irregular indentations at the veins; terminal line strengthened. Hindwing somewhat less white than in *purpureotincta*. Ta-t sien-lu (type ♂ and others), Chinese Tibet and probably Yantung, the poor ♀ mentioned in Vol. 4, p. 165 under *Kuldscha oberthuri*.

**K. pantophrica** Prout (Suppl.-Vol. 4, pl. 7 e). Somewhat larger; ♂ antenna slightly intermediate towards *pantophrica*. that of *purpureotincta*. Forewing a trifle more elongate; band as narrow as in them, but much more regular, all the markings parallel with the termen, a conspicuous whitish area between the postmedian and the dark distal area. Hindwing somewhat more variegated with white than in *avulsa*. Only known to me from Ta-t sien-lu.

### 15. Genus: **Colostygia** Hbn.

(See Suppl.-Vol. 4, p. 129.)

The separation of this genus from *Larentia* (sens. str.), like that of *Xanthorhoë* from *Oritholitha*, was grounded on the requirements of the Palaearctic Larentiines and has been found unworkable, in the present state of our knowledge, for the other regions (compare Vol. 16, p. 88). In the interest of conformity, I am retaining it here for a few Indian and Chinese species which are believed to have close affinity with the Palaearctic.

**C. ustipennis** Hmps. (Vol. 4, pl. 11 f), from Dharmasala, seems evidently related to *albigirata* (26 k), but *ustipennis*. differs in its reddish fawn-colour, broader and much more regularly formed median band and other details.

**C. albigirata** Koll. (= *signata* Moore, *thomasina* Warr.) (26 k), to which were formerly sunk some more *albigirata*. definitely Palaearctic *Colostygia* (see Suppl.-Vol. 4, p. 129) belongs properly to North India, extending from Kashmir to Upper Burma. Easily known by the very irregular shape of the median band. Antennal pectinations rather long. Type locality: Masuri.

**C. jameza** Butl. (Vol. 4, pl. 9 b, as *albigirata*), with the antennal pectinations only about half the length, *jameza*. belongs chiefly to Japan and Ussuri, but I have seen a few small Szechuan specimens which I suspect of belonging to it; irregularities of the postmedian much less profound.

**C. bellaria** Leech (Vol. 4, pl. 7 k; Suppl.-Vol. 4, p. 135) has evidently originated from the anomalous *bellaria*. *corydalaria*-group of the Palaearctic Region; see Vol. 4, p. 232). White, with sharply black, white-marked distal borders; the borders, or at least that of the hindwing, are much narrowed as compared with other members of the group, while the other black bands (subbasal and median) are much broken or even altogether fragmentary. Szechuan (loc. typ.), Yunnan and Central China.

**C. pendearia** Oberth. (= *moupinata* Ponj., *phaiosata* Stgr.) (26 k). This was first described from Ta- *pendearia*. tsien-lu and is very abundant in W. China. It is not demonstrated that the form *phaiosata*, from Koko-Nor, figured in Vol. 4 (pl. 8 l), differs geographically, but in case that should be so, we here figure a topotypical *pendearia*. Not a striking species, but easily known by its coloration and its parallel-sided median band.

**C. exceptata** Sterneck (see Suppl.-Vol. 4, p. 135) is unknown to me and I only repeat that its expanse *exceptata*. is about 43 mm, its shape comparable to that of *Oporinia dilutata* (Vol. 4, pl. 9 f), colour violet-brown with white base, subterminal spots, central section of median area and rows of dots delimiting that area. Face smooth, with slight tuft; palpus and pectinations long. A ♂ from Ta-t sien-lu.

### 16. Genus: **Cephalissa** Meyr.

Erected for the somewhat isolated *siria* Meyr., this was afterwards merged in *Scotosia* (!), i. e. *Philereme* Hbn., later in the comprehensive "*Hydriomena*". It differs from the following in its small eye, relatively small and very heavily scaled palpus and the highly sinuous termen if the forewing; ♂ antennal ciliation minute. A possible connecting link is found in the Chilean *Coenotephria pusilla* Btlr.

**C. siria** Meyr. (26 g). Easily known, apart from its structure, by its small size and bright orange hind- *siria*. wing and underside. Only recorded from Dunedin and near Invercargill; flies like a *Chrysophanus* among *Carex* in low-lying Kahikatea forest.

### 17. Genus: **Coenotephria** Prout.

(See Suppl.-Vol. 4, p. 140.)

This, at least as constituted at present, is probably not a strictly natural genus; but it is convenient as affording a provisional position for a number of species which resemble *Larentia* or *Colostygia* in nearly all the easily-used structural characters but have non-pectinate ♂ antennae. Systematists who reject genera

based on secondary sexual characters would regard this as a section of *Larentia*, those who over-rate the taxonomic importance of the ♂ antenna alone have made an impossible union with *Hydriomena*. There are about 70 species which come within my present conception of "*Coenotephria*", the great majority of them Palaearctic; most of the residue Antarctic, chiefly Chilian.

- subochraria*. **C. subochraria** *Dbl.* (= *strangulata* *Guen.*) (26 k). Palpus moderate. Antenna of the ♂ dentate, the teeth moderately ciliated. Recognizable by its yellow colour, narrow median band and paucity of other markings: even the median band is not solid except at hindmargin, though it is often dark at its distal edge, sometimes broadly so. It was one of the earliest discoveries in New Zealand, where it is widely distributed and very common in open country, frequenting tussock grass. Also recored from Chatham Island and common in temperate
- fuscinata*. Australia: West Australia and Queensland to Tasmania. — ab. **fuscinata** *Guen.* has both wings more or less strongly infuscated, the band likewise darkened. Only known from New Zealand, where it has been reported locally abundant in swampy plains.
- uncinata*. **C. uncinata** *Guen.* (= *plurilineata* *Walk.*) (26 l ♂, ♀). Very variable in colour (pale greyish to brown, yellowish or reddish) and in the strength of the markings, but the shape of the forewing will at once distinguish even its yellowest forms from *subochraria*; usually also, subapical markings are much better developed than in that species and frequently the basal patch is developed or indicated. Structure similar. Generally common from West Australia and New South Wales to Tasmania and known from one or two Queensland localities. The type ♀, from Tasmania, is a weakly marked form, pale chamois with darker lines, only the antemedian and a group of 2 or 3 postmedian more strongly expressed. — ab. **intercalata** *Walk.* is intermediate between
- intercalata*. this and the following. — ab. **replicata** *Walk.* (= *revulsaria* *Walk.*) has further developed costal spots at the
- replicata*. boundaries of the median area and a single dark one at its hindmargin. — ab. **approximata** *Walk.* is a pretty
- approximata*. form, delicate grey with subbasal, ante- and postmedian bands and the 3 subapical spots orange-brown.
- gallinata*. — **gallinata** *Feld.*, a ♀ from Sydney, is almost synonymous with the type, though with subapical merk well developed and with rather strong lines, but not (as the figure makes it) with a median especially developed.
- apotoma*. **C. apotoma** *Turn.*, founded on ♀♀ only, is probably nearest to *uncinata*, but with shorter palpus ( $1\frac{1}{2}$ ) and differently shaped hindwing: "termen slightly wavy, straight". Forewing grey, tinged with reddish purple, basal patch and median band faintly indicated, cell-dot minute. Hindwing somewhat paler, with dark cell-dot and towards termen several fine lines. Beaconsfield, near Melbourne, in June and July. Superficially rather like *Euphyia trygodes* *Meyr.* I suspect it will sink to the following.
- assimilata*. **C. assimilata** *Walk.* (26 l). A very poor ♀ from "Swan River" (the old specimens so labelled have mostly proved to be E. Australian); we give the best figure that its condition allows. Glossy purplish grey, the basal patch and median band (except its central section) on the forewing above more orange-brownish; all marking very weak, on the hindwing and underside apparently wanting; beneath, a considerable part of the hindwing and at least part of the costal region of the forewing (distally) of the browner hue.
- microcyma*. **C. microcyma** *Meyr.* (26 k). A small and very unimposing species, especially in the weakly marked forms. Palpus  $1\frac{1}{2}$ ; ♂ antenna somewhat thickened, ciliation  $\frac{1}{2}$ . Forewing rather broad, termen wavy, not very oblique, hindwing irregularly crenulate; in the type form, the subbasal, antemedian and postmedian lines are accentuated by black, as well as white dots, but the black ones are, in some specimens, scarcely visible without the lens; proximal half of costa of forewing somewhat infuscated. Victoria, South Australia and Tasmania, the type probably Tasmanian.
- homophana*. **C. homophana** *Hmps.* (Suppl.-Vol. 4, pl. 13 i). Superficially very closely similar to *Colostygia albigirata*; subbasal line of forewing generally less angled, antemedian with a strong additional tooth outward about the fold, postmedian with the irregularities somewhat less extreme. The ♂ is of course easily distinguished by the antenna, which is nearly simple — laterally compressed and with extremely short ciliation. Simla (type).
- sustenta*. Dalhousie and Kashmir. — **sustenta** *Prout*, from, W. China, has the proximal dark shade of the subterminal of the forewing almost continuous, more uniform, the only prominent darkening there on being the pair of spots at the radials. — A further local race in the Peter the Great Mountains, see Suppl.-Vol. 4, p. 140.
- homophoeta*. **C. homophoeta** *Prout* (Suppl.-Vol. 4, pl. 13 i). Distinguished from *homophana* by the ♂ antenna, which is subdentate, with ciliation nearly as long as its diameter, by the brown suffusions in places and especially a wash of rather light cinnamon in the distal area between the 1st radial and 2nd median and by the development of a roundish clear white spot in front of the 3rd radial; hindwing becoming rather suddenly pale or white behind the postmedian. Kashmir.
- championi*. **C. championi** *Prout* (Suppl.-Vol. 4, pl. 13 i). Antennal structure nearly as in *homophoeta*. Rather larger and more resembling *Euphyia variegata* *Moore* (27 k). Median band of forewing somewhat less sharply blackish than in that species, its distal edge indented rather than incurved at the 2nd radial, the lobe behind this slight,

posterior part of the band more strongly narrowed than in *variegata*. Nainital, S. W. of Almora (type) and Muktesar.

**C. flavistrigata** Warr. (= *pallidaria* Swinh.) (Vol. 4, pl. 7 h). Smaller than the 3 preceding, median band *flavistrigata*, narrower, distal area paler, etc. Antenna of ♂ nearly as in *homophana*. N. W. India, the types from Kalapani (Punjab).

**C. cupreata** Moore (26 l). Palpus rather short. Antennal ciliation very short. Wings glossy; forewing *cupreata*, with an ill-defined reddish-brown median band, traversed by a narrow darker shade about the cell-spot; distal area interruptedly suffused with red-brown; subterminal macular; a somewhat pronounced brown antemedian band. Sikkim, Bhotan and Naga Hills.

**C. combusta** Swinh. (26 l). Larger, ciliation longer; less glossy, the hindwing whiter, traversed by a slender postmedian line. The type form has the bands of the forewing rather ill-defined, the median band not enclosing any white-grey patches, the distal area not sharply marked, but with an ill-defined white-grey patch in the middle. — ab. **uniformis** nov. has the entire forewing still more uniformly rippled, almost unicolorous, *uniformis*, the whitish outer spot wanting. — ab. **albimaculata** nov. resembles the typical form of *tripunctaria* in developing *albimaculata*, white patches in the median band; white outer spot sometimes enlarged. — All the forms are from the Khasis.

**C. tripunctaria** Leech (Vol. 4, pl. 7 k). Very similar to *combusta*, perhaps a subspecies, the postmedian *tripunctaria*, projecting somewhat more before the middle; the median area is somewhat broadened, the terminal correspondingly narrowed. W. China: Pu-tsu-fong.

**C. umbrifera** Butl. (Vol. 4, pl. 10 c). Similar to the two preceding, the median area of the forewing *umbrifera*, broader, white, merely with a narrow, somewhat irregular brown band on its proximal part, a blackish celldot and a postmedian line which arises from a costal spot, is much more irregular throughout and has slight macular extensions centrally and at hindmargin. Japan (type), Corea, Central China and the Khasis.

**C. altera** Bastelb. (26 l), described as a *Mesoleuca*, is closely related to *umbrifera*, though the broadly *altera*, white median area gives it the aspect of *Mesoleuca*. Scaling not so dense and glossy as in typical *Mesoleuca*, discocellulars of hindwing strongly biangulate. Palpus rather short, antennal ciliation of the ♂ about as long as the diameter of the shaft. Formosa.

**C. erebearia** Leech (Vol. 4, pl. 13 c). A dark, glossy species of moderate size, not particularly like any *erebearia*, other known to me. Palpus rather short and thick, ciliation of the ♂ antenna extremely short. Forewing rippled with lines almost throughout, the boundaries of basal and of median area marked by heavier lines. W. China: Pu-tsu-fong.

**C. perplexaria** Leech (Vol. 4, pl. 7 i). Similar to large specimens of the Palaearctic *obsoletaria* (Vol. 4, *perplexaria*, pl. 10 a) but with the median area broader anteriorly, less interrupted, whiter-bordered, same additional white marking in the apical region, the hindwing also whitened. Ta-t sien-lu.

## 18. Genus: **Gonanticlea** Swinh.

(See Vol. 16, p. 89.)

Distinguished structurally from *Coenotephria* by the long, porrect palpus, with conspicuous, rather robust 3rd joint. Usually also easy to recognize superficially by the unicolorous, very generally orange-yellow hindwing and a characteristic pattern of the forewing, especially in the ♂♂. Sexual dimorphism, at least in the *occlusata* group, very pronounced (see below). Antenna of ♂ simple or shortly ciliated. Discocellulars of the hindwing biangulate. Genotype: *aversa* Swinh., in which species a tendency for the termen of the forewing to be concave anteriorly and angled in the middle is carried further than in most of the species. Distribution chiefly African, Indian and Malayan, but a few Papuan species have also been referred here.

**G. semiflava** Warr. (27 a). In this and the three following species the palpus is moderate rather than *semiflava*, long and their reference to *Gonanticlea* is somewhat doubtful. *semiflava* is easily distinguished from *subcaesia*, inter alia, by the simple ♂ antenna and the bright coloration, notably the yellow hindwing. British and Dutch New Guinea, type from Angabunga River.

**G. onaea** sp. n. (27 a). Very near *semiflava*, with which it was taken on Mount Goliath. Both wings *onaea*, with the colouring more sober, though essentially similar, the pale part of the median area restricted and not white; postmedian line of forewing between 2nd radial and 2nd median curved instead of bilobed, subterminal spot in cellule 6 stronger and darker than that of cellule 7 (in *semiflava* they are equal, confluent and more reddish); hindwing slightly more rounded than in *semiflava*, perhaps with termen more prominent about 3rd radial and 1st median, its posterior region with broader drab suffusion, its fringe less darkened. A pair in the Tring Museum.

- horia*. **G. horia** *sp. n.* (27 a). On an average considerably smaller than *subcaesia* (28 to 30 mm, but 1 ♀ reaches 34 mm). ♂ antennal ciliation apparently shorter, thorax with larger white spot posteriorly, ♂ abdomen less markedly elongate. Body and forewing above less variegated, the blackish-fuscous parts predominantly brown. Forewing with antemedian and the lines between it and subbasal on the whole more sharply angled in cell; postmedian with the tooth behind 3rd radial generally simple rather than double (i. e. almost without an accompanying tooth or angulation behind 1st median). Hindwing and underside with the grey colour less bluish, more inclining towards brown or drab. Queensland (F. P. DODD): Kuranda, Cairns district, type ♂ in my collection, 8 ♀♀ in the British Museum; Taylor Range near Brisbane, 1 ♂, 2 ♀♀ in the British Museum.
- subcaesia*. **G. subcaesia** Warr. (27 a). Median band quite different in form from that of *semiflava*, dark shadings of subterminal differently placed. Antenna with ciliation about as long as diameter of shaft. British and Dutch *neutralis*. New Guinea, the type from Upper Aroa River. — **neutralis** Prout. Hindwing and underside with the non-descript purple-grey hue of *sublustris* or of the African *meridionata*, even further removed from the deep blue-grey colouring of the type than is the brown-grey or drab-grey of *horia*; distal half of forewing with irregular ochreous suffusion, which is strongest and clearest in the outer lobe of the postmedian band. Manusela, Central Ceram, 1 ♀.
- occlusata*. **G. occlusata** Feld. (27 a). Moderately variable and (as also the next 5 species) with strong sex-dimorphism. ♂ with moderate or rather narrow white or pale yellowish bar bisecting the (mostly dark) median band, ♀ with the distal part of the band represented only by a somewhat triangular costal spot and a fine postmedian line. Hindwing with the yellow ground-colour more or less suffused with grey. Ceylon (type) and S. India. — *laetifica*. **laetifica** Prout. Forewing with brighter tints outside the median area, in the ♀ with the median area itself bright or light and with the postmedian lines generally very weak except at costa. Hindwing, excepting the abdominal region and a narrow or incomplete terminal shade, ochraceous orange. Underside also brighter orange than in *O. occlusata*. N. E. Himalayas, the type from Cherrapunji. I have also referred here the forms from Malaya *kinabalensis*. and Tonkin. — **kinabalensis** *subsp. nov.* (27 a) should be separated; grey abdominal shade of the hindwing narrower, termen without the grey shading or maculation; I think also that there is somewhat more hair on the hindwing proximally. Kinabalu.
- albizona*. **G. albizona** Prout (27 b). "Except in the very different shape more like *amplior* than *occlusata*." Median area of forewing in both sexes broader than in *penicilla*, hindwing brighter, the ♂ without the characteristic pencil of the hindwing and apparently with normal antenna (damaged in both the known ♂♂). ♀ rather large, with minute cell-dot well outside the narrow antemedian band, the much clearer orange hindwing best distinguishing it from that of *o. occlusata*. Mount Korintji, S. W. Sumatra, 7300 feet.
- penicilla*. **G. penicilla** Prout. Forewing closely like that of *amplior*, but looking slightly less broad, on account of the rather less square-cut tornus; hindwing quite different in shape from that of *amplior*, in the ♂ with a longitudinal pale-buff hair-pencil on the upperside arising in the base of the cell between the subcostal and the cell-fold; without the broadly smoky abdominal-marginal area. ♂ antenna somewhat remarkable, the end darkened and very appreciably fusiform, recalling the South American genus *Rhopalodes*. ♀ apparently variable, the hindwing intermediate in tone between those of *O. occlusata* and *laetifica*, but the cell-dot of the forewing in all the known examples stands outside, instead of on, the edge of the dark antemedian band. Korintji, at *amblia*. 4500 feet (type), also (a race?) from the mountains of W. Java. — **amblia** Prout (27 b), from E. Java, 4000 to 5000 feet, is somewhat larger, hindwing and underside with strong dark suffusions, median band of the ♂ forewing paler than in *p. penicilla*; 1 ♂ more recently received from E. Bali.
- euclidiata*. **G. euclidiata** Snell. (27 b, O, U). Until recently, this apparently rare *Gonanticlea*, described as long ago as 1881, was known only from the original account and figures. Now, however, specimens have been received from Paloe (W. Celebes) and these confirm the close relationship to *amplior* which was suggested by SNELLEN'S good figures of the ♀, here reproduced. The ♂ begins to approach, in the hindwing, the shape which characterizes *amplior* but has not the specialized antenna. The ♀ differs little from that of *amplior* but (as also the ♂) lacks the large darkened apical patch of the forewing beneath which is developed in that species. Celebes, the originals from Lokka.
- amplior*. **G. amplior** Th.-Mieg (27 b). Closely similar in pattern and in the sexual dimorphism to the rest of the *occlusata* group; ♂ with antenna thickened for a considerable distance, gradually tapering distally, the abdomen tufted at its extremity, the wings very distinct in shape, forewing broader and with more curved costa, hindwing with abdominal margin elongate. The very broad median band in the ♂ approaches nearer to the termen behind the 3rd radial than in most *Gonanticlea*; cell-mark with noticeable pale circumscription; ♀ with the dark band forming a tooth outward behind the cell-spot. Kinabalu (type), Selangor, Sumatra, Java and Bali; perhaps some races, but few specimens are yet known except from Kinabalu.

**G. multistriata** Warr. (27 c). Only known from a single ♀, but manifestly a good species. Not only is the multiplication of lines very characteristic but its large size and especially the much more direct postmedian line of the forewing are against its union with any other *Gonanticlea*. W. Java, without exact locality.

**G. subfalcata** Wileman (27 b). Related to *aversa* but larger, much darker, the emargination of the forewing stronger, the lines more uniform in expression throughout, very numerous and approximately parallel, more recalling the scheme of *multistriata*. Formosa: Arizan, only the type ♂ known.

**G. aversa** Swinh. (27 c). The shape of both wings, the dark hindwing and the form of the bands of the central area abundantly distinguish this species from the *occlusata* group. The yellow colouring, so prevalent in the genus, only appears on parts of the underside and even there it is rather pale and in part obscured with grey. N. India, Burma, the Malay Peninsula, Formosa, Kinabalu and Java, the type from the Khasis. The sexes differ little, but the ♀ is somewhat the larger and more uniform.

**G. siphia** sp. n. (27 c). This species and the following constitute yet another section, the ♂ forewing beneath having a large area of specialized rough scaling and hair. Shape and pattern also characteristic, though *siphia* is slightly intermediate. Specialized clothing of forewing also perhaps scarcely so extreme. Otherwise differs chiefly from one of the forms of *sublustris* in its greyer tone, above and particularly beneath. Bands narrowed, antemedian not dentate on its proximal side, subterminal pale but not whitish, not very conspicuous. Paloe, W. Celebes: Gunong Rangkoenau, 1800 feet (KALIS), 1 ♂ in the Tring Museum.

**G. sublustris** Warr. (27 c). Forewing broad, elbowed, without the pronounced anterior concavity of *sublustris*. *aversa* but here more denticulate. Dark bands of median area broad, their approximated sides convex, often coalescing centrally. — ab. (et ♀-f.) **deleta** Warr. (27 c), described as a separate species, appears to be merely the normal ♀ form, distinguishable by the strong reduction of the dark bands of the median area. WARREN based it on 1 ♂ and 1 ♀ from the Upper Aroa River, the type locality for the species; but the holotype turns out to be a ♂ with ♀ coloration and perhaps with the sex-scaling of the underside reduced (overlooked by WARREN on account of its pale colouring). Considerable material has since accumulated and shows the collective species to have a wide distribution from the Moluccas to the Solomon Islands. Geographical variation moderately pronounced. The name-typical race, inhabiting New Guinea and its satellite islands, has the distal side of its postmedian costal spot irregular and the dark band which terminates the basal patch nearly always very slender, often linear or thread-like. — **subpilosa** Warr., from Batjan, has the coalescence of the broad bands of the median area much stronger than in any except extremely rare aberrations of the more eastern races, but differs chiefly in the obsolescence of the broad pale or white subterminal stripe of the forewing. This is particularly noteworthy as being the direct antithesis of the conditions in the following, but as only one specimen is yet known it must not be over-stressed. — **stagnatilis** subsp. nov. Rather large and sharply marked, ♂ with the coalescence of the bands almost as strong as in *subpilosa*, the longitudinal pale patch from the central pale area to the slender postmedian line generally very clean-cut, subterminal stripe broad, whitish, beneath buff, very conspicuous, at least in its middle; ♀ large, costal spots rather heavy. Central Ceram: Manusela, 6000 feet, 6 ♂♂, 1 ♀ (ex coll. JOICEY); also 1 ♂ from 3000 feet; all in the British Museum. — **novellata** subsp. nov., from New Ireland (loc. typ.) and New Britain, has the dark subbasal band of the ♂ forewing broader, and generally projecting outward in the cell, the distal edge of the postmedian costal spot forming a gentle curve, or almost straight; the ♀♀ also begin to approach the following in some strengthening of the antemedian band. — **choiseuli** subsp. nov. ♂ very like that of *novellata*, perhaps on an average smaller and less purplish; ♀ developing a stronger (in the type form complete) antemedian band and, at least at hindmargin, a darkening of the narrow postmedian band also. Bongainville, Choiseul (type series) and Rendova.

**G. (?) ochreivittata** Bastelb. (= *latifasciata* Wileman) (27 d), described as a *Cidaria* and later referred to *Gonanticlea*, is of doubtful location, having somewhat the coloration and scheme of markings of some *Ecliptopera*, the apical markings of the *Ortholitha propinquata* group. Palpus moderately long, 3rd joint rather small, drooping. Abdomen (except anteriorly) with small lateral tufts. Underside, as in most *Ecliptopera*, with forewing less, hindwing more, strongly marked than above, the cell-dot and postmedian line the best developed. Formosa. — **yunnanensis** nov. Perhaps a separate species. Forewing with the discocellulars (and therefore the elongate cell-streak) very slightly more oblique (but perhaps inconstant?); colour-contrasts less strong, the bright ochreous-brown shades weaker; basal patch little darkened, angled in the cell; antemedian line somewhat more oblique; median band much broadened, at costa 9 mm wide, at hindmargin fully 4. Hindwing with the grey tone less yellowish, the postmedian line more distally placed; subterminal rather slender, fairly well defined by greyish shading proximally and distally. Yunnan, probably from the Yulingshan district (FORREST), the unique type ♂ in the British Museum, received from Mr. M. A. MANSFIELD through the Brighton Museum.

*anticleata.*

**G. (?) anticleata** Moore is still more aberrant in structure, though somewhat like a large *subfulcata* in markings; but until I have seen more specimens, and particularly the ♂, I do not feel inclined to create a genus for it. Both wings with the termen crenulate, forewing with the excision even more pronounced than in *subfulcata*; areole simple; hindwing with the 3rd discocellular strongly oblique, but without an appreciable angle at the origin of the 2nd radial. Palpus characteristically *Gonanticlea*, at least 2½. "Forewing with sub-basal, double antemedial and medial slightly waved lines, the last become treble below [behind] vein 4; a post-medial line from the costa to vein 4. Hindwing unmarked except for a dark marginal line" (HAMPSON, who — deceived by MOORE'S describing it as an *Endropia*! — apparently did not examine the structure and merely transferred it, together with "*Endropia*" *basipuncta* Moore, to *Leptomiza*). We hope to obtain, for one of our supplementary plates, a figure of the unique type, a Darjiling ♀.

### 19. Genus: **Anticlea** Steph.

This genus — or generic name, type species *derivata* Schiff. — has been scarcely at all recognized by recent systematists, though PIERCE revived it, on account of some differences (in the genitalia) from *Earophila* (type *badiata* Schiff.), with which it has much in common; both belong to the "calcar"-bearing group of genera, but not to the *Xanthorhoë* division, which bears coremata on the 7th segment. From *Earophila* it differs in the non-crenulate hindwing, but this is rarely of generic importance. Face rounded, without tuft. Palpus rather short. Antenna simple. Hindwing elongate, with discocellulars biangulate. In Vol. 4 (p. 243) I left it with the comprehensive *Coenotephria*, which should have involved supplanting my name by STEPHENS'S, but it seems somewhat isolated (see Suppl.-Vol. 4, p. 144). Its occurrence in the Indo-Australian Region is quite problematical.

*canaliculata*

**A. canaliculata** Warr. (27 d). Described in this genus but of quite uncertain affinities and as HAMPSON'S transference to *Dysstroma* is unacceptable I quote it here. Face, antenna, venation, etc., as in the genotype, palpus rather less short, scaling less glossy. Sikkim, very rare. I figure a large ♂ form Vriantong, Tibet.

### 20. Genus: **Mesoleuca** Hbn.

(See Vol. 4, p. 253.)

Another small group for which it is not easy to give a rigid taxonomic differentiation. Evidently related to *Anticlea*, agreeing in most respects, but with denser scaling, hindwing not elongate, discocellulars less biangulate, i. e. the 2nd radial originating considerably nearer to the cell-fold. Genotype: *albicillata* L. In its most restricted sense it is purely Holarctic, but if it embraces also *mandschuricata* Brem. the two species dealt with below must likewise be referred here.

*bimaculata.*

**M. bimaculata** Leech (Vol. 4, pl. 7 f). Evidently related to *mandschuricata* (Vol. 4, pl. 10 b), similar in shape, dark basal and midcostal blotches and form of the white subterminal line, but larger, predominantly brown instead of whitish. W. China, the type from Ta-t sien-lu.

*costipannaria.*

**M. costipannaria** Moore (27 d). Still nearer to *mandschuricata*, agreeing in size, or smaller, but with the brown colouring of *bimaculata*, which may be a giant form of it. Distal margins, especially of hindwing, somewhat more sinuous than in *mandschuricata*; basal patch not or scarcely indented; outer white line slender, very near termen; median band scarcely defined. Sikkim (type), W. China and Formosa.

### 21. Genus: **Trichoplites** Warr.

(See Suppl.-Vol. 4, p. 158.)

Face nearly smooth, rounded. Palpus short or quite moderate. Antenna simple. Forewing with areole double: in the ♂ on the underside with a ridge of hair or uniformly appressed-haired; in the ♂♀ also, so far as known, mixed with hair beneath. Hindwing with discocellulars biangulate or simple. A small genus, belonging almost exclusively to the N. E. Himalayas and the mountains of W. China. Genotype: *cuprearia* Moore.

A. Section: Forewing of ♂ beneath without definite ridge of hair.

*lateritiata.*

**T. lateritiata** Moore (= *cupreiformis* Hmps., *M. S.*) (27 d). MOORE'S type, in the Berlin Museum, is an aberrant ♀, with rather more mottling, the white subterminal spots browner, less conspicuous, but probably belongs with the ♂♂ which have been thus identified. Sikkim. Very similar to *cuprearia* except in the ♂ sexual characters; antemedial line more curved. Discocellulars biangulate.

*latifasciaria.*

**T. latifasciaria** Leech (Vol. 4, pl. 13 c). Founded on a ♀ from Wa-shan, in which the discocellulars are not at all biangulate, but as a few ♂♂ with them biangulate are exceedingly similar to it, it is just possible that the character may here vary. A somewhat paler ♂ from "W. China" (with the space between basal and median

bands recalling *cuprearia*) and a more typically coloured ♂ from Kunkala-shan shown me by WEHRLI are probably, however, safer representatives; discocellulars not biangulate, hairiness of underside of forewing rather slight.

**T. ingressa** *sp. n.* (27 d) cannot, in the present state of our knowledge, be referred to any known species. *ingressa*, although it might, according to the relative value attached to the structural distinctions, be considered to represent either *latifasciaria* or *cuprearia* on Formosa. Hairiness of underside as slight as in the former; discocellulars biangulate as in the latter, or even more strongly. Scarcely larger than typical *c. etesias*, with which it agrees very accurately in coloration (both wings) and in the markings of the forewing; antemedian line rather firm, not quite so oblique as in *latifasciaria*, cell-dot very small and weak, well outside the antemedian band. Arizan. 8000—10 000 feet, 1 ♂, in the British Museum, from Dr. A. MOLTRECHT.

B. Section: Forewing of ♂ beneath with ridge of hair.

**T. cuprearia** *Moore* (27 e). For a comparison of *lateritiata* see above; very generally, moreover, the ♂♂ *cuprearia* of *cuprearia* (but not the ♀♀) have the area between basal and median band conspicuously paler. Discocellulars biangulate. Type locality: Darjiling. — **etesias** *subsp. nov.* Somewhat smaller (35 mm), forewing darker (nearly *etesias*, the colour of *latifasciaria*), antemedian line somewhat more sinuous, the space between this and subbasal not pale. Hindwing with dark posterior and distal shading rather heavy. Naga Hills (type ♂), in the Tring Museum; Kachin Hills, 2 ♂♂, much worn, in my collection. A larger ♂, from Nanchuen, S. Szechuan, is remarkably like *latifasciaria* except in the discocellulars.

**T. tryphema** *Prout* (= *latifasciaria Prout*, err. det.) (27 e) is considerably larger than *latifasciaria*, with *tryphema*, the special ridge of the underside well developed, tone different, the well-expressed lines more numerous, the antemedian series not angled subcostally. hindwing sharply marked in the anal region; only the non-biangulate discocellulars justified my mistake in mating it with *latifasciaria* type, of which at the time I did not know any true ♂. Hpimaw Fort, 8000 feet, 2 ♂♂.

## 22. Genus: **Atopophysa** *Warr.*

(See Vol. 4, p. 267; Suppl.-Vol. 4, p. 173.)

Face-cone developed. Palpus moderate. Antenna simple. Wings ample; forewing with areole double, ♂ with a bladdery fovea at base of 2nd submedian; hindwing with abdominal margin elongate, discocellulars biangulate. Genotype: *indistincta* *Btlr.* Himalayas to China and Formosa.

**A. indistincta** *Bull.* (Vol. 4, pl. 13 e). Extremely variable, but Dr. WEHRLI, who has made the only *indistincta*, good analysis of the forms which has yet been undertaken, treats it provisionally as a single species. Some of the forms may perhaps be geographical races, but if so, their separation is probably according to altitude, as 3 are already recorded from Ta-tsien-lu. The name-typical form was described from Dharmasala and is assumed to embrace all those of the N. W. Himalayas and perhaps some others; in fact the specimen figured in Vol. 4, a ♂ in my own collection, comes from Tali, Yunnan. — **proximifascia** *Prout* (27 e), founded on 9 ♀♀ from the *proximifascia*, Khasis, is on an average larger than the corresponding sex of *i. indistincta*, the forewing slightly less dusky, its subbasal line strongly blackened, almost straight, the boundary-lines of the median area blackened at costa and especially at hindmargin, the antemedian at hindmargin oblique outward. Hindwing, except in distal area, paler than in the name-type. Since I have seen also the ♂ and find the distinctions constant, excepting the size, I am inclined to think it a separate species. — **sinotibetaria** *Wehrli* (Suppl.-Vol. 4, pl. 14 d) is the pre-*sinotibetaria*, vailing form at Ta-tsien-lu and occurs also at Ta-ho and some other localities on the Sino-Tibetan frontiers. Large, whitish, variegated, rather richly and brightly marked. — **kunkalashana** *Wehrli* (Suppl.-Vol. 4, pl. 14 d) *kunkalashana*, is the smallest and most delicate form. Forewing with the band-like markings dark and complete, somewhat recalling the *Colostygia salicata* of Europe; hindwing with the lines very weak or wanting. Kunkala-Shan. — **micans** *Wehrli* (Suppl.-Vol. 4, pl. 14 d). Nearly as small, but otherwise very dissimilar; forewing uniform glossy *micans*, yellowish-grey, the lines of the forewing nearly obsolete, even the black and the light vein-dots reduced, the only sharply black markings being 1 or 2 subapical spots, spots at hinder end of ante- and postmedian and at times a straight subbasal as in *proximifascia*, to which it perhaps belongs, hindwing very weakly marked, darkened distally. Canton (loc. typ.) and Central to West China. — **orphnina** *Wehrli* (Suppl.-Vol. 4, pl. 14 d) *orphnina*, is similar in the scheme of markings to *sinotibetaria*, but it is a smaller dark grey form and is separable at a glance by the dark yellow-grey hindwing. It is said to be rather prevalent at Mupin, Siao-lu and Tchang-kou and to have occurred also at Ta-tsien-lu, etc.

**A. lividata** *Bastelb.* (= *opulens Prout* (27 e). Easily distinguished from its congeners by its dark colour, *lividata*, the ground-colour of the forewing more slaty or leaden, the markings olive-brownish. Formosa.

23. Genus: **Entephria** Hbn.

(See Vol. 4, p. 234; Suppl.-Vol. 4, p. 137.)

An essentially Palaearctic genus of chiefly mountain Larentiines, with the forewing-pattern adapted to the coloration of the rocks on which they rest. External characters nearly as *Coenotephria*, except that in a few species the discocellulars are not biangulate. The only scientific grounding of the genus was given by CHAPMAN in 1908, who demonstrated the taxonomic value of the "juxta" and "calcar" of the ♂ genitalia in separating this from other alpine species of similar facies; until this has been tested in all the outliers, it cannot be asserted that our classification of them is accurate.

- ravaria*. **E. ravaria** Led. (Vol. 4, pl. 13 n). A rather large and glossy species, distinguishable from the most similar *Entephria* by the non-biangulate discocellulars of the hindwing. The forewing has not, in any example known to me, such strong colour contrasts as in our figure. Chiefly S. Siberian, but 2 large Kashmir ♂♂ (Koksar and Rala) seem to agree well.
- fuscaria*. **E. fuscaria** Leech (Suppl.-Vol. 4, pl. 13 e). A rather obscure grey species with darker basal patch and median band, otherwise weakly marked. Antennae broken in the unique type, but the short pieces which remain become strongly dentate. Hindwing with termen waved, discocellulars simple, 2nd radial arising much before the middle. Ta-t sien-lu.
- poliotaria*. **E. poliotaria** Hmps. (Vol. 4, pl. 13 n). A true *Entephria* by all characters, smaller and darker than the Palaearctic *cyanata* Hbn., not so glossy as *nobiliaria* H.-Sch., hindwing whitish grey, with cell-dot and on the underside indications of postmedian line. Kashmir and Chobia.
- neurbouaria*. **E. neurbouaria** Oberth. (Vol. 4, pl. 9 k). Unmistakable in the bright green tint and brown markings. The whitish hindwing, both above and beneath, has markedly punctiform lines. By the genitalia not a true *Entephria*. Szechuan and N. Tibet, the type from Ta-t sien-lu.
- nigrifasciaria*. **E. nigrifasciaria** Leech (Vol. 4, pl. 7 i), founded on a ♂ from Pu-tsu-fong, has a somewhat more crenulate and sinuate hindwing than most *Entephria*. Grey with blackish median band and a deeply dentate blackish line beyond it. Antenna simple, retinaculum rather large; perhaps akin to *Triphosa*.
- stellata*. **E. stellata** Warr. (= *adjrouaria* Oberth.) (Vol. 4, pl. 10 i). Thorax and forewing mixed fuscous and olive-yellow and marked with blue-whitish, nearly all the latter markings punctiform, the lunulate subterminal nearly complete. Hindwing beneath, from cell-dot outward, traversed by alternate brownish and white waved lines. Tonglo, Sikkim, 10 000 feet (loc. typ.) and through Tibet to Szechuan; also in Kashmir. This, too, is no true *Entephria*, but its actual affinities have not yet been ascertained.
- argentiplumbea*. **E. argentiplumbea** Hmps. (Suppl.-Vol. 4, pl. 17 e). Small for an *Entephria* and unusually glossy, with whitish hindwing, rather strongly marked on the underside. Face somewhat prominent, nearly smooth, almost white. Moderately variable, but not closely like any other known species. Indian Tibet, up to 12 000 feet; also known from Bhotan, Sikkim and Kashmir.
- punctatissima*. **E. punctatissima** Warr. (27 e). Perhaps (as ELWES, in coll., suggested) near *caesiata* Schiff. (Vol. 4, pl. 9 f). Palpus longer (over 1½). Slightly rounder-winged; median band of forewing broader, bounded on each side by large white vein-dots; subterminal also conspicuously punctiform; the thick black pairs of terminal marks alternated (between the veins) with white spots. Sikkim, at high elevations; discovered on the Nepal frontier, 10 000—12 000 feet. *E. poliotaria*, which shows also a tendency towards punctiform markings, is smaller, more blue-grey, the median band more narrowed posteriorly, the subterminal line more continuous.
- multicava*. **E. multicava** sp. n. (27 f). Similar to the largest, greyest *punctatissima*. Palpus somewhat shorter (scarcely 1½), more heavily scaled. Abdomen with white dorsal spots very conspicuous. Forewing with termen less curved; cell-spot somewhat enlarged; white spots in part still better developed, all the 3 rows between median band and subterminal well formed, the third (nearest the subterminal) much more so than in *punctatissima*, though a little irrorated with grey; 1st postmedian dark line more strongly outbent opposite the cell-spot; the white subterminal dots, especially the large one of cellule 3, set on well-defined black wedge-marks. Hindwing slightly more elongate than in *punctatissima*, the cell-dot, postmedian line and subterminal shade well developed both above and beneath. North Burma: Adung Valley, 12 000 feet, 28 September 1931 (Lord CRANBROOK), 1 ♀ in the British Museum.
- aurigutta*. **E. aurigutta** Prout (Suppl.-Vol. 4, pl. 13 g). Only the type ♀ known, collected on Mount Omei at 11 000 feet; in this the areole is undivided, but in all else it seems so typically an *Entephria* that I suppose the venation to represent a "sport". In its dark slaty-grey colouring and the development of a pale postmedian band on the hindwing it rivals or surpasses the darkest form of *ravaria* Led., or it might be likened to a dark form of *flavi-*

*cinctata* Hbn. deprived of almost all yellow scaling, but a characteristic ochreous spot, succeeding a white one, is developed between the 3rd radial and the 1st median of the forewing. Discocellulars rather strongly biangulate.

#### 24. Genus: **Neotephria** Prout.

(See Vol. 4, p. 257.)

Probably a development of *Entephria*, but distinguished by the hindwing, which has the 2nd radial arising before the middle of the discocellulars, the 1st median stalked with the 3rd radial, or occasionally arising from the same point; this wing, moreover, at least in the ♂♂, is irregularly produced about the end of the 1st median. Antenna of ♂ shortly ciliate. Type of the genus: *ramalaria* Feld.; a second, closely related species is, so far as I know, exclusively Palaearctic, a third is now added.

**N. ramalaria** Feld. (= *ramularia* Butl.) (Vol. 4, pl. 13 a, as *ramataria*). Very variable, but readily *ramalaria*. recognizable by its shape and venation. Kangra district to Gulmarg, in places common, FELDER's type from Lahul.

**N. avinoffi** sp. n. (27 f). Quite easy to distinguish from *ramalaria* by its shape and texture, as well as *avinoffi*. by the weaker markings. Palpus shorter, antenna and venation similar. Wings delicate, smoothly scaled and glossy (as different from the texture of *ramalaria* as *nobiliaria borearia* Prout from *cyanata* Hbn.); forewing with termen straighter in approaching the tornus; hindwing still less bent at the 1st median than in the female of *ramalaria*, the cell-mark and postmedian line obsolete above, indistinct beneath. Ladak: Tashgam (Kharbu). 9300 feet, 18 June 1912 (A. AVINOFF), a ♂ in the British Museum. *C. antelataria* Stgr. (Vol. 4, p. 238), which more resembles *avinoffi* in shape, is a variegated and sharply marked species.

#### 25. Genus: **Perizoma** Hbn.

(See Vol. 4, p. 258; Vol. 16, p. 90.)

Strictly speaking, this is a small and apparently natural genus, not yet detected outside the Palaearctic Region, best characterized by the early stages and by the ♂ genitalia. It has, however, been greatly extended temporarily, so as to include a considerable number of small (and a few middle-sized) species with frontal tuft, simple or nearly simple ♂ antenna, moderate (occasionally elongate) palpus, double areole, with 1st radial arising from the outer areole, and biangulate discocellulars. Wings smooth-margined, or nearly so, the hindwing sometimes a little elongate, always weakly marked, not or scarcely continuing the pattern of the forewing. It is doubtful whether it can be rigidly differentiated from "*Coenotephria*". Species from all the faunal regions have been included, but it is predominantly Palaearctic and Indian.

**P. costinotaria** Leech (Vol. 4, pl. 13 c). Not very small, perhaps better referred to *Coenotephria* than to *costinotaria*. *Perizoma*. Palpus short. The only known specimen, LEECH's ♂ type from Pu-tsu-fong, may perhaps represent a race of *olivacea*, subbasal band dark throughout, very oblique posteriorly, costal spot less crenulate-edged, hindwing much darker.

**P. olivacea** Warr. (27 f). Almost as strongly glossy as *schistacea*, with which WARREN placed it in *olivacea*. *Gagitodes*. Shape somewhat less characteristic. Recognizable at once by its colour and markings. ♂ antenna with ciliation 1. Discovered by ELWES on Sundukpho, Sikkim, at about 12 000 feet, since received from Yatong.

**P. plumbeata** Moore (27 f). Belongs to WARREN's genus *Gagitodes*, which might possibly be resuscitated; *plumbeata*. characterized by its rather well developed posterior thoracic crest, pointed forewing, with the termen faintly sinuous, and smooth, fine, extremely glossy scaling. Darjiling.

**P. schistacea** Moore (27 f). The type of *Gagitodes*; similar in shape and structure to *plumbeata* but *schistacea*. considerably smaller, the colouring less varied, the characteristic brown subterminal marking at the costa of the forewing wanting, etc. Dalhousie, Sikkim and the Khasis, the type from Darjiling. Captain SWANN sent very small specimens from the Kachin Hills, perhaps representing a separate race.

**P. tenuifascia** Warr. (27 f). Greyish white, the hindwing more grey; median band of forewing complete *tenuifascia*. but narrow, less so anteriorly and with a small projection outward about the middle, the blackish cell-spot contained within it, basal patch and a small costal subterminal spot also present. Underside of the forewing dark grey, of the hindwing paler, with cell-dot and traces of 2 lines. Khasis.

**P. costata** Wileman (27 g). Described from 1 ♀ as a *Xanthorhoë*, though compared with "*P.*" *triplogiata* *costata*. and obviously congeneric with that. Lines of forewing less obsolete, basal patch indented before middle, costal patch more quadrate, subterminal line in its anterior part traversing an obscure band-like shade. Formosa: Daitozan, 8500 feet. — ab. **particulata** Bastelb. has the median band less obsolete in its posterior part, thus *particulata*. more resembling *tenuifascia*. from which it is distinguishable in having the basal patch more vertical, the median

band attenuated behind and somewhat interrupted, the wings perhaps relatively more elongate. Formosa, without indication of exact locality.

- triplagiata*. **P. triplagiata** Warr. (= *biplagiata* Wileman, err. transcr.) (27 g). Forewing almost unmarked excepting the three dark patches from which it derives its name. WARREN indicates that it may conceivably be a very different form of *tenufascia*, but, apart from the other differences, it has an ochreous suffusion which is wanting in that species. Khasis (loc. typ.) and Simla.
- fractifasciaria*. **P. fractifasciaria** Leech (Vol. 4, pl. 7 i). Whiter than *costinotaria*, the midcostal dark patch broader, a small mark opposite to it on the hindmargin (as in *costata* ab. *particulata*). Ta-t sien-lu, 1 ♂. Also 1 from Yunnan.
- brevifasciata*. **P. brevifasciata** Warr. (Suppl.-Vol. 4, pl. 16 b). Position somewhat doubtful. Antenna of the ♂ shortly ciliate, 1st radial of the forewing not stalked, hindwing not quite regularly rounded. The type of maculation is somewhat as in *fractifasciaria* but much more copious, a band developed between the basal and the median, a line intersecting each white band, dark outer shades stronger. Thundiani (type) and Darjiling.
- cerva*. **P. cerva** Hmps. (27 g). Much smaller than *triplagiata*, the glossy white forewing much suffused with cinnamon-buff, the midcostal mark greatly reduced, the subterminal costal somewhat extended, very near the apex. Sikkim, 7000 feet (type) and Upper Burma. Palpus rather long.
- lacernigera*. **P. lacernigera** Butl. (Suppl.-Vol. 4, pl. 14 k). This and the following have also elongate palpi and are probably related to *cerva* but are less brightly coloured and more normally marked, the last costal spot not so near the apex. *lacernigera* is generally smaller than *hockingii* and has the termen of the forewing somewhat more sinuous. Further differentiations are given under *hockingii*. Both were described from Dharmasala and extend through Sikkim to N. Burma.
- hockingii*. **P. hockingii** Butl. (Vol. 4, pl. 7 k). Less glossy. Basal patch of forewing generally more oblique, central band better developed, less narrow, generally formed of a pair of dark lines connected by a costal blotch; fringe scarcely so sharply marked. Specimens from the Nagas, so far as they are known to me, are larger.
- rectifasciata*. **P. rectifasciata** Hmps. Lines and bands more equally expressed throughout the forewing than in the two preceding, approximately parallel and without any very strong projections; tone of colour somewhat as in *decorata*. Hindwing somewhat less weakly marked than in most *Perizoma*. Sikkim, 7000 feet, apparently very rare.
- decorata*. **P. decorata** Moore (27 g). A neat little species, with sinuous median band (weakly indicated also on the whiter hindwing) and fairly conspicuous anterior half-band proximal to the subterminal, the subterminal more or less macular and with a large spot or longitudinal streak in the middle. Sikkim. — **quadrinotata** Warr. from Assam and Upper Burma (the type from the Khasis) is possibly a separable race as the majority of the specimens — especially from the Khasis — are more strongly marked; but there is considerable variation and HAMPSON was perhaps right in treating the two forms as synonymous.
- simulata*. **P. simulata** Wileman. Similar to *decorata*, indeed WILEMAN considers that some of the Sikkim specimens determined as *decorata* in the British Museum agree with his species. His unique type, however, a ♂ from Arizan, Formosa (7300 feet), is much less brightly coloured — whitish with the markings grey-brown, the subterminal spots not quite characteristically developed. It should be, I think, at least a subspecies.
- puerilis*. **P. puerilis** Prout (Suppl.-Vol. 4, pl. 16 a). Antennal ciliation of the ♂ minute. Paler than *decorata*, forewing with apex more acute, termen more sinuous, median band narrow throughout, scarcely sinuous, subterminal spots formed much as in *decorata*, their dark proximal shade developed chiefly in cellule 5, i. e. just in front of the longitudinal white streak. Htagaw, Kachin Hills, the type ♂; besides, I know only a ♂ labelled "W. China". Superficially recalls the S. American genus *Psaliodes*.
- ochreotincta*. **P. ochreotincta** Wileman (27 g). WILEMAN considers this also allied to *P. "decorata"*; perhaps this is so, but the type ♂ — unfortunately rubbed — looks to me to have more affinity with *fasciata* or others of the *taeniata* group; it is hoped that our figure will give a correct impression of it. Basal and median bands well defined, blackish, the latter bilobed distally, costal subterminal patch bearing 3 white dots. Rantaizan (type) and Arizan, Formosa.
- parraria*. **P. parvaria** Leech (= *ablegata* Stgr.) (Vol. 4, pl. 7 k). Recognizable by its rather characteristically shaped median band, which has its distal boundary and the lines which are parallel therewith not dentate, but merely once sharply bent; distal area partly white opposite the angle. The originals were "probably from *albidivisa*, Yokohama", later material from Yamato, the Ussuri and W. China. Palpus rather short. — **albidivisa** Warr. (27 g), described from the Naga Hills and known in similar forms from the Khasis and N. W. India, is perhaps

not constantly separable racially, but has as a rule a more strongly produced postmedian angle and more extended white beyond it.

**P. ecbolobathra** Prout (Suppl.-Vol. 4, pl. 18 a) somewhat resembles a small and rather narrow-banded *ecbolobathra parvaria*, but is easily distinguished by its clear whitish base (bounded by a narrow dark line), less developed subterminal line and midterminal whitish spot and a number of other details. Palpus longish-moderate. W. China, the type from Yaregong.

**P. fasciaria** Leech (Vol. 4, pl. 7 k) seems to belong here rather than to *Euphyia*, with which it was formerly placed. Rather broad-winged, moderately glossy, the median band broader than in most *Perizoma*. Palpus long (approaching 3 times the diameter of the eye); discocellulars not actually "biangulate" but the 2nd radial of the hindwing arises well behind the cell-fold. Perhaps the group may form a separate genus; see remarks on *conjuncta*. Central and West China and Formosa, the type from Omei-shan at 3820 feet.

**P. phidola** Prout (Suppl.-Vol. 4, pl. 16 b). Possibly a form of *fasciaria* with only the costal part of the median band developed, recalling extreme forms of *conjuncta*; but as all the 3 known examples have unequivocally biangulate discocellulars it is probably a species. W. China: Tupakö (7400 feet) and Pehlinting (6000 feet).

**P. fatuaria** Leech (Vol. 4, pl. 7 h). Smaller than *fasciaria*, the palpus not quite so long, the median area much more encroached upon by the white ground-colour, so that only its distal part is band-like. An evident transition to *conjuncta*. Chang-yang, Central China.

**P. conjuncta** Warr. (27 g). Variable, but never with the median band fully darkened, yet always with its costal part blackish; subterminal shades generally strong; fringe strongly spotted. The long palpus and the crested abdomen suggest doubt as to its belonging is *Perizoma*; discocellulars weakly biangulate. East Pegu (loc. typ.), the Khasis and Htawgaw, Upper Burma. The few specimens yet known from the Kachin Hills and Teng-yueh-ting are exceptionally small and may represent a subspecies.

**P. minuta** Btlr. (Vol. 4, pl. 7 h). Median band about as broad as in *fasciaria*, coloration not dissimilar, the hindwing, however, lighter and generally more sharply marked; termen of hindwing more sinuous. Very distinct in the sinuous white subterminal line of the forewing, which is placed very near the margin and separated therefrom by conspicuous dark spots; a hindmarginal spot between basal and median band is also noteworthy. N. W. Himalayas and Nagas, the type from Dhurmsala. — **latifasciata** Warr. (27 g) is very closely related, if not a form of the same species. Nearly always larger, both wings generally a little more irregular in shape; median band relatively broader, more sharply defined proximally, subbasal band complete, not accentuated at hindmargin, Type from Sikkim; also known from Upper Burma.

**P. maculata** Moore (27 h). Strikingly distinct in the ample white maculation and not variable. Sikkim to N. Burma, the type from Darjiling.

**P. lacteiguttata** Warr. (27 h) has the white spots copious but all small, the majority merely small vein-dots. Tonglo, Sikkim, 10 000 feet.

**P. (?) contrastaria** Sterneck is unknown to me. Expanse "18 mm". Palpus moderately long. Antenna of ♂ simple, much thickened. Discocellulars of hindwing biangulate, 2nd subcostal long-stalked. Forewing with cell-spot large, black; proximal and distal areas blackish, traversed respectively by a weak lighter sub-basal and a punctiform subterminal; median area white, in the middle — especially anteriorly — darkened with vein-streaks and dots, only its borders remaining clean white. Hindwing white, darkened at anal angle; cell-dot distinct; basal and terminal bands grey. Wassekou, W. China.

**P. rantaizanensis** Wileman. Closely related to *albofasciata* (27 h), perhaps a subspecies. The apical dash of the forewing is perhaps less sharply white and (to judge from a few poor specimens) the median band may be more mixed with grey than in most *albofasciata*, less narrowed posteriorly and with less strong dark mark on hindmargin. The white hindwing shows at least a trace of 2 lines outside the cell-dot. Formosa: Rantaizan.

**P. albofasciata** Moore (Vol. 4, pl. 7 h). Readily recognizable from our figure; the median band is always more or less ill-defined (mixed with white), sometimes very feeble except at costa and hindmargin; postmedian marked by dots or small dashes on the veins, rarely traceable on the hindwing. Darjiling (loc. typ.) and up to 10 000 feet at Tonglo. A similar, or still whiter-banded form occurs at Dhurmsala. — f. **mixtifascia** Prout is smaller (19—22 mm), the white outer spot of the forewing somewhat, the median area considerably, more irrorated with dark grey, the irroration in this latter area extending to the postmedian line. Kachin Hills and probably Kwanhsien, Szechuan.

**P. interrupta** Warr. (27 h), founded on 2 ♀♀ from Sikkim, commences an extensive and difficult group of species (chiefly Himalayan and West Chinese) which are probably — many of them certainly — near relatives

of *taeniata* Steph. (Vol. 4, pl. 8 e); their life-history is still unknown, but it may be conjectured that it will prove to be similar to that of *taeniata* and will possibly constitute it a separate genus. *interrupta* is considerably larger than *fasciata*, the markings more blurred, the pale band outside the postmedian broad (in *fasciata* narrow), the outer white spot reaching the 2nd median, the hindwing slightly darker, at least at the margin, the underside of the forewing slightly better marked than in *fasciata*.

- mediangu-*  
*laris.* **P. mediangularis** Prout (Vol. 4, pl. 12 c. as *mediangularia*). Probably near *interrupta*, but almost as strongly glossy as *variabilis*, than which it is larger, somewhat more tinged with red-brown and with scattered bluish scales; subterminal line bluish white, somewhat punctiform, but with a V-shaped mark pointing inwards at the 3rd radial. Szechuan, the type from Omei-shan.
- variabilis.* **P. variabilis** Warr. (27 h). As a good deal of confusion has prevailed regarding this *Perizoma*, I gave a rectification in Suppl.-Vol. 4 (p. 164) and am now providing an authentic figure of one of the originals from Tonglo, Sikkim, 10 000 feet. Smaller and perhaps even more glossy than *mediangularis*; the lustrous blue-white or greenish-white scales conspicuous on the forewing, especially between the 2nd submedian and the hindmargin, where they commonly coalesce into small spots which define the dark lines; similar dots usually present at the termen and always on the subterminal; median area scarcely darkened into a band. Hindwing above glossy white. Head not so light as in *lucifrons*, though the face shows a sprinkling of grey scales, which are occasionally somewhat more copious. — ab. (?) **albimacula** Prout. Central part of the subterminal, which in the type-form is somewhat wedge-shaped or may approach that of *mediangularis*, enlarged into a round spot. Tonglo, with the typical form; the original 3 are all ♀, but this is probably a mere chance. One of them was figured by WARREN as "*variabilis*", but is really his "third form", not his type; it is not even certain that it is conspecific, since it looks slightly rounder-winged. — **condignata** Prout (= *seriata* var., *Butl.*, nec *Moore*) (Suppl.-Vol. 4, pl. 16 a), from Dharmsala, was at first confused by me with *albimacula* but is very distinct, not unlikely a separate species. Very small (20—22 mm), without lustrous scales, basal and median areas of forewing darker banded, subterminal dots before and behind the central white spot enlarged, hindwing darker than in *variabilis*, beneath more weakly marked. The originals were collected by "sugaring"; they fed with the wings erected, like many Larentiines. I do not think it has been taken since.
- antisticta.* **P. antisticta** Prout (Suppl.-Vol. 4, pl. 16 a). 23—27 mm. Not quite so glossy as *variabilis*, anal tuft darker. Forewing with a very conspicuous dark basal or subbasal band; median area generally broader, at least anteriorly, its boundaries defined by dark costal and hindmarginal spots; subterminal slender and much interrupted, in the middle crossed by an irregular buff-tinged mark which runs broadly along the 3rd radial and throws out a curved projection to the 1st median. Hindwing slightly more grey-tinged than in *variabilis*, cell-dot and nearly always a dark terminal shade present. Punjab: Thundiani (?); also 1 ♀ from Sultanpur. —
- methemon.* **methemon** *subsp.* (? *sp.*) *nov.* (27 h). Slightly broader-winged and less glossy, more variegated; forewing with the pale areas tinged with buff, the greyish median shade not quite reaching the postmedian, which stands out with conspicuous dark marks on the veins. Hindwing above with distinct indications of a punctiform postmedian. Kashmir (T. B. FLETCHER): Gulmarg, 23 July, type ♀ in my collection; Yusimarg, 6—15 August, a similar ♀ in that of the Agricultural Research Institute, Pusa.
- lucifrons.* **P. lucifrons** Prout (27 h) differs from *variabilis* in its pale head and in having a conspicuous white spot or transverse line at the base of the abdomen above, followed posteriorly by a bright, somewhat tawny transverse line or narrow band. Forewing a little broader, hindwing scarcely so white, with apex slightly cloudy, beneath more powdery. Smaller, less glossy and less brown than *mediangularis*, band rather broader, etc.; the smooth grey-tinged hindwing is similar in the two, but the line of the hindwing in perhaps rather more bent beneath and less distinct above. Kachin Hills (loc. typ.) and Sikkim. —
- lychnobia.* **lychnobia** Prout (Suppl.-Vol. 4, pl. 16 a), from Tupakö (Mupin), is somewhat darker, at least on the abdomen and hindwing, the characteristic maculation of the abdomen weaker; forewing with the relatively large white subterminal dots in cellules 3 to 5 and oblique buff spot outside them well developed.
- bicolor.* **P. bicolor** Warr. (27 i). Distinguishable by its glossy rufous tone, very restricted basal area, slight and punctiform subterminal and relatively broad, dentate-edged median band. Sikkim, a single ♂ taken at light at about 12 000 feet by *Elves*. The British Museum has a ♀ from Yatong, Tibet.
- apicistrigata.* **P. apicistrigata** Warr. (27 i). Very distinct in the form of the strong dark markings, notably those which accompany the subterminal; apparently not variable. Sikkim: Nepal frontier, 10 000—13 000 feet
- fulvimaecula.* **P. fulvimaecula** *Hmps.* (= *fulvistriga* Warr.) (Vol. 4, pl. 13 m, as *affinis*). This was erected by HAMPSON in 1896 as *nom. nov.* for the species which he erroneously described from the N. W. Himalayas in 1895 as *affinis* *Moore* (see below). The specimens before him in the British Museum came from Dalhousie and Dharmsala and as he had indicated no type. Mr. TAMS has selected a Dalhousie ♀ which best fits his description. WARREN'S

*fulvistriga* is from Sikkim and I have it from Kumaon, but I have not yet found any racial distinction. A moderately large species, with rather warm colouring; the subterminal "macula" upon which the name was founded, is longitudinal and generally narrow, so that "striga" is a better designation. From *antisicta*, which has some points in common with it, *fulvimacula* differs in the shape of the markings, absence of their dark borderings, presence of (ill-defined) pale oblique dash from apex, etc. — **promiscuaria** *Leech*, from W. and Central China (type from Chang Yang), is perhaps on an average larger, less bright and with less (or scarcely) developed longitudinal streak of the subterminal. But a Formosan ♀ is closely like some Indian. — **liberata** *Prout*, possibly a separate species, has sharper contrasts than even *f. fulvimacula*, the broad area between basal and median bands pale, traversed by a central brown shade which is edged distally by an angulated darker line; distal area with a pale central spot recalling that of *seriata* but less sharply defined, a bright brown band between the subterminal and the double pale line which bounds the median area. Szechuan. Easily distinguished from *seriata* by the sharply angled antemedian and proximal markings.

**P. affinis** *Moore* (27 i) differs from *fulvimacula* in the suppression of the white spot at base of abdomen; basal and median bands stronger, the intermediate band or shade almost obsolete; median band sometimes (as in the figured paratype) broadened. Darjiling.

**P. constricta** *Warr.* (Suppl.-Vol. 4, pl. 16 a). In Vol. 4, p. 259, I accepted HAMPSON'S suppression of this to the preceding, though with a query. It is in any case a noteworthy form; brown parts less mixed with blackish (especially between the sharply dark subbasal and the antemedian line); median band narrowed, its distal edge rather straight; mid-subterminal spot extended, but ill-defined, greyish, with no fulvous mark, hindwing less white. Dalhousie.

**P. lineola** *Bastelb.* (27 i). "Forewing smoky black with darker median band; along the termen are placed extremely fine white dots and at vein 4 a small yellow striga accompanies this vein. Hindwing white, with fine central dot. Underside smoke-grey, a praemarginal row of white dots from the costa to the hind angle; at the costa some indistinct spots. Hindwing with black central dot and a postmedian and a praemarginal macular line. Fringes yellowish; on the forewing dark spotted." Arisan, Formosa. I have not had an opportunity to study this species, which may prove an aberration of *promiscuaria*; but I trust that a figure of the type will help to elucidate it.

**P. seriata** *Moore* (Vol. 4, pl. 7 h). Forewing rather bright brown, basal patch well developed, median band nearly always conspicuously dark, subterminal white, punctiform, the dots large, unless the anterior 2 or 3, mid-subterminal spot outstandingly large, nearly always pure white; an oblique whitish dash from apex. Described from Darjiling; widely distributed in N. W. India, N. Burma and W. China. — **niveiplaga** *Bastelb.* (27 i), from Formosa, is more variable, nearly always less contrastingly coloured; median band weakly darkened, midsubterminal spot oftenest suffused with buff.

**P. taiwana** *Wileman* (= *arizanensis* *Wileman*) (27 i). Founded on a few ♀♀ from Arizan, 26 to 27 mm. Closely like *seriata* but with the characteristic white subterminal spot more speckled or reticulated with dark scales. Possibly a remarkable modification of *s. niveiplaga*, with the median band darkened and bounded distally by a double, broad line, of which the proximal part is pure white, the distal ochreous.

**P. fasciata** *Warr.* (27 i). Smaller than *seriata*, the wings more glistening (WARREN calls the forewing "bronzy fuscous-brown") the median band bounded on each side by a double whitish line, most distinct costally, the proximal one angulated outward in the middle; subterminal line macular, the central spot moderate, roundish; smaller white terminal spots. Forewing beneath with the costal part of the whitish postmedian stripe present, also the two outer series of white spots; hindwing beneath glossy white, with dark base and 5 lines or narrow bands. Sikkim: Nepal frontier, 10 000 to 12 000 feet.

**P. variaria** *Leech* (Vol. 4, pl. 13 m). A strongly glossy species which I have suggested (t. c., p. 259) may possibly be a local race of the Japanese *fulvida* *Btlr.* (Vol. 4, pl. 7 k. as *punctilinearis*), though it seems to be somewhat broader winged and the hindwing is considerably lighter and less devoid of markings. Szechuan, the originals from Pu-tsu-fong.

**P. prouti** *Schawerda* (Suppl.-Vol. 4, p. 166). Palpus longish, heavily scaled. Rather broad-winged but probably related to *inconspicuaris*, the white markings which border the median band stronger and clearer, especially in the costal part of the outer one; a strong projection of the postmedian at cellule 6 in addition to the central lobe which is present in both; subterminal forming a whitish spot in the middle; fringe chequered. Ta-tsien-lu, only the type ♂ known.

**P. inconspicuaris** *Leech* (Vol. 4, pl. 7 h). This and its two neighbouring species are characterized by the lunulate-dentate dark markings, in particular the postmedian; the browns and greys of *inconspicuaris* are not

very sharply contrasted and the pale area which separates the median band from the basal area is narrow, the latter area being extended by the inclusion of two strong subbasal lines; subterminal incomplete, punctiform. Ta-t sien-lu.

*mordax*. **P. mordax** *sp. n.* (27 k). Expanse 22—26 mm. In general coloration, as well as the number and approximately the position of the lines, the small and punctiform (in part well isolated) subterminal marks and the strength of the double fuscous line between basal patch and antemedian, suggestive of *inconspicuaria*, but very distinct. Palpus scarcely so long. Head and base of abdomen pale or whitish. Postmedian of forewing with less strong central projection outward, subterminal with conspicuous, though not very large, white spot on and behind the 3rd radial. Underside more strongly marked than in *inconspicuaria*, the hindwing with strong broad postmedian and subterminal lines, the former markedly sinuous, a faint and slender line between them. Tibet: Kama Valley, 12 000 feet, 22 June 1922 (E. F. NORTON), 5 ♂♂ in the British Museum, from the Mount Everest expedition.

## 26. Genus: **Euphyia** *Hbn.*

(See Vol. 4, p. 244; Suppl.-Vol. 4, p. 145; Vol. 16, p. 91.)

Face generally with slight tuft below. Palpus shortish or moderate, rarely more elongate. Antenna of ♂ simple or very shortly ciliate. Abdomen not or scarcely crested. Wing-margins smooth or slightly waved; forewing with areole double; hindwing with discocellulars not biangulate. As at present classified, an extensive genus, largely Palaearctic and Indo-Australian; most of the South American species which have been placed here may probably be separable by characters of the palpus, etc.; but a few North American are certainly congeneric with the European. Genotype: the European *picata* *Hbn.*

*variegata*. **E. variegata** *Moore* (27 k). A moderately large species, the forewing dull greenish, the rather broad dark median band with its edges on the whole more irregular than in its nearest allies and marked, especially the distal edge, with somewhat conspicuous white dots or teeth at the veins. Hindwing predominantly grey, anteriorly somewhat relieved with whitish; a whitish subterminal indicated. Underside of forewing less, of hindwing more, strongly marked than upper. Antenna of ♂ shortly ciliated. Simla to Bhotan, the type from Sikkim. Single ♀♀ from Chia-kou-ho (W. China) and Sultanpur seem to agree with it.

*viridis*. **E. viridis** *Warr.* (27 k), treated by HAMPSON (possibly with justification) as a green form of *scortea*, has nearly always a more sharply defined line bounding the basal area, less jagged edges of the median band, with little or no white scaling, and less variegated distal area, the subterminal lunules less developed, as also the black marks which accompany them proximally and distally. Hindwing more brownish than in *variegata* and almost unicolorous. Underside also on the whole slightly more brownish than in *variegata*, both wings well marked, the less strong central projection of the postmedian line generally noticeable. Sikkim (type) and common in the Khasis, where it varies considerably in size, on the whole smaller than *variegata*. — ab. **solida** *nov.* is an occasional form, parallel to some which I have so named in other Larentiines; with the median band (sometimes also the basal) solidly darkened, the green areas on either side of it almost devoid of markings. Khasis; type ♂ in the British Museum.

*scortea*. **E. scortea** *Swinh.* (27 k). Most of the above differentiation from *variegata* applies also here, but the ground-colour is brownish, the size and markings less variable, the median band on the whole broader, occasionally a little more resembling in its outline that of *variegata*. Described from the Khasis, where the ♂♂ have been taken in great numbers; also known from Kulu and British Bhotan. I have a ♀ from Laukhaung, Upper Burma, which seems to belong here.

*obscura*. **E. obscura** *Butl.* (= *butleri* *Leech*) (see Vol. 4, p. 252). Considerably smaller than the preceding group, palpus shorter (reaching very little beyond face), ♂ antenna simple; antemedian line less curved. The name-typical form, based on a Yokohama ♀, besides being unusually large, is nearly unicolorous, the median band almost uniformly suffused, but such an aberration could occur anywhere. — ab. (form. princ.) **subobscura** *Prout* (Vol. 4, pl. 11 f, as *obscura*) is the usual Japanese form and is recorded also from Szechuan; median area of forewing lighter, etc. — **multilinea** *Hmps.* (= *multilineata* *Hmps.*), described from the Nilgiris, is very variable, but probably a tenable race by the dark underside, though even this is occasionally closely approached by aberrations of *fecunda*. On an average rather smaller and with the upperside rather brighter, more varied and more strongly marked than in the name-typical race. S. India and Ceylon. — **fecunda** *Swinh.* (27 k). Also extremely variable, perhaps almost a synonym of *o. obscura*, but generally rather greener, more strongly marked, with more black marking, often a black cell-dot. N. India, the type from the Khasis.

*nyctichroa*. **E. nyctichroa** *Hmps.* (27 k) is smaller and darker, more uniform, the postmedian much more sinuous in its anterior part, the subterminal scarcely widened at the tornus, etc. Besides the type ♂ from the Palnis, I know only a ♀ from Belgaum and another from Khandalla.

**E. subangulata** Koll. (= *extraneata* Guen., *cymaria* Bull., nec Guen.) (Vol. 4, pl. 10 b). White, the fore-*subangulata*. wing with red-brown median band, bright orange-brown inner band and subterminal shades, the latter strongly developed beneath. Except in the width of the median band not particularly variable. — ab. **melidiata** Feld. is *melidiata*. a somewhat extreme ♀ form, the type from Lahul; rather large, median band broadened, hindwing above rather dark as far as the postmedian, conspicuously white beyond. — *subangulata* inhabits N. W. India and Afghanistan; it was described from Masuri. — **antigonia** Prout (? ab. loc., ? sp. div.) (Suppl.-Vol. 4, pl. 18 l). Likewise mod-*antigonia*. erately broad-banded, even in the ♂, but distinguished by its more angular markings. Underside with the orange-brown outer band generally less developed, at least posteriorly, than in the latter, but not so nearly suppressed as in the former. Kashmir, especially at Gulmarg, the type locality.

**E. goniodes** Prout (271). Intermediate between *subangulata* and *mediovittaria*, with nearly the tone of *goniodes*. the latter, but with the postmedian angled, approaching that of *subangulata*. Fore- and midleg slightly darker than in *mediovittaria*, forewing very slightly more produced, hindwing rather straighter-margined between the costal and the 2nd radial; ochreous tints less pronounced. Chumbi Valley (loc. typ.) and Yatong, Sikkim-Tibet; also Kashmir.

**E. mediovittaria** Moore (271). Recognizable by the almost straight postmedian line of the forewing. *mediovittaria*. Hindwing above whitish, very feebly marked. Sikkim. — **azonaria** Oberth. (Vol. 4, pl. 9 b) apparently represents *azonaria*. *mediovittaria* in W. China. It differs very little except that the hindwing is less whitish and less weakly marked.

**E. cinnamifusa** sp. n. (271) at first sight recalls rather large and dark, broad-banded *subangulata* but *cinnamifusa*. the differences are numerous and obvious. Antenna of the ♂ shortly ciliated (nearly 1/2) instead of simple. Forewing with the area between basal and median bands more heavily lined, the brown intermediate band fairly broad, but neither bright nor clean-cut; antemedian line curved; very characteristic orange-cinnamon suffusions developed about the cell-dot and on a great part of the subterminal area, especially as two broad longitudinal patches about the folds; central projection of postmedian obtuse. Underside less brightly coloured than in *subangulata*, more like that of *Xanthorhoë castanea*. Kashmir: Gulmarg, 10—30 June 1931 and (1 ♂, not very fresh) on 20 July (T. B. FLETCHER), 3 ♂♂ and 5 ♀♀ in the British Museum.

**E. torpidaria** Leech (Vol. 4, pl. 7 i). Founded on a ♂ from Mu-pin, not obviously related to any known *torpidaria*. *Euphyia*, possibly an *Entephria*. Palpus rather long, antenna finely ciliated; anal tuft strong; wings strongly glossy, 2nd radial of hindwing not arising quite so far forward as in most *Euphyia*.

*E. unangulata* Haw. (Vol. 4, pl. 10 b) **chinensis** Sterneck. "Basal area of forewing concolorous with *chinensis*. median band, black-brown, the distal boundary of the band between 3rd radial and 1st median not produced to a sharp point but only bluntly bowed. Distal area entirely dark-grey, the waved subterminal line therein narrowly white. The inner edge of the disal area sharply defined", parallel with the postmedian. Basal area of hindwing as far as the postmedian unicolorous dark-grey. Differs from *luctuosaria* Oberth. (Suppl.-Vol. 4, pl. 15 c) in the smaller, more rounded protuberance of the postmedian, the more sinuous inner edge of the distal area, the dark basal area of the hindwing and the lack of the white spot in the distal area of the forewing beneath. Ta-tsien-lu, 3 ♂♂. Unknown to me.

**E. coangulata** Prout (= *subangulata* Stgr., nec Koll.) (see Vol. 4, p. 247) is said to be longer-winged *coangulata*. than *unangulata*, the dark parts more brownish, the outward projection of the median band more strongly produced, the distal area less darkened. Mongolia. Mentioned here because STERNECK provisionally refers to it a pair from Sunpanting, W. China, which are very similar to *picata* Hbn. (Vol. 4, pl. 10 b) except that the postmedian is not dentate as in that species and especially in its Chinese representative *ochreata*, but almost smooth, excepting the single, strong central projection.

**E. ochreata** Moore (Suppl.-Vol. 4, pl. 15 h). Apparently a very rare species, only known from the *ochreata*. Darjiling originals. As its affinities are evidently with the genotypical Palaearctic group, we have figured in that fauna the ♀ paratype kindly lent by the Berlin Museum. Hindwing and underside darker than any other of the group. Large (33 to over 35 mm); proximal area of forewing rather indistinctly marked excepting some costal maculation, basal patch incomplete; median and distal areas much as in *picata*, but with the postmedian more jagged and the white subterminal spots larger and rounder, not at all lunulate. — **brunneimixta** Th.-Mieg *brunnei-* *mixta*. (= *picata* Leech, nec Hbn.) (Suppl.-Vol. 4, pl. 15 c) may be a smaller and less dark race of *ochreata*, but I am inclined to expect that anatomical research will show it a distinct species. In any case distinct from both *picata* and *submarginata*, notably in the shape of the "costal arm" in the ♂ genitalia. In the wing markings separable from *picata* by the more strongly dentate postmedian and paler, weakly marked subbasal area and hindwing. THIERRY-MIEG's differentiation by the denser and brown (not green) wavy markings which traverse the white area of the forewing and their tendency to consolidate into a rather strong brown suffusion about the

radials is less satisfactory; but his localities — Tali (Haut Yunnan) and Ta-t sien-lu — leave no doubt about the determination; it reaches westward to the Khasis and eastward to Central China.

- submarginata*. **E. submarginata** Warr. (= *ochreatea* Hmps., *Prout*, nec *Moore*) (Vol. 4, pl. 7 i, as *ochreatea*). Smaller (often much smaller) than *picata*, much less handsome, the greenish areas less dark, the white area outside the postmedian line less pure, on the hindwing scarcely or not all indicated; distal area of forewing above and of both wings beneath often with more dark shading, but variable. N. W. India and Afghanistan, the type from Kashmir, where it is locally common.
- undulata*. **E. undulata** Leech (= *undifraga* *Prout*) (Vol. 4, pl. 13 c). On account of my temporary conservation in Vol. 4 (under protest) of the unwieldy and in part unnatural "genus" *Cidaria*, I was compelled to find (Suppl.-Vol. 4, p. 150) a new name for this striking black, white-lined species, since there existed an older *Cidaria undulata*; in *Euphyia* this substitution is no longer necessary. Palpus somewhat elongate, the 3rd joint longer than usual, at least in the ♀. Wings glossy, black, with numerous, mostly punctiform white lines; underside similarly or still more strongly marked. East and Central China, the type from Kiukiang.
- contortilinea*. **E. contortilinea** Warr. (27 l). Equally unmistakable, on account of the abnormal course of the thick black lines. Underside with almost the same markings, strongly expressed. Hindwing somewhat elongate. Khasis, few specimens yet known.
- discomelaina*. **E. discomelaina** Wehrli (= *undulata* *Sterneck* nec *Leech*) (Suppl.-Vol. 4, pl. 14 a). Much smaller than *undulata*, more brownish, the white markings slighter, the subordinate lines not punctiform, the apical white spots wanting. Like the two preceding it has large cell-spots and sharply marked underside. Peking, obtained in numbers by STÖTZNER; also recorded from Sunpanting, West China.
- geraea*. *E. unduliferaria* *Motsch.* (Vol. 4, pl. 10 h, as *albostrigaria*) **geraea** *Prout* (Suppl.-Vol. 4, pl. 14 a). Generally large, like the name-typical Japanese race, but paler or less yellowish-tinged and with the postmedian line nearly always slender. W. China, locally common.
- leucoxylla*. **E. leucoxylla** *Meyr.* (27 l). This was described from a ♀ and assumed to belong to *Xanthorhoë*, but the discovery of the ♂ within the last decade has necessitated its transference here, the antenna being simple. Aberrant in the elongate wings and with rather elongate face-cone and palpus. I do not know any other species with which to compare it. Hawaiian Islands: Kauai.
- aphoristis*. **E. aphoristis** *Meyr.* (27 l). Another apparently isolated species, with somewhat the facies of a *Horisme* but without the crests. Face scarcely at all tufted. Palpus moderate. Wings dark and weakly marked, the termen of the hindwing waved. Hawaiian Islands: Kilauea.
- roseata*. **E. (?) roseata** *Swezey.* "27—31 mm. Forewing whitish much strigulated with rosy-pink and scattered fuscous scales; median band with some suffusion also of brownish ochreous, proximal edge wavy, distal edge wavy, outwardly prominent in middle; discal spot small. Hindwing of the same colour and strigulation, median band less distinct". Kilauea, in both sexes. Shape and venation not given.
- giffardi*. **E. giffardi** *Swezey.* "23—24 mm. Forewing white with a few scattered fuscous scales and much strigulated with fuscous; median band with proximal and distal edges nearly straight and marked with blackish lines, the proximal line discontinued between cell and costa; discal dot round, black. Hindwing similar to forewing but with the strigulations less distinct." Kilauea, a pair. Here also we lack detail as to shape and venation.
- lithurga*. **E. lithurga** *Meyr.* (28 a). Palpus 1½. Antennal ciliation short. Wing-margins rounded, crenate. Very distinct in the shape of the median band, its edges strongly dentate, proximal edge twice sinuate, distal edge with strong lobe. Both wings beneath with conspicuously darkened subterminal band. The pupa of the type was found in a loose cocoon among *Mühlenbreckia*. New Zealand: Makara Beach, near Wellington (loc. typ.) and near Sinclair Head.
- prionota*. **E. prionota** *Meyr.* (28 a). Wings elongate, the distal margins highly crenulate or dentate. Antenna non-pectinate, otherwise similar to *Xanthorhoë cedrinodes episema*, for which, indeed, Mr. HOWES had determined it in his collection. As MEYRICK described it in his *Arsinoë (Anachloris)* I suppose the ♂ antenna is "strongly dentate", but HUDSON, whose figure of the ♂ we copy, is definite as to the "entire absence of pectinations". The "greenish" costal and distal shading of the forewing should further distinguish it from *episema*. South Island: Castle Hill and Dunedin; subsequently also from Goulard Downs.
- loxocyma*. **E. loxocyma** *Turn.* "♀, 20—24 mm. A small and inconspicuous species, best distinguished by the form of postmedian line of forewing"; this line is "very distinct, from ⅔ costa to mid-dorsum [hindmargin], with a well marked outward projection beneath costa and another more obtuse in mid-disc". Palpus short

( $1\frac{1}{4}$ ). Forewing with apex acute, hindwing rounded; whitish with numerous fuscous lines. Birchip, Victoria, in April.

**E. coniophylla** *Turn.* Founded on 1 ♀ from Mount Kosciusko, 5000 feet. Palpus long ( $3\frac{1}{2}$ ). Body and legs with some reddish tinge. Wing expanse 30 mm; forewing with costa gently arched, apex acute, colour whitish, irrorated with fuscous-brown, lines indistinct, postmedian very slender, oblique outward from costa, angled near costa and in the middle, thence to  $\frac{2}{3}$  hindmargin, a fairly broad fuscous-brown terminal band, its proximal edge suffused, containing a fine, whitish, wavy submarginal line; hindwing with termen slightly wavy, irroration densest towards termen, no markings except a faint whitish submarginal line. Both wings beneath with irroration and cell-dots. *coniophylla.*

**E. aprepta** *Turn.* ♀, 36 mm. Palpus  $2\frac{1}{4}$ . Forewing broad, termen slightly oblique, slightly crenulate; pale fuscous, with dark basal patch and median band; median band with proximal edge at  $\frac{1}{3}$ , slightly curved outward and finely dentate, distal edge at  $\frac{2}{3}$ , crenulate, with a bend "inwards" behind the middle; cell-dot darker, placed on the band, preceded and followed by a wavy transverse line, best marked towards costa; subterminal crenulate, whitish; terminal slender. Hindwing rounded, crenulate; pale grey, unmarked. Victoria: Kyneton. December, only the type and a dubious ♂ from Castlemaine known. *aprepta.*

**E. trissocyma** *Turn.* ♂, 22 mm. Palpus  $2\frac{1}{4}$ . Antennal ciliation minute. Forewing with costa nearly straight, termen bowed, oblique, wavy; whitish with oblique fuscous lines; a moderate basal patch; antemedian line at  $\frac{1}{3}$ , broad, gently outcurved; cell-dot dark fuscous; a broad three-fold line from  $\frac{3}{4}$  costa to  $\frac{2}{3}$  hindmargin, slightly outbent near costa and again in middle; other lines very fine and incomplete; terminal line well marked, interrupted on the veins. Hindwing with termen slightly rounded, wavy; the numerous lines only well developed in posterior part. Jervis Bay, New South Wales. *trissocyma.*

**E. poliophasma** *Turn.* (28 a). ♂, 36—38 mm; ♀, 32 mm. Palpus  $2\frac{1}{4}$ . Antennal ciliation of ♂  $\frac{1}{4}$ . A rather smooth-winged, glossy species with the markings extremely feeble on the forewing, wanting on the paler hindwing and on the underside. Mount Kosciusko, 5000 feet. December. *poliophasma.*

**E. oxyodonta** *Turn.* A ♀ from Perth, Western Australia, expanding 28 mm. Palpus 2. Forewing with termen nearly straight, oblique, wavy; whitish, with fuscous markings; a small 3-lined basal patch; median band broad, its proximal edge broadly dark, strongly concave and twice indented, its distal fine, dark-fuscous, from  $\frac{3}{4}$  costa, thickened before middle, projecting slightly near costa, then angularly indented, centrally with a strong double-toothed projection, the anterior tooth the more prominent and acute, posterior part incurved and dentate; suffused subterminal maculation. Hindwing with termen slightly rounded, wavy; whitish grey, with 4 or 5 faint lines, better marked at hindmargin; postmedian with an acute central tooth; terminal line interrupted. *oxyodonta.*

**E. panochra** *Turn.* (28 a). Expanse 28—32 mm. Palpus  $2\frac{1}{2}$ . Antenna of ♂ with ciliation  $\frac{1}{3}$ . Forewing broad, termen faintly sinuous; ochreous-whitish, with slight pale-grey suffusion, stronger towards termen; postmedian nearly straight, faintly dentate, in some examples with a third line or series of dots beyond it; fringe dark grey, tipped with white except at costa, behind apex and at tornus. Hindwing above without markings, beneath with cell-dot, postmedian and subterminal lines; forewing beneath suffused with drab. New South Wales: Mount Kosciusko; Victoria: Mount Hotham, Mount St. Bernard; flies at 5000 feet elevation. *panochra.*

**E. plesia** *Turn.* (28 b). This and the succeeding few species recall *Horisme* in their pattern and their somewhat crenulate hindwings and may perhaps be found to be really akin to the *mortuata* group of that genus; but they are not sufficiently crested, according to our present taxonomic system. *plesia* differs structurally from *squamulata* in its considerably longer palpus (about 2). Gisborne. *plesia.*

**E. squamulata** *Warr.* (28 b). Palpus slender and reaching very little beyond face. Dark, with numerous ill-defined lines, the median band little darkened. Hindwing with termen somewhat concave between the radials. Victoria and Tasmania, the type ♂ (not "♀", as printed in the original description) not exactly localized. *squamulata.*

**E. arachnitis** *Turn.* (28 b). Palpus still longer than in *plesia* (nearly 3). Ground-colour paler, lines slender, rather regular. I have only the ♀ before me and the original description refers also to this sex. Our figure unfortunately does not bring out the sinuosity of the termen and of the postmedian line and therefore makes a somewhat erroneous impression. Gisborne. *arachnitis.*

**E. severata** *Guen.* (= *perfectata* *Walk.*, *scitiferata* *Walk.*, *promptata* *Walk.*) (28 a). Variable in size, but generally larger than the three preceding. Forewing with termen in its posterior part rather strongly oblique, the oblique basal and median bands well defined at least at their margins, the postmedian continuing oblique outwards to the costa; hindwing beneath generally paler or mixed with whitish. Palpus about as in *plesia*. *severata.*

Common and widely distributed in Australia, excepting the more tropical parts; the type of *perfectata* came Sydney, the other 3 types from Tasmania, but I am not aware of any geographical variation.

*cnephaeopa*. **E. cnephaeopa** *Turn.* (28 a). Forewing broader, though still with the termen strongly oblique; hindwing elongate anteriorly. Much more weakly marked both above and beneath and wholly dark. Mount Kosciusko.

*plagiocausta*. **E. plagiocausta** *Turn.* (28 b). Distinguishable by the conspicuous blackish streak which runs from the hindmargin of the forewing very obliquely outwards and terminates abruptly opposite midcosta, with which it is connected merely by a fine line. Hindwing with termen crenulate. Near Hobart, Tasmania (type) and Adelaide.

*cryeropa*. **E. cryeropa** *Meyr.* (28 b). Palpus  $1\frac{2}{3}$ . Antennal ciliation of ♂  $\frac{1}{3}$ . Forewing rather light fuscous, more or less densely irrorated with white; basal patch consisting of faint lines; proximal edge of median band curved and twice indented, distal edge with its central projection triangular; subterminal line faint; an oblique whitish subapical streak, underlined with fuscous. Hindwing weakly marked. (Abridged from MEYRICK, whose originals, 2 ♂♂ from Hay, N. S. W., appear to be lost). The form from Adelaide, here figured, is rather pale. The other recorded localities are in Victoria: Birchip, Sea Lake and? Melbourne (LOWER).

*euphileta*. **E. euphileta** *Turn.* (28 b). Palpus  $1\frac{1}{4}$ . Ciliations of ♂  $\frac{1}{4}$ . Median band uniformly fuscous (in the ♀ edged with white lines), proximal edge slightly dentate, distal with the projection obtuse; subterminal indicated. Hindwing with lines and dark irroration proximally to the postmedian line; 2 subterminal lines indicated, at least towards hindmargin. Forewing beneath darkened from base to postmedian. Lorne, Victoria.

*crocota*. **E. crocota** *Turn.* (28 c) is said to be nearest to *trygodes* but differing in its brighter and more distinctive colouring. Palpus, as in that,  $2\frac{1}{4}$ . Antenna in the ♂ with the dentations 1. Forewing bright ochreous mixed with purple-reddish; a purple-fuscous basal patch, suffused in the centre with the ground-colour; median band purple-fuscous, traversed by faint wavy reddish-purple lines, proximal edge curved, distal slightly waved anteriorly, sinuate towards hindmargin; a purple-reddish distal suffusion. Hindwing pale purple-grey, distally suffused with whitish-ochreous. Near Melbourne; probably also at Kelso and possibly Mt. Wellington, Tasmania. We figure a Kelso ♂ which only deviates from the description in the (slightly) bidentate antemedian and bisinuate postmedian and in the purplish distal suffusion of the hindwing; the latter was noticed by TURNER in his Wellington ♀, which is whitish rather than ochreous, and he suspects that the species "varies considerably".

*trygodes*. **E. trygodes** *Meyr.* (28 c). ♂ antenna triangularly dentate, ciliation  $\frac{2}{3}$ . Forewing with termen waved; brown, mixed with dull rust-reddish and slightly sprinkled with whitish; numerous faint waved lines; margins of median band indicated by minute white dots, the postmedian from  $\frac{4}{5}$  costa to  $\frac{2}{3}$  hindmargin, sinuate before and behind the middle, central projection slight; cell-dot blackish; subterminal line merely indicated. Hindwing with termen waved, unevenly rounded. Tasmania: George's Bay (loc. typ.); Victoria: Melbourne and Gisborne; New South Wales: Ebor.

*insulsata*. **E. insulsata** *Guen.* (28 c). This and the two following species form an interesting and somewhat puzzling group which, notwithstanding the differences in the coloration of the fringes and the strength of the projection of the postmedian line, may perhaps be (as TURNER was at one time inclined to think) modifications of a single entity. MEYRICK measures the palpus as  $2\frac{1}{4}$  in *insulsata*,  $2\frac{1}{3}$  in *correlata* and  $2\frac{1}{2}$  in *ebuleata* and this may be accurate, but the differences are too slight to gauge precisely in cabinet specimens. All have the underside strongly marked, with characteristic dark subterminal shading, that of the hindwing consisting of a large anterior and a smaller posterior blotch, commonly more or less connected by narrower or weaker suffusion. In *insulsata* the hindwing above is almost uniform clear ochreous with extremely narrow dark terminal shading, the forewing with smoky irroration, the lines extremely weak, the postmedian projection not acute. Fringes nowhere clear white, mostly of the ground-colour or greyer, its forewing with a pale, yellowtinged line beyond their middle, those of the hindwing showing this whitish yellow on the distal half. "Australia" (the type) and "Adelaide" (a worn ♀); most of the material which I have seen comes from South Australia.

*correlata*. **E. correlata** *Walk.* (28 c). More strongly (generally much more strongly) marked, the postmedian with strong central prominence; forewing generally of a clear ochreous-yellow. Fringes predominantly dark, on the forewing proximally approaching blackish. Perhaps commonest in Victoria (Melbourne district, etc.) but recorded also from New South Wales and Tasmania. "New Zealand", given by WALKER, is obviously erroneous.

*ebuleata*. **E. ebuleata** *Guen.* (= *spoliata* *Walk.*) (28 c). On an average somewhat smaller than the two preceding, often a little (or considerably) paler; but chiefly distinguished by the white distal half of the fringes. The weakly marked forms, which are typical for both the cited names, otherwise very similar to *insulsata*. — ab.

*fervidata*. **fervidata** *Walk.* (GUENEE'S "var. A") is more strongly banded and as the postmedian inclines towards the shape of that of *correlata* there is sometimes little except the fringe to distinguish the two; but generally, so far as

I have observed, *ab. ferridata* is small and pale, with whitish boundaries to the median area of the forewing. All the three types came from Tasmania, but as *correlata* sometimes occurs with it there, and *ebuleata* has been found in Victoria, it cannot be regarded as merely a geographical modification.

**E. polyxantha** *Meyr.* (28 c) is distinguished by the very narrow median band, with a series of dots at a distance from it on either side (considered by MEYRICK to be the true boundaries of the median area) and by the conspicuously darkened fringe of the forewing. Hindwing very weakly marked, a strong contrast to that of its other narrowly dark-banded relative, *perornata* (28 d). Forewing beneath with a large dark apical cloud, continued posteriorly as a weaker and narrower shade; hindwing with an irregular broad subterminal band. Mount Kosciusko (type). Ebor and Mount Macedon. *polyxantha.*

**E. leucozona** *Meyr.* (28 c). Recognizable at a glance by the pure white stripe in the centre of the median area (sometimes interrupted). Mount Kosciusko (4500 feet) to Tasmania, locally common. *leucozona.*

**E. cydalima** *Turn.* 2 ♀♀, 26—28 mm. from Victoria (Beaconsfield and Lorne). Central stripe of forewing white, but not show-white, at costal end broader and containing a cell-dot, the subordinate markings less faint, ante- and postmedian lines fuscous, slender, the former at  $\frac{1}{3}$ , nearly straight, the latter from  $\frac{3}{4}$  costa to  $\frac{2}{3}$  hindmargin, with slight subcostal and central projections, edged distally with white, slender whitish subterminal present. Hindwing with much more marking than in *leucozona*, at least posteriorly. Underside with dark subterminal bands incomplete at tornus. *cydalima.*

**E. mecynata** *Guen.* (28 d). Duller than any of the foregoing ochreous-winged species; especially so the ♂, which has nearly the entire upperside dark-suffused. Hindwing above and both wings beneath with darkened borders, that of the underside in large part dull reddish. Tasmania (loc. typ.) and to Queensland (Toowoomba). *mecynata.*

**E. perornata** *Walk.* (28 d). Forewing more marked with red. its costal margin and a part of the lines brightly rosy; the dark maculation, both above and beneath, also characteristic. Tasmania (type) and a few mountain localities in Victoria and New South Wales. *perornata.*

**E. chrysocyma** *Meyr.* (28 d). Considerably smaller. Palpus  $2\frac{1}{2}$ . with rather long, lax hair, showing (as also several of the succeeding mountain species) some approach to those of *Dasyuris*, to which, indeed, TURNER (1926) has transferred one of them, *polycarpa*. Ciliation of ♂  $\frac{2}{5}$ . Forewing blackish, with orange lines, the ante- and postmedian broad, the median slender or macular, the subterminal macular. Hindwing deep orange, with dark lines and border, the latter containing the irregular orange subterminal. Mount Kosciusko, at high altitudes. Also on Cradle Mountain, Tasmania, at 3000 feet. *chrysocyma.*

**E. stereozona** *Meyr.* (28 d). Both surfaces almost alike, except that the hindwing beneath has an additional orange patch at the apex. Described from Mount Kosciusko, subsequently recorded from Mount Erica, Victoria. *stereozona.*

**E. oxygona** *Meyr.* (28 d). Considerably larger, palpus shorter, the yellow parts somewhat lighter, on the forewing reduced, the subbasal line being absent. Mount Kosciusko. *oxygona.*

**E. polycarpa** *Meyr.* (28 d). would probably be better placed in *Dasyuris* (cf. *E. chrysocyma*); face and palpus perhaps even rougher than in *D. hedylepta*. Rather variable, markings of forewing whitish yellow, more or less waved or crenulate, beneath with the dark parts greatly reduced; subterminal line sometimes complete, sometimes rudimentary. Mount Kosciusko (type) and Cradle Mountain, Tasmania. *polycarpa.*

**E. heterotropa** *Turn.* (28 d). I have only a damaged, but well recognizable ♂ of this very distinct species, here figured. The bidentate antemedian and bisinuate postmedian distinguish it at once from *polycarpa*. Forewing beneath, as in that, predominantly whitish-yellow. Cradle Mountain, 2000—2500 feet. 2 of the 6 originals have the areole asymmetrical, on one wing undivided. *heterotropa.*

**E. orthropis** *Meyr.* (28 e). Upperside in both sexes at first sight similar to that of *mecynata* ♂, forewing somewhat broader, with the (feeble) markings whitish; hindwing with the anterior part suffused with whitish. Underside with the yellowish parts much paler than in *mecynata*, the borders darker, that of the forewing quite different in shape, broader at costa, narrowing rapidly, quite narrow in posterior part. Ciliation of ♂ antenna extremely short. Mount Kosciusko. — **tasmanica** *Turn.* Forewing "fuscous, with scarcely any brownish tinge". postmedian line with usually a very slight bidentate median projection, terminal half of fringe not, or only very slightly, barred with whitish. Mount Wellington and Cradle Mountain, Tasmania. *orthropis.* *tasmanica.*

**E. trissophrica** *Turn.*, founded on a ♀ from Mount Wellington, expanding 36 mm, is said to resemble *orthropis* in having the costal part of the hindwing whitened, but, in addition to its much larger size, has the hindwing crenulate, the forewing whitish, with numerous fine wavy dark lines, a whitish median band con-

taining the coll-dot. Underside whitish, with blackish cell-dots and interrupted subterminal band, forewing also with a strongly angled postmedian band.

- bichromata*. **E. bichromata** *Guen.* I have not been able to match this type, which I studied carefully some years ago, but Dr. TURNER wrote me that he had a specimen from Tasmania which agreed fairly well and that he was satisfied that this name should supplant *longuescens*, representing the Tasmanian race; in any case nearly related. It differs somewhat in shape, the apex of the forewing being slightly more falcate, the termen faintly sinuate between the 5th subcostal and 1st radial, the hindwing with an appreciably sharper tooth at the 3rd radial than elsewhere. The upperside is very similar to that of *longuescens* type, the markings more blurred than in many examples. The underside has the cell-dots enlarged, that of the hindwing larger than in almost any *longuescens* which I have seen; apical border of forewing broad to behind the 2nd radial, then suddenly narrowed, but continuing (outside the subterminal) to the hindmargin; border of hindwing broadened, reaching the termen but not reaching the costa (indeed fading away about the 2nd radial), the part on the proximal side of the subterminal macular and not "black" (as GUENÉE gives) but brown. Tasmania, the type ♀ in the Paris Museum. — **languescens** *Rosenstock* (28 e), founded on a ♀ from "South Australia", is known also from New South Wales, Victoria and Tasmania (see above). Antennal ciliation of the ♂ short. Forewing above variable in markings, often (chiefly in the ♂♂?) with a better expressed median band than in the type ♀. Hindwing with its anterior part usually clear orange-yellow, the dark markings only developing towards the abdominal region; at times there is also a shadowy subterminal basal. Underside sharply marked, with dark subterminal shades on the hindwing (reaching costa) and on the anterior half of the forewing. — ab. **concolor** *nov.* is a remarkable ♀, recorded by TURNER, in which the hindwing has no yellow tinge, but is almost concolorous with the forewing. Type in the LYELL collection, probably from Gisborne.
- doliopis*. **E. doliopis** *Meyr.* (28 e). Related to *languescens*, but with the ♂ ciliation twice as long (about 1). Forewing with termen rather more oblique, median band with more definite distal projection; more reddish-mixed than in *aglaodes*. Hindwing generally duller or more clouded than in *languescens*. Underside less sharply marked, lacking the strong dark subterminal shades. South Australian.
- opipara*. **E. opipara** *Turn.* (= *oriotes* *Turn.*, M. S.) (28 e). A rather large and ample-winged species, in the shape of the forewing and of its broad median band slightly reminiscent of the large New Zealand *Dasyuris*. The yellow ground of the hindwing not very bright, the subterminal maculation of the underside reproduced more weakly above. Discovered on Mount Hotham, Victoria; subsequently found on Mount Koseiusko.
- deltoidata*. **E. deltoidata** *Walk.* (28 e). Excessively variable in coloration and in the breadth, and even the shape, of the median band of the forewing; yet its size and wing-form and the absence of any similar species in New Zealand render its recognition easy. The conspicuously white central dot of the subterminal is a relatively constant feature, but even this is occasionally suppressed. Hindwing always more or less ochreous and with very weak markings; sometimes more, sometimes less, suffused with greyish or whitish. Widely distributed and common; recorded also from Stewart Island and the Chatham Islands. WALKER's type, from Auckland, has a half-band, rather nearly resembling that of the first-named aberration, but more quadrate. — ab. **plagifurcata** *Walk.* (= *hawthornei* *Th.-Mieg*) has the half-band which represents almost the only darkening of the median area curiously misshapen, a very long and acute indentation being developed in its distal side in front of the 2nd radial. Rare, but recurrent; occasional intermediates occur. WALKER's dingy type is from Auckland, THIERRY-MIEG's brighter *hawthornei* from Springfield. — ab. **perversata** *Feld.* has the median band unequally bisected, the ground-colour crossing it about the fold. — ab. **inclarata** *Walk.* is a common form, with the median band complete, its distal edge twice sinuate inward. — ab. **perductata** *Walk.* (= *conversata* *Walk.*, *inopiata* *Feld.*) (28 e) has the median band broader than in normal ♂♂, its edges blacker than the rest of the band, the distal edge almost straight. — ab. **bisignata** *Walk.* is a ♀ somewhat similar to *perductata* (of which both the cited types are ♂♂) but with the median band darker, its edges not noticeably differentiated from its interior.
- descriptata*. — ♂-ab. **descriptata** *Walk.* has the band shaped about as in *perductata* but narrowed. There is, naturally, no sharp line of demarcation and the separate name was probably even less needed than most of the others. —
- pastinaria*. ab. **pastinaria** *Guen.* is not quite intelligibly differentiated, but as the median band is entire, with its anterior part enclosing round the cell-dot an ashy-grey patch which is prolonged and constricted on the costa I gather that it is a combination of the *plagifurcata* with the more normal group. Described from the ♀. — ab. **congressata** *Walk.* is a small, smoky, comparatively unicolorous ♀ and has the hindwing also somewhat dull and dark-suffused, suggesting incipient melanism. — ab. **aggregata** *Walk.* is the antithesis of *perductata* and *descriptata* in that the median band has developed a strong bilobed projection between the 3rd radial and the 2nd median.
- congregata*. The type and the other most pronounced examples which I have seen are ♀♀. — ab. **congregata** *Walk.* (= *monoliata* *Feld.*) (28 f). These types are also ♀♀, characterized by the warm ground-colour of the forewing and weakened markings of the distal area, so that the aberration is comparable (especially when the postmedian

inclines to the *aggregata* form) to that of typical *vacuaria* Guen. (26 a). — The larva feeds on *Plantago* and probably other low plants; sooty black but variable; commonly with a broad brownish lateral stripe; it pupates in the earth.

**E. heteroleuca** Meyr. (28 f ♂, ♀). 23—31 mm. Palpus  $2\frac{1}{4}$ . Ciliation of ♂ antenna  $\frac{1}{3}$ . The hindwing, *heteroleuca*, which has the termen rounded and waved, seems tolerably constant in its colour and markings, as is also the forewing beneath, which has a dark border, broadened in the anterior half; but the white element in the median area of the forewing above (by the presence of which element MEYRICK separates the species from *mecynata*, *doliopis* and *languescens*) varies greatly. In the ♂ type, from Mt. Kosciusko, it forms only a very small cell-spot; in his allotype ♀, from Warragul, Victoria, it forms a large spot around the black cell-dot and 2 additional small ones posteriorly. — ab. **leucoplea** nov. (29 b), a second Warragul ♀ noted by MEYRICK, has a *leucoplea*, broad white band occupying all but the borders of the area.

**E. aglaodes** Meyr. (28 f). Palpus  $1\frac{1}{2}$  or scarcely; ♂ ciliation  $\frac{4}{5}$ . The median band, which is less broad *aglaodes*, than in *heteroleuca* and contains no white, is bounded distally by two partly confluent whitish, posteriorly more greyish lines. Mount Kosciusko (type) and Mount St. Bernard, 5060 feet. Our figured specimen, from the latter locality, is smaller and less bright than the type.

**E. synchora** Meyr. (28 g), founded on a ♀ from Hobart, is rather large, with palpus  $2\frac{1}{2}$ . Apart from *synchora*, its larger size and paler coloration, it may be readily distinguished from *excentrata* by the deep indentation of the postmedian in front of the central prominence.

**E. excentrata** Guen. (= *constipata* Walk., *bifusata* Walk.) (28 g ♀). Palpus nearly 2; ciliation of ♂ *excentrata*, antenna minute. Rather glossy, the general range of colouring much as in the New Zealand *deltoidata*, the forewing much less produced anteriorly. Both wings beneath with broad subterminal or terminal dark band, that of the hindwing leaving the apex quite clear. Very variable; two extremes from Gisborne, both ♀, have been diagnosed by TURNER. — ab. **fuscifascia** nom. nov. "Median band wholly suffused with dark fuscous." — ab. **fuscifascia**, **albiplaga** nom. nov. Dorsal [posterior] two-thirds of median band clear white except discal dot and a slight *albiplaga*, suffusion near external edge." Tasmania (GUENÉE's and WALKER's type) to Killarney, Queensland.

**E. adornata** Guen. (= *lamprotis* Meyr.) (28 f). The source of GUENÉE's type is unknown, but the *adornata*, synonymy was established by THIERRY-MIEG, who first recorded it from Tasmania, a likely locality for GUENÉE's. A small (20—21 mm), brightly coloured species, with the hindwing margin markedly crenulate, the forewing more or less marked with white, the central projection of the median band strong, forming approximately an equilateral triangle. New South Wales to South Australia and Tasmania.

**E. hilaodes** Turn. Only ♀♀ known, similar to *adornata* but much larger (30 to 34 mm), palpus shorter *hilaodes*, ( $2\frac{1}{4}$ ), head irrorated with crimson, antemedian line indented near costa and behind middle, projection of postmedian less strong, bidentate, hindwing not orange but whitish, suffused more or less with pale ochreous. Tasmania.

**E. cataphaea** Meyr. (28 f). Hindwing more elongate than in the similarly coloured *Euphyia*, generally *cataphaea*, a good deal dulled with fuscous. Palpus rather long, with relatively elongate terminal joint. Antennal ciliation of ♂ vestigial. Both wings beneath usually much paler and yellower, outside the postmedian often almost unmarked. Mount Kosciusko, 5700—6000 feet.

**E. symphona** Meyr. (= *maerens* Swinh.) (28 g). Glossy and with the ♂ hindwing somewhat elongate *symphona*, costally, beginning to approach the shape of an *Ortholitha*, the shape of the ♀ more extreme. Palpus scarcely 2 in the ♂, longer in the ♀. Forewing grey-brownish, hindwing paler, almost or entirely unmarked. Underside almost unicolorous, without markings. Mount Kosciusko. — **symmolpa** Turn. was described on 2 ♀♀ from the *symmolpa*, same locality and differentiated by the form of the postmedian line, which is more strongly angled in the middle, posteriorly more concave, the "discal spot not pale centred", perhaps the more strongly marked distal area and other details; but was afterwards sunk; I think "palpus 3", even for the ♀, must have been an over-estimate. Presumably a mere aberration; the species is in any case variable.

**E. leptophrica** Turn. (28 f). Much shorter- and broader-winged, the areas of the forewing not sharply *leptophrica*, defined, central projection of postmedian slight, hindwing sometimes better marked than in *symphona*, both wings beneath with a dark band (even if incomplete) proximal to the subterminal line. New South Wales: Barrington Top, Mount Kosciusko.

**E. anthracinata** Guen. (= *atriplena* Walk.) (28 g). Falcate-winged in the ♂; strikingly black above, *anthracinata*, dusky though not black beneath. Until the discovery of the following, no *Euphyia* at all like it was known. Victoria and Tasmania.

- propinqua*. **E. propinqua** Turn. (28 g) recently described from West Australia, is closely allied to *anthracinata*, but with the termen of the ♂ forewing straight. The ♀♀ of the two species are difficult to distinguish, but the lines in *propinqua* ♀, so far as it is yet known, are somewhat more crenulate, the ante- and postmedian lines less strongly marked.
- subrectaria*. **E. subrectaria** Guen. (= *responsata* Walk.) (28 h) is an inconspicuous little species and not notably variable, but is interesting as being one of the very few which are common to Australia (Queensland to Tasmania) and New Zealand (both islands). Lines straightish, the postmedian throughout almost parallel with the termen.
- casta*. *subrectaria* type came from Tasmania, *responsata* from "South Australia". — **casta** Blt. type (from Marlborough, N. Z.) is sharply marked, the black mark on the postmedian and the presubterminal spots strong; perhaps the New Zealand form is beginning to diverge racially.
- phaulophanes*. **E. phaulophanes** Turn. ♂ ♀, 22—24 mm. Palpus 2½, fuscous. Antenna in ♂ slightly serrate and minutely ciliated. Forewing apex pointed, termen gently rounded, oblique, wavy; pale fuscous; a moderate, slightly darker basal patch, a slightly darker median band defined by very slender whitish lines, the antemedian slightly curved, wavy, indistinct, the postmedian from 4/5 costa to 2/3 hindmargin, wavy, scarcely projecting in middle; an interrupted dark terminal line; fringe fuscous. Hindwing strongly rounded; pale grey. Denmark, West Australia, a pair. Affinities not indicated.
- inangulata*. **E. inangulata** Bastlb. (28 h), described as *Epirrhoë*, must belong to this genus. Antennae and abdomen wanting in the type ♂, which was said to come from Melbourne. White-yellow, with brown markings. Forewing with basal patch marked by numerous extremely fine lines; median band narrow, not solid, its edges straight, as are also the succeeding (divided) white-yellow band; subterminal present. Hindwing similarly but much more weakly marked. Will probably have to sink to the following.
- ptochopis*. **E. ptochopis** (Meyr., M. S.) Turn. (28 h). ♀, 24 mm. Abdomen whitish, 3rd and 4th segments with paired dark dots edged posteriorly with white. Forewing elongate, costa almost straight, termen strongly oblique; whitish, with numerous straight oblique lines, a dark cell-dot and a short oblique dark apical streak. Hindwing with termen nearly straight to near apex, there rounded; the lines indistinct and restricted to the distal half of the wing. Type from Beaconsfield, Victoria; later recorded from New South Wales (Moruya). We figure MEYRICK's unpublished original, a smaller ♂ (22 mm) from Melbourne, with simple antenna, the lines not literally straight; it will need careful comparison with TURNER's species and with *inangulata*.
- perialla*. **E. perialla** Turn. ♂ ♀, 30—35 mm. Palpus 2¼. Forewing broad, costa moderately arched, termen wavy; brown, with fuscous and whitish lines; edge of basal patch excurved; median band broad at costa, narrow at hindmargin, its anterior part containing a paler patch, in which, near its proximal edge, stands the cell-mark; fine whitish lines edging the band, the antemedian curved outward, the postmedian arising beyond 2/3 costa, at first perpendicular, then shortly incurved, in the middle forming an obtuse double prominence; subterminal line fine, interrupted, accompanied proximally and (near apex) distally by some fuscous suffusion. Hindwing strongly rounded, dentate; orange, posteriorly suffused with fuscous and marked with many paler and darker short lines, the suffusion extending on termen to middle. Mount Kosciusko, 4500 feet (type), Mount St. Bernard, etc. (Description abridged from TURNER).
- conifasciata*. **E. conifasciata** Butl. (28 h). Variable in depth of colouring and other details but easily known among the yellow-winged *Euphyia* by the straight distal edge of the subtriangular median band; subbasal line outcurved to approach or touch the antemedian; apical dash conspicuous. In the type, a Melbourne ♀, the median band is narrowed so that its boundary-lines meet before reaching the hindmargin, but this is exceptional. New South Wales to Tasmania.
- tacera*. **E. tacera** Turn. 30—32 mm. Palpus 2. Antennal ciliation minute. Said to be "not unlike *lucidulata*" (28 h), but with slightly excurved, not dentate, antemedian line, etc. Hindwing yellow-ochreous, with 3 fine dark lines from proximal half of hindmargin, only the first reaching costa, a double subterminal (usually reaching about to the middle of the wing) and a narrow terminal band (sometimes obsolete towards apex). New South Wales: Barrington Top.
- lucidulata*. **E. lucidulata** Walk. The type ♀ from "Tasmania" and the only other ♀ which I have seen from that country (Cradle Mountain) are considerably larger and paler than ordinary Australian forms, the areas proximally and distally to the postmedian white, the distal one broad; but a ♂ from Kelso is small and normally coloured.
- festiva*. Whether this "name-type" is racially separable or an "ab. loc.", I have no means of deciding. — f. **festiva** form. nov. (28 h). In any case this brightly coloured form, with only the slender lines which bound the dark areas clean white, needs a separate name. New South Wales and Victoria, type from Gisborne.

**E. psarodes** *Turn.* 27 mm. Palpus  $2\frac{1}{4}$ . Antenna of ♂ dentate, the teeth 1, ciliations 1. Forewing with *psarodes*. costa nearly straight, termen rounded, oblique; white mixed with pale greyish; markings apparently much as in *rhynchota*, but with the antemedian nearly straight, followed (distally) by dark fuscous spots at costa and hindmargin and before middle of disc, the hindwing above grey instead of "whitish-ochreous" and apparently not darkened close to the termen. Beneath, the hindwing is mixed with whitish, on the veins whitish-ochreous, with a dark cell-dot, fine dentate postmedian line and a series of submarginal spots. Only known from Tasmania.

**H. actinipha** *Lower*, from Broken Hill, South Australia, is unknown to me, but is readily distinguishable *actinipha*. from *psarodes*, according to TURNER, by the strongly concave proximal margin of the median band; this band is broad, predominantly fuscous, traversed by white lines, with an acute distal projection as in the neighbouring species. Hindwing pale grey, with a whitish subterminal line. Expanse 24—26 mm. LOWER considers it nearest to *cryeropa*. 2 ♀♀.

**E. rhynchota** *Meyr.* (28 h). Palpus not quite 2. Antenna of ♂ with small teeth below, which bear short *rhynchota*. ciliation. Hindwing nearly *Ortholitha*-shaped, very feebly marked. Forewing with an acute central projection of the median band, somewhat as in the small and differently coloured *interruptata* and *epicteta*; for the differentiation of *psarodes*, see above. Mount Kosciusko (loc. typ.) and Castlemaine, Victoria.

**E. interruptata** *Guen.* (= *oxyclasta* *Meyr.*, M. S., *fuscescens* *Warr.*, M. S.) (28 i). Sharply marked, *interruptata*. somewhat recalling the design of an *Ecliptopera*, the lines which bound the areas of the forewing, as well as an oblique stripe from the apex, broadly white, the lines angular, the angle of the antemedian usually (but not invariably) so prolonged as to bisect the black-brown median band. The originals ("Australia") belong to the form which I have seen only from Tasmania. — **ochreipicta** *Th.-Mieg.* "Differs from the type in that the black- *ochreipicta*. brown markings or areas of the forewing are clear brown, sometimes approaching yellow ochre and, moreover, the edgings or white bands round the 2 median spots are much narrower, being encroached upon by the pale yellow ochre. The markings of the hindwing are a little paler than in the type." Victoria: Melbourne and Gisborne. So far as my limited experience goes, this would seem to be the normal form (subspecies) in Victoria and New South Wales.

**E. epicteta** *Turn.* (28 i). Very similar to *interruptata* and showing the same kind of variation in the *epicteta*. median area of the forewing. According to the measurements given the palpus may be a little longer and the antennal ciliation a little shorter, but the structural differences are at best so slight as to be difficult of verification. Easy to distinguish, however by the subbasal line, which is much more direct and entirely lacks the acute angle on the 2nd submedian; the underside is less sharply marked than in *interruptata*, with the postmedian line of the hindwing markedly less sinuous. Described from Gisborne and Lorne (Victoria), now known also from Mount Kosciusko, National Park and Cradle Mountain (Tasmania) and perhaps other localities. — ab. **costimaculata** *nov.* is a very extreme form, parallel to those which have occasionally been found in various Palae- *costimaculata*. arctic Larentiinae, with the median band narrowed and confined to the anterior half of the wing (or less), the rest, excepting the basal patch and subterminal shades, whitish, almost devoid of markings. National Park, type a ♂ in my collection.

**E. phaedra** *Meyr.* (28 i). Palpus in ♂ 2, in ♀  $2\frac{1}{2}$ . Antennal ciliation minute. "A distinct and very elegant *phaedra*. species" (MEYRICK), very variable, differentiated from the other yellow-hindwinged *Euphyia* by the extended brownish proximal area of the forewing (reaching to the dark antemedian band), the pale central part of the median area, rather strong bilobed prominence of the postmedian, etc. Hindwing with some dark marking at the tornus; beneath with interrupted dark border. New South Wales (type) and Queensland.

**E. officiosa** *Meyr.* (28 i), from the Kermadec Islands, is only known in one specimen, a ♀. Palpus *officiosa*. moderate. Forewing with termen nearly straight, the pattern of dark lines also mostly straightish, the subbasal angled near costa, the postmedian with a shallow, blackish-marked sinus. MEYRICK suggested a probable relationship to *deltoidata*, but I rather suspect it may be a *Xanthorhoë*, perhaps of the *subidaria* group, though with weakly marked distal area.

**E. haemophaea** *Meyr.* (28 i). ♂, 34 mm. "Very distinct; nearest *hemizona*". Forewing more suffused *haemophaea*. with reddish, proximal edge of median band twice acutely angled outward, distal edge with the bilobed central prominence obtuse, proximal subterminal shade rather well developed, a whitish costal spot close to apex. Whangamarino, Chatham Islands, only the type known.

**E. hemizona** *Meyr.* (28 i). Antennal ciliation of ♂ slight. Wings glossy; forewing with cell-spot moderate, *hemizona*. median band rather broad, best defined distally and especially in the anterior half, where it is succeeded by a white and an ochreous-tinged line, the almost rectangular projection behind the 3rd radial somewhat blackened; hindwing paler, greyer, very feebly marked. Both wings beneath somewhat dark shaded proximally to the

somewhat diffuse postmedian, paler outside it. New Zealand, local and rarely common: Wellington (type), Arthur's Pass, Mount Cleugharn, Queenstown, etc. According to PHILPOTT very abundant in the Hunter Mountains.

- canescens.* **E. canescens** *Philpott* (28 i). Ciliation of the ♂ antenna 1. PHILPOTT considers it near *hemizona* but with "the ground-colour wholly different and many other distinctions". Actually it is much more *Horisme*-like, especially in the well-marked upperside of the hindwing, and though the body is not appreciably crested it is quite possible that it may, like the Palaearctic *desiderata* *Stgr.* (see Suppl.-Vol. 4, p. 251), have to be transferred to that genus or its vicinity; veins interruptedly blackish. ♀ smaller and still more marked with finer lines than the ♂. Queenstown, New Zealand.
- arida.* **E. arida** *Btlr.* (28 k). Very striking in its typical form, in which the forewing is very broadly dark cinnamon ("saya-brown" of RIDGWAY) medially, very dark slate-violet proximally and terminally; costa outside, the postmedian with 2 thick curved pale lines, outside the proximal with a similar pair sometimes less distinct.
- chaetica.* — ab. **chaetica** *Meyr.* has the median area also blackish, but retains the costal marks. MEYRICK mentions this form first, so I select it as his type and utilize the name. — Distributed in South Island and to Stewart Island; type from Otago.
- harmonica.* **E. harmonica** *Clarke* (28 k). Only known to me from the description and HUDSON's figure; perhaps a colour-form of the following, but CLARKE claims it for a species because the "cyanism" suggests a tropical line of ancestry and the coloration, which in *callichlora* is strongly cryptic, is here aposematic. "Pale cerulean blue" with the principal light markings changed to bright orange. A ♂ from Waitati Bush, near Dunedin.
- callichlora.* **E. callichlora** *Butl.* (28 k). This species and the two which follow are sufficiently characterized by the bright green scaling of the forewing. The thorax is rather well crested posteriorly and the ♂ abdomen tufted laterally. In *callichlora* the forewing is not very strongly variegated, the median band rarely much darkened except at its edges, of which the proximal is strongly indented at both folds (the anterior indentation deep), the distal moderately bilobed in the middle. Ground-colour of hindwing and underside predominantly whitish, suffused and marked with grey. Distributed in New Zealand at least from Cape Egmont to Invercargill. Larva on *Coprosma rotundifolia*; moderately slender, slightly flattened, very bright green dorsally, with a conspicuous crimson lateral line, sometimes edged with white. Pupa in a fragile cocoon among leaves.
- praerupta.* **E. praerupta** *Philpott* (28 k) "may be regarded as the mountain representative of *callichlora*", but its author has demonstrated a difference in the ♂ genitalia. On the whole more strongly marked; the antemedian of the forewing in my only specimen (here figured) is less oblique at the costa, the postmedian bidentate prominence is stronger and suffuses distally with a well-developed presubterminal band; oblique apical dash strong and cutting off a pale subtriangular apical patch. Underside also rather sharply marked, the apical region (at least in my example) with a rusty tinge. Hunter Mountains: Mount Cleugharn, type; also from Lake Howden.
- similata.* **E. similata** *Walk.* (= *timarata* *Feld.*) (28 k). Very distinct in its red-brown suffusion on both surfaces (including most of the hindwing above, except costally), the posteriorly curved antemedian and the sharply white subterminal near the tornus. Widely distributed from Napier southward to Stewart Island; also on the Chatham Islands. — PHILPOTT mentions occasional aberrations in the Invercargill district with the median area wholly black: ab. **nigrofasciata** *nov.* — Larva on *Coprosma*, much less gay than that of *callichlora*, darker and with mossy green dorsal ridges, so as to mimic mossy twigs of the foodplant.
- rixata.* **E. rixata** *Feld.* (28 k). Glossy, typically with nearly the coloration and aspect of *Ecliptopera* or *Lampropteryx*; quite unmistakable among New Zealand *Euphyia*, notwithstanding its variability. As PHILPOTT says, it appears to become more dull and suffused towards the souther limits of its distributional area. FELDER's type, not exactly localized, is only moderately dark, the subterminal spots of the forewing well developed.
- squalida.* Distributed in South Island, often abundant. — ab. loc. **squalida** *Butl.* Very weakly marked, the distal area of the forewing showing little or no marking excepting the apical dash. Type from Otago Peninsula; commoner at Invercargill. — **liara** *subsp. nov.* (28 l). Colouring much brighter, the band with more tinge of purple, the ground-colour paler and (especially on hindwing and underside) considerably more ochreous-tinted, sometimes recalling *purpurifera*. North Island: Auckland to Wellington; type from Titahi, in my collection.
- purpurifera.* **E. purpurifera** *Fereday* (28 l). Probably related to *rixata*, but still more striking in the shape of the markings and more brightly and contrastingly coloured. Founded on specimens from Mount Hutt, where it is said to be common in wooded gullies; widely distributed in South Island, up to about 3000 feet; also found
- ochreifera.* on Mount Egmont and at Ohakune. — **ochreifera** *subsp. nov.*, from the lower altitudes, at least about Dunedin, has the hindwing above and the forewing beneath much more deeply suffused with ochreous than the typical forms. Type in my collection.

**E. triphragma** *Meyr.* (= *siris Hawthorne*) (28 l). Erratic in shape, but provisionally retained in this *triphragma*. genus. The markings are also characteristic and apparently very constant. New Zealand, the type from Blenheim; the recorded localities are Cape Terawhiti (near Wellington) and on the Otago Peninsula.

**E. expolita** *Philpott* (28 l). Near *triphragma*, including the irregular shape. "30 mm. Whitish-grey with *expolita*. faint purplish tinge; markings dark purplish-fuscous; basal line thick, evenly curved, projecting angularly in middle"; antemedian nearly as in *triphragma*; postmedian "from  $\frac{2}{3}$  costa to  $\frac{3}{4}$  dorsum [hindmargin], with strong broad apically indented projection at middle; an oblique fascia from apex". Hindwing with basal half darkened, limited by a median fascia parallel with termen. (Abridged from PHILPOTT.) Broken River, Canterbury, New Zealand, 7 or 8 ♂♂. Later found on Mount Grey.

## 27. Genus: **Melanthia** *Dup.*

(See Vol. 4, p. 253; Suppl.-Vol. 4, p. 157.)

Venation and some other characters much as in *Euphyia*, but I have long been convinced that its real affinities are with *Horisme* or in any case with the Eupitheciid tribe of the Larentiinae. Face rounded-prominent. Palpus short. Antenna simple. Thorax with double, glossy posterior crest; abdomen with rudimentary crests. Genitalia of the ♂ with labides developed, 7th segment without coremata. Essentially Palaearctic. A few little-known Himalayan and Chinese forms are tentatively placed here, but the typical species (or superspecies), *procellata Schiff.*, has also Indo-Australian representatives.

*M. procellata Schiff.* (Vol. 4, pl. 10 c, as *procellaria*) **szechuanensis** *Wehrli* (Suppl.-Vol. 4, pl. 14 b). Larger *szechuanensis*. than *p. inquinata* (Japan) and *clathrata*, purer white, costal spot larger, at the costa broader, postmedian band warm brown, rarely whitish, the white median area for the most part weakly marked, much more weakly than in *clathrata*, the brownish-ochreous distal area enclosing 2 isolated white spots. W. China. — **catenaria** *Moore catenaria*. (28 l). Sexual dimorphism pronounced. White ground-colour very pure, particularly in the ♀; ferruginous subcostal vein very conspicuous; lines in median area variable, never so massed as in *clathrata*, in the ♀ obsolescent; spots on hindmargin well developed, at least the antemedian; postmedian white band broad, only in the ♂ suffused; borders in the ♀ not very broad, but of a very bright rust-colour; a strong white blotch at tornus. Hindwing white, strongly marked only at inner marginal and tornal area. Abdomen dorsally fuscous, the black dots traceable. Sikkim. — **clathrata** *Warr.* (28 l). Probably a further race of *procellata* but *clathrata*. its general constancy and considerable difference from *catenaria* make this somewhat uncertain. Sexual dimorphism rather strong. White ground-colour rarely very pure (I have only seen it so in a few ♀♀); ferruginous colour on subcostal vein obsolete; lines in median area in the ♂ very strong, largely connected on the veins, even in the ♀ sometimes fairly conspicuous; spots on hindmargin generally well developed, at least the antemedian; border, except in a few ♀♀, broad, bright rust-colour, connected by some suffusion with the median half-band, the spots on it bluish-white, the tornal one well developed, though variable in size. Hindwing and underside partly or wholly suffused, in the ♂ strongly lined, nearly as in the Japanese *inquinata Btlr.* Abdomen with distinct black dorsal dots. Khasis. — **mesozona** *subsp. nov.* Hindwing and underside, besides distal *mesozona*. area of forewing, closely as in *p. clathrata*, from which, indeed, some white ♀♀ can hardly be distinguished; forewing in most ♂♂ and in some ♀♀ with the median area almost solidly darkened. Formosa: Kanshrei (the type series), Arisan, Rantaizan, etc.; type in British Museum. — Occasional aberrations in this species assume the characters of some other race. Perhaps ab. **infumata** *Rbl.* (see Vol. 4, p. 253, on *p. procellata*) can furnish *infumata*. a nom. coll. for the *inquinata*-like aberrations which can develop among *catenaria* (e. g. a Darjiling ♀ in the Tring Museum). Conversely I have seen 1 or 2 ♂ *clathrata* with very white hindwing, almost like *catenaria*.

**M. exserens** *Wehrli* (Suppl.-Vol. 4, pl. 14 c). Likewise related to *procellata*, but deviating so strongly in *exserens*. colour and markings that it must be treated as a species. Upperside with the dark parts uniform dark grey-brown, not ochreous, the light bands glossy white; basal patch larger than in the allies, angled; the succeeding white band broad; the large midcostal spot very broad, quadrate, posteriorly irregularly concave, costally with some small white spots; posterior part of median area heavily lined; distal margin of median area very characteristic, with 2 sharp teeth in the middle projecting distad. W. China: Siao-lu and Ta-t sien-lu.

**M. postalbaria** *Leech* (Vol. 4, pl. 13 n). Much more glossy than *procellata*, forewing predominantly dark, *postalbaria*. subterminal line reduced to a few dots, the one behind the 3rd radial the best developed, the hindwing glossy white, with some posterior shading and incomplete lines. Central and West China, type from Pu-tsu-fong.

**M. dentistrigata** *Warr.* (29 a). Strongly glossy, the dark forewing somewhat brightened by a narrow *dentistrigata*. ferruginous shade proximally to the subterminal and a similar shade close to the base; the very strong outward curve of the anterior part of the antemedian lines also very characteristic. Founded on a few ♂♂ from Tonglo,

*leucansis*. Sikkim, 10 000 feet (ELWES). — **leucansis** *form. nov.* (29 a) has a white suffusion on the posterior half of the median band and extending for a short distance proximally and distally thereto, somewhat recalling some forms of *inquinata* Btlr. Kaponang, Sikkim, 8000 feet, 27 July 1924 (Major R. W. G. HINGSTON) Everest expedition), type ♂ in the British Museum. Perhaps a mere aberration. At Yatong the two forms apparently meet.

*exquisita*. **M. exquisita** Warr. (29 a), from the same source, is generally smaller and has the hindwing and underside dark, the pale markings very light blue, a brighter shade outside the postmedian, chiefly concentrated in a patch which touches the central lobe of the median band, and other characteristic features. It has been found also at somewhat lower altitudes in Sikkim, at least down to 8000 feet, and at Phallaloong, Nepal frontier, as high as 12 600 feet.

### 28. Genus: **Cataclysme** Hbn.

(See Vol. 4. p. 265.)

Probably a derivative of *Euphyia*, from which it scarcely differs except in the subcostal venation of the forewing. Here and in a few other genera (*Zenophleps* Hulst, *Mesotype* Hbn., *Acodia* Rosenstock, *Aprosdoceta* Turn., *Ansorgia* Warr., *Scotocyma* ♂ Turn.), which are distributed in the faunistic regions with the exception of the Neotropical, the distal areole is wanting, sometimes also the proximal, and the 5th subcostal is well separated from the others, so as to suggest at least superficially, a remarkable exception to the structure of the whole family Geometridae. In the typical section, which is Palaearctic, the ♂ antenna is nearly simple and WARREN's genus *Paraplaneta* can, if it is desired, be resuscitated for those in which it is pectinate. Type of the genus: *riguata* Hbn.

A. Antenna of ♂ bipectinate (*Paraplaneta*).

*obliquilineata*. **C. obliquilineata** Hmps. (Vol. 4, pl. 13 m). Pectinations shortish-moderate. Forewing above and beneath with the lines, from the cell-dot outward, straight and parallel with the termen. N. W. India and Buxa, British Bhotan.

*polygramma*. **C. polygramma** Hmps. (Suppl.-Vol. 4, pl. 16 d). Pectinations a trifle shorter than in *obliquilineata*. Lines not so straight nor so strictly parallel, forewing with ante- and postmedian both rather strongly darkened, a large black cell-dot, a strong white subterminal. Altogether the most sharply marked *Cataclysme*. The ♀ is considerably smaller than the ♂. Kashmir, in several localities.

*conturbata*. **C. conturbata** Walk. (Vol. 4, pl. 13 l). Similar to *plurilinearia*, but with the ♂ antenna pectinate though only shortly, forewing above with a distinct cell-dot, underside very sharply marked, etc. N. W. India and Yunnan; also in a modified form in N. China (subsp. *sternecki* Prout Suppl.-Vol. 4, p. 171).

B. Antenna of ♂ strongly dentate.

*plurilinearia*. **C. plurilinearia** Leech (Vol. 4, pl. 7 i). Rather large, in its typical form grey mixed with brown and not very dark. For the differentiation from *conturbata* see above, also Vol. 4, p. 265, 266. W. China. — **murina** Prout (Suppl.-Vol. 4, pl. 16 e) is a much darker form, hitherto only known to me in a series from Vrianatong, Tibet.

### 29. Genus: **Acodia** Rosenstock.

Distinguished from *Cataclysme* (*Paraplaneta*) by its relatively long palpus (over twice diameter of eye), long pectinations of the ♂, continuing almost to the apex of the antenna, and much more rounded wings; both areoles are wanting and the 1st subcostal of the forewing is not so strongly stalked with the 1st radial, indeed it can arise separately. Only one species known.

*pauper*. **A. pauper** Rosenstock (= *pelochroa* Lower) (29 a). Sufficiently characterized by the structure. The type came from "South Australia", but the range is now known to be rather wide: Tasmania, Victoria, West Australia.

### 30. Genus: **Aprosdoceta** Turn.

Face rough. Palpus moderate, rough; terminal joint short. Antenna in the ♂ bipectinate to apex. Thorax and abdomen not crested. "Forewing with outer wall of areole not developed, in ♂ 5 and 6 stalked from near upper angle of cell, 7 free, in ♀ 5 from slightly above [before] middle of cell, 6 and 7 stalked from angle, in both 8, 9, 10, 11 stalked." Hindwing with discocellars sometimes bent, 2nd radial from before the middle. Genotype: *chytrodes* Turn. I have not seen either species.

*orina*. **A. orina** Turn. ♂, 42 mm. Palpus  $2\frac{1}{2}$ . Pectinations 10. Forewing with apex pointed, termen bowed, strongly oblique, longer than hindmargin; whitish, irrorated and marked with fuscous; lines numerous; ante-median from  $\frac{1}{4}$  costa to  $\frac{1}{3}$  hindmargin, posterior half dentate; postmedian from  $\frac{3}{4}$  costa to  $\frac{4}{5}$  hindmargin,

**P. contorta** Warr. (31 b). Somewhat darker than *E. delecta*, especially on the hindwing, which has a larger cell-spot; some of the lines more angled. The ♂ is further separable by the pectinate antenna and presence of a pale-buff pencil along the submedian vein of the forewing beneath. West China.

#### 44. Genus: **Pareustroma** Sterneck

(See Suppl.-Vol. 4, p. 106.)

For the reason given under *Paralygris*, it seems expedient to deal with as a separate genus. The only available alternative would be either to "lump" our genera 42—46 (as *Eustroma*) or to erect yet other genera to accommodate *metaria* and *conisecta*. *Pareustroma* is distinguished by the presence of a strong tuft of yellow hair on the middle of the abdominal margin of the ♂ hindwing; typically it conserves the forewing hair-pencil of *Eustroma*, but this can be lost. In place of the specialized patch at the front of the cell of the hindwing (of typical *Eustroma*) there is in the first two species a narrower patch in the cell, just proximal to the discocellulars. Palpus longer than in most *Eustroma*, with prominent terminal joint. The palpus, the non-stalking of the 1st median and generally the smooth margin of the ♂ hindwing separate it from *Hysterura*.

**P. fissisignis** Butl. (= *reticulata* Moore, nec Schiff.) (31 b). Readily recognizable by the structural characters and the much broken pattern of the forewing. Darjiling. — **chrysoprasis** Oberth. (34 h) (Vol. 4, pl. 10 l), from W. China, scarcely differs except in having the orange-yellow sex-patch in the cell of the hindwing above larger.

**P. propriaria** Leech (31 b) (Vol. 4, pl. 13 d), the genotype, has closely similar structure, but a less complex pattern, consisting chiefly of basal patch and median band. W. China. — ab. **insulata** nom. coll. Here (as remarked in Vol. 4, p. 208) the band is divided into a large anterior and a small posterior part, as in the *Ecliptopera silacea* aberration of the same name.

**P. metaria** Oberth. (31 c) (Vol. 4, pl. 10 l) has a similarly broken pattern to *fissisignis* but differs in the greyer ground-colour, details of the markings and in the absence of the specialized patch of the ♂ forewing above. The hindmarginal tuft of the hindwing is developed, also a long slender black hair-pencil on the forewing beneath. Ta-tsien-lu.

**P. conisecta** sp. n. (31 c). Ciliation of ♂ minute. Wings somewhat less elongate than in the other species. Forewing without hair-pencil; a little darker or less yellowish than *propriaria*, which it recalls in the weakly marked proximal and distal areas; median band shaped more as in *fractifasciaria*, but not so broad, its proximal margin straight, its distal deeply indented before 2nd radial, shallowly concave behind 2nd median; enclosed pale anterior patch obliquely edged behind. Hindwing about as dark as in *fractifasciaria*, weakly marked above; specialized buff patch in end of cell very small and weak, hindmarginal tuft well developed. Tien-tsuen, 2 ♂♂, 2 ♀♀; also a ♂ from Ta-tsien-lu district and a ♀ from eastern frontiers of Tibet; all from the OBERTHÜR collection. 3 farther ♀♀ have the band shaped almost as in *propriaria*, but can hardly be a short-winged dark form of that. More likely another species, but must wait for the discovery of the ♂.

#### 45. Genus: **Lobogonodes** Bastelb.

(See Suppl.-Vol. 4, p. 105.)

I have already explained (loc. cit.) that my genus *Microlygris* (Vol. 4, p. 207) was erected through insufficient knowledge of BASTELBERGER'S *Lobogonodes*. Palpus very long, 2nd joint stout, 3rd joint smooth, rather elongate, exposed. The irregular shape of the wings, especially of the hindwing, further separates it from *Eustroma*, of which it is evidently an offshoot; but the irregularities vary in degree, and it could probably be sunk as a further section thereof. All the species are small. Distribution: Himalayas, China, Japan and Formosa. Genotype: *permarmorata* Bastelb.

A. Section: ♂ forewing with hair-pencil beneath; 1st median vein of hindwing free (*Microlygris*).

**L. porphyriata** Moore (31 d) (Suppl.-Vol. 4, pl. 10 f). Larger than the following, which was long confused with it, forewing with cell-mark ringed with very pale brown, outermost pair of lines extremely deeply indented, hindwing, except the termen towards the tornus, very weakly marked. Sikkim. rare. The few known specimens from Dharmasala and Dalpousie are smaller, but otherwise agree.

**L. multistriata** Butl. (= *porphyriata* Hmps., nec Moore) (Vol. 4, pl. 12 a, as *porphyriata*). Much more frequent. Forewing with cell-mark ringed with white, lines less extremely irregular; hindwing strongly marked. Punjab to Darjiling; type from Dharmasala. — **tensa** subsp. nov. (31 d) differs very little from the typical form.

- but the brown colouring is somewhat darker, the markings more intense, the 5th white line (1st antemedian) less sharply angled on the median vein; sometimes scarcely distinguishable. Khasis, type ♂ (Shillong) in the *atherma*. British Museum. — **atherma** Prout (Suppl.-Vol. 4, pl. 10 f). White lines more sharply developed, dark parts more uniformly olive-brown mixed with fuscous, median area not conspicuously bicoloured. Kwanhsien, Szechuan. — Another race is found in Japan and Corea.
- dactylotypa*. *L. complicata* Butl. (Vol. 4, pl. 13 a) **dactylotypa** subsp. nov. (31 d) is much greyer than the name-typical *complicata* of Japan, especially so the distal area, which shows scarcely any indication of the cinnamon-brown of that area of *c. complicata*. Formosa: Kanshiei (A. E. WILEMAN), both sexes in the British Museum.
- B. Section: ♂ forewing without hair-pencil: 1st median vein of hindwing more or less stalked (*Lobogonodes*).
- taiwana*. **L. taiwana** Wileman (31 d). Very near *erectaria* Leech from Japan (Vol. 4, pl. 13 d). More yellowish, but chiefly distinguishable by the angulated antemedian line. Formosa: Arizan; only the type ♂ known.
- permarmorata*. **L. permarmorata** Bastelb. (Suppl.-Vol. 4, pl. 10 f). Rather larger than the average *Lobogonodes* and with much less sinuous postmedian line. The broader oblique streak from the apex and the more conspicuous white central spots are further characteristic. Described from Arisan, Formosa. A worn ♀ from Tu-pa-kö seems to agree exactly with it.

#### 46. Genus: **Hysterura** Warr.

(See Vol. 4, p. 206; Suppl.-Vol. 4, p. 104.)

Even this might also be regarded as a section, or group of sections, of *Eustroma*, though the almost constant (sometimes long) stalking of the 1st median of the hindwing affords perhaps a good character for its separation. The species are further bound together by the similarity of their pattern and the tendency — not always carried far, however — for the hindwing to assume an irregular shape, somewhat as in *Lobogonodes*. The texture and pattern, as well as the shorter palpus, separate them from *Lobogonodes* (sect. typ.). Palpus moderate; antenna and generally the venation of forewing (but see *cervinaria*) as in *Eustroma*, also the non-biangular discocellulars of the hindwing. In most of the forms the *Eustroma* hair-pencil of the forewing beneath is well developed; in some the ♂ develops also lateral pencils on the abdomen posteriorly and a specialized patch in the folded hindmarginal area of the hindwing. Almost exclusively Himalayan and West Chinese. Type of the genus: *multifaria* Swinh.

- literataria*. **H. literataria** Leech (31 c) (Vol. 4, pl. 13 n). Strictly speaking, this and the following should form a separate section, as the hair-pencil of the forewing is wanting; *literataria* is, however, so closely similar in facies to *cervinaria* and *hypischyra* to *multifaria* that I suppose the presence or absence of the pencil to be here of little genetic importance. Szechuan, the type from Pu-tsu-fong.
- hypischyra*. **H. hypischyra** Prout (Suppl.-Vol. 4, pl. 10 e). Larger than *literataria*, termen of hindwing more bent at the 3rd radial, though less so than in *multifaria*. Forewing similarly marked to that of *multifaria* but paler, hindwing whitish, with distinct postmedian line above. Szechuan? the type ♂ from Tupa-kö; 4 ♂♂ from Ta-tsien-lu, with the hindwing somewhat variable, on the whole slightly less white. Abdomen and hind-marginal area of hindwing in the ♂ with the pencils and sex-patch respectively.
- cervinaria*. **H. cervinaria** Moore (31 c). Forewing of ♂ beneath with a rather slender buff pencil. Hindwing of ♂ scarcely irregular in shape or clothing, though a rather long fringe on the middle part of the abdominal margin may indicate a slight specialization. Erratic in venation, the areole oftenest simple, the 1st median of the hindwing not quite always stalked. Darjiling (type) and the Khasis.
- vacillans*. **H. vacillans** sp. n. (31 c). Intermediate in tone and in markings (amount of narrowing of the hind part of median band and degree of obsolescence of subterminal spots after the first few strong ones) between *cervinaria* and *multifaria*; shape more as in the latter — apex of forewing not produced, termen of hindwing angled at 1st median, but not so strongly. Hair-pencil of ♂ of the light colour of that of *cervinaria*. Forewing with the pale line along the median vein. Markings of underside rather weaker than those of *multifaria*, but with the postmedian of the hindwing almost equally irregular. On an average smaller. Ta-tsien-lu district (type ♂), Siao-lu (1 ♂) and eastern frontiers of Tibet (1 ♂), all from the OBERTHÜR collection. Here will doubtless belong the 1 Ta-tsien-lu "*multifaria*" recorded by STERNECK (see Suppl.-Vol. 4, p. 104).
- multifaria*. **H. multifaria** Swinh. (31 d) shows the special ♂ characters well developed on the abdomen and both wings and has an almost rectangular tooth at the 3rd radial of the hindwing. Described from Darjiling, but reaches Kashmir as well as the Khasis.

**H. protagma** *sp. n.* (31 d). Considerably darker than *multifaria*, notably on the hindwing; which has *protagma*. a somewhat acuter tooth. Markings of forewing somewhat intermediate towards those of *cervinaria*, especially in the narrowing of the median area posteriorly and the weakening of the dark subterminal markings also posteriorly; hair-pencil of forewing more buff and longer than that of *multifaria*, reaching the tornus and spreading forward about to the cell. Sikkim, Khasis and Yunnan hitherto inexcusably mixed with *multifaria*; type from the Khasis in the Tring Museum. HAMPSON noticed the important structural distinctions between this and the two preceding, but failed to appreciate their significance. — **agaura** *subsp. nov.* Considerably *agaura*. larger (length of a forewing fully 19 mm). Forewing with the 3rd row of black spots (the strongest of the proximal series) more irregular, the one between fold and 2nd submedian being much larger than either of the others (but perhaps inconstant?). Hindwing with tail scarcely so acute; more variegated above, the pale postmedian distinct, subterminal only developed between 3rd radial and 2nd median, followed distally by a bright, somewhat tawny streak. Arizan, 7300 feet (A. E. WILEMAN), only the type ♂ known.

#### 47. Genus: **Polythrena** Guen.

(See Vol. 4, p. 168; Suppl.-Vol. 4, p. 82.)

Differs from *Eustroma* and *Lygris* in a number of characters, but has, in the ♂, a similar hair-pencil on the forewing beneath. Face smoother. Palpus shorter. Wings long and narrow; forewing with areole simple; hindwing more as in *Lygris* than in *Eustroma*, the discocellulars strongly biangulate. Only 3 species are known and these inhabit Siberia and West China. The two most closely related genera, *Trichobaptia* Prout and *Trichodezia* Warr., have been sufficiently dealt with in Vol. 4, which should be referred to by students of the Geometridae of West China.

**P. miegata** *Pouj.* (Vol. 4, pl. 11 b). Yellow with black markings, like all the *Polythrena*. Hindwing *miegata*. less extremely elongate than in the others, its postmedian band more distally placed than in the Palaearctic *coloraria*, less shortened and less oblique than *angularia*; costal area of forewing cut by two yellow lines or bands in proximal half. Szechuan, the type from Mu-pin.

**P. angularia** *Leech* (Vol. 4, pl. 11 b). Black patches of forewing more solid and less numerous than in *angularia*. *miegata*. Distributed in the Mountains of Szechuan, the type from Pu-tsu-fong.

#### 48. Genus: **Amnesicoma** Warr.

(See Vol. 4, p. 204; Suppl.-Vol. 4, p. 104.)

This genus — or, as some systematists would prefer to say, section of *Photoscotia* — typically differs only from the following in the absence of the hair-pencil of the ♂ forewing and its correlated specializations; but I provisionally refer here also one species (*albiseriata* Warr.) with closely similar genitalia but slightly different shape and structure, which certainly cannot be allowed to remain with *Dysstroma*, where WARREN and HAMPSON placed it. Himalayan and Tibetan, 5 species known. Type: *simplex* Warr. Seems to connect *Entephria* with *Photoscotia*.

**A. albiseriata** *Warr.* (31 e). Somewhat less broad winged than the similarly coloured species of *Photo-* *albiseriata*. *scotia*, costa of ♂ hindwing not arched, 2nd discocellular angled, though not elongate as in *Dysstroma*, etc. The whitish spots (separated by dark veins) outside the discocellulars of the forewing are characteristic, though variable in size. Underside much paler, forewing with dark distal border and whitish apical spot, hindwing with weak s u b-terminal band, only well developed in anterior part. Sikkim, especially Tonglo, 10 000 feet; also from Bhotan. — **condigna** *subsp. nov.* Large and rather broader-winged, forewing above with increased *condigna*. olive-yellow admixture in the paler parts, beneath rather dusky and weakly marked, but with the whitish apical spot very clear and a second (smaller) light spot at the origin of the postmedian; the white spots of the median band much reduced or almost obsolete. Tibet: Chumbitang, 13 000 feet (Major R. W. Hingston), the type a beautiful ♂ from the Everest expedition of 1924; a good ♂ from the same district and one merely labelled "Sikkim (KNYVETT)", presumably also from high altitudes, in the Tring Museum. Slightly recalls *Ph. rivalaria* *Leech* in its rich colouring.

**A. bicolor** *Moore* (= *subalbata* *Warr.*) (31 e). Very like small *Ph. tonchignearia* but somewhat rounder- *bicolor*. winged, the hindwing with broader dark border. The absence of the hair-pencil immediately distinguishes the ♂; the underside gives further distinctions: white subapical spot of both wings larger, base of hindwing with some dark suffusion (in *tonchignearia* remaining clear white). Sikkim at 13 000—14 000 feet; also Chumbi Valley, Tibet.

**A. simplex** *Warr.* (Suppl.-Vol. 4, pl. 10 e). Easily distinguished from those *Photoscotia* species which *simplex*, have partly orange hindwing, not only by the simpler ♂ structure but also by the angulations of the postmedian

line near the costa of the forewing and the whitish costal markings which succeed it. ♀ much darker than ♂. Gurais (type series) and Gulmarg, Kashmir. Quite similar, mostly very large specimens from Kharta, Tibet, 12 000 feet (A. F. R. WOLLASTON, Everest expedition of 1921) are in the British Museum collection.

#### 49. Genus: **Photoscotosia** Warr.

(See Vol. 4, p. 202; Suppl.-Vol. 4, p. 103.)

A handsome group of large, ample-winged species, the typical section so unmistakable, with its glossy scaling, the hindwing not continuing the pattern of the forewing but usually with a whitish (sometimes bright orange) costal or apical region, that it is scarcely necessary to consult its generic characters. These, however, are very homogeneous. Palpus moderate, somewhat roughened. Antenna of ♂ shortly ciliated. Forewing with areole double; posterior part of the wing in ♂ with specialized scaling beneath and distally somewhat truncate, a large spreading pencil of hair arising behind the median vein near its base. Hindwing with costal region expanded, especially in the ♂, cell short, discocellulars highly oblique, costal vein, after moderate anastomosis with the cell, diverging very steeply. Belongs chiefly to the Himalayas and the mountains of Tibet and West China, but extends to Turkestan, Japan and Formosa and one species is known from Java.

- indecora.* **Ph. indecora** *sp. n.* (31 e) should perhaps form a separate section, the ♂ hair-pencil being considerable shorter than the normal. Wings slightly more elongate than in *fulguritis*. Forewing with antemedian forming an acute projection at each fold; postmedian waved, with a sharp tooth inward at 5th subcostal, but with an only very slight double prominence between 1st radial and 2nd median; subterminal with the interneural shallow lunules well isolated; an oblique whitish line from apex to postmedian much as in *fulguritis*; minute pale terminal vein-dots. Hindwing, even in the ♂, almost wholly dark, the fringe (but scarcely the wing) lightened with pale buff at apex; whitish subterminal line and (fainter) postmedian discernible, especially in the ♀. Underside also dusky, forewing with a whitish apical spot; hair-pencil light, tinged with buff. Tibet, at 12 000 feet: Kharta, at light, 30 July 1921 (G. H. BULLOCK), type ♂; Kama Valley, 27 August 1921 (A. F. R. WOLLASTON), allotype ♀; both collected on the Everest expedition of 1921. The allotype, which we figure on account of its fresher condition, has a small white central patch (as in some *amplicata*) which is undeveloped in the ♂.
- tonchignearia.* **Ph. tonchignearia** *Oberth.* (31 e) (Vol. 4, pl. 9 h, ♀; Suppl.-Vol. 4, pl. 10 e, ♂). Somewhat variable, as our two figures show, in the white midcostal patch, which may be clear or more or less dark-lined and irrorated, usually clearest in the ♂♂. — ab. **albiplaga** *Prout* (Vol. 4, pl. 6 l, as bicolor) is the extreme of the latter form, the clean and well-defined white patch recalling that of *dejeani*. — *tonchignearia* is common in W. China and Chinese Tibet. Leech had a ♂ from "Sultanpore, Kulu".
- albomacularia.* **Ph. albomacularia** *Leech* (Vol. 4, pl. 11 g). Dark borders much broader, both above and beneath. As the wings seem slightly more elongate, it can scarcely be an extraordinary aberration of *tonchignearia*. Type ♂ from Omei-shan, no others known.
- albapex.* **Ph. albapex** *Warr.* (31 e). Forewing almost as rounded as in *bicolor*; an oblique white or light-buff band from costa to 1st median, in the ♂♂ clear, in the ♀♀ irrorated with the ground colour. Hindwing blackish, with a very characteristic apical patch. Sikkim, at 12 000 feet and upwards; also from Yatang, Tibet.
- hostmutata.* **Ph. hostmutata** *Prout* (Suppl.-Vol. 4, pl. 10 e), erected as a potential subspecies of *amplicata*, has the hindwing less pure white than in *tonchignearia*, the distal border less sharply defined proximally, the abdominal region more broadly suffused. In its larger size, the truncate tornus of the forewing, more strongly black hair-pencil and the presence of a postmedian line on both wings beneath it certainly belongs to the group of forms with which I associated it. Described from How-kow, Chinese Tibet, known from several localities in Szechuan.
- rivularia.* **Ph. rivularia** *Leech* (Suppl.-Vol. 4, pl. 10 d). Forewing more variegated and richly marked than in the rest of the group, postmedian line broader and more conspicuous, apex beneath less whitened. Hindwing with a rather broad dark border. Fringes chequered. Omei-shan.
- amplicata.* **Ph. amplicata** *Walk.* (31 f) (= *trisignata* *Moore*) (Vol. 4, pl. 6 l). WALKER's type was a ♀ from "Hindustan", MOORE's a ♂ from "Bengal", but the sexes do not differ materially except that the hindwing in the ♀ has only the costal region (about to the subcostal and 1st radial) white. The white on the forewing is somewhat variable, but usually shows, in addition to the postmedian vein-dots and traces of lunulate subterminal, a row of 3 confluent or separated spots from midcosta. Himalayas from Kashmir to the Khasis, perhaps chiefly Sikkim. Some Kashmir aberrations make a close approach to *dejeani*, which may be its Chinese race.
- dejeani.* **Ph. dejeani** *Oberth.* (31 f) (Vol. 4, pl. 6 l). On the whole larger, the dark parts more black-mixed, the midcostal patch purer white and broader, not tripartite. Szechuan, locally abundant.

**Ph. chlorochrota** *Hmps.* (31 f). Underside similar to those of the *amplicata* group, the white apical *chlorochrota*. patch of forewing not very clear. Easily distinguishable above by the almost entire suppression of white markings on the forewing and by the green tint of the paler parts. Yatong, Tibet. Has also been taken at Darjiling.

**Ph. fulguritis** *Warr.* (= *keraria Swinh.*) (31 g). White markings slender, but very characteristic, the *fulguritis*. postmedian sharply expressed, the antemedian with a very strong central projection, the apical dash slender, extending to the postmedian. Hindwing with a lunulate or dentate subterminal line. Nepal frontier to Bhotan, 10 000 feet and upward; type from Sikkim, probably Tonglo; SWINHOE's pair (*keraria*) are labelled Darjiling.

**Ph. penguionaria** *Oberth.* (34 h) (Vol. 4, pl. 6 l). Less dark than *fulguritis*, the veins rather strongly *penguio-* marked with ochreous; of the lines, only the postmedian remains conspicuous and this follows a different *naria*. course. Szechuan and Chinese Tibet; type from Ta-t sien-lu.

**Ph. prosenes** *sp. n.* (31 f). In coloration (especially in the ♀ — the ♂ is rather more suffused with blue- *prosenes*. grey) somewhat recalling *palaeartica Stgr.* and *leechi Alph.*, but not really near any known species; specialized scaling of ♂ grey, occupying (in addition to the narrow part proximal to 2nd median) the proximal half of cellule 2 and a small proximal part of cellule 3, the pencil light, inconspicuous. Forewing not quite so broad as in *leechi*; basal patch small, markings between this and median band rather well developed; median band little darkened; cell-mark elongate; postmedian less irregular than in *leechi*; subterminal slender and dentate between 5th subcostal and 3rd radial, punctiform posteriorly; a slight pale apical dash. Hindwing and underside very weakly marked, the latter with weak commencement of postmedian line on forewing. Tibet: Rongshar Valley, 12 500 feet, 5 July 1921 (A. F. R. WOLLASTON, Everest expedition) a pair.

**Ph. undulosa** *Alph.* (31 f) (Vol. 4, pl. 5 h) belongs to a chiefly Palaearctic group, with pale (but not *undulosa*. white, nor white-marked) forewing and restricted dark markings. In *undulosa* the subbasal band is well darkened, but narrow, the antemedian also strongly darkened, the darkest part narrow, but with broad suffusions usually accompanying it proximally; postmedian slender, zigzag, arising from a dark costal spot. Type from Honton River (POTANIN), the Szechuan specimens (Ta-t sien-lu, Kunkala-shan, etc.) apparently not differentiable from those of the Koko-nor district.

**Ph. multilinea** *Warr.* (31 g). Forewing more warmly coloured, subbasal band red-brown, not black, *multilinea*. antemedian much less (in the type scarcely at all) outbent behind the cell-mark, postmedian costal spot also red-brown, more extended, hindwing considerably darker. Sikkim, apparently rare.

**Ph. rectilinearis** *Leech* (Vol. 4, pl. 11 g). Very near *multilinea*, perhaps a subspecies. Subbasal band *rectilinearis*. connected by rufous shading with base, antemedian still straighter, perhaps blacker, postmedian costal spot reduced. Omei-shan (type), Tu-pa-kö (Mupin).

**Ph. pallifasciaria** *Leech* (Vol. 4, pl. 5 k). Forewing with the markings more broken into lines, at least *palli-* proximally to the antemedian. Hindwing more variegated, with postmedian and subterminal indicated. Sze- *fasciaria*. chuan, founded on 2 ♀♀ from Che-tau, 3500 m. Also occurs at Yatong, Tibet.

**Ph. dipegaea** *sp. n.* (31 g). Probably related to *undulosa* and *multilinea*, but very distinct. Forewing *dipegaea*. less variegated, the median area not noticeably lighter than the distal, very slender white lines bounding the median area, that of the postmedian broadened anteriorly; basal patch not, or scarcely, developing a dark subbasal band, its pale distal boundary weak; antemedian stripe narrow, its proximal part blackish and almost straight, its distal edge slightly more sinuous; cell-dot minute; postmedian with rather stronger angu- larities than in *undulosa* and *multilinea*; subterminal very ill-developed except at costa; oblique dark mark from apex slight and irregular. Hindwing with the paler and darker parts very weakly differentiated. Makong- Yangtse Divide, E. of Tse-ku: Pei-ma-shah, 14 000 feet, 23 July 1922 (Prof. J. W. GREGORY), 2 ♂♂ in the British Museum.

**Ph. velutina** *Warr.* (31 h) (Vol. 4, pl. 8 c, as *vetulina*). Easily known by the heavy black markings *velutina*. which bound (and often in some degree suffuse) the median area and shade the subterminal and by the long- itudinal black streak of the terminal area behind the 3rd radial. Szechuan, common, the type from Chertou.

**Ph. atromarginata** *Warr.* (31 h). A much smaller species, with twice excurved antemedian, no s t r o n g *atro-* projections of the postmedian and two small, obliquely placed black marks between apex and subterminal. *marginata*. Hindwing white, with the dark distal border narrow and developed in the posterior half only. Tonglo (type) and Chumbi Valley (Tibet).

**Ph. multiplicata** *Warr.* (31 g). Hindwing pale buff, the distribution of the dark borders about as in *multiplicata*. *amplicata* ♂ or some forms of *miniosata*. Coloration of forewing somewhat as in *nubilata* and *apicinotaria*. antemedian with a moderately strong central projection outwards. E. Java, common on Mount Ardjoeno. —

- atrifasciata*. ab. **atrifasciata** Warr. Median area of forewing forming a dark band; dark lines of the adjacent areas correspondingly weakened. — **erebenna** Prout is a high-altitude form, with the forewing and the distal border of the hindwing considerably darkened, the reddish tints of the forewing weakened, sometimes almost entirely suppressed. Mount Moenggal, E. Java, abundant at 9000 feet.
- nubilata*. **Ph. nubilata** Moore (31 h). Shape in the ♂ somewhat extreme. Readily recognizable by the bright red-brown median band and terminal shades, separated by an area of light blue-grey irroration. Hindwing dark. in the ♂ with an ample white costal area, in the ♀ narrowly white costally and with a small light-buff terminal patch behind the apex. Sikkim, 7000—13 000 feet.
- annubilata*. **Ph. annubilata** sp. n. (31 h), considered by HAMPSON a variety of *nubilata*, seems quite distinct. Forewing with median band broader, antemedian curves slighter; beneath with whitish apical spot, otherwise less extended white, the pencil less strong. Hindwing above with the white area shortened, separated from the (much reduced) apical mark by a dark area; beneath dark, almost unicolorous. Sikkim: "Guethong", 12 000 feet (KNYVETT), type ♂ in Mus. Tring.
- polysticha*. **Ph. polysticha** sp. n. (32 a). Darker than *pallifasciaria* Leech, with which it was mixed in the British Museum (hence the remark in Vol. 4, p. 203, on the "extraordinarily variable" or mixed Yatong material). Perhaps better compared with the well-known *atrostrigata* Brem. Forewing with the reddish suffusion more noticeable; all the proximal lines straighter, even the antemedian group (more or less confluent into a band) more weakly sinuous than in that species; postmedian with a single (shallow) curve inward between 1st radial and 1st median, the posterior lunules also shallow; subterminal more punctiform, the dot or spot behind the 2nd submedian strengthened in the ♀. Hindwing nearly as in *atrostrigata*, the remnants of the subterminal again punctiform. Underside darker than in *atrostrigata*, the markings less strengthened anteriorly, more extended hindward. Yatong, Tibet, 2 ♂♂, 6 ♀♀, in the British Museum, besides 1 ♂ from Kama Valley, 10 000 feet, which was collected on the Everest expedition, 1921. Tring Museum has a ♀ from Dopenri, Chumbi Valley.
- atrostrigata*. **Ph. atrostrigata** Brem. (32 a) (= *hucicolens* Butl.) (Vol. 4, pl. 5 h). Variable in size but generally large. Bears on the forewing considerable resemblance to *miniosata*, but lacks entirely the orange of the hindwing and underside. Chiefly Palaearctic (E. Siberia and Japan), but found also in Central China, as far as Changyang.
- insularis*. **Ph. insularis** Bastelb. (32 a). Intermediate between *atrostrigata* (of which I formerly supposed it a subspecies) and *miniosata*, but different from both in the genitalia (shape of tegumen, etc.). Sometimes closely similar to some Formosan *miniosata*, which probably BASTELBERGER confounded with it. Antemedian of forewing more slender and sharply defined, generally more oblique outward at hindmargin, median area on an average broader, distal area with the colours softer and more blended, hindwing with the ochreous part less orange (paler, more buff), less sharply defined; ♂ abdomen with 9th tergite produced to a sharp projection on either side (in *miniosata* rounded), uncus appreciably curved downward (in *miniosata* slightly upcurved). Formosa.
- miniosata*. **Ph. miniosata** Walk. (32 b). Variable, but well characterized by the orange patch of the hindwing, reddish suffusions in the median area of the forewing, thick black antemedian line or band, etc. Described from Silhet, widely distributed from Masuri to China and Formosa. — **cupha** Prout (32 b), from Luzon, has the forewing more reddish, much less variegated, less dark-mixed, the hindwing with the white area rather more extended.
- isosticta*. **Ph. isosticta** sp. n. (32 b). At first sight similar to *miniosata*, with which OBERTHÜR seems to have mixed it; really quite easy to distinguish. Forewing with the proximal area more strongly darkened; antemedian band angled outward in hind corner of cell; subterminal consisting of an approximately equal series of whitish-green dots (in *miniosata* one only, in front of the 1st radial, outstanding). Hindwing with the orange part on the whole less reddish, suffusing into the dark posterior colour (in *miniosata* the two colours sharply defined), the anterior white in the ♂ extended at the expense of the orange; in the ♀ a dentate postmedian generally visible on the upperside. Underside distinguishable at a glance by the broad extension of the terminal and apical dark shading along the costal margin of the forewing so as to absorb the postmedian costal spot; postmedian line of hindwing more developed. W. China: Sialu (loc. typ.), Tientsuen, Ta-tsien-lu, Mupin, etc.
- propugnataria*. **Ph. propugnataria** Leech (Vol. 4, pl. 11 g) is in the ♂ more like *atrostrigata* in general coloration, but nearly always retains a small yellow patch on the hindwing, variable in its exact extent. It should be easily recognizable from our figure, though the subterminal is drawn a little too thick in its anterior part and should be continued, though interrupted or punctiform, posteriorly; the strong, acutely angled anterior half of the antemedian is characteristic of this species and the following. The ♀ has the apical orange of the hindwing ex-

tended, generally broadening to the apex and costa, occasionally more band-like (bounded by the postmedian and subterminal), but even in this case connected at costa with a narrow yellow streak which runs round the apex and to the 1st radial; her underside more blotched with orange than in the ♂. W. China and Chinese Tibet, the type from Wa-Shan. — ♂-ab. **reducta** *Sterneck* (see Suppl.-Vol. 4, pl. 13 a) lacks the yellow patch *reducta*. of the hindwing and has the underside less yellowish; in its type, from Ta-t sien-lu, the proximal and distal areas of the forewing are said to be more uniformly brown than in name-typical *propugnataria*. Our figure is a transition; I have not seen the extreme form.

**Ph. prasinotmeta** *sp. n.* (32 b). An interesting link between *propugnataria* and *metachryseis*. the shape *prasinotmeta*. of the ♂ forewing as extreme as in the latter, the hindwing with more extended white anteriorly and more extended yellow above and beneath than in *propugnataria*, otherwise closely similar to that species. Forewing with the space between the slender green subbasal line and the antemedian mostly filled with dark shading; ante- and postmedian connected by slender yellow-green streaks on the 2nd median and the fold; postmedian with rather acute projection at the 2nd radial; subterminal accompanied distally by some black marks, those in cellules 2 and 3 strong, quadrate. W. China. 2 ♂♂ from the OBERTHÜR collection, the type from Ta-t sien-lu.

**Ph. apicinotaria** *Leech* (Vol. 4, pl. 5 k). Forewing coloured nearly as in *polysticha*. the lines much less *apicinotaria*. straight; a very characteristic whitish apical spot present. Hindwing of the ♂ similar to those of *polysticha* and *atrostrigata*, that of the (much larger) ♀ with an orange patch recalling *miniosata*; the yellow colouring on the underside in this sex is more restricted than in *miniosata* and the dark postmedian spot at the costa is shortened and narrowed. W. China.

**Ph. dejuta** *Prout* (32 c) (Suppl.-Vol. 4, pl. 10 d). Forewing coloured nearly as in the most tawny-tinged *dejuta*. ♂♂ of *miniosata*; antemedian band-like, postmedian better defined posteriorly than in *miniosata*, subterminal with two whitish dots equally well expressed. Shape and to some extent the coloration of the hindwing and underside suggest affinity with *dejuncta*; hindwing beneath with a bent postmedian line. the orange suffusions less overlaid with dark scaling. W. China: Wuin-kin, only the type ♂ known.

**Ph. dejuncta** *Prout* (Suppl.-Vol. 4, pl. 10 d). Forewing almost as dark as in *funnebris*. but with the apex *dejuncta*. rather more acute, the tornus slightly more cut away; the hair-pencil more slender; a cupreous suffusion rather more manifest; pale subapical marks present. Hindwing beneath with the orange-yellow part much restricted, irrorated with the dark ground-colour. Gulmarg, Kashmir, the type ♂ also a unicum.

**Ph. funnebris** *Warr.* (32 c) (Vol. 4, pl. 11 f). Forewing above almost uniformly darkened, the black *funnebris*. markings (or at least the boundaries of the moderately broad median area) discernible but not conspicuous (in our figure too variegated): beneath whitish, dark-bordered except at hindmargin. Hindwing similar to that of *miniosata*. W. China.

**Ph. obliquisignata** *Moore* (= *stigmatica* *Warr.*) (32 c). Named from the large, elongate and very oblique *obliquisignata*. cell-mark of the forewing, which is emphasized by its pale edging; forewing with many lines, somewhat variegated, but with the areas not very sharply defined. Hindwing in the ♀ with the orange extended, not very sharply defined. Sikkim, very rare, the ♂, so far as I am aware, still unknown.

**Ph. fasciaria** *Leech* (Vol. 4, pl. 11 f). Very distinct in the unusually broad and almost uniformly darkened *fasciaria*. median band of the forewing on a relatively light ground-colour. Hindwing with the orange-yellow more extended than in the *miniosata* group. How-kow, Tibet.

**Ph. metachryseis** *Hmps.* (= *obliquisignata* *Hmps.* olim. err. det.) (32 c) differs from *obliquisignata* in *metachryseis*. its less reddish forewing, normal cell-mark, more cloudy markings, the white (or at least pale) midcostal patch, pale streak from apex, dark apical clouding (much extended beneath) on the orange anterior part of the hindwing and other characters. Sikkim.

## 50. Genus: **Callabraxas** *Btlr.*

This genus was proposed for the somewhat isolated species *amanda* *Btlr.* and accepted by HAMPSON, who separated it (from the other Indian genera which he recognized as having the costa of the hindwing "highly arched and vein 8 curved, especially in ♂") by the "frons rounded and smooth: palpus upturned: ♂ with 4 tufts on inner area of forewing". These mimetic members of the *Eustroma-Lygris* group, even more than *Eustroma* itself, are in a condition of chaos taxonomically, almost every species showing some structural individuality. The groupings which I adopted in Vol. 4 (p. 209—211) and Supplement do not claim any permanence. The general mimicry of the *Abraxas* group, which are well known to be distasteful and "aposematic", takes various different manifestations. The genotype has double areole and non-biangular discocellulars. The only other species known to me with shortened palpus and that venation is therefore placed here, but there is obviously

no near relationship and the ♂ sex-patches of the forewing are quite different. For this second species see *C. maculata* Swinh., Vol. 4, p. 209, pl. 11 i.

*amanda*. **C. amanda** Btlr. (32 d). The wing-pattern is quite distinctive. The "4 tufts" of the forewing (beneath) consist of 2 long white pencils from near the base, behind the median and 2nd submedian respectively, and 2 smaller, dark tufts more distally, one before and the other behind the 2nd submedian. Sikkim, not common.

### 51. Genus: **Calleulype** Warr.

Palpus short and upcurved, in this and most of the other external characters agreeing approximately with *Callabraxas*. Discocellulars of the hindwing biangulate; areole of the forewing simple in the type species (*whitelyi* Butl., which lacks a hair-pencil on the underside of the forewing), variable in the *compositata* Guen. section (genus *Callygris* Th.-Mieg), double in *intersectaria* Leech, which I have tentatively transferred here on account of the short palpus (see Suppl.-Vol. 4, p. 107). For convenience, I repeat the structural distinctions under the species.

*intersectaria*. **C. (?) intersectaria** Leech (Vol. 4, pl. 11 h). Forewing with double areole, without hair-pencil. The broken pattern of the forewing, but with large dark basal and midcostal patches, is somewhat reminiscent of some *Ecliptopera*. Szechuan: Omei-shan (type) and Tu-pa-kö.

*compositata*. **C. compositata** Guen. (Suppl.-Vol. 4, pl. 10 g). Forewing with areole very inconstant, simple or double, the variation individual, not racial; forewing beneath with a strong hair-pencil, as in *Lygris*. The exact status of the name-typical form is still doubtful, though it is highly probable that it is merely a very rare aberration of the *junctilineata* form, unfortunately bearing the older name; it was said to come from "North China", which was also the type locality of *junctilineata* Walk., though in the case of the latter author Shanghai is almost certainly to be understood. Its hindwing above entirely lacks the cell-spot; see Vol. 4, p. 210. Excepting perhaps

*junctilineata*. 1 ♂ from Ichang, I have seen nothing that literally agrees with this type of GUENEE'S. — **junctilineata** Walk. (Vol. 4, pl. 8 d) is by far the commoner form, and has the cell-spot of the hindwing developed both above and

*constricta*. beneath. Distributed in E. and Central China, as well as in Japan. — ab. loc. **constricta** Prout is perhaps confined to North China, i. e. Palaearctic, but it may occur anywhere within the range of the species. The white postmedian area is much narrowed, so that the lines which bound it are partly confluent anteriorly. By an oversight I referred to this in Suppl.-Vol. 4 (p. 107) as "nov." instead of *constricta* Prout; the first publication

*basistrigaria*. was in Vol. 4 (p. 210). — **basistrigaria** Wileman (32 d). Forewing with the outermost subterminal dark line scarcely interrupted, the 2nd group of lines thickened, almost confluent to form a single band (as also, however, in some *c. compositata*). Hindwing with the subapical black spot almost obsolete on the upperside, the anterior

*apothetica*. 2 subterminal spots well isolated. A pair from Kanshirei, Formosa. — **apothetica** subsp. nov. is a further development of *basistrigaria*; forewing with the subterminal line as in *c. compositata*, the group of dark lines variable but with a tendency to thickening or confluence; hindwing with subapical and subterminal spots above quite or almost obsolete, cell-spot somewhat weakened. W. China: Tse-ku (type ♂), Ta-t sien-lu, Siao-lu, etc., ex coll. OBERTHÜR. At Ichang intermediates occur between this and *c. compositata*.

### 52. Genus: **Eucosmabraxas** Prout

(See Suppl.-Vol. 4, p. 107.)

Palpus rather long, quite distinct from those of the two preceding genera. Areole simple, as in typical *Calleulype*. Discocellulars of hindwing not biangulate, in this respect nearer to *Callabraxas*. Type of the genus: *placida* Btlr.; this and the closely allied *evanescens* Btlr. are Japanese. In addition to them I refer here the following two yellow species.

*pseudolargetaui*. **E. pseudolargetaui** Wehrli (Suppl.-Vol. 4, pl. 10 h). A truly remarkable mimic of the well-known *Obeidia largetaui* Oberth. (Vol. 4, pl. 14 h), among which it was discovered. The deeper orange ground-colour and the more complex, more band-like formation of the black markings are its chief superficial distinctions from its model. Yunnan: Siao-lu and Szechuan: Ta-t sien-lu.

*octoscripta*. **E. octoscripta** Wileman (32 d). Closely related to *pseudolargetaui* (which is not impossibly a subspecies of it), but presenting a different aspect, chiefly on account of the confluence of the 4 costal bands of the forewing in the central part of the wing. Formosa: Arizan. only the type ♂ known.

### 53. Genus: **Chartographa** Grnpg.

In Vol. 4 I made this a section of *Lygris*, and as it differs in little except the different form of palpus — longish-moderate, definitely not "long", the terminal joint concealed — this may be the better view, but

**C. hyospilata** Guen. (37 c). Palpi fuscous. Upperside not unlike that of *blosyra*; underside very sharply *hyospilata* marked; its postmedian band not at all broken into spots, subterminal composed of strong, blackish interneural spots. Ceylon (type) and S. India. Other records erroneous or doubtful, as the name has been too comprehensively applied.

**C. praetenta** Prout (37 d). Variable in size, larger and rather paler than *ghosha*, ♂ antenna less compressed laterally. The darkest examples are extremely similar on the upperside to *hyospilata*. Underside intermediate between that and *ghosha*, almost exactly as in *foraminata* Guen. (Vol. 16, pl. 10 g), the strong longitudinal streaking of *ghosha* faintly or scarcely indicated, the bands both macular, with the spots large and subconfluent, the postmedian series not so elongate as in *ghosha*. Khasis (type), E. Pegu, Malaya and Formosa. — **astathes** Prout, from Bali and E. Java, erected as a separate species, is probably only a large dark form of *praetenta*. Underside with postmedian rather less broadly macular, perhaps a little more continuous, subterminal on forewing obsolescent at costa, only distinct as paired spots between the radials and isolated ones between the medians and at the fold. Type from Batoeriti, Bali, 3500 feet.

**C. exemplata** Warr. (37 d). So similar in structure and underside to the preceding that both may possibly be forms of one species. Large, dark, the markings heavy but not sharp, a characteristic ochreous spot in base of cellule 3 of the forewing. New Guinea, Ceram and Buru, the type from Angabunga River. The underside sometimes, in the Moluccan forms, shows traces of the additional line which is characteristic of *mesopora*.

**C. mesopora** Prout (37 d). Closely similar to *praetenta*, although the build appears a trifle more robust and the ♂ antenna more compressed laterally. Forewing rather broader, more mottled, more inclining to brown, cell-spot enlarged, postmedian band rather broad. Both wings beneath, in addition to the two bands of *praetenta*, with a slender median line present. Kinabalu, 5000—5500 feet (loc. typ.) and the mountains of Sarawak; I think also Benguet and W. Celebes (Luzon) at similar altitudes.

**C. ghosha** Walk. (37 d). Distinguishable by its small size and the exceptionally heavily marked underside; here the cell-spots are very large, the postmedian spots produced basewards, especially the one behind the 3rd radial, which continues to the base of the cellule, so as to meet the cell-spot; there are (also on the underside) some ill-defined dark longitudinal streaks proximally. Described from Ceylon but widely distributed: Riu-Kiu Islands, Formosa, Malaysia, Bali, Celebes, the Sula and Kei Islands, Timor, etc. — **mayri** *subsp. nov.* 3 ♂♂ from Siwi, Arfak Mountains, 800 m (Dr. E. MAYR), appear to represent a local race, but are not in really good condition; upperside darker, duller and more uniform. Received by the Tring Museum from the collector. — **sticticata** Warr. is treated as a subspecies of *ghosha*, but as the antenna in the only available ♂ (the holotype) is rather more notched between the lamellae, some of the distal joints showing nearly the form that is observable in *rufidorsata*, *elongata* and *multifilata*, it may be a separate species. Superficially it differs very little from typical *ghosha* but has somewhat more equal markings (less spotted), the pale band outside the postmedian bisected by a more distinct line. Solomon Islands: Florida (type) and San Christoval.

**C. subligata** Warr. (37 d), from Lifu, Loyalty Islands, is also little known. The type ♂ (not “♀”) is the only specimen before me and differs from both the preceding in its larger size and relatively still broader markings of the underside, particularly noticeable in respect of the subterminal band.

**C. dichobathra** Prout (37 e). Scarcely distinguishable from the largest, broadest-winged, brownest and most strongly marked examples of *rufidorsata*, except in having the ♂ antenna much less strongly lamellate. Forewing with the costal spots in general more darkened, subbasal line rather conspicuously darkened between cell and hindmargin, almost as in *exemplata*. Underside with longitudinal streaks on the whole less strong than in *rufidorsata*, postmedian band much less indented near costa. Upper Aroa River (type) and Biagi. — **puncticulata** *subsp. nov.* Slightly warmer in tone and with some of the subordinate lines (notably the first of the postmedian series) more broken into dark, pale-edged dots. N. Queensland: Kuranda (including the type), Herberton and Cedar Bay, a good series in the British Museum. — ♀-ab. (?) **anaxia** *nov.* is much more weakly marked above and the forewing looks rather more rounded apically, the hindwing perhaps rather less concave between the radials. Brisbane (M. CULPIN), type in my collection; Taylor Range (J. P. DODD), paratype. As TURNER has not noted any deviation in the Brisbane forms, I am uncertain of the status.

**C. lasiospila** Meyr. (37 e). If I have correctly determined this species, of which the underside is ignored in the description, it is a *Collix*, with normal structure and upperside but very distinct in the broadly yellow-streaked veins beneath. Fiji. More recently brought from the New Hebrides by Miss CHEESMAN.

**C. rufidorsata** Prout (37 e). This species and the two following have the ♂ antennal lamellae more separated, forming almost what HAMPSON called “clawed teeth” below. *rufidorsata* is larger than average *ghosha*.

slightly more rufescent, more strongly banded, subterminal area more blotched, underside with somewhat less developed longitudinal suffusions. Abdomen with subdorsal streak scarcely so bright as in the *stellata* group but longer, in addition with a similar tinge on the dorsal ridge, the intervening stripe black, generally more or less macular. Distributed from Assam to the coastal regions of New Guinea; described from W. Java.—  
*promulgata*. **promulgata** Prout, from the Admiralty Islands (type) and distributed in the Bismarck group, is darker and more tinged above with reddish or purplish, somewhat less banded in appearance, on account of the more equal expression of the lines; basal region of forewing anteriorly almost always well reddened.

*elongata*. **C. elongata** Warr. (37 e) is said to be "distinguished by the long narrow wings, uniform dull tint above, and the rufous patagia" (tegulae) from most *Collia*. In structure and essentials near the preceding, somewhat greyer in tone, the markings more slender, the tegulae and subdorsal streak of the abdomen brighter, cinnamon. Solomon Islands, the type from Kulambangra.

*multifilata*. **C. multifilata** Warr. (37 e) is unmistakable, presenting a finely reticulated appearance throughout, on account of the alternations of dark and light spots or dashes on the veins. Queensland. — **infecta** Prout is more densely irrorated, the dark lines thick and rather ill-defined, the clear costal spots narrower and less conspicuous. Louisiades, the type from Mount Rossel.

### 85. Genus: **Horisme** Hbn.

(See Vol. 4, p. 300; Suppl.-Vol. 4, p. 212; Vol. 16, p. 99.)

Palpus moderate. Antenna simple, or nearly so. Thorax nearly always with a posterior crest. Abdomen with small dorsal crests. Forewing with termen generally smooth; areole double. Hindwing moderately ample, with termen waved or crenulate, discocellulars not biangulate; usually marked similarly to the forewing. Genitalia rather similar to these of *Eupithecia*; 8th sternite without the characteristic plate of the ♂♂ of that genus. A genus of moderate extent, numbering at present perhaps about 80 named species, very widely distributed. By the genitalia, it is quite evident that the New Zealand group which has usually been placed here cannot be allowed permanently to retain this position, in spite of its similar facies. The type is the well-known Palaearctic *tersata* Hbn.

*liometapa*. **H. (?) liometapa** Turn. Unknown to me, but said to be readily distinguishable by the scarcely rough-scaled face (without frontal tuft) and irregularly shaped hindwing, which is strongly dentate, the longest tooth at vein 6, a deep semicircular excision between this and vein 4, the "apex quadrangular on vein 7". Expanse 24—28 mm. Brown-whitish, with indistinct wavy dark lines, the basal patch of the forewing ill-defined, median band ill-defined proximally, postmedian line fuscous, a narrow brownish shade immediately beyond, the subterminal line very indistinct; cell-dot present on forewing only. Australia; Russell Falls, National Park. Described as a *Eucymatose*.

*flavovenata*. **H. flavovenata** Leech (Vol. 4, pl. 11 i, as *Collia*), founded on a ♀ from Ta-t sien-lu, known also from Chungking, is likewise an obscure species with strongly dentate hindwing, but has the excision at the radials less deep. This species and the two following are best recognized by the yellow-veined undersides.

*elachista*. **H. elachista** West (37 e). Hindwing much less irregular in shape, subterminal of both wings more punctiform, postmedian much less bent outward in middle; the latter distinction very noticeable on the sharply marked underside; which is otherwise similar to that of *flavovenata*. Luzon.

*subradiata*. **H. subradiata** Warr. (37 f), founded on a ♀ from Biagi, British New Guinea, is likewise characterized by the underside, which has thickly darkened veins on a whitish ground, and two curved dark outer lines. Palpus rather short, abdomen robust, forewing *Eupithecia*-like, hindwing with costa long, apex unusually acute.

*brooksi*. **H. brooksi** sp. n. (37 f). Upperside much lighter and brighter than in *flavovenata* and *elachista*, marked nearly as in *rufipicta* (37 i), though the markings of the hindwing are less strong, especially the postmedian: hindwing with moderate sinus between the radials. Underside at least as bright as that of *minuta* Btlr. (Vol. 4, p. 300, pl. 7 f), the longitudinal ochreous markings still broader, postmedian of forewing very strongly bent outward anteriorly. Sumatra: Dempo, 4000 feet (C. G. BROOKS), 1 ♂ in the British Museum.

*rufipicta*. **H. rufipicta** Hmps. (= *rubrinotata* ♂ Warr., ex err., *rubripicta* Warr. M. S.) (37 i). By some oversight this was figured by WARREN in 1893 as "*Eupithecia rubrinotata* ♂", whereas it has no connection with the species concurrently described under that name; WARREN in litt. and HAMPSON corrected this error. It much resembles *brooksi* or small *macularia*, especially like the former in its strongly bent postmedian line; the underside, moreover, shows yellow on the principal veins, though not very vivid. ♀ much larger than ♂. Sikkim (type) and the Khasis.

**H. macularia** *Leech* (Vol. 4, pl. 11 c). A moderately large species, the pale grey ground-colour faintly tinged with olive-yellowish, the macular markings of the forewing including an anterior subbasal band and a postmedian spot in cellule 3. Underside without the longitudinal streaks of the preceding species of *Horisme*. Hindwing more strongly crenulate. Founded on a ♂ from Omei-shan; known also from Sikkim, Assam and Formosa.

**H. flavofasciata** *Moore* (37 f) was originally described from Darjiling as a *Collia* and has about the shape of several of that genus, but lacks the raised cell-spot and specialized ♂ midtibia and has the pale bands of the upperside greenish (fading to yellowish, hence the name). The underside resembles these of the weakest-marked *Collia*, though neither postmedian nor subterminal is at all macular. Variable in size. Extends through the Khasis to N. Burma.

**H. hirtivena** *Warr.* (37 f). Considerably paler, median vein with linear patches of raised black scales, costal shoulder of forewing roughly fringed; the numerous lunulate-dentate lines marked with blackish dashes on the veins; a pale spot just outside the cell. New Guinea, the type from Angabunga River. — ab. **carneata** *Warr.*, founded on a pair from Biagi, has the body and the ground-colour of the proximal and distal areas of both wings flesh-colour.

**H. intrepida** *Prout* (37 g) apparently represents *hirtivena* on Kinabalu. Larger, the raised tufts of scales on the forewing rather less developed, the colouring, at least in the ♂, more reddish, the underside showing some further differences. Both species show some structural deviations from typical *Horisme*: palpus longer. 2nd joint with long-projecting hairs above and beneath; a strong pale anal tuft in the ♂; hindwing with a slight approach to the *Coenocalpe* shape of the discocellulars.

**H. erythroides** *sp. n.* (37 g). Somewhat less robust than *hirtivena*, the genitalia a little less large. Coloration darker and in places more suffused with reddish, more recalling on the upperside *hyperythra* *Hmps.*, but retaining (or even accentuating) the pale patches just outside the cell and again outside the postmedian which are shown in *hirtivena*; the raised scaling on the median vein apparently wanting (the wings here unfortunately little rubbed); longitudinal dark streak from lobe of postmedian to termen intensified. Mount Tafa, 8500 feet, February 1934 (Miss L. E. CHEESMAN), the unique type a ♂ in the British Museum.

**H. angustipennis** *Warr.* (37 g). Probably related to *hirtivena*, but without the long-projecting hair of the palpus, the wings much narrower, without raised scales. Further distinguishable by its more whitish colour and somewhat less strongly dentate hindwing. Angabunga River (type), Biagi and Mount Goliath.

**H. ustimacula** *Warr.* (37 g). Almost as narrow-winged as *angustipennis* but considerably darker, especially the posterior part of the hindwing. Abdomen more robust, somewhat tufted laterally, blunt at tip. Angabunga River, 2 ♂♂.

**H. hyperythra** *Hmps.* (37 g). Generally smaller than *flavofasciata*, hindwing much less deeply crenate; colour much browner, inclining to reddish, more uniform. Underside strongly marked, both wings with cell-spot, strong band-like postmedian and more or less interrupted or macular subterminal; the postmedian on both wings, but especially on the hindwing, is indented near the costa and markedly angled outward before the 1st radial; these markings may be blackish or more reddish, but are always very characteristic. The type — though this was not specified in the original publication — is from the Nilgiris; distributed from Ceylon to N. India, Pahang, Luzon, Borneo and Java. — **catalalia** *subsp. nov.* is rather darker and less reddish, the lines (or bands) on the underside broadened and heavily blackish, with the postmedian of the hindwing very acutely angled. Formosa (WILEMAN): Rantaizan (type) and Arizan. Also on Kiushiu and the Riu-kiu Islands.

**H. invicta** *sp. n.* Although the ♂ is unknown, the position of this species cannot be in doubt. Expanse 35—36 mm, larger than the largest *hyperythra*, the forewing relatively broader, the hindwing more crenulate, thus nearer in shape to *boarmiata*, to which it further assimilates in the much less bent postmedian of the forewing, particularly noticeable on the underside, where, however, it does not arise from a darker spot as in *boarmiata*. Scheme of markings otherwise almost exactly as in *hyperythra*, the tone similarly reddish, the underside even more suffused with vinaceous-cinnamon than in *hyperythra*, the course of the broad postmedian of the hindwing almost exactly as in that, though with a slight additional indentation at the 2nd radial. Korintji, W. Sumatra 7000 feet (ROBINSON & KLOSS). 2 ♀♀ in the Tring Museum.

**H. praemaculata** *Prout* differs from the Indian *olivata* in that the forewing is broader, the termen considerably less oblique anteriorly than posteriorly, roundly bent about the 3rd radial, cell-spot obsolete above, rather less large than in *olivata* beneath; lines weakened, costal spots remaining strong, a small basal-costal patch substituted for the proximal streak of *olivata*. Fakal, Buru, only the type known,

- olivata*. **H. olivata** Warr. (37 g). Underside similar to that of *hyperythra* though scarcely so extreme, upperside much paler than in that, olive-tinged, with large cell-dots and costal spots. Khasis (type) and Sikkim.
- boarmiata*. **H. boarmiata** Snell. (37 h ♂, ♀). Described as a *Collia*, although its author mentions its shortish palpus. Founded on a pair from Lokka, Celebes. Until recently I had seen no example from Celebes, but the good description and figure left no doubt of its close affinity with *leprosa*; now, however, I am able to study it from a series of over 30 received by Lord ROTHSCHILD from W. Celebes, a pair of which are here figured. Unlike some of the other forms, it seems that this race varies scarcely at all except sexually; no ♂ shows any development of the white costal patches which are constant for the 10 known ♀♀. Ground tone fuscous; the irregular white dots or spots just outside the median band are not, even in the ♀♀, enlarged, as occurs commonly in other races and *xylinata*. Underside pale, generally very sharply marked, with strong costal spots. Of a pair from Luzon, the ♂ is typical, the ♀ exceptionally white. — **inconstans** subsp. nov., from Java, perhaps deserves a separate name, although some individuals may be hard to distinguish from the name-type. ♂ on the whole very similar thereto, more variable, at times showing an approach to the pale costal maculation of the ♀; underside rarely with such intense markings as in *b. boarmiata*. ♀ generally larger, sometimes as uniform as the typical ♂; the commoner (white-marked) form however, has the white purer and more sharply defined against a very dark ground-colour, the pale boundary of the postmedian on both wings nearly always marked with some clean white spots in its posterior part. A long series in the Tring Museum, chiefly from E. Java (loc. typ.: Singgolangoe, Tengger, 5000 feet). One ♂ from Bali probably belongs here. — **leprosa** Hmps. (37 h), from Ceylon and S. India and reaching at least as far north as Mahabeshwar, is nearer to *inconstans* than to the name-type and equally variable, but the ground-colour is browner and the usual forms show some small differences in the arrangement of the white spots, including a frequent tendency to their enlargement at the base of the forewing; the ♀♀ vary much in size: the ♂♂ show on the whole an increase of white admixture. Described from the southern slopes of the Nilgiris, ca. 3000 feet. — ab. (?) **suffusa** Hmps. (37 h), erected as a separate species, is a large form from the Nilgiri Plateau, 6700 feet, expanding about 40 mm, the type above entirely with white maculation, beneath suffused and rather weakly marked and with the postmedian of the hindwing less acutely angled. Most ♀♀, however, are sharply white-spotted and transitions exist, both in size and in underside. Such, perhaps, are single ♀♀ from Hsipaw (Burma) and Kori (Shan States). More surprisingly, there exists a Kenya and Natal representative which passes as *suffusa* (see Vol. 16, p. 100) but which is probably nearest to the Ceylon *b. leprosa*, to which name, on careful consideration, I give priority over the exceptional form
- grandescens*. (? montic.) **suffusa**. — **grandescens** Prout, founded on a ♀ from Rana, Buru, is larger than any other hitherto known in the group (♀ 43 mm, 2 ♂♂ 34 and 36 mm), but otherwise very similar to some whitish-blotched forms from other countries; the blotches are the one in the cell (not reaching the costa) and the larger distal one at the costa. The postmedian line, at least on the forewing, shows a more pronounced subcostal indentation than usual. — **serangica** subsp. nov., a pair from Manusela, Central Ceram (ex coll. JOICEY). Expanse 36—38 mm; more brownish, median area more uniform, pale markings light buff instead of white; patagia buff. Should *grandescens* vary in the same way as *inconstans* and *suffusa*, *serangica* may be merely an aberration of it.
- xylinata*. **H. xylinata** Warr. (= *aorista* Turn.) (37 h). Probably an eastern representative of *boarmiata*, but the postmedian of the forewing is not, or scarcely, dentate in its anterior half and its underside is not so much mixed with whitish nor so intensely sharp-marked; the general range of variation, however, seems identical with that of *inconstans*, but with whitish-marked ♂♂ much less infrequent. The type, a ♀ from Angabunga River, has the pale markings inconspicuous (light brown, not white); TURNER's type-form, from N. Queensland, also lacks the white blotches. — ab. **albipannosa** nov. may therefore be used to designate the white-blotched form in both sexes. The species is distributed in the Mountains of British New Guinea.
- semirufata*. **H. semirufata** Warr. (37 h). Hindwing somewhat less dentate, though noticeably sinuate. Very distinct in the brighter red-brown ground-colour, in places marked with pale green, and in the extremely weakly marked underside. Very characteristic is the elongate-triangular blackening of a part of the median area posteriorly; the white midterminal spot is variable in its size and purity, in the type ♂, from Angabunga River, well developed. Only known from the Owen Stanley Range (sens. lat.) — ab. (?) **extrafumata** nov. has the vinaceous-tinged anterior stripe somewhat paler, the area between the postmedian and the white subterminal dots suffused with greyish, at least between the 1st radial and the 1st median, the white spot consequently obliterated. As the subterminal dots are less clean-cut, more connected into vague lunules or a lunulate-dentate line, it is just possible this is a separate species. Mount Tafa, Mafulu district, 8500 feet (Miss L. E. CHEESMAN), a pair in the British Museum, taken with a typical ♂ *semirufata* and presenting a very different appearance, not only in coloration but also in the somewhat larger size and perhaps relatively broader forewing. A worn ♀ in the Tring Museum, from Biagi, entirely agrees with them, but a ♂ from Angabunga River furnishes a connecting

link. — **goliathi** *subsp. nov.* is larger than typical *semirufata* (length of a forewing 15—17 mm), with the green markings and white subterminal dots more pronounced, the pale line which bounds the postmedian of the forewing forming deep indentations inward on the veins from the 3rd radial hindward; postmedian of both wings slightly more direct, on the hindwing slightly more proximal than in the name-type. Mount Goliath, 1 ♂, 2 ♀♀, in the Tring Museum.

**H. steretica** *sp. n.* (37 i), collected with *goliathi*, can scarcely be a remarkable form of the same, although it agrees somewhat better with *s. semirufata* in the subterminal dots and lacks the deep postmedian teeth of *goliathi*. Forewing without the blackish suffusion, median area less constricted in the middle, the antemedian line strongly excurved before and behind the median vein, distinct throughout, a fine parallel line just proximal to it, the two separated by a pale greenish line. — ab. (?) **restituta** *nov.* is a puzzling specimen agreeing essentially with the 5 typical (and very constant) *steretica* except that the posterior part of the median band is darkened, nearly as in *semirufata* though less strongly and without dark definition anteriorly, and the postmedian is rather more incurved in its posterior part.

**H. subrubescens** *Warr.* (Suppl.-Vol. 4, pl. 17 e). Somewhat *Eupithecia*-like except in its larger hindwing. Palpus with 2nd joint triangularly scaled above. Abdominal crests weak. Forewing with cell-mark elongate, median area darkened, ante- and postmedian lines black, the latter rather distinctly white-edged distally. Distributed in N. W. India, the type from Berham Gully. Also known from British Bhotan. — ab. **despicienda** *Bull.* (37 i), described from Dharmasala, is the commoner form, the median band scarcely darkened, though its boundary-lines remain sharply black.

**H. eurytera** *Prout* (Suppl.-Vol. 4, pl. 17 e). Closely related to *subrubescens* but mostly larger (26 to 28 mm), the apical part of the forewing a little more rounded, much darker and greyer, the forewing with the cell-mark less thick, the subterminal showing chiefly as two whitish dots. Hindwing not lighter costally. W. China, the type from Pehlinting, N. N. W. of Cheng-tu.

**H. cristata** *Walk.* (= *decreta* *Walk.*, *peplodes* *Turn.*) (37 i). Size of *subrubescens* or still smaller, agreeing in several characters, including the nearly smooth margin of the hindwing and a plate or flap which covers the ♂ genitalia dorsally. Abdominal crests well developed. Queensland, all the types ("Swan River", given for *decreta*, is doubtless erroneous); no further range is yet recorded.

**H. brevifasciaria** *Leech* (Vol. 4, pl. 13 i, as *Eupithecia*). On account of the relatively large hindwing and the absence of the plate on the 8th sternite of the ♂, my suggestion (Vol. 4, p. 289) that this should be removed to *Horisme* proved to be justified and was acted upon in Suppl. Vol. 4, p. 213). Hindwing with the termen waved, both wings sharply marked, the dentate line outside the pale band characteristic. W. China, the type from Chow-pin-sa.

**H. sternecki** *Prout* (Suppl.-Vol. 4, pl. 18 g). Not unlike *brevifasciaria*, the forewing relatively shorter and less pointed, the hindwing slightly more ample still, its termen more rounded, the colouring of the forewing continued more fully; median area less band-like, the pale band outside it less strong, the distal area without the conspicuous cloudings. Peking district (abundant) and one specimen from Tientsin, perhaps purely Palaearctic, but may be looked for in other parts of eastern China.

**H. scotodes** *Turn.* (= *mortuata* *Meyr.*, nec *Guen.*) (37 i). This and the next three Australian *Horisme* have the termen of the forewing rather strongly oblique and wavy, the markings at least as oblique as the termen. *scotodes* is an obscure species, with shortish-moderate palpus. Postmedian of forewing with a short acute angle in the middle. Queensland (type), N. Queensland and Sydney.

**H. mortuata** *Guen.* (= *clandestinata* *Walk.*) (37 i). Somewhat larger than *scotodes*, palpus considerably longer, the projection of the postmedian double, obtuse, the proximal lines more evenly curved. New South Wales. Both the types represent the darkest form. — ab. **suppressaria** *Walk.* has the central part of the median band whitish. The given locality, "New Zealand", was obviously erroneous.

**H. leucophanes** *Meyr.* (37 i). Lighter, browner and more variegated, a large anterior part of the hindwing white. The oblique blackish apical line of the forewing, with white maculation in front of it, is also characteristic. Moderately variable. Distributed in Tasmania, the type from Deloraine; also recorded from Sale, Victoria.

**H. plagiographa** *Turn.* 25 or 26 mm. "Palpus 3" (TURNER gives this length also for the ♀ of *leucophanes*, where, however, it seems a slight exaggeration). Forewing with costa straight, slightly sinuate before the apex, termen slightly crenulate, that of the hindwing very little rounded, dentate. Forewing whitish, suffused with fuscous, markings very oblique, apical dark streak much as in *leucophanes*; hindwing whitish grey, the lines becoming indistinct towards costa. New South Wales: Sydney and Jervis Bay; founded on 3 ♀♀. I have not seen it.

- arenosus*. **H. arenosus** *Howes* (= *arenosa* *Meyr.*) (37 k). Unlike the other three members of its group, this seems to be very constant. On the whole smaller than *gobiata*, in any case easily separable from the palest, weakest-marked forms of the latter by the straighter postmedian line and by the shape of the hindwing. Titahi Bay (Cook Strait); also near Oamaru.
- gobiata*. **H. gobiata** *Feld.* (= *simulans* *Btlr.*) (37 k). Excessively variable. Hindwing, especially in the ♂, with the distal margin a little more rounded and appreciably more crenulate than in *arenosus*. Intermediate towards that of *anguligera*: forewing with the streak from behind the apex to the postmedian line generally blacker, the cell-dot sometimes minute, sometimes quite large. New Zealand: common and widely distributed in South Island, rarer in North Island. Larva on *Coprosma areolata*; moderately stout, tapering, rugose, with very large humps on the 4th and 5th abdominals, general coloration pale brownish green; it is very sluggish and is believed to hibernate. FELDER'S type form (not localized) is shown in our figure; it is pale, with the incomplete blackish lines and apical dash well developed. — ab. **unduligera** *Butl.* is a little browner, with the lines in part (or at least the antemedian) bright brown rather than blackish; BUTLER'S type, from Otago, has moreover a large cell-spot and if the name is to be utilized at all it might be made to cover all the forms which show this peculiarity. — ab. **rivularis** *Btlr.*, also described from Otago, lacks the broken blackish lines and merely presents a series of rippings of almost equal intensity. — ab. **fasciata** *nov.*, with the median area strongly darkened, is more interesting than either of the aberrations which were known to BUTLER. Type from Niagara (N. Z.) in my collection. A similar form can occur with a browner ground-colour.
- unduligera*. **H. anguligera** *Butl.* (37 k). On an average larger than *gobiata*, but very variable in size; both wings with termen more dentate, particularly as regards the 3rd radial of the hindwing. Coloration on the whole browner, sometimes with a tinge of chocolate or of reddish; forewing beneath with a strong, or at the least a distinct, rosy suffusion anteriorly, its posterior part from fold or even from median vein generally whitish and feebly marked (in *gobiata* only so behind the 2nd submedian). Abdomen and hindwing with a darker sub-basal belt than in *gobiata*; forewing with the compound subbasal marking nearly always weaker, scarcely so oblique, antemedian from hindmargin to middle without sinuosities, cell-dot minute, postmedian with a strong central bend outward, an inward curve in front thereof, subterminal generally with a stronger bandlike shade proximally than in *gobiata*, hindwing beneath more banded distally. Few of the distinctions are constant and the type ♂ (from Otago, described as a ♀!) is so unrepresentative, as compared with the normal Wellington forms, that I hesitated about its identity until Mr. A. H. STRINGER, of the British Museum, had investigated its genitalia. Its enlarged cell-spot is quite exceptional in this species. — ab. **bipartita** *nov.* (37 k) is a frequent form (never, I think, matched in *gobiata*) with the entire anterior part of the forewing pale (about as in sharply marked *vitalbata* *Schiff.*), the rest of the wing almost entirely dark. Type from Wellington, in my collection. Auckland, Porirua, Wellington, Otira, Queenstown, Dunedin and Invercargill are known localities for *anguligera*. It often visits Veronica. Larva pale ochreous brown, similar to the preceding but with a blackish swelling on the mesothorax.
- anguligera*. **H. tersata** *Hbn.* **chinensis** *Leech* (Suppl.-Vol. 4, pl. 17 d). This eastern race, or very close ally, of the widely distributed *tersata* of the Palaearctic Region (Vol. 4, pl. 13 l) was described from Chang Yang, but seems to be distributed from Omei to Japan. On an average rather small, with the lines (including the subterminal of the forewing) ill-defined, the cloudings on the postmedian and subterminal rather well developed.
- bipartita*. **H. plurilineata** *Moore* (Vol. 4, pl. 7 f ♀) (38 a ♂). Wings narrower and more elongate than in *tersata*, particularly in the ♀; sexual dimorphism strong, the ♀♀ being regularly darker and more clouded. Forewing in the ♂ with a conspicuous double dark postmedian spot, on the 3rd radial and 1st median. Khasis and Sikkim, the type from Cherrapunji.
- chinesis*. **H. nigrovittata** *Warr.* (= *nigripunctata* *Warr.*) (Suppl.-Vol. 4, pl. 17 d). These names, referring respectively to the ♀ and the ♂, were formerly sunk as synonyms of *plurilineata*, but represent a distinct though nearly allied species, with several differences in the ♂ valve, juxta etc. The ♂♂ are variable, both in size, tone, and distinctness of markings, but no N. W. Indian species is yet known which could be confused with it. The ♀ is less extremely elongate-winged than that of *plurilineata*. Both sexes were described from Thundiani, but the distribution is wide in the Punjab and Kashmir and extends to Kumaon. — f. **exors** *Prout*. Slightly less narrow-winged, considerably paler and less brown, with the dark transverse lines much more distinctly expressed, the double, dark postmedian spot wanting, the sexes more nearly alike; altogether more resembling a small, narrow-winged form of *tersata* *Hbn.* (Vol. 4, pl. 13 l). Kashmir, the types from Koksar, some intermediate forms from other localities (Narkundah, Nubra Valley, etc.). Perhaps a tenable subspecies.
- plurilineata*. **H. impigra** *Prout* (? = *plurilineata* *Sterneck, nec Moore*) (Suppl.-Vol. 4, pl. 18 g) is structurally nearer to *nigrovittata* than to *plurilineata* and might possibly be treated as a subspecies, but the chitinized arm of the sacculus, which in the former is longer and less slender than in the latter, is here longer still and there

are other slight differences. Wings more strongly marked than in either of the Indian relatives, particularly the costal spots of the forewing and the postmedian line of the hindwing above and of both wings beneath; postmedian of forewing with the central spot large and with a more oblique course between the 2nd median and submedian. W. China, the typical series from Tseku.

**H. (?) angustealata** *Sterneck*, described as a *Collix* and perhaps justifiably, is said to be very similar *angustealata* to "*plurilineata*" (see above) but with a large tuft of raised black scales on the discocellulars of the forewing. Palpus moderately long. Wings strongly elongate, hindwing with termen strongly truncate and moderately straight, very weakly waved. Forewing yellowish brown, costal margin darkened, postmedian represented only by the dark spot behind the 3rd radial, beyond it with 5 or 6 blackish dashes on each vein. Hindwing predominantly unicolorous grey, cell-dot small, postmedian line and a double subterminal indicated at inner margin. Ta-tsien-lu. 2 ♂♂.

**H. genuflexa** *Prout* (38 a) belongs to a large group of glossy forms and with rather long palpus, chiefly *genuflexa* from New Guinea, to which little attention has yet been given. Perhaps a few of the species are polymorphic and have given rise to the belief that there are more species than is actually the case; but, for the most part, they seem to be well definable and in any case worthy of names. *genuflexa* is similar at first glance to large *brunneata* but has a characteristic antemedian line, fairly direct as far as the fold, then suddenly bent strongly inward; postmedian with a conspicuous black mark between the radials, followed distally by a white and then by a tawny one. Collar ferruginous; a longitudinal ferruginous dash on the prothorax. Mount Goliath, which is remarkably rich in this group.

**H. murudensis** *Prout* (38 a). Evidently closely related to *genuflexa* and *brunneata*, not likely to be mis- *murudensis* taken for anything else yet known from Borneo. The unique type, a ♂, was discovered by MJÖBERG on Mount Murud, Sarawak.

**H. brunneata** *Warr.* (38 a). Scarcely variable. Markings on the whole not very strong, the subbasal *brunneata* characteristic, oblique outward and generally thickened in its costal half, then rather sharply inbent; an oblique wedge-shaped dark mark from the hindmarginal end of the antemedian looks almost like a resumption of the darkened part of the subbasal. Angabunga River (the type) and Mount Goliath.

**H. leucotmeta** *Prout* (38 a) is distinct from *brunneata* in the less irregular subbasal patch, regularly *leucotmeta* curved antemedian line, more fuscous band, with a white patch in its centre, and other details. Mount Goliath.

**H. notata** *Rothsch.* (38 a). More variegated and more variable, always some tawny shading outside the *notata* median band. Best characterized by the strong angulation of the antemedian line about the fold (shared only by *illustris*) and especially by the longitudinal pale median streak. Carstensch Peak, Utakwa River (type) and Mount Goliath.

**H. illustris** *Prout* (38 b). Possibly a form of the preceding, but very distinct in the tawny colouring *illustris* of the greater part of the median band and the absence of the longitudinal pale streak. Mount Goliath. both sexes.

**H. symmetrozona** *Prout* (38 b). On the whole somewhat smaller; band dark, of more equal width and *symmetro-* intensity, the cell-mark not placed in a whitish patch; the warm colour appearing only in ill-defined suffusions *zona* outside the band. Mount Goliath.

**H. chlorodesma** *Meyr.* (= *picta* *Butl.*) (38 b). The position of this very small, glossy species is quite *chlorodesma* doubtful and its smooth, weakly marked hindwing is discrepant among *Horisme*. The aspect is more that of a *Sterrhochaeta*, but the areoles are not exceptionally large, the inner one, indeed, quite small. Palpus nearly 2. Antenna simple. Crests present, but not large. Hindwing with discocellulars slightly variable, 2nd radial about central. Subterminal line of forewing and its proximal dark shading very regular, both interrupted at the veins. Fiji. — ab. **rewaensis** *B.-Bak.* is paler, with the median band darker, but scarcely needs a separate name. *rewaensis*.

**H. albicristata** *Warr.* (38 b). The darkest of the group and relatively a little longer-winged than most; *albicristata* thorax with the posterior crest conspicuously whitened. The ♂ has little or no white in the median band; in the ♀ the anterior half of its central section is clear white, containing the small and slender cell-mark, which is often broken into two minute dots. Angabunga River (type), Biagi and Mount Goliath.

**H. griseata** *Warr.* (38 b). Only the type is known, a ♀ from Angabunga River, but it is manifestly *griseata* distinct. More uniformly ashen than any of the grey *Horisme* which follow, the subbasal and especially the antemedian more regular, the postmedian with the prong behind the 3rd radial less acute than in *contaminata*, the one behind the 1st median more nearly equal to it.

- contaminata*. **H. contaminata** Warr. (38 b). Basal patch sharply darkened in its distal part only; antemedian line strongly bent near costa, postmedian with strong central prong; a rather large grey (proximally brown) subterminal cloud before the middle. The median band in the type form is predominantly whitish, only dark-marked at the costal and posterior ends of the antemedian and (usually less strongly) at parts of the postmedian. — ab. **completa** Warr. has the entire median band infuscated. — ab. **semipleta** nov., a ♂ from Mount Goliath, has the distal half of the band blackish from the central angle to the hindmargin. The other forms were described from Angabunga River and have the same range as *albicristata*.
- labeculata*. **H. labeculata** Prout (38 b) differs from *rufilunata* in its larger ♀ (30—31 mm), its slightly less white colouring, less heavy and less broadened subbasal band, much less irregular antemedian, rather better defined subterminal, etc. Kinabalu. — **deviaria** subsp. nov. is so similar that it may be provisionally treated as a race. The antemedian line, instead of forming an almost regular curve, is noticeably angled outward behind the subcostal and inward about the fold (though less irregular than in *rufilunata*), the postmedian of both wings on the whole a little more produced centrally, the rusty mark (between postmedian and subterminal shades of forewing) almost obsolete. Papua: Mt. Tufa, 8500 feet, 2 ♂♂, 4 ♀♀; Mondo, 5000 feet, 1 ♂ (Miss L. E. CHEESMAN), type series in the British Museum.
- rufilunata*. **H. rufilunata** Warr. (38 c). From all but the very palest aberrations of *contaminata* readily distinguishable by the cleaner white colour of both wings. Subbasal more strongly bent in cell; antemedian twice angled outward, after the second angulation very oblique inward; postmedian prong somewhat less acute; the mark just outside it brighter, almost rufous, only accompanied at the subterminal by weak grey clouding. Angabunga River (type), Mount Tafa and Mount Goliath.
- lichenosa*. **H. lichenosa** Warr. (38 c). Very near *rufilunata*, possibly a colour-form of it, with a delicate green suffusion over the forewing and a stronger dark border to the hindwing. Median band traversed by more distinct wavy lines. Angabunga River (type), Biagi, Mount Tafa and Mount Goliath.
- disrupta*. **H. disrupta** Warr. (38 c). Colouring nearly as in *lichenosa*, yet it is a very distinct species. Forewing with cell-spot large, the principal lines broadly, but interruptedly, marked with black; subbasal more angular, antemedian much less so, postmedian with a V-shaped anterior projection. — ♀-ab. **nebulata** nov. Black markings still broader, on a less greenish white ground; the area on each side of the median band heavily clouded with dark grey. As this specimen, a large ♀ from Angabunga River, was the only ♀ obtained from the type locality, WARREN naturally supposed that this was the normal allotype and so described it. I have before me, however, a ♀ from the Kratke Mountains which agrees absolutely in size and markings with the ♂, though its ground-colour is slightly less greenish. *disrupta* is distributed in the mountains of New Guinea.
- aeololis*. **H. aeololis** Prout (38 c). Variegated; in shape of proximal markings and size of cell-spot intermediate between the two preceding species; postmedian with a subcostal indentation, then almost straight to the point of the central projection; a blackish subterminal shade from costa to 3rd radial, containing a light blue-grey spot. Mount Goliath, common.
- albimedia*. **H. albimedia** Warr. (38 c). Large and absolutely unmistakable, by the shape of its blackish markings and its continuous dark slaty outer shade. Angabunga River. In the type form the median band is white. — ab. **brunneotincta** Warr. Median band, except at costa, bright brown, a projection of this colour running inward to the basal patch between the fold and 2nd submedian.
- caliginosa*. **H. caliginosa** Warr. (38 c). Much darker than the preceding group and less glossy, the palpus shortish. Moreover the areole is simple and probably some better position will be found for it when it is more thoroughly studied; perhaps a larger and differently shaped *Parazoma*. Biagi. A ♂ from Mount Goliath with a large part of the median area lighter brown, but not in very fresh condition, probably represents a race.

86. Genus: **Parazoma** Prout.

Palpus rather long. Antenna in the ♂ minutely ciliated. Thorax with posterior crest. Forewing with nearly the shape and pattern of a *Perizoma*, but with the areole undivided, very large. Hindwing moderately ample, discocellulars slightly or scarcely biangulate, 2nd radial nearly central. Probably an offshoot of *Horisma*, from which it differs chiefly in the simple areole. Type of the genus: *P. ferox* Prout. Here obviously belongs also *semifusca* Warr. and perhaps the eccentric *hypobasis*; possibly also a few crested species which are still reckoned to *Perizoma*, e. g., *contrastaria* Sterneck.

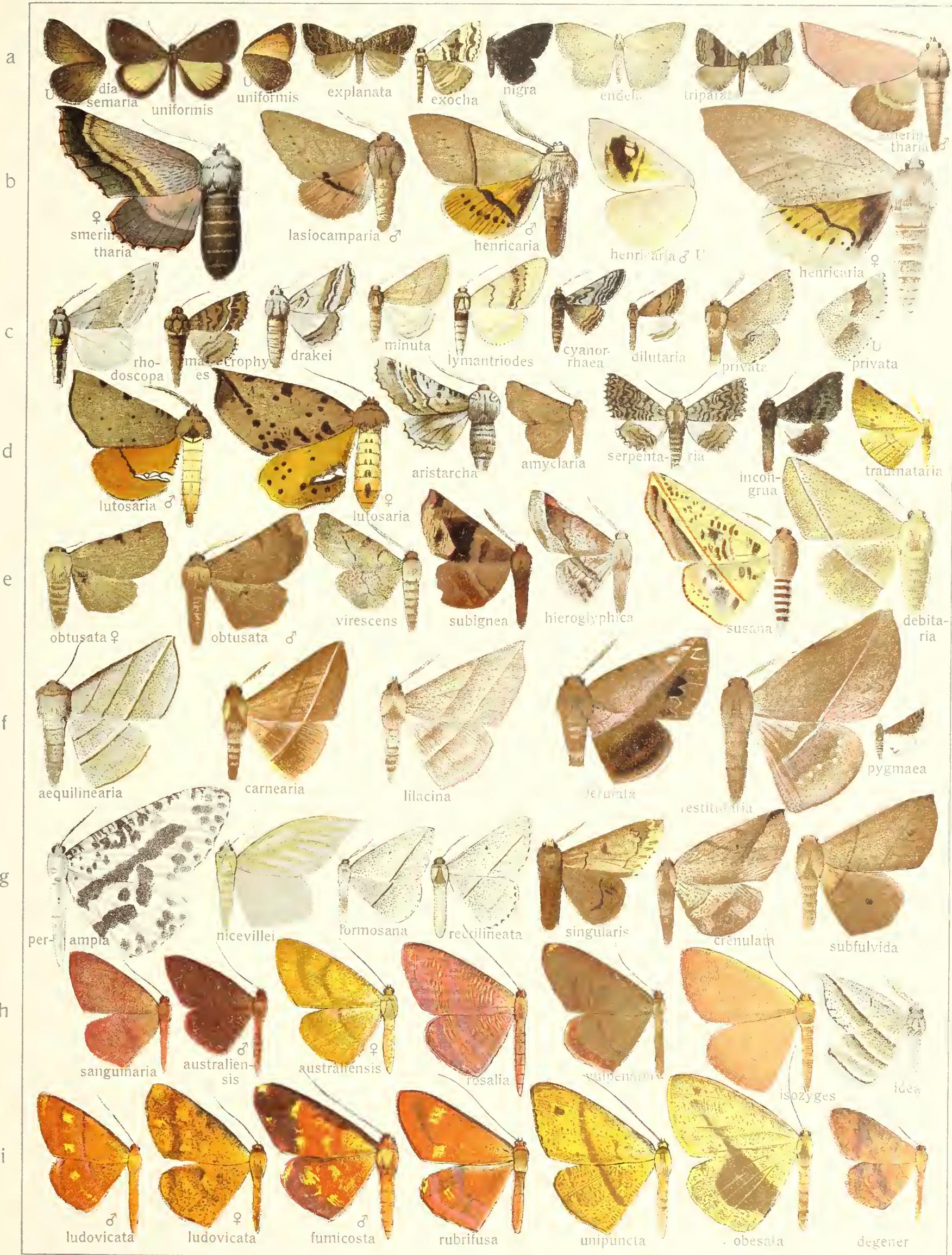
- semifusca*. **P. semifusca** Warr. (38 c). Hindwing with discocellulars not biangulate; in the typical form distinguishable from *ferax* by the dark border of the hindwing; in any case very distinct in the shape of the median band and other characters. Khasis — **swanni** form. n. (38 d) is sharply marked and lacks the dark border of

# DIRCE - CARTHAEA





# DICHROMODES - EUMELEA

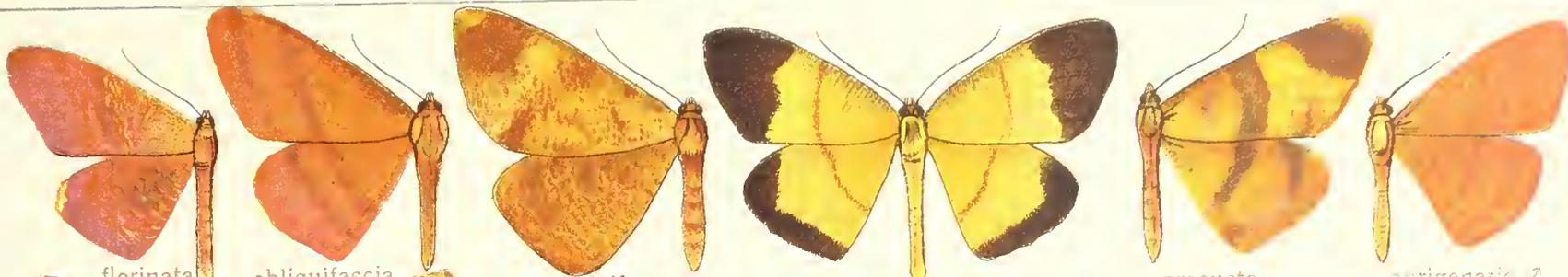




# EUMELEA - CELERENA

XII

a



florinata

obliquifascia

sanguinifusa

genuina

praeusta

aurigenaria ♂

b



unilineata

phlegetonaria

olivacea

hemipteraria ♂

hemipteraria ♀

unilinea

c



achroaria

alectoraria

octomaculata

dentiscripta

rectiscripta

melagonata

lumenaria

infelix

saponaria

d



grises-cens

impedita

microniaria

extersaria

macariata

venusta

perden-sata

ajaja

umbonata

e



papuensis U

papuensis

albifimbria

achloraria

palparia

aurantiata

continuaria

f



helicola

rudis

obliterata

textilis

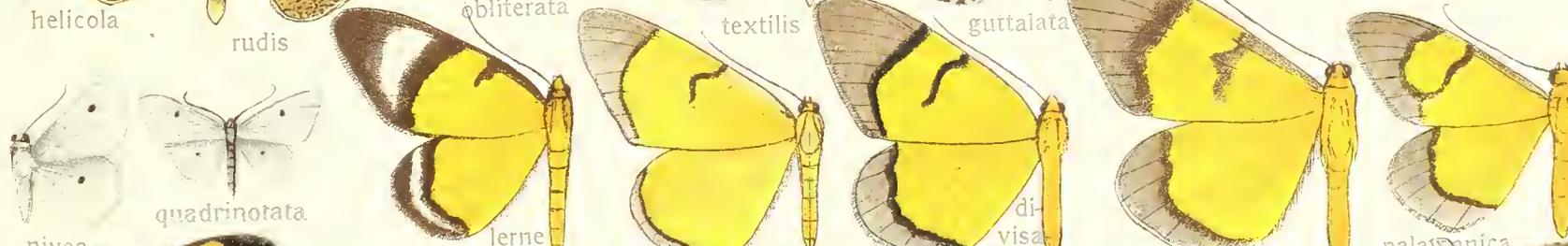
guttalata

atrofasciata

falcipennis

picaria

g



nivea

quadrinotata

lerne

andamana

di-visa

palawanica

h



mutata

semperi

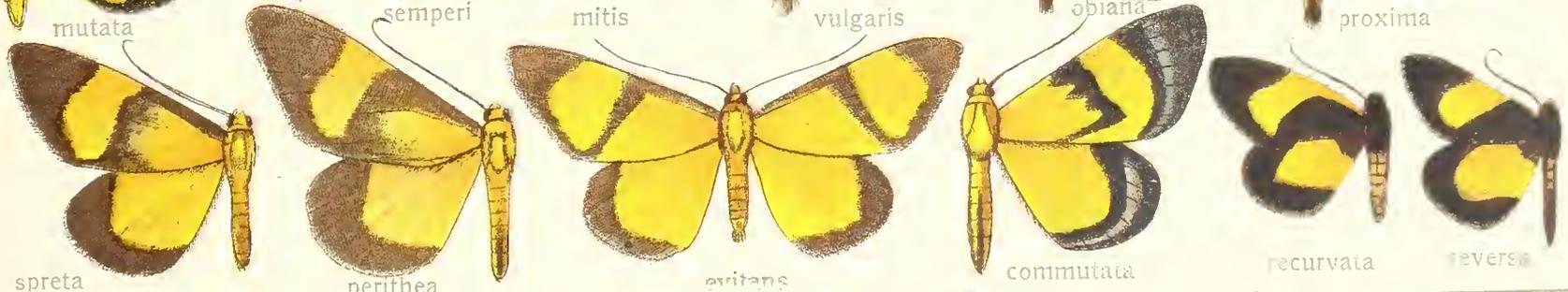
mitis

vulgaris

obiana

proxima

i



spretta

perithea

eritans

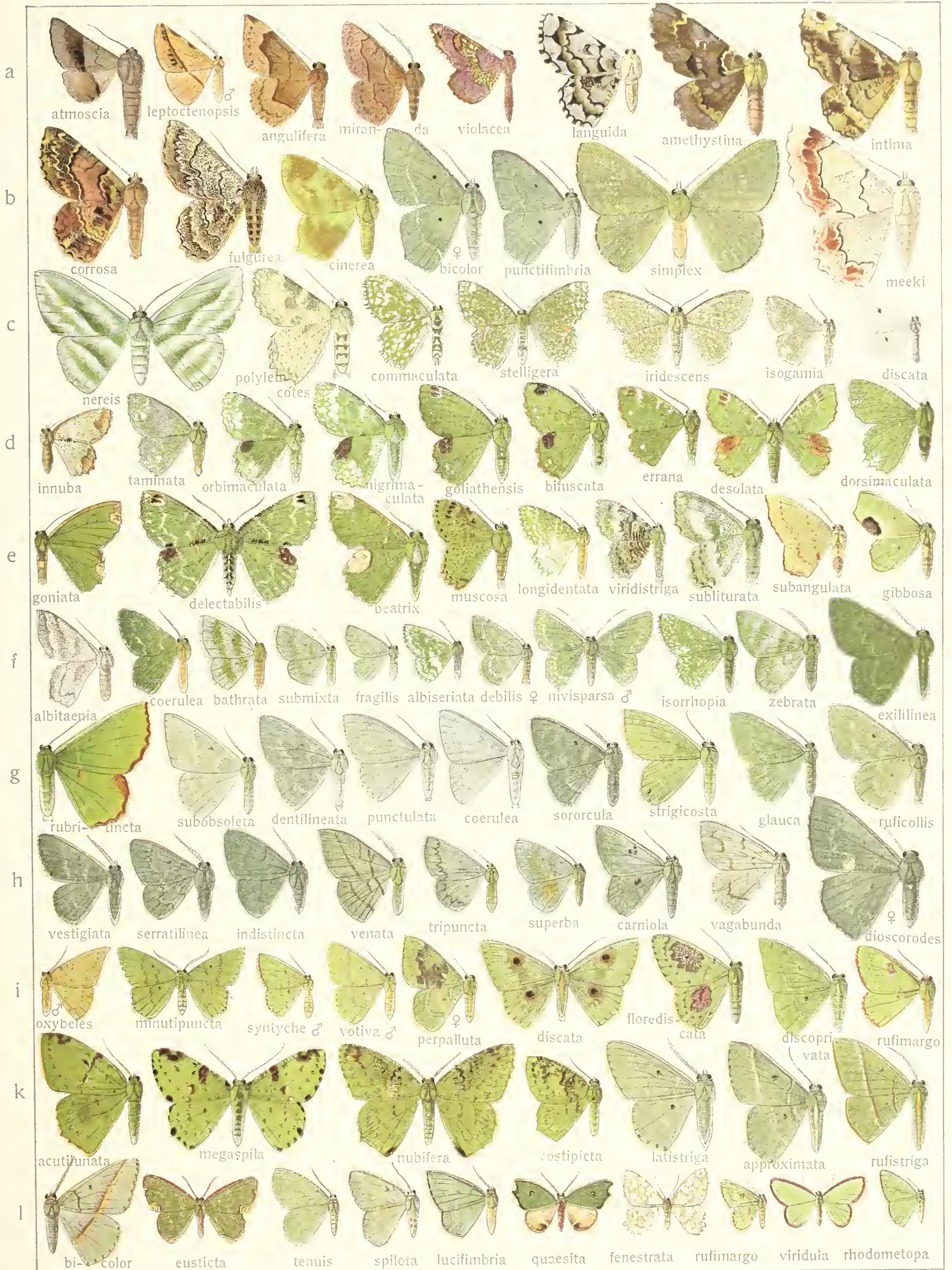
commutata

recurvata

reversa



# HYPOGRAPTA-PYRRHORHACHIS





# EUMELEA-HYPODOXA

XII.





DYSIPHANIA





# DYSPHANIA



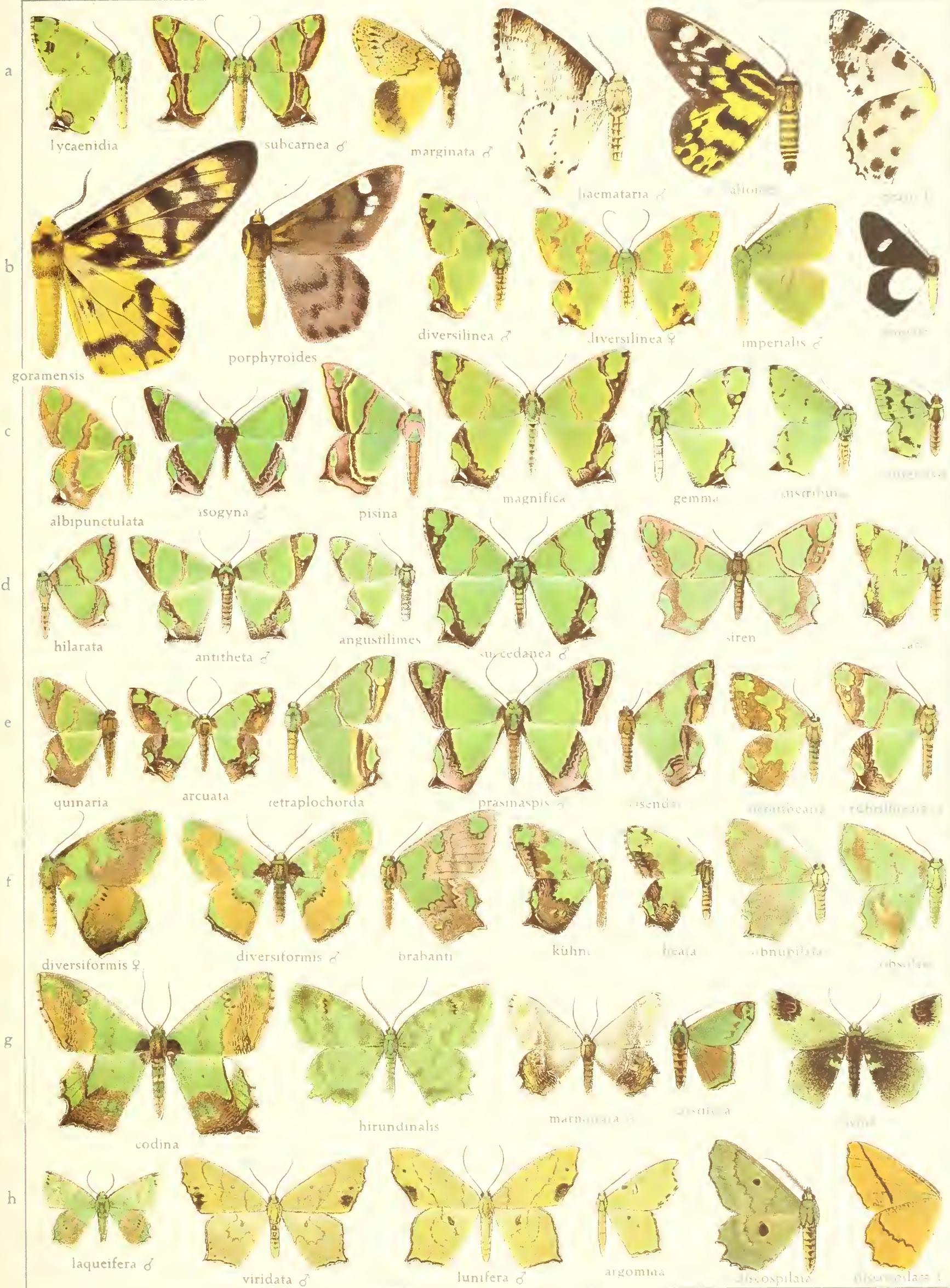


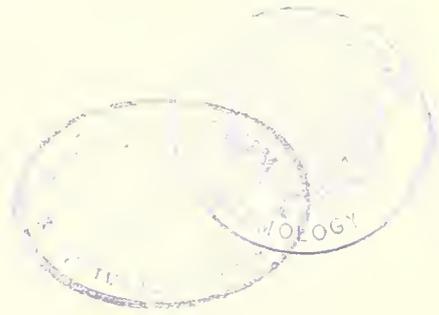
RHUMACINI ESTERPINA

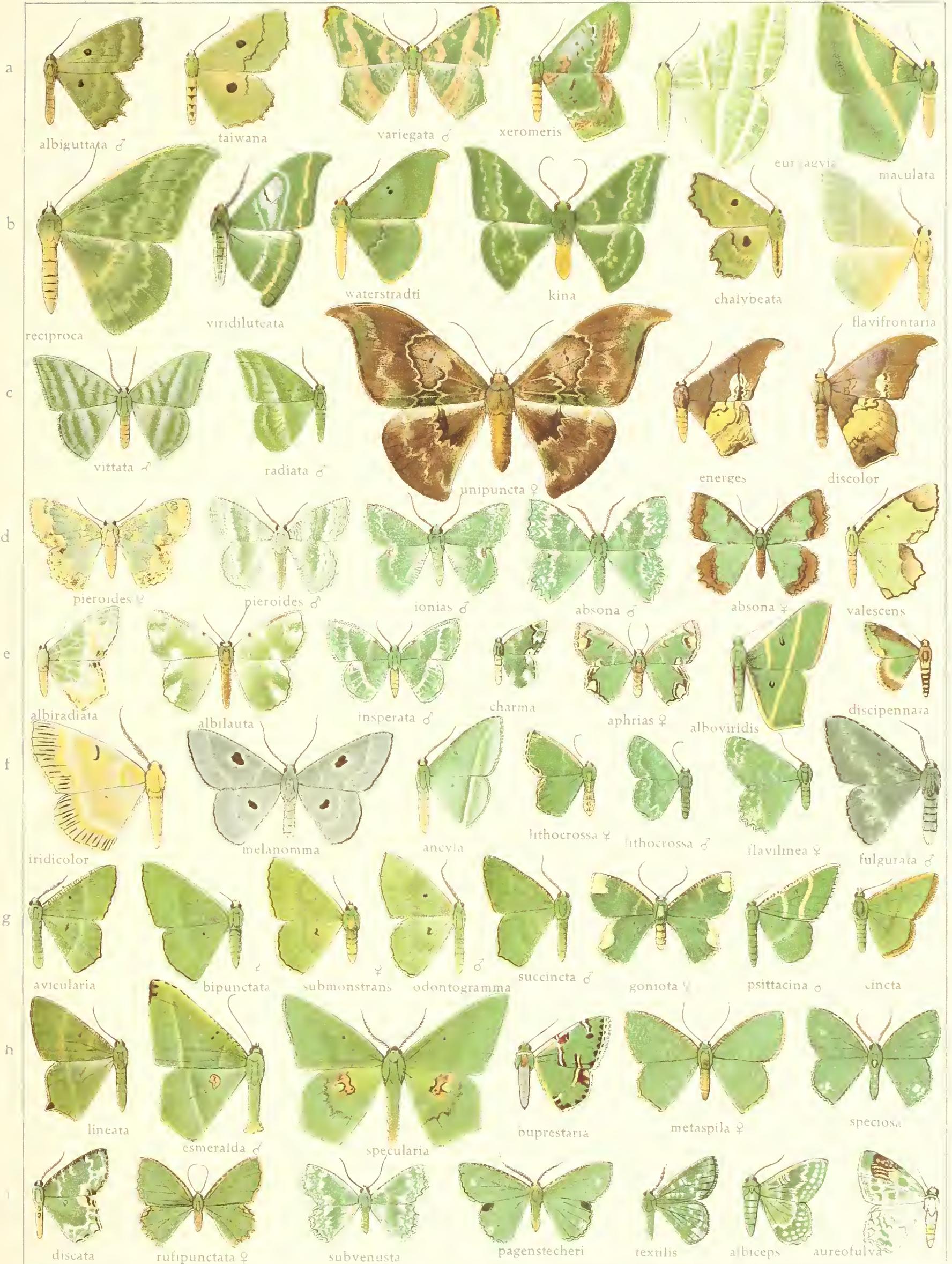




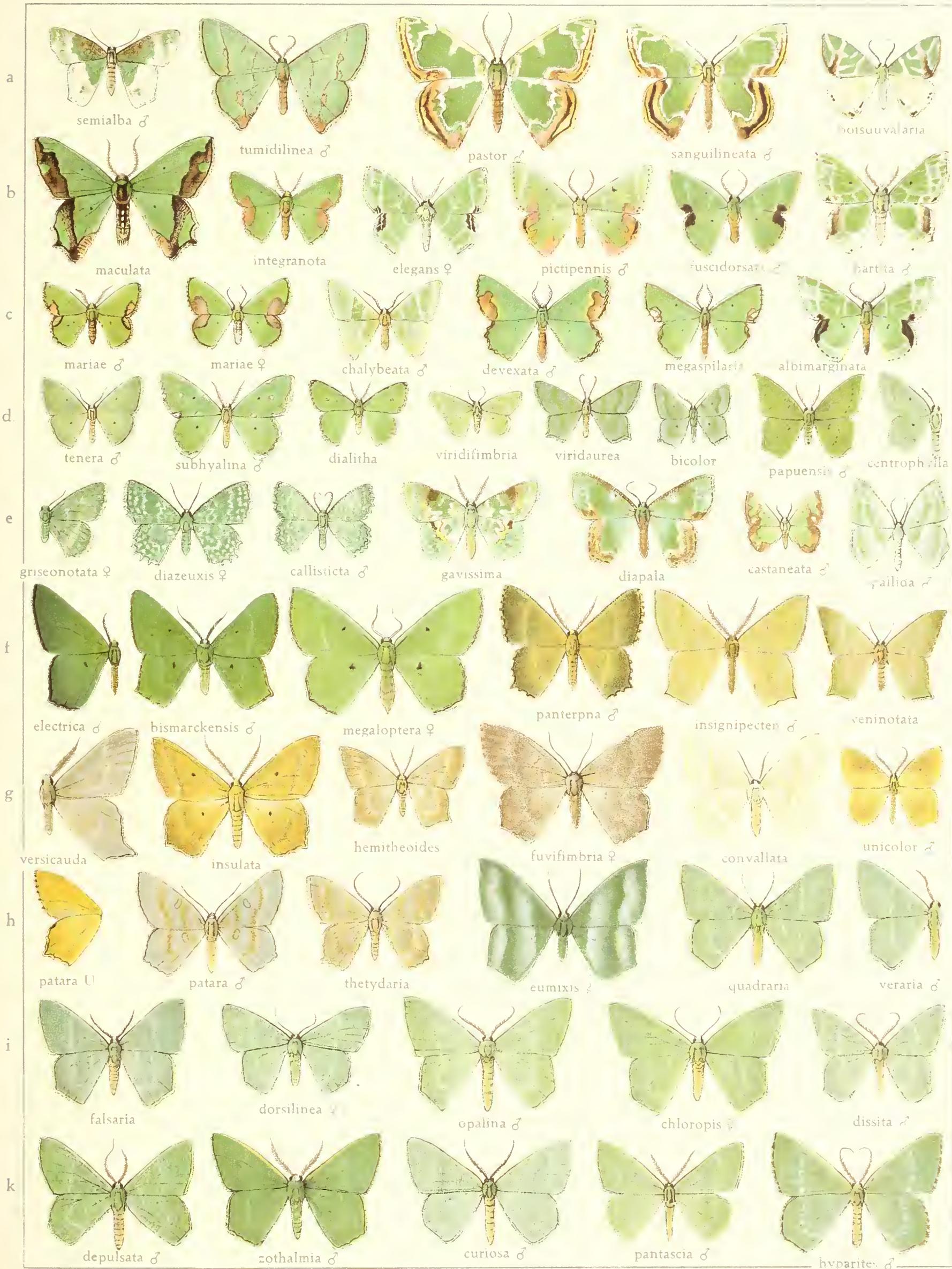
# AGATHIA-CHLORODONTOPERA



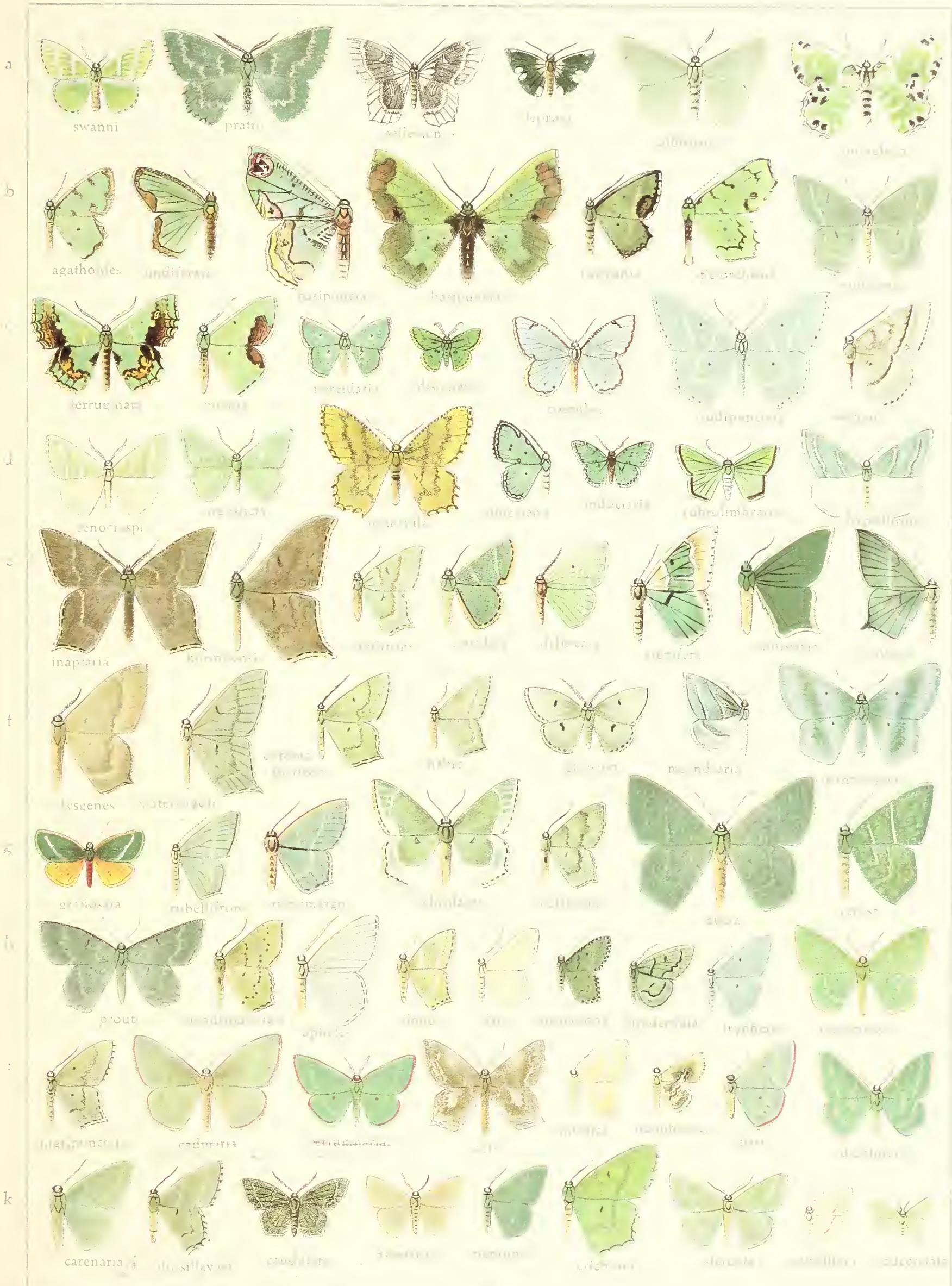




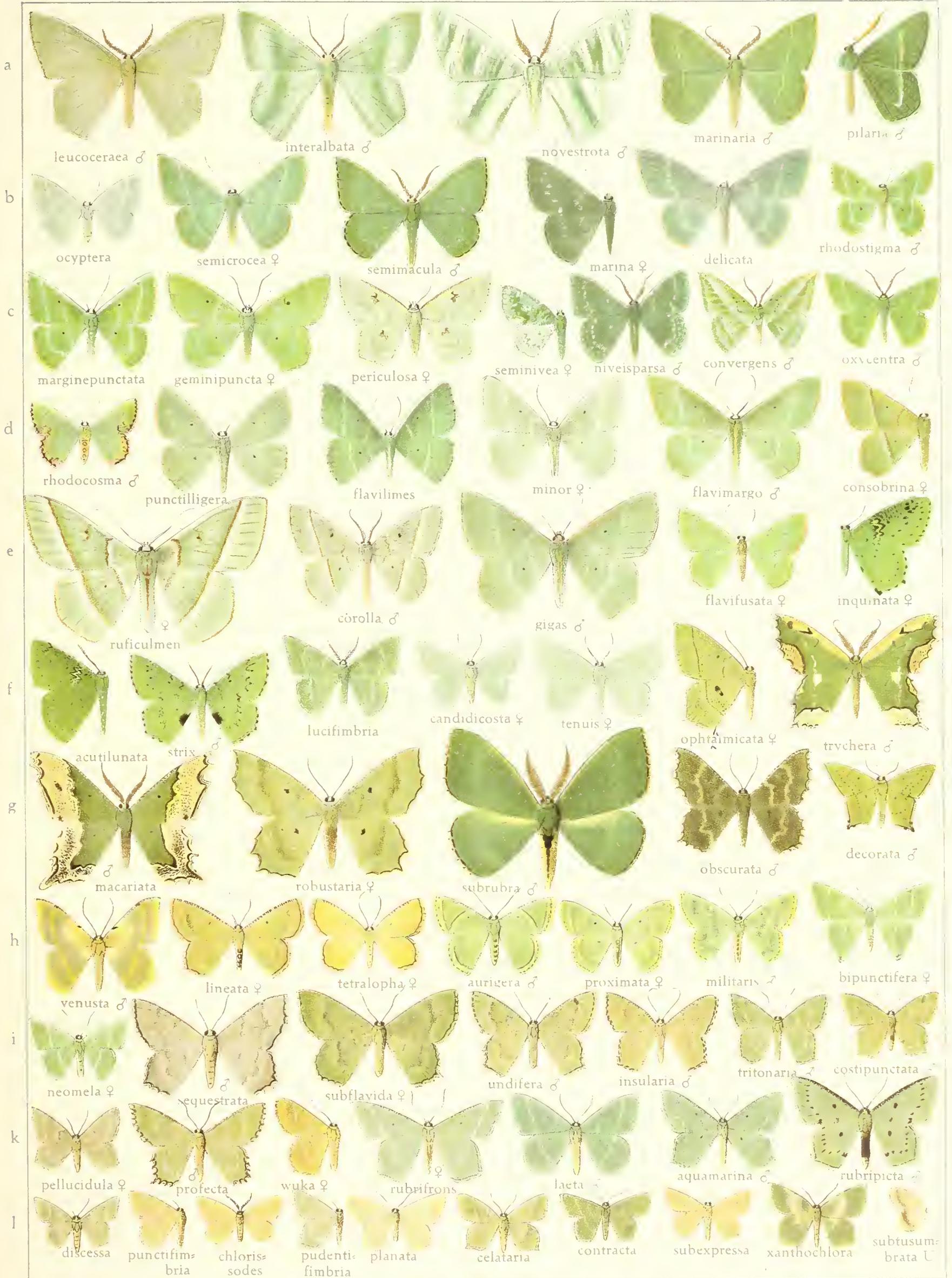






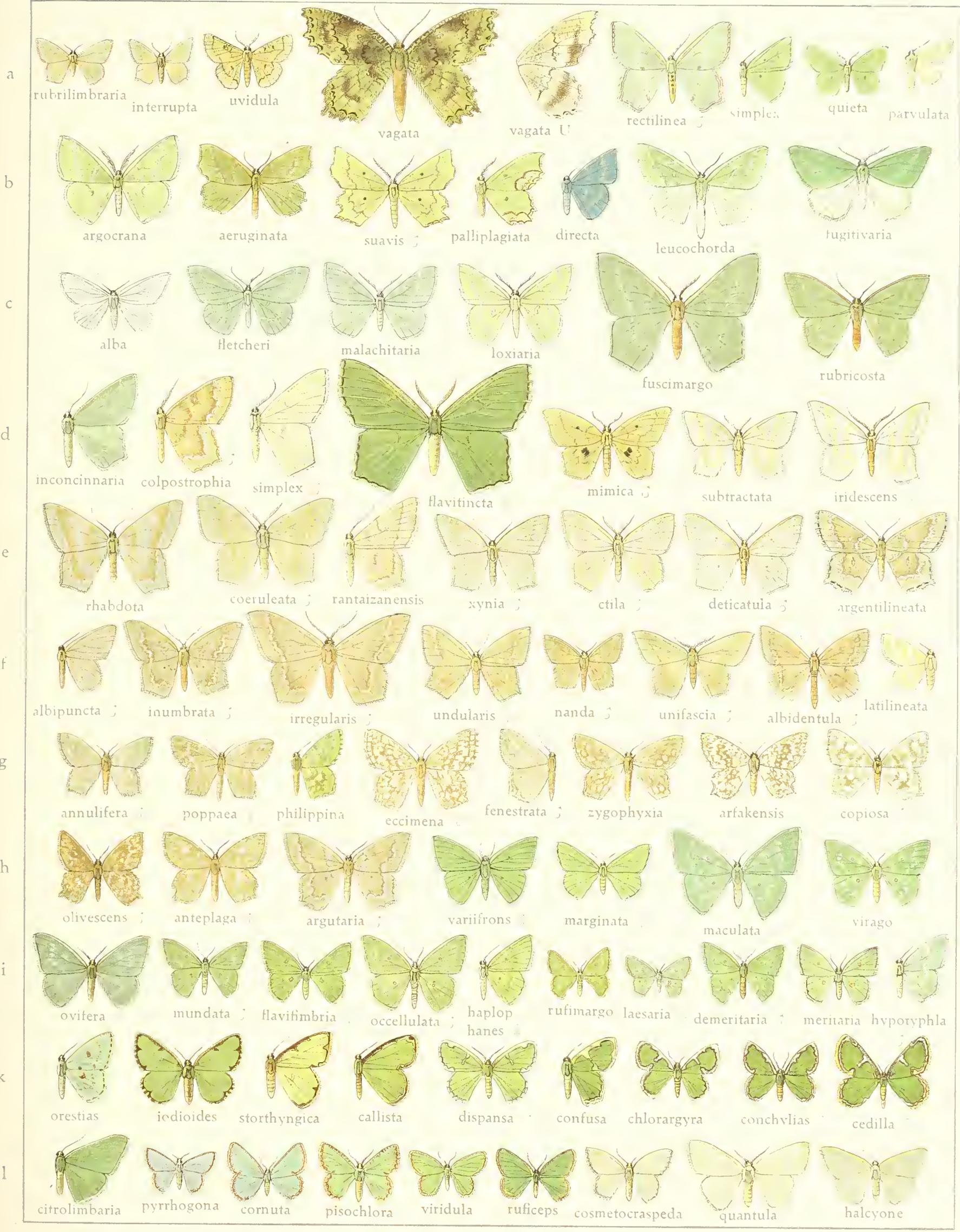






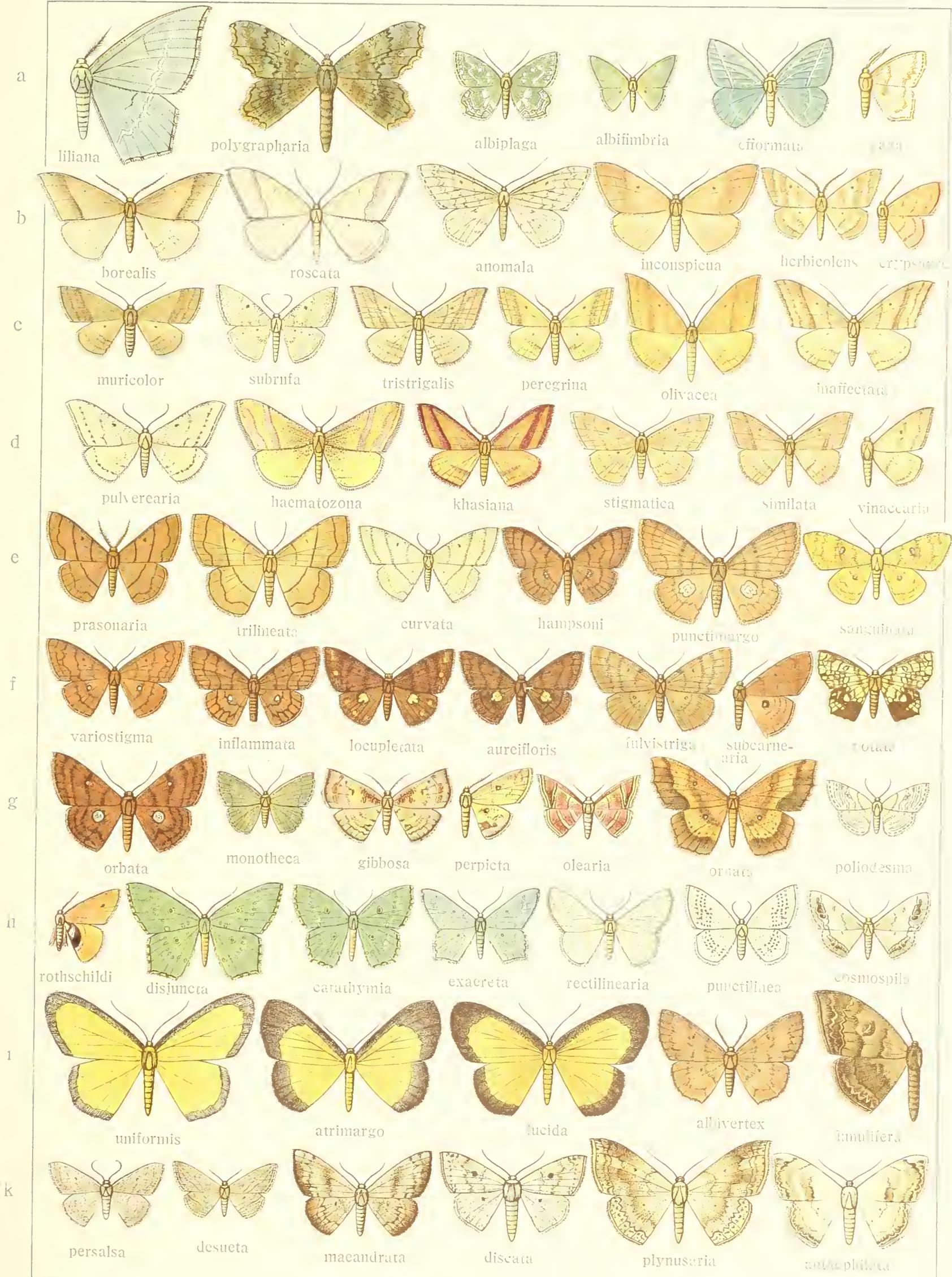


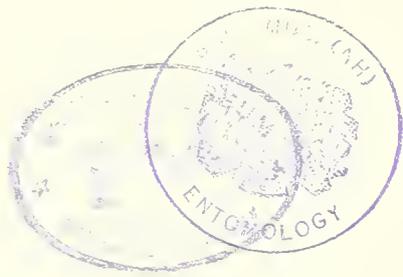
PAMPHLEBIA – CYMATOPLEX





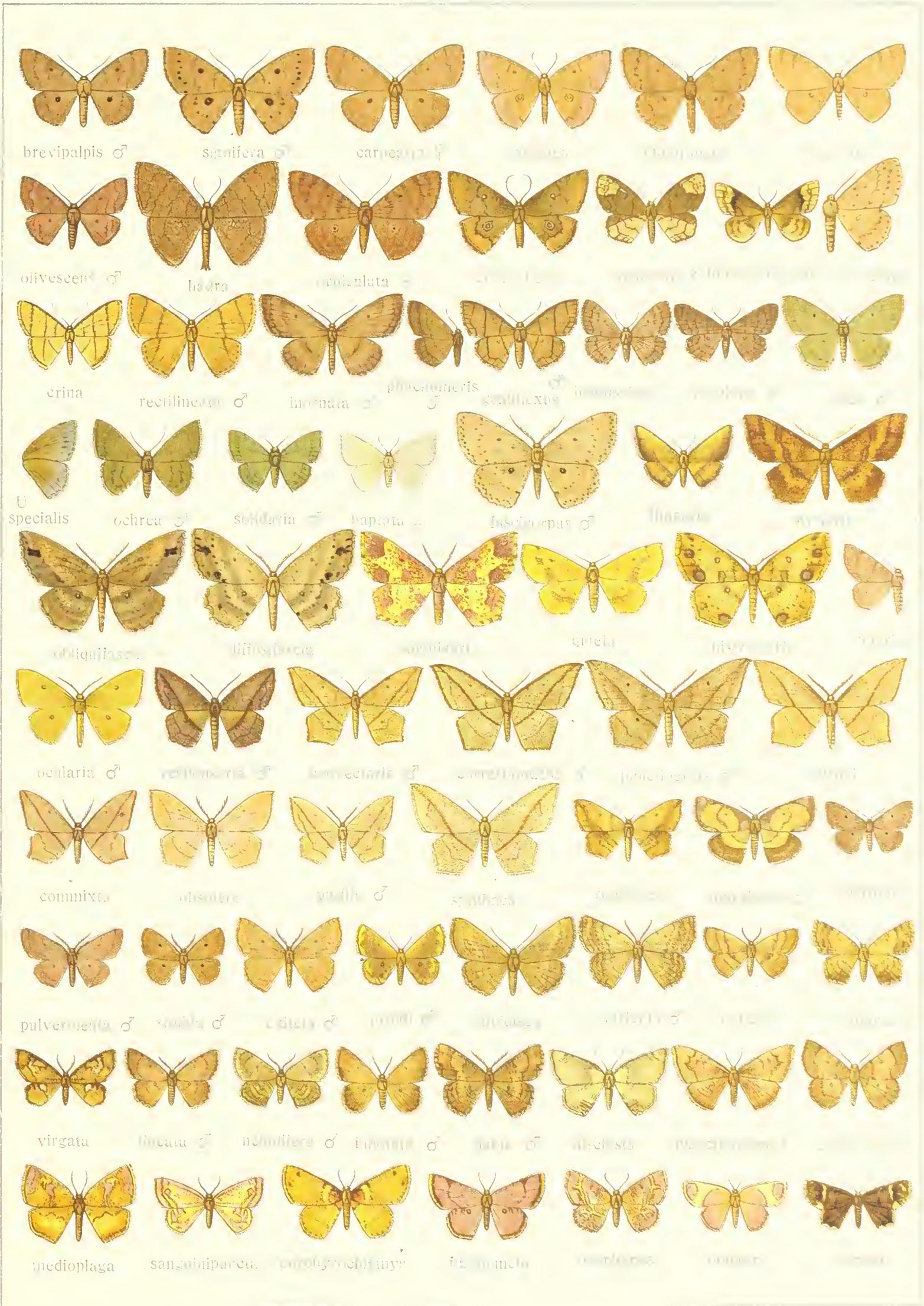
HEMISTOLA-SOMATINA.





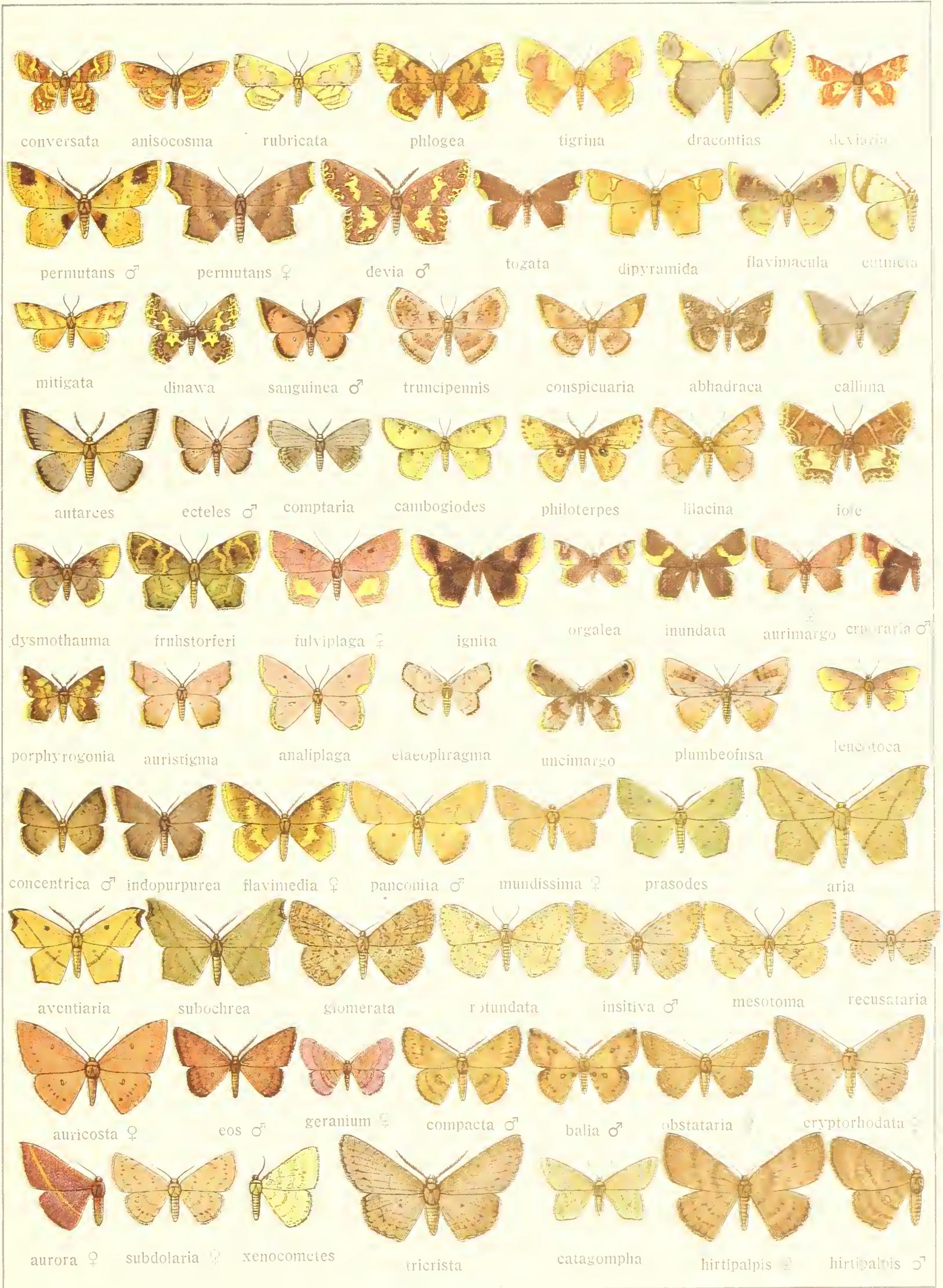
XII.

ORGANOPODA-PTOCHOPHYLE

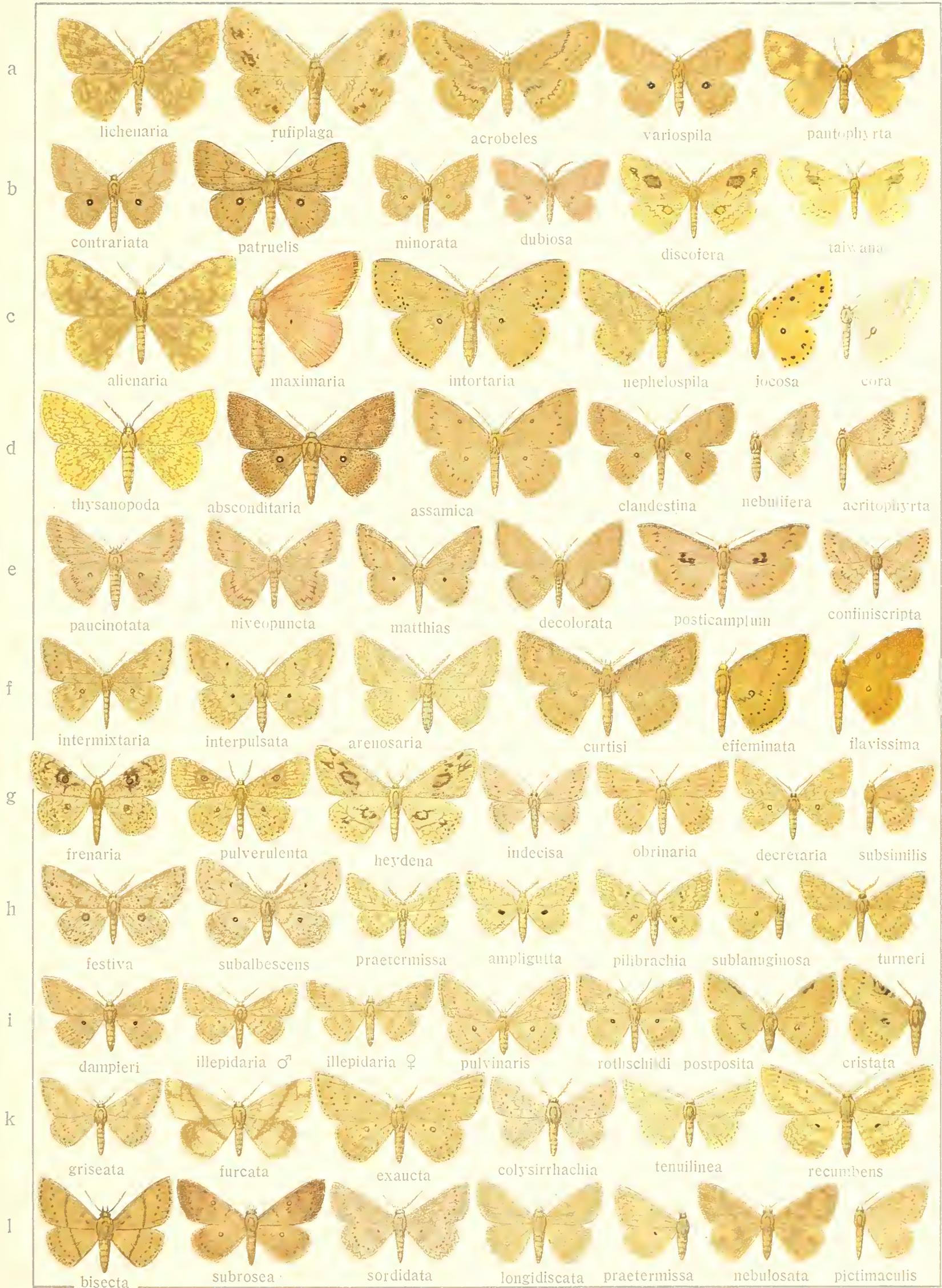




PTOCHOPHYLE-ANISODES.

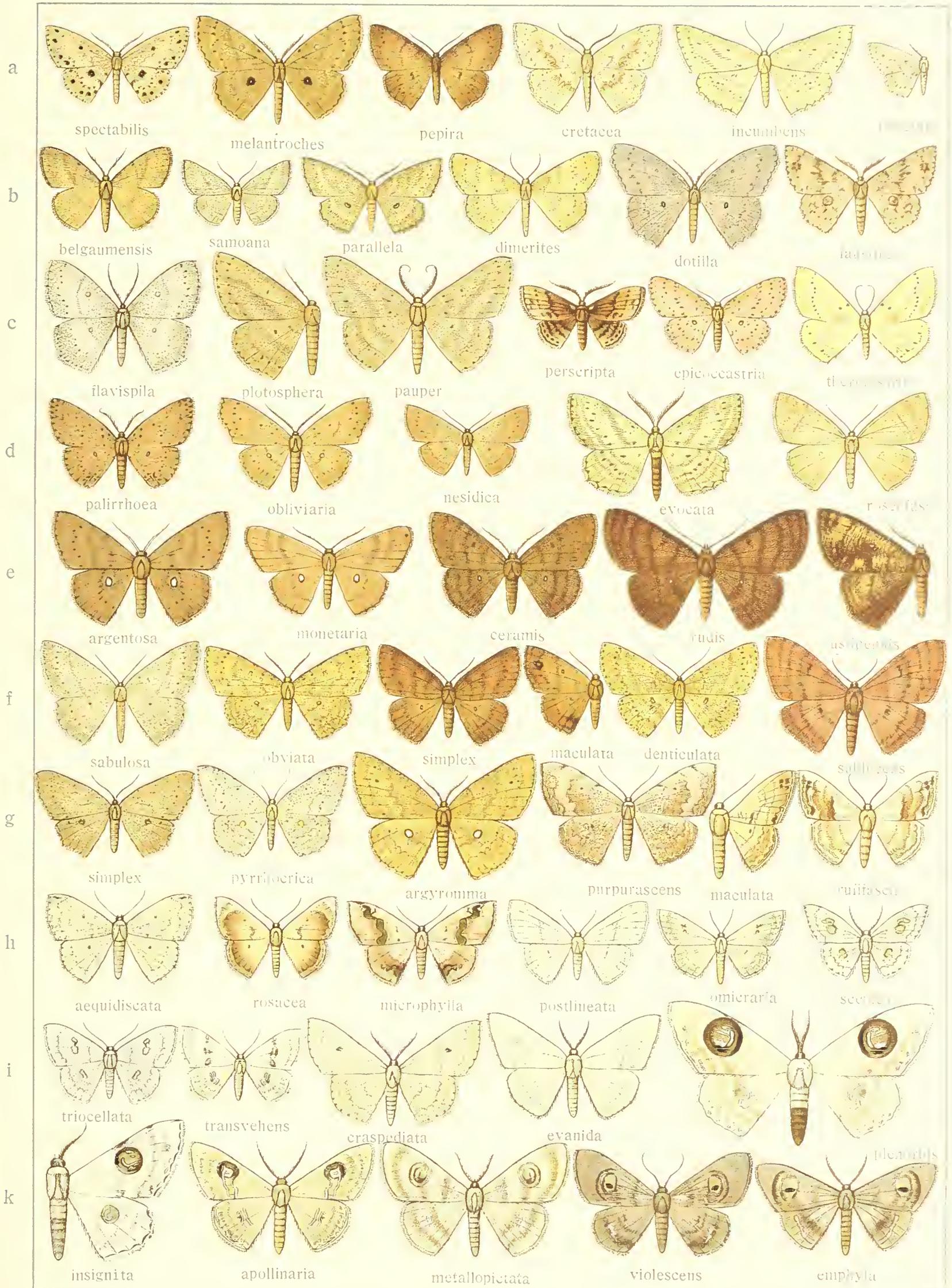




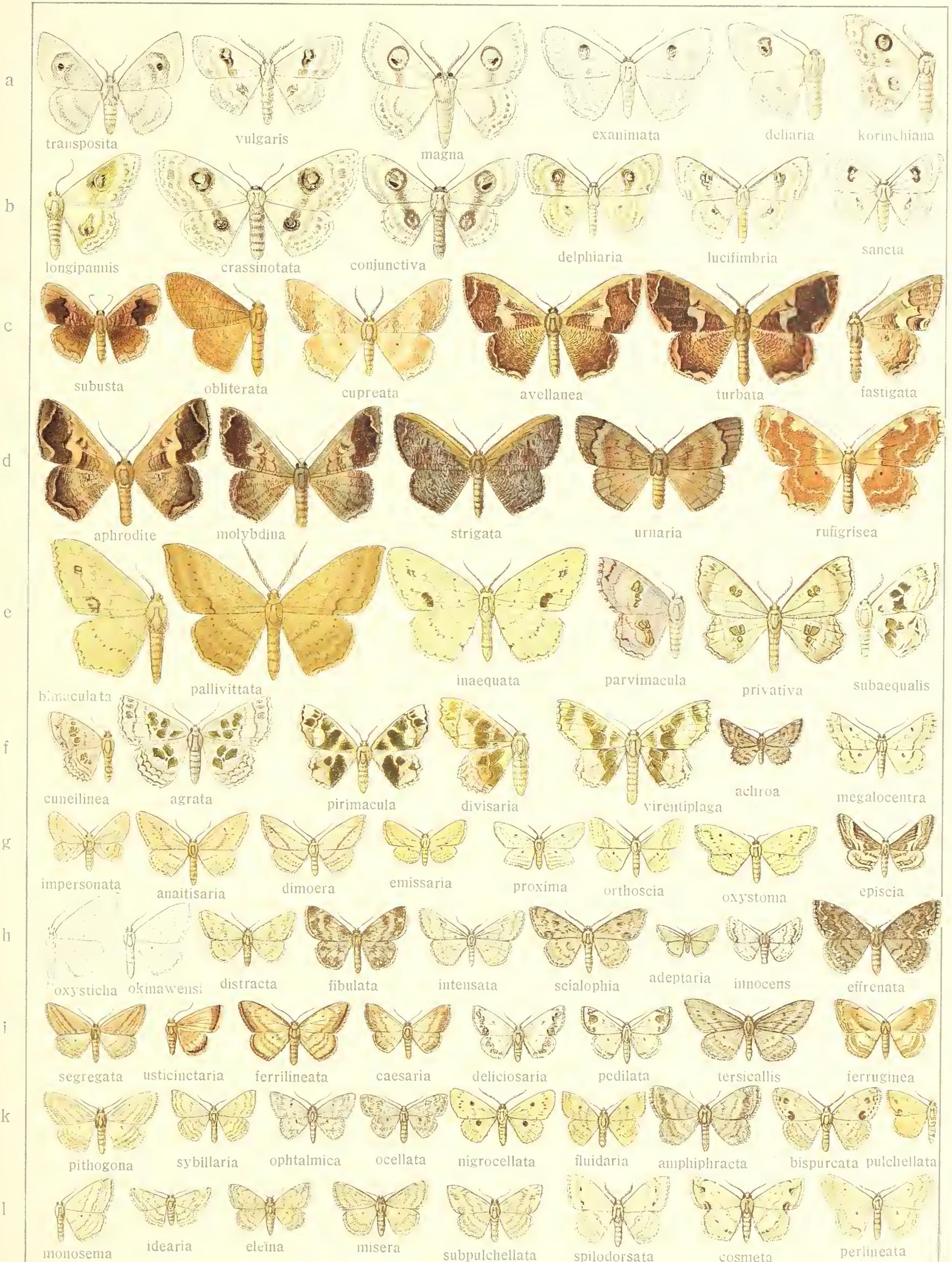




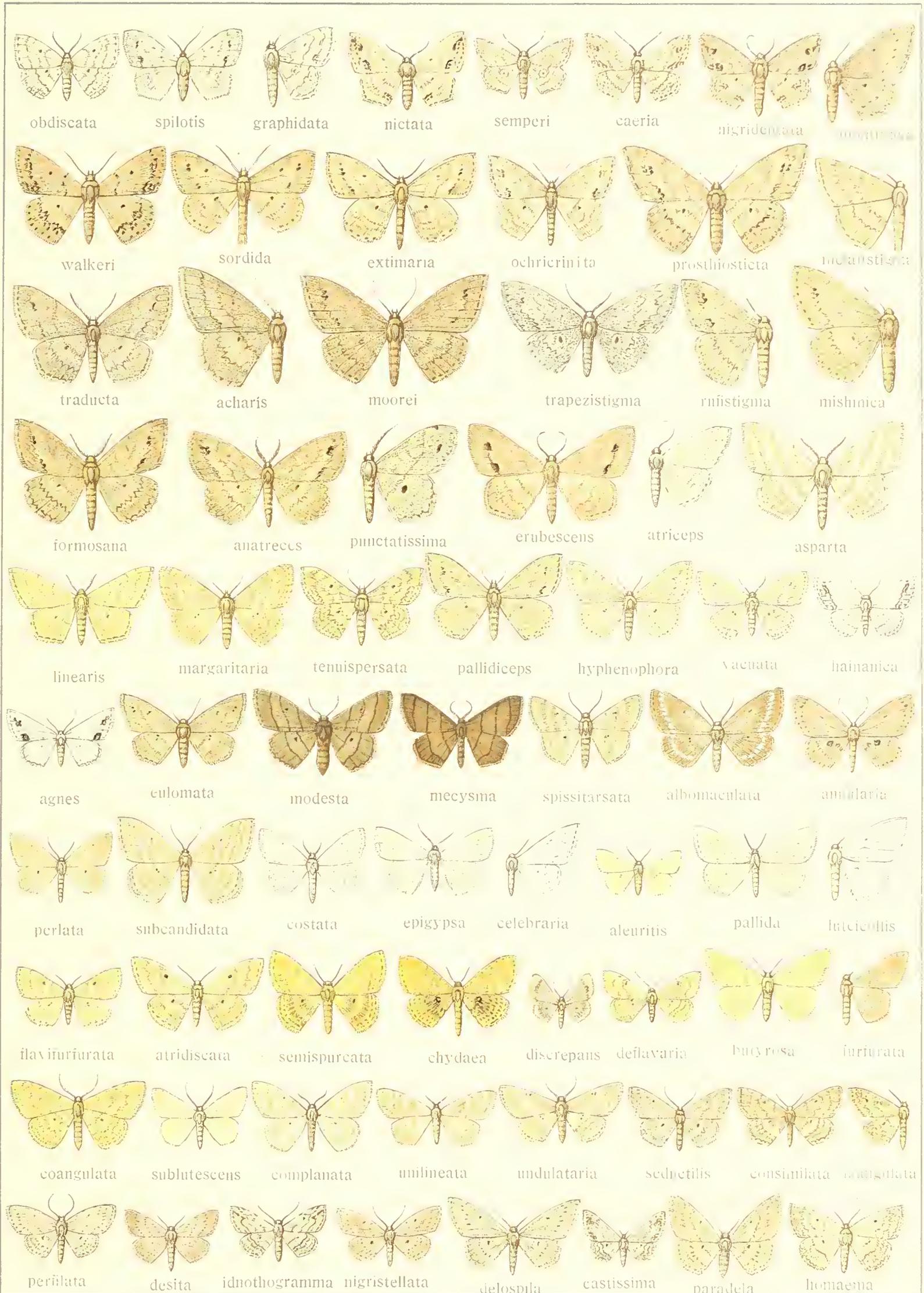
# ANISODES-PROBLEPSIS

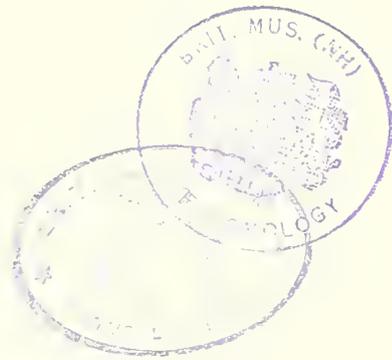


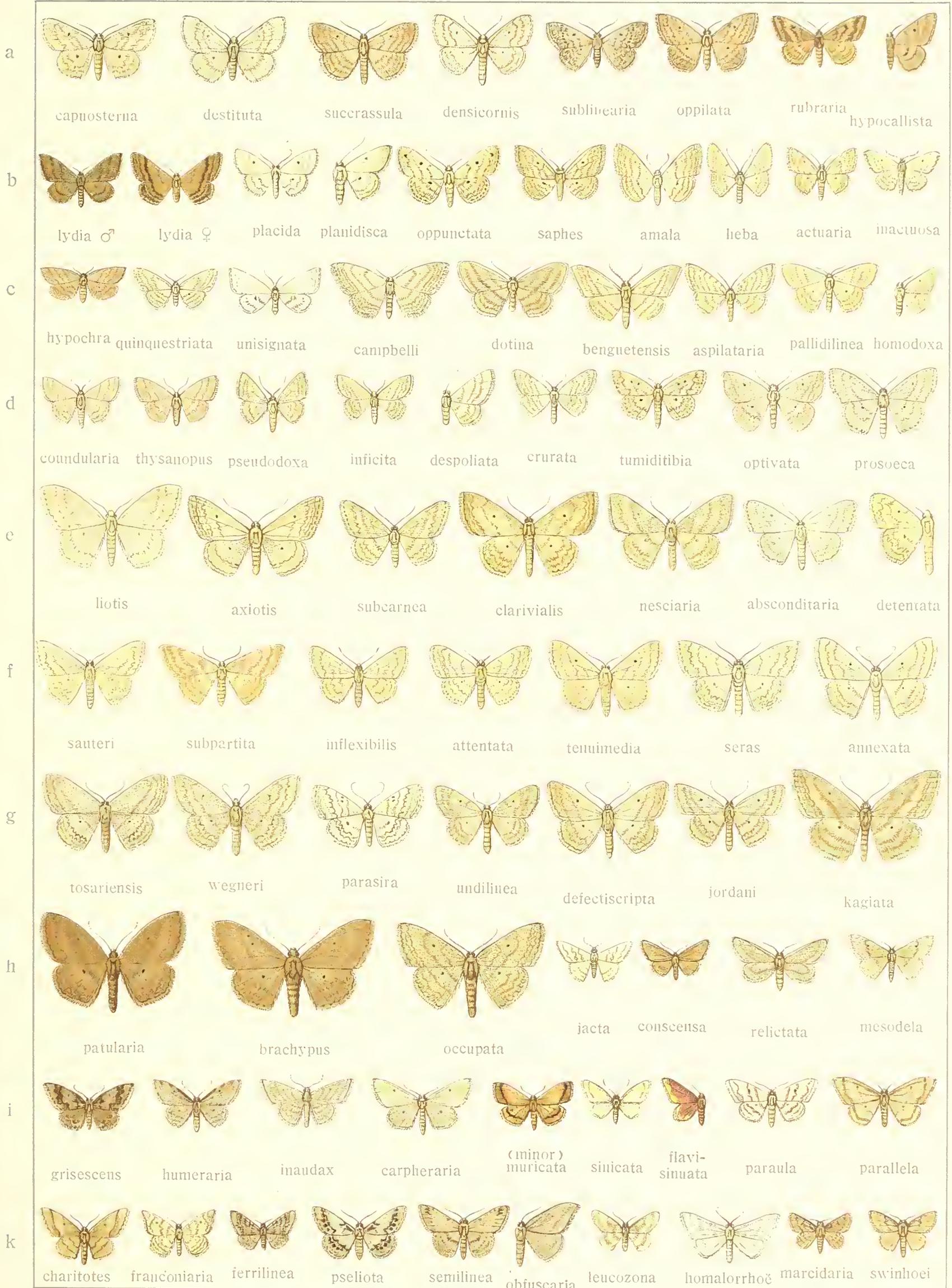




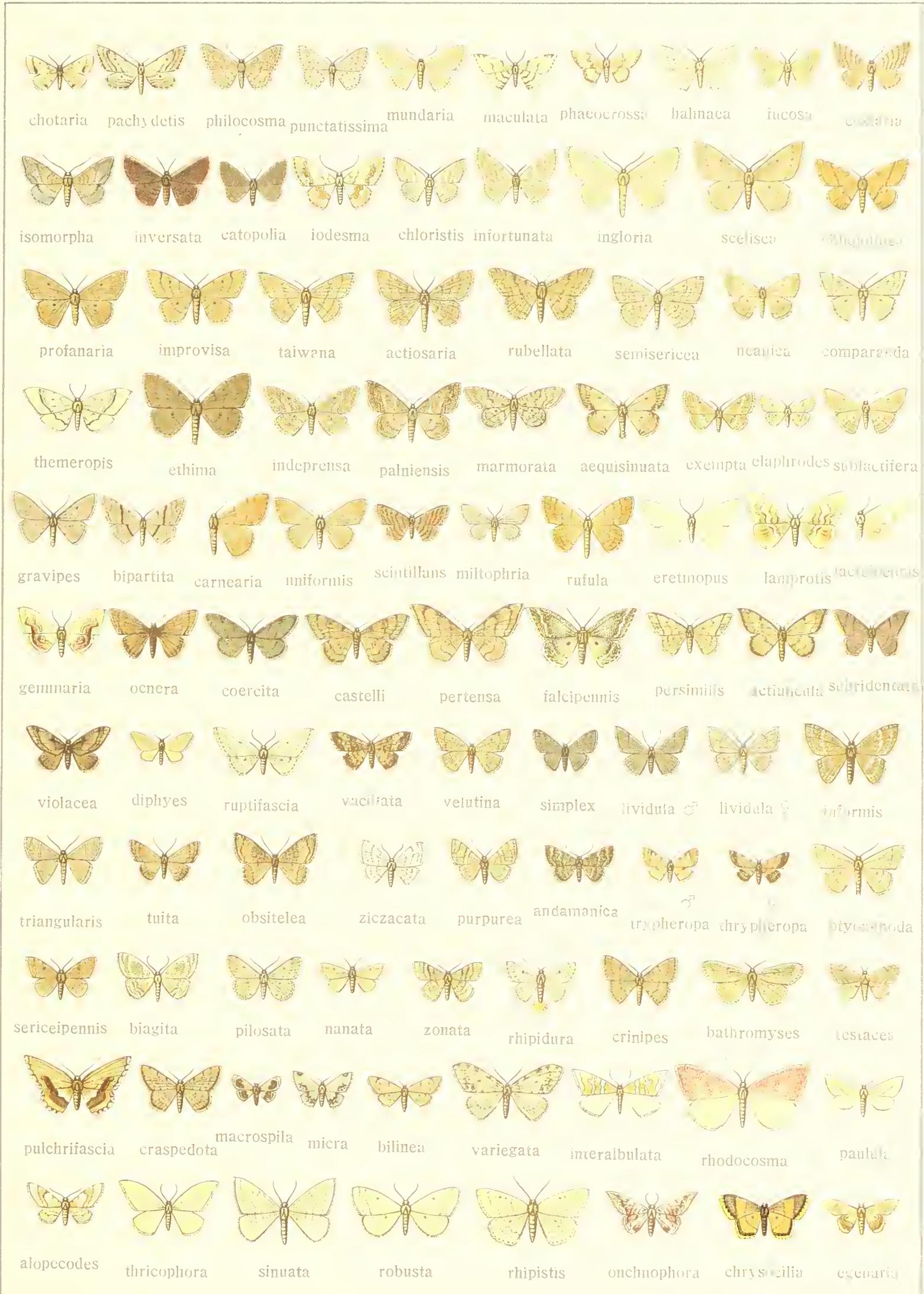


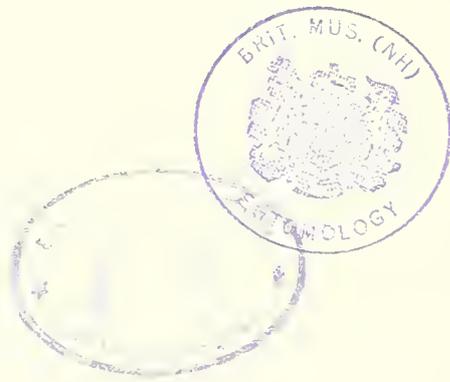


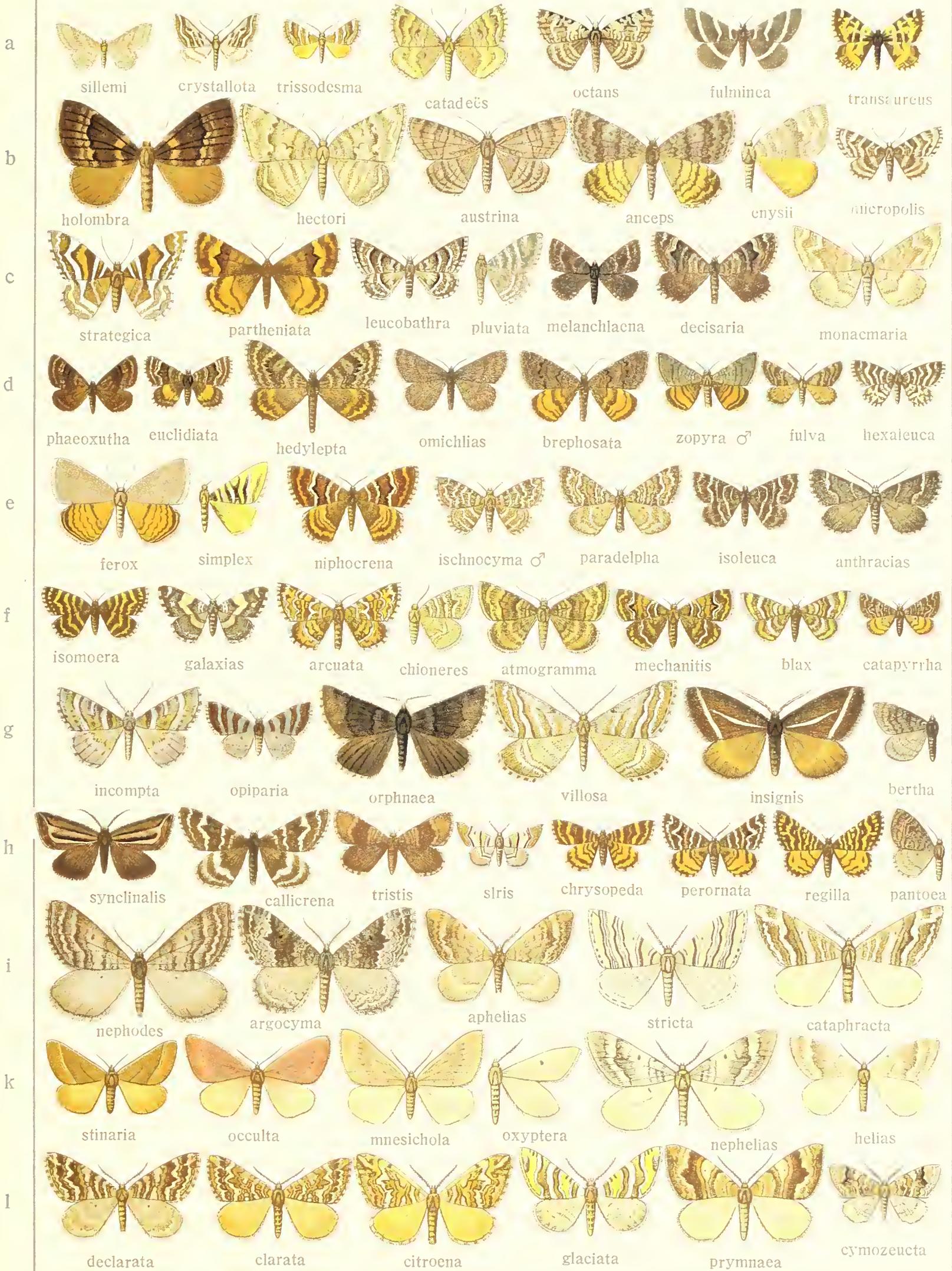




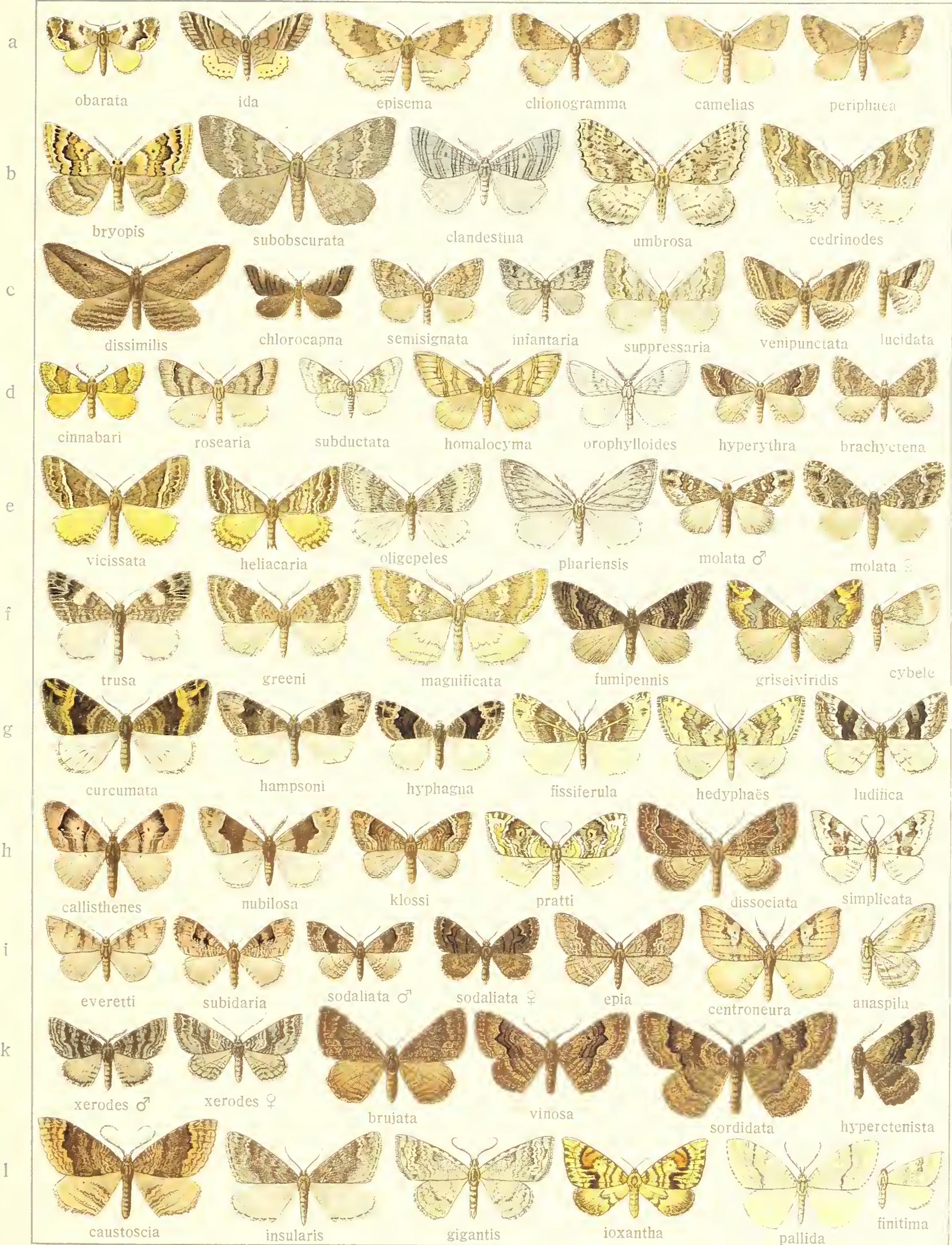




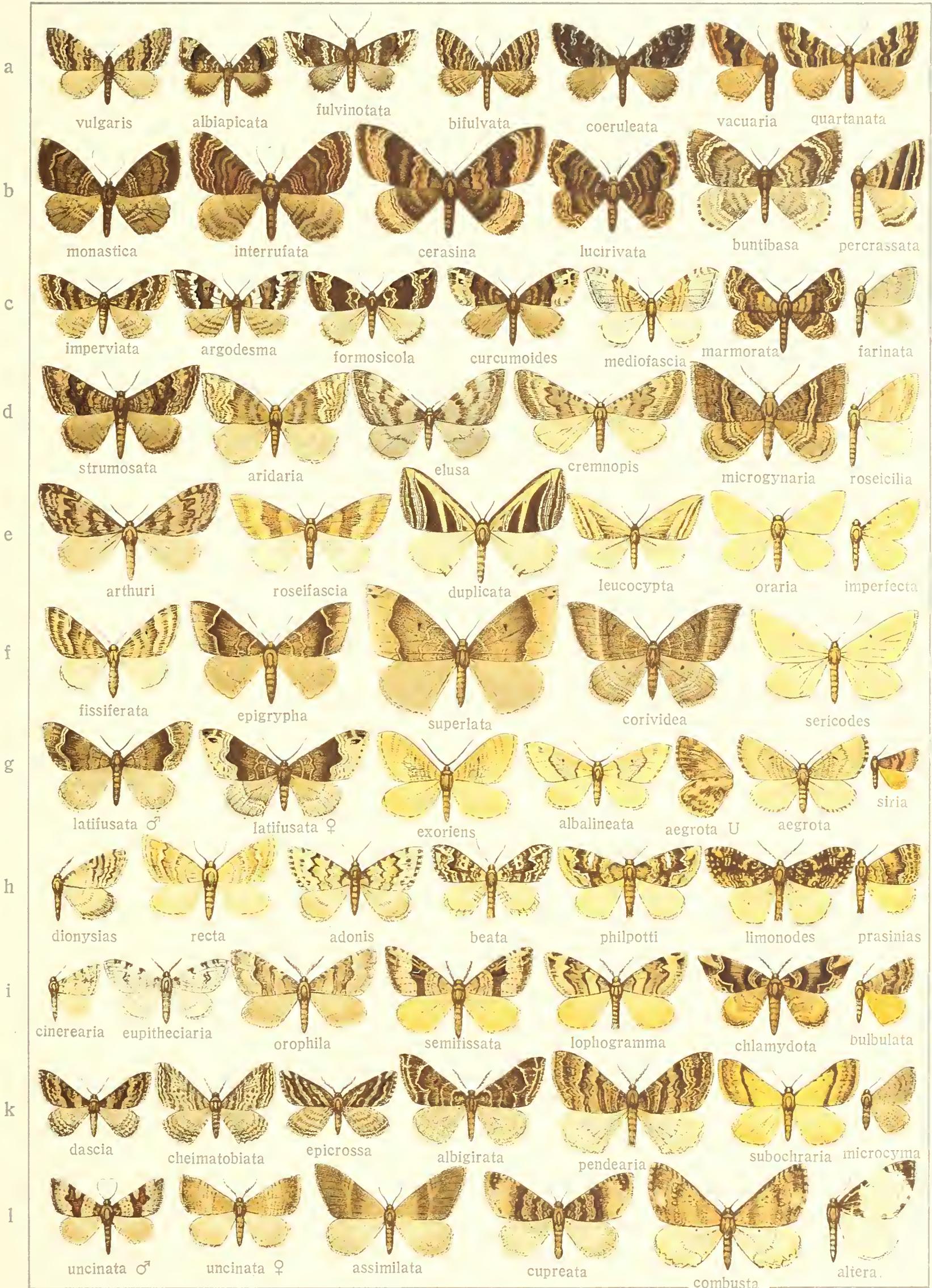








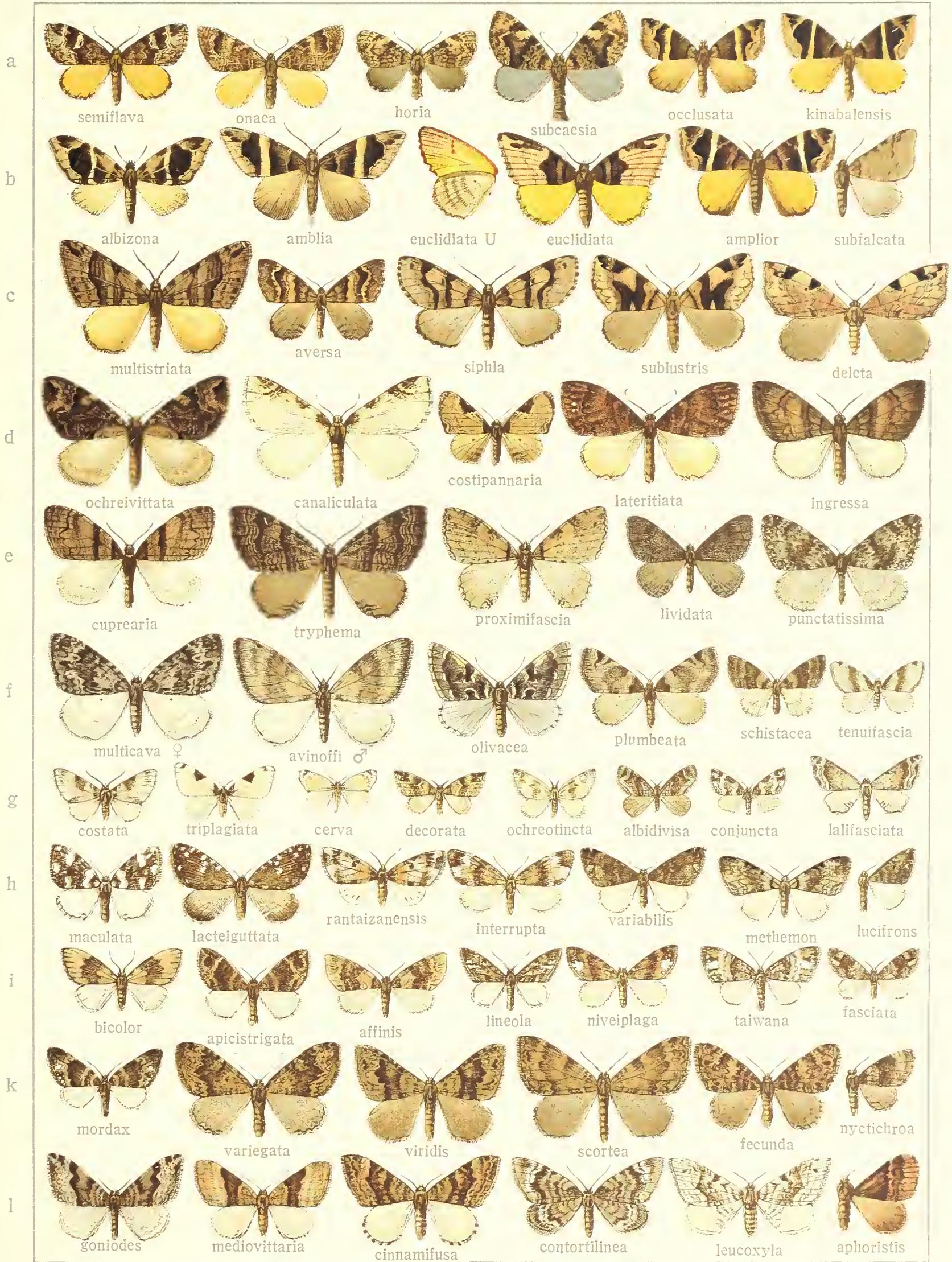




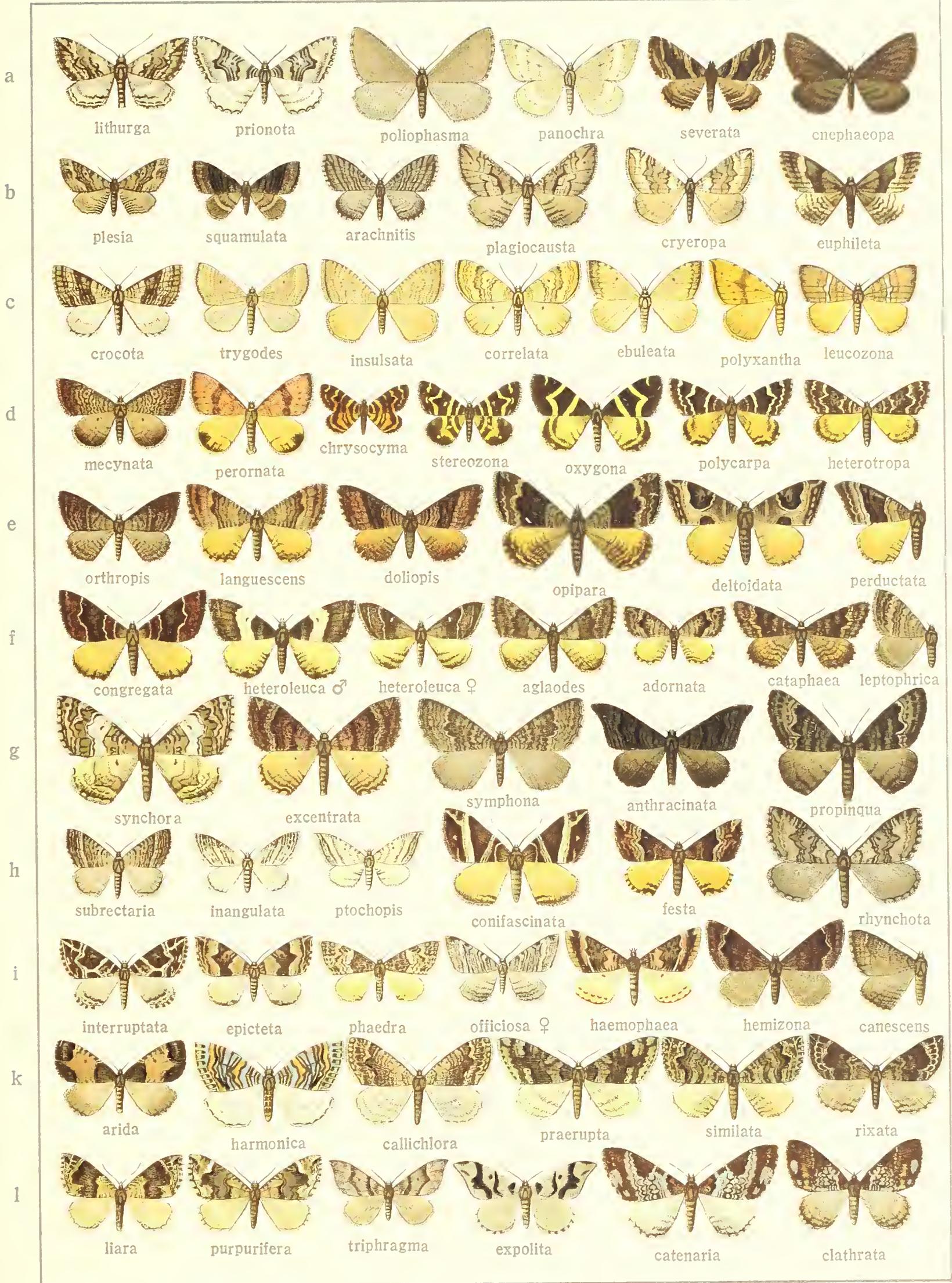
Pars II. Fauna indo-australica 4.

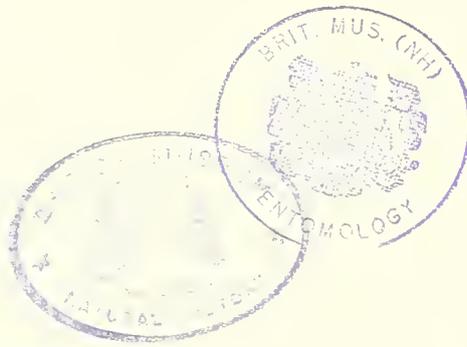


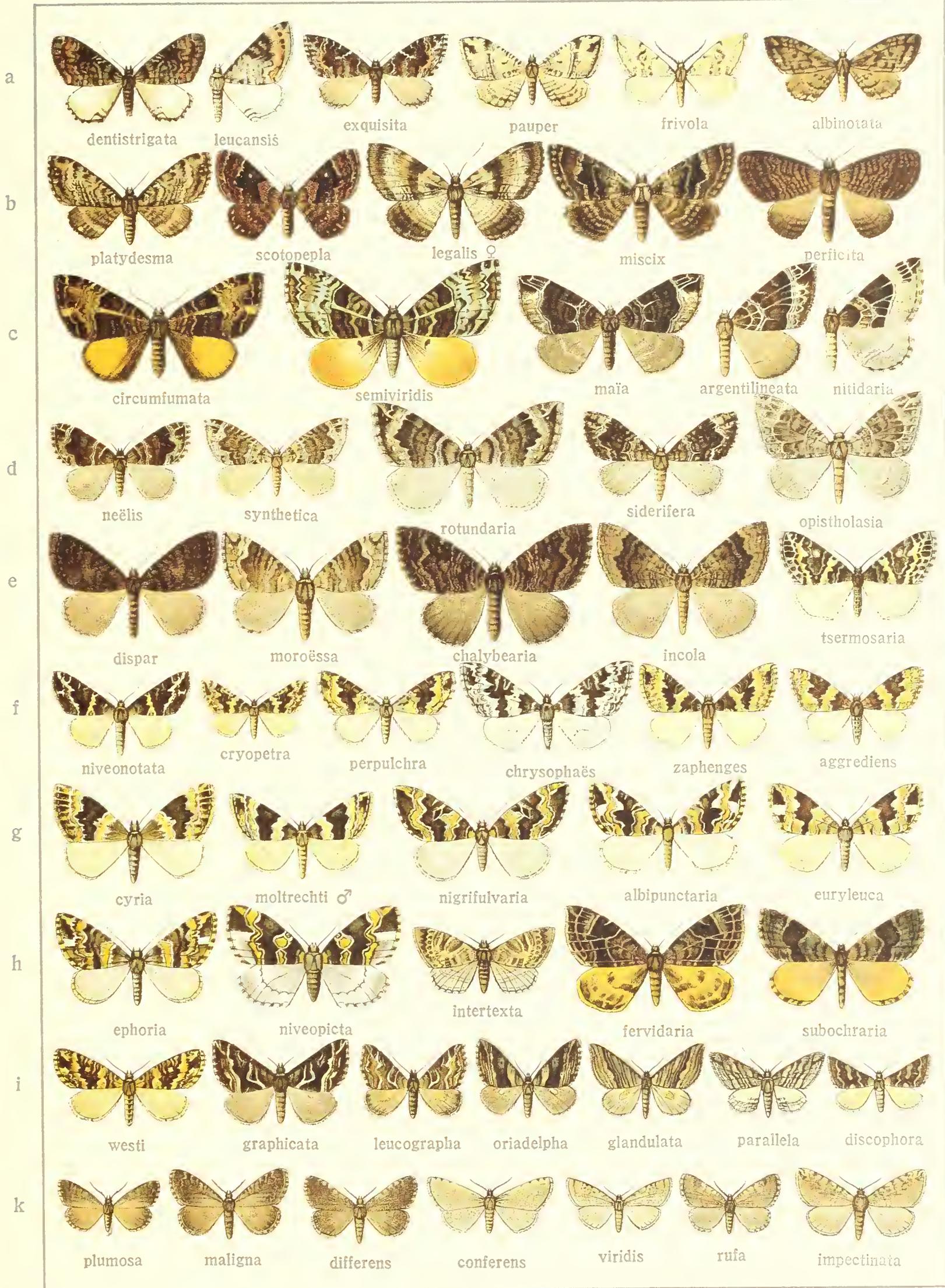
# GONANTICLEA-EUPHYIA











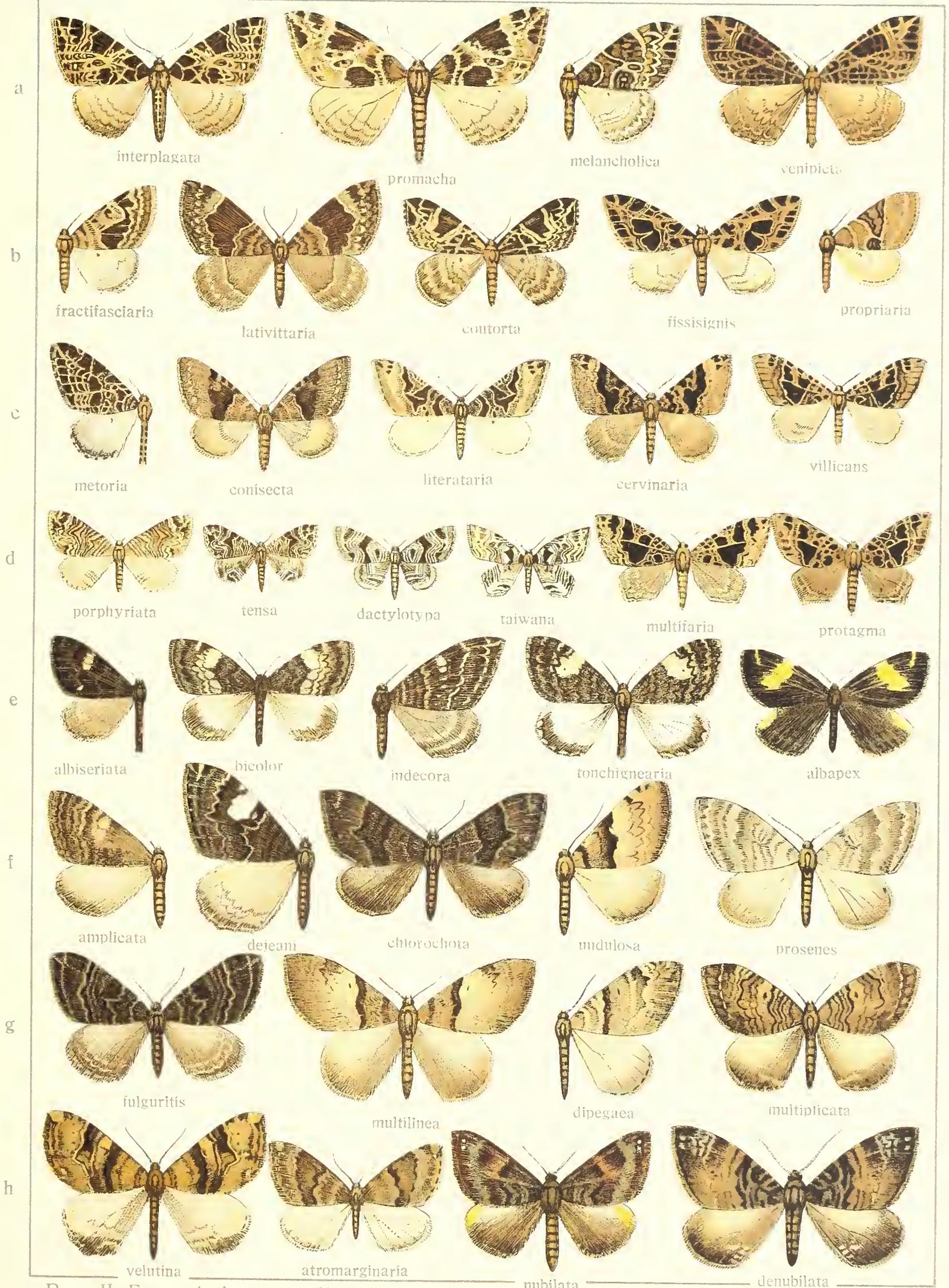


# SPECTROBASIS-EUSTROMA



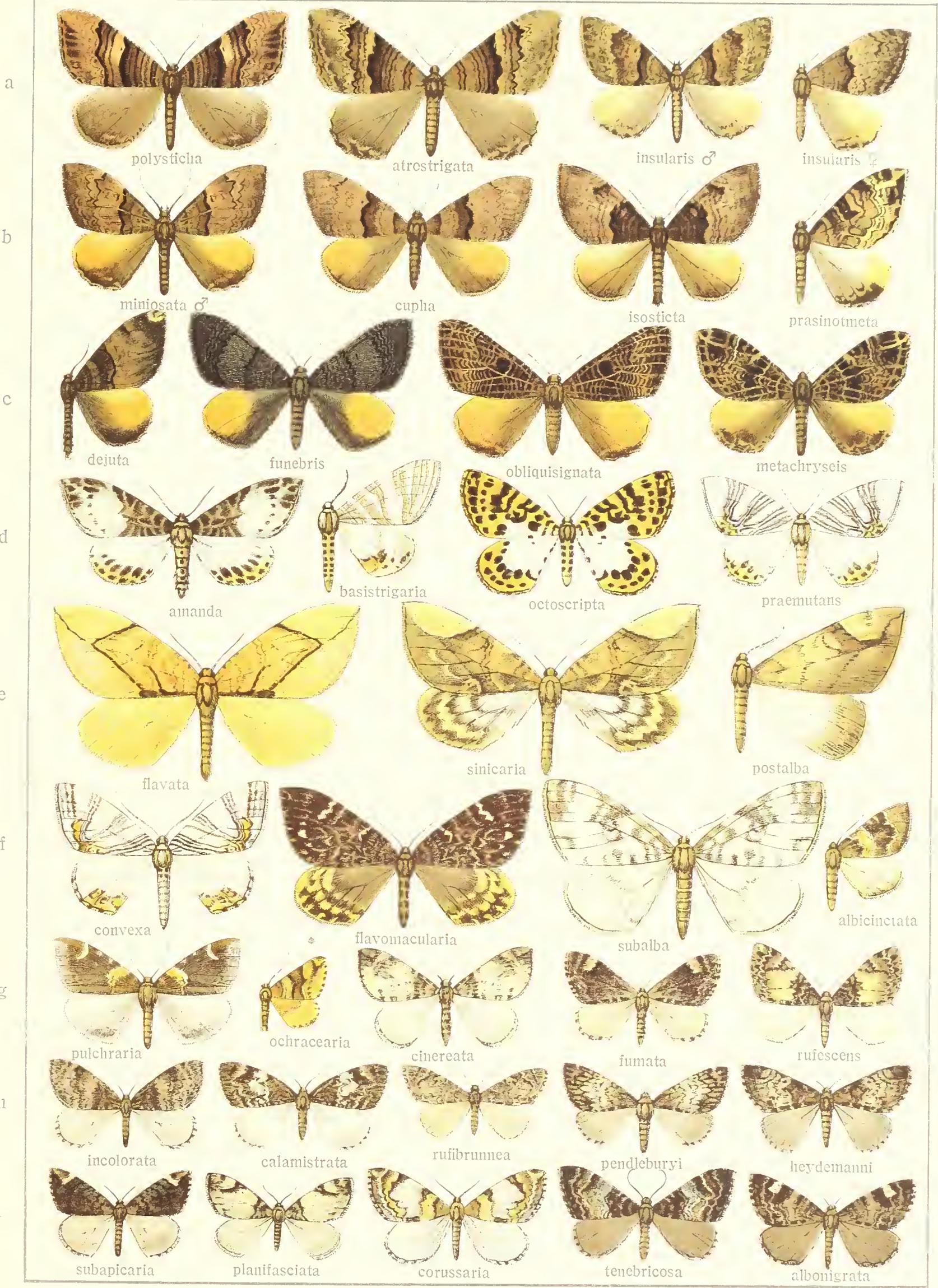


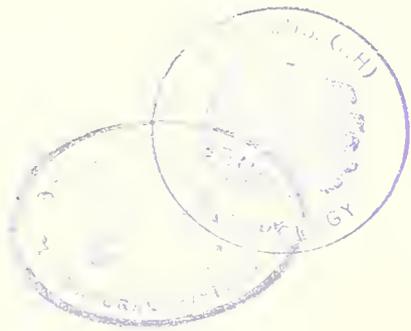
# EUSTROMA-PHOTOSCOTOSIA



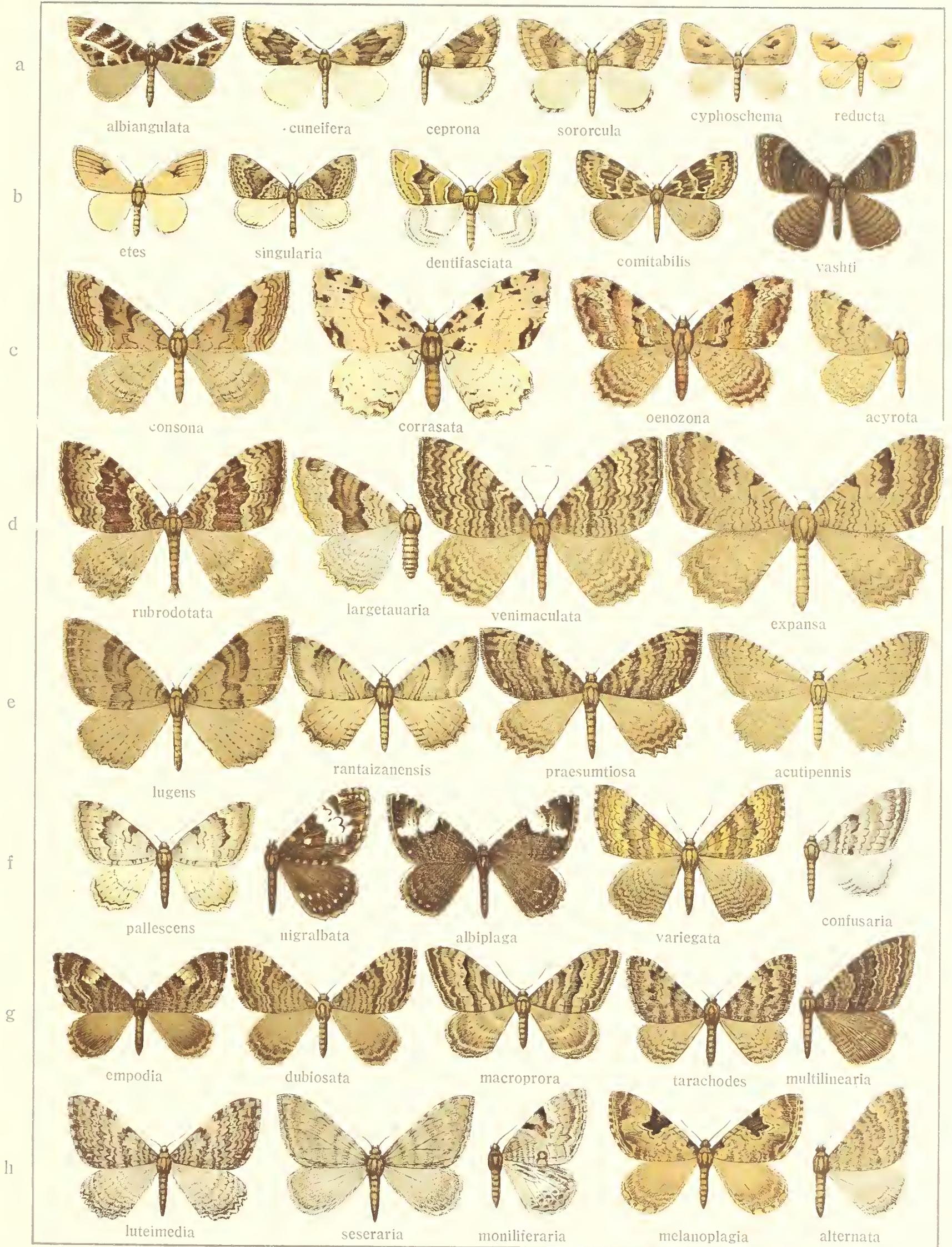


# PHOTOSCOTOSIA-DYSSTROMA

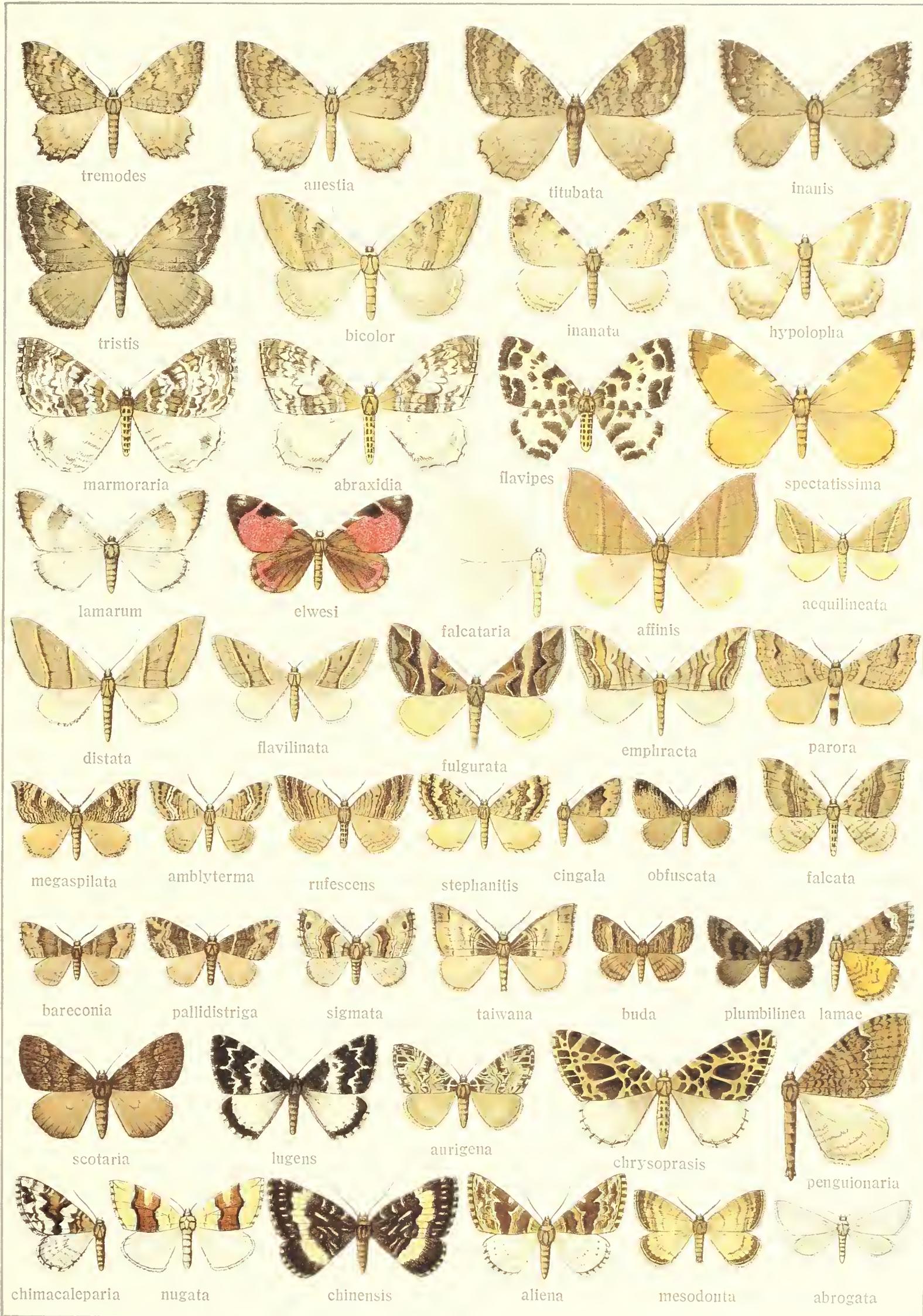




# DYSSTROMA-CALOCALPE

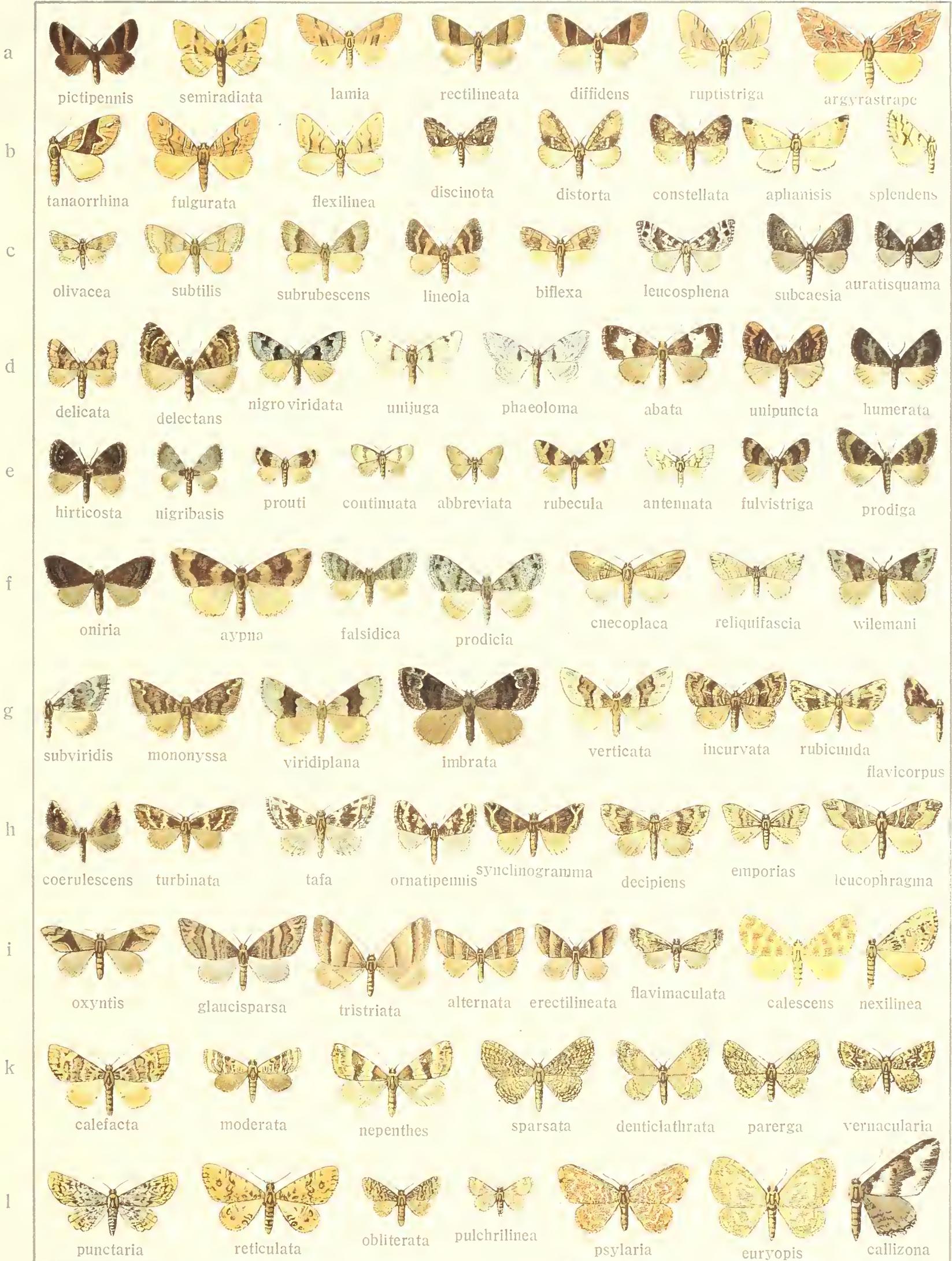


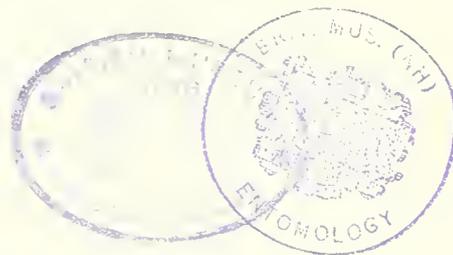


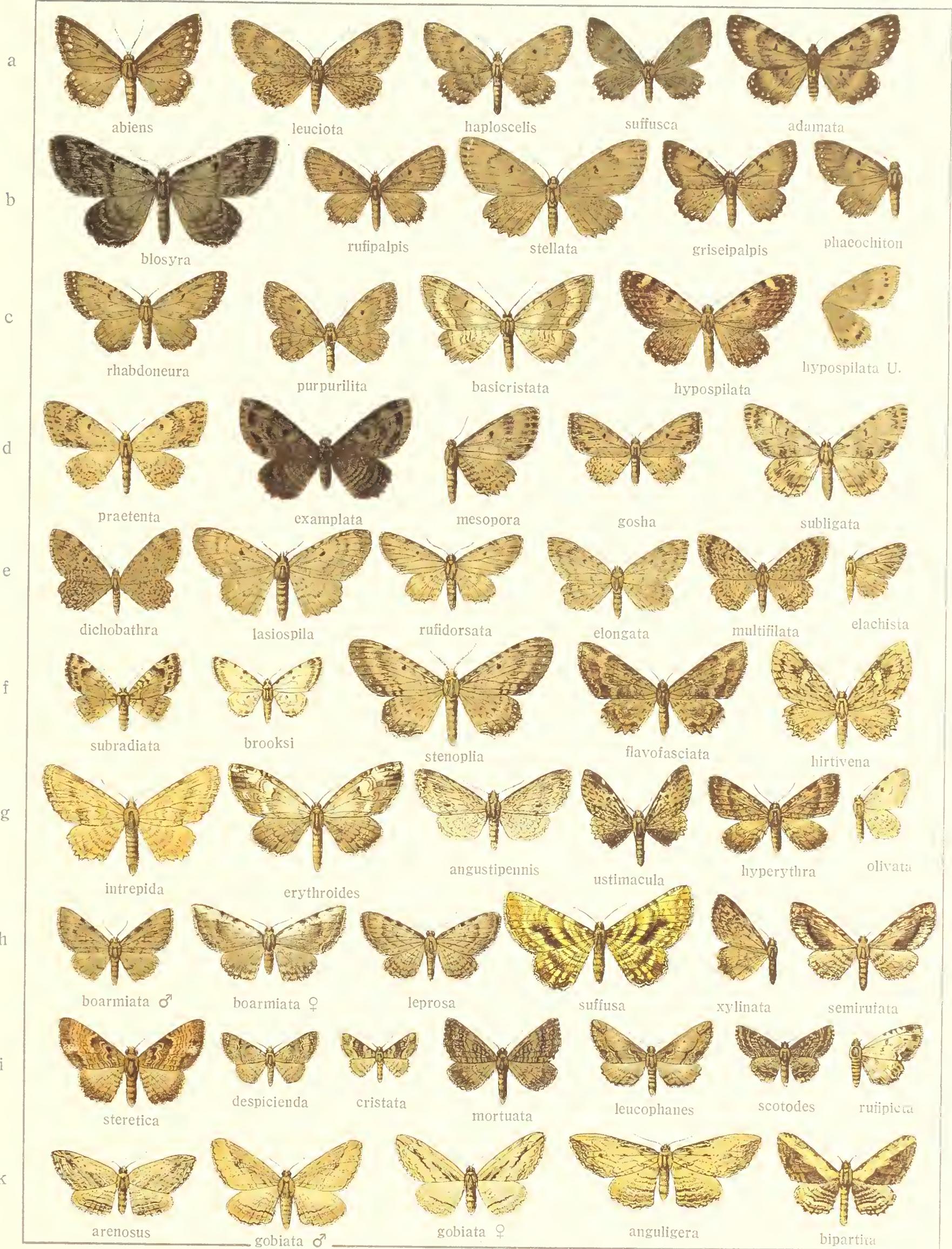




STERRHOCHAETA-ECCYMATOGE



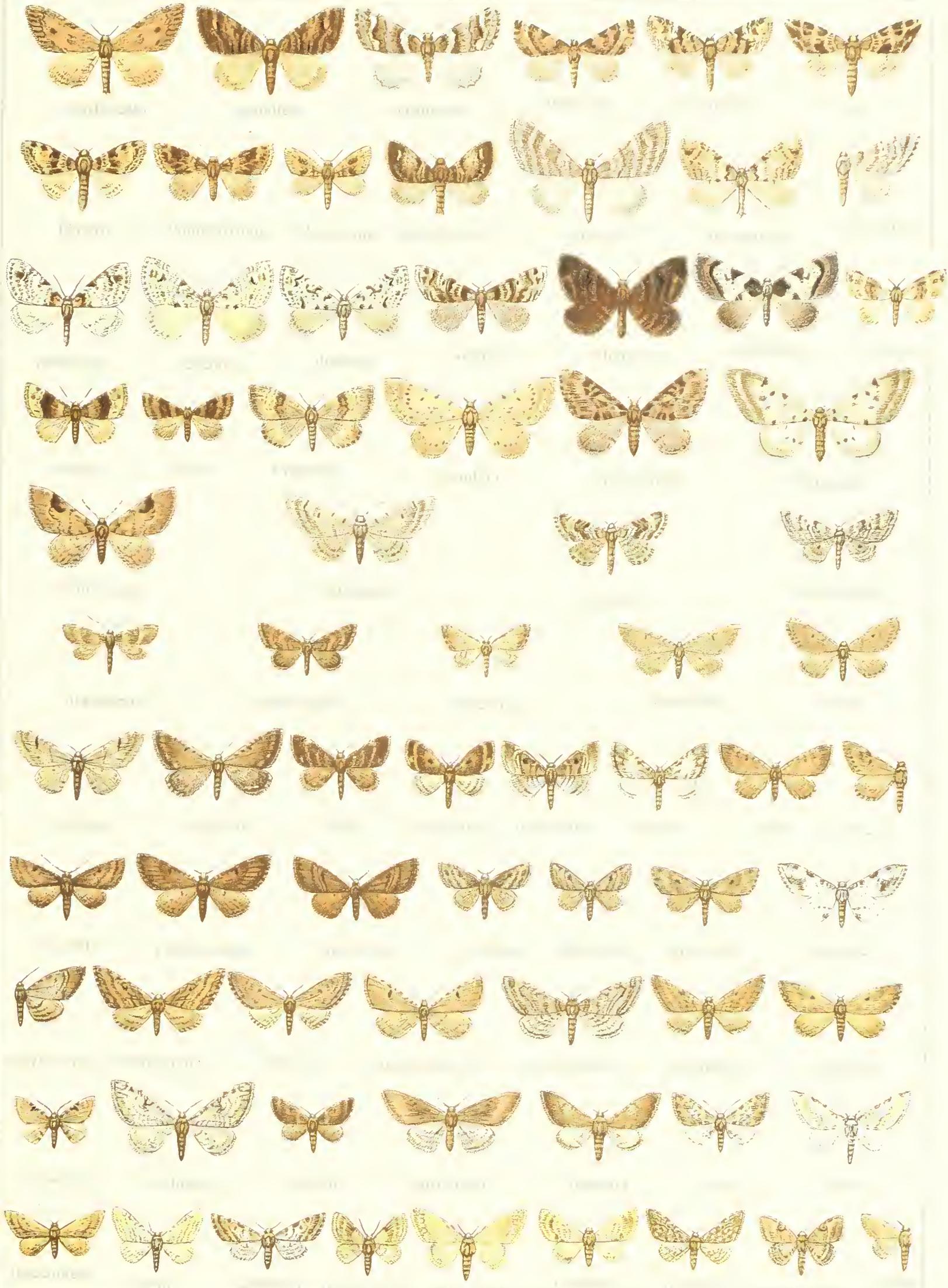






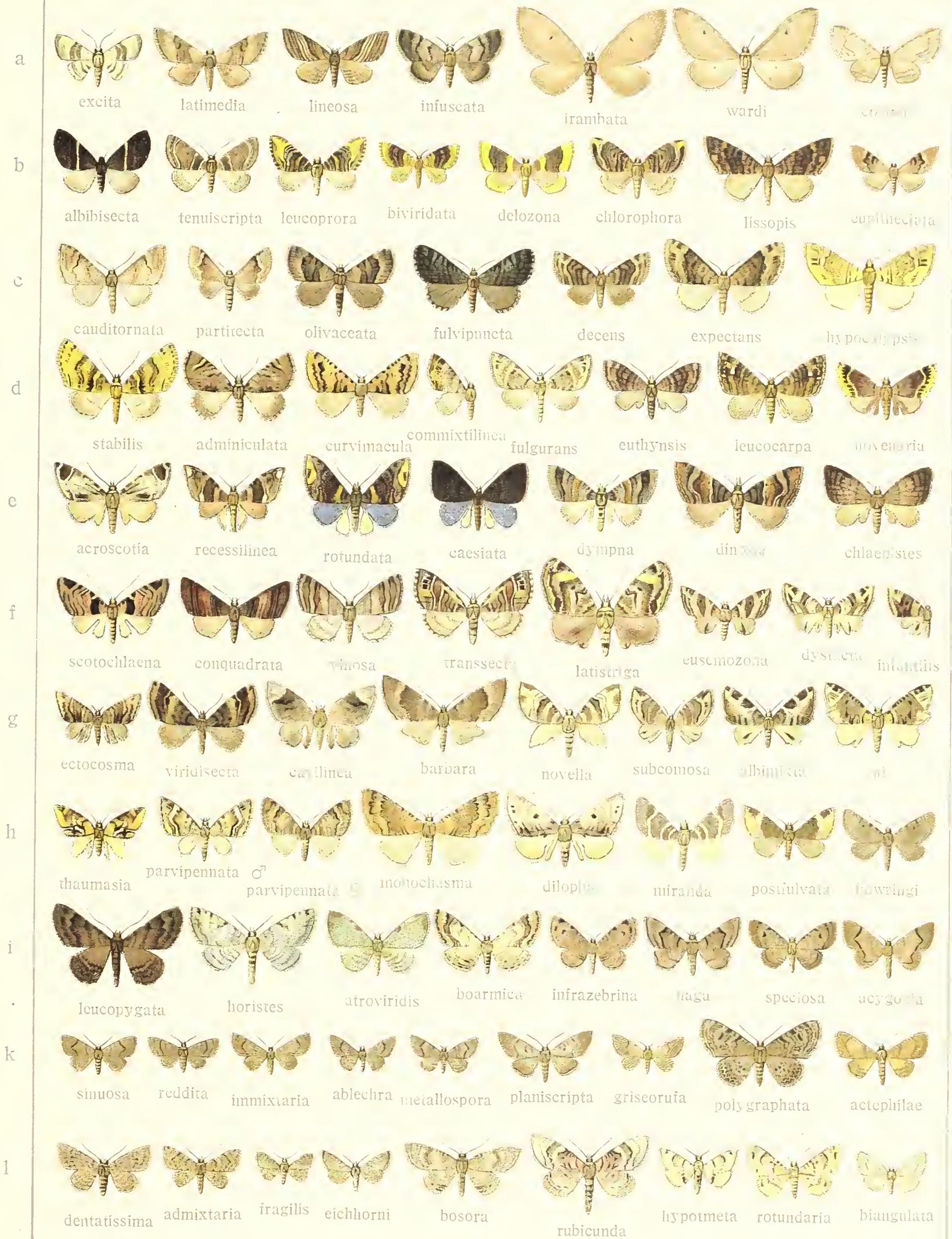
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80





# EUPITHECIA-CHLOROCLYSTIS

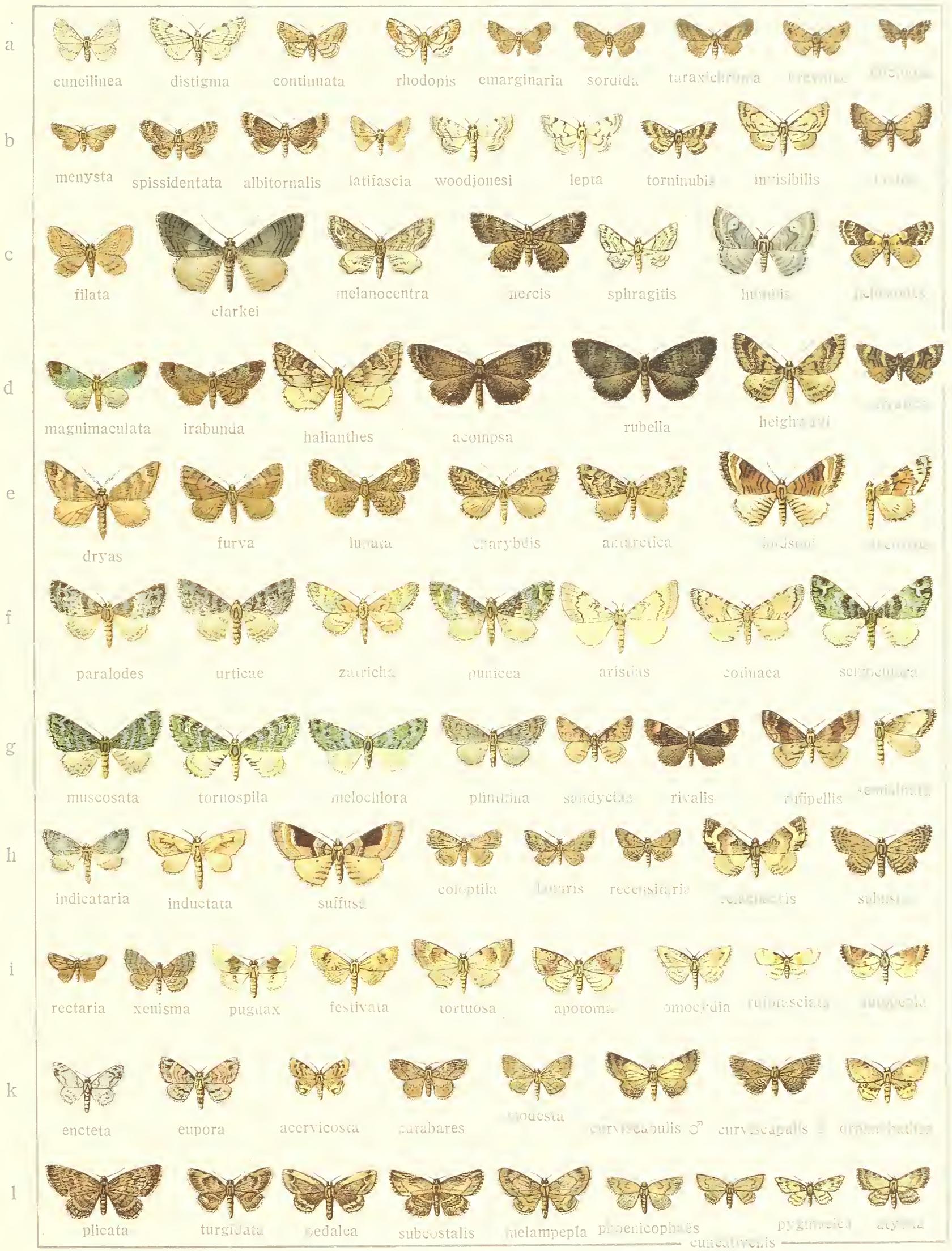




# CHLOROCLYSTIS

XII

40





# CHLOROCLYSTIS

