

## REVISION OF AUSTRALIAN LEPIDOPTERA, V.

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Fam. GEOMETRIDÆ.

Subfam. GEOMETRINÆ.

Forewings with 7, 8, 9 stalked, 10 usually stalked with them, their common stalk arising from upper angle of cell, 6 nearly always approximated or stalked with them, 11 usually separate, rarely stalked, either free or anastomosing shortly with 12 and 10, or with 12 only, no areole. Hindwings with 5 strongly approximated to 6 at origin, 8 approximated to cell near base, diverging at or before middle, or rarely approximated to beyond middle. Frenulum and retinaculum frequently rudimentary or absent, being replaced by a rounded costal dilatation of base of hindwing.

The *Geometrinæ* form a very natural group. The *Acidalianæ* (or *Sterrhinæ*) are usually, though not always, distinguishable by the origin of vein 5 of the hindwings. But independently of this, the structure of the forewings is fundamentally different in the two subfamilies. In the *Acidalianæ*, veins 11 and 10 arise by a common stem, which anastomoses with the common stem of 7, 8, 9, forming the areole. Those genera in which the areole is absent, have been developed from genera in which that structure exists, by the gradual obliteration of the areole by fusion of its walls. In the *Geometrinæ*, on the other hand, an areole is never developed;\* vein 11 is either free, or very frequently anastomoses first with 12 and then with 10, or it may anastomose with 12

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\* My attention was called to this point by Hampson's "Moths of India," iii., p.466; but Mr. Prout informs me that the absence of an areole in this group was first insisted on by Lederer.



only. As a rare abnormality the anastomosis with 12 may be missed, while that with 10 is present, but 10 arises always separately from 11, and usually from the stalk of 7, 8, 9, and this is fundamentally different from the normal structure of the *Acidalianæ*. Another radical distinction is, that the common stalk of 7, 8, 9 arises, in the *Acidalianæ*, from well before the upper angle of the cell, widely separate from 6, which arises at the angle. In the *Geometrinæ* the common stalk arises from the angle, and 6 is usually either closely approximated to or stalked with it; though, in rare instances, the origin of 6 is displaced downwards. From these considerations it follows that the *Acidalianæ* are not derived from the *Geometrinæ*, as I formerly supposed, but are a collateral and independent line of development.

The more primitive genera of the *Geometrinæ* differ from the remainder of the group in two characters. Firstly, in the separate origin of vein 10 of the forewings from the cell, a character present in the genera *Protophyta*, *Heliomystis*, *Rhuma*, and *Sterictopsis*. Secondly, in the close approximation of vein 8 of the hindwings to well beyond the middle of the cell, a character found in *Protophyta*, *Heliomystis*, *Rhuma*, and *Oenochlora*. The first of these characters is not uncommon in the *Monoctenianæ* (*Oenochrominæ*), while the second is characteristic of that group. If we endeavour to distinguish the two subfamilies by the point of origin of vein 5 of the hindwings, we find that this is not a distinction to be relied on absolutely. Vein 5 of the hindwings usually arises in the *Monoctenianæ* rather nearer to 6 than to 4, and in the genus *Cernia* the approximation is quite as strong as in many *Geometrinæ*. In a genus closely allied to *Sarcinodes*, which I have from Northern Queensland, the approximation is even stronger, 5 and 6 being almost connate; while in the Indian genus *Sarcinodes* (Hmps., *Moths Ind.*, iii., p.315) 5 and 6 are stalked. Though I am unable, at present, to separate the two subfamilies by any absolute definition, I consider them genetically distinct. The two genera I have mentioned are not, in my opinion, genetically allied in any close degree to the parent-stem of the *Geometrinæ*. This group certainly arose out of the *Monoc-*



teniance, and I regard *Eumelea* as the genus, of all with which I am acquainted, coming nearest to the parent-stem of the former subfamily, being a somewhat aberrant branch from this stem. The importance of the approximation of 5 and 6 of the hindwings in the *Geometrinæ* does not consist in that character being peculiar to the subfamily, for it occurs occasionally, as an aberrant character, in some of the other subfamilies; but in the fact that, in the former, that character has become *fixed*, being found without exception throughout the group.

A most important character of the higher *Lepidoptera*, that is all except the primitive *Micropterygidæ* and *Hepialidæ*, is the presence of a frenulum. In certain groups the frenulum has been lost, and in them its place is supplied by an expansion of the base of the costa of the hindwing. In the *Geometrinæ* may be found all gradations between a strong functioning frenulum and its complete absence. In the lower genera it is well-developed. The first stage in its obsolescence is the appearance of a rounded dilatation of the base of the costa of the hindwing, just beyond the origin of the frenulum. This is soon followed by the obsolescence of the frenulum itself, which usually occurs most rapidly in the female sex. In the male it is longer persistent, but becomes weak and slender; while the retinaculum shifts to nearer the base of the forewing. Evidently, though developed, these organs are not strongly functioning. In the next stage, frenulum and retinaculum become completely obsolete in both sexes. By the use of these characters, the *Geometrinæ* may be readily divided into three divisions, the genera which may be regarded as intermediate being extremely few, at least in the Australian fauna.

Div. i.—Hindwing with a strong rounded dilatation at base of costa. Frenulum and retinaculum completely absent in both sexes.

Div. ii.—Hindwing with a rounded dilatation, usually strongly marked, at base of costa. Frenulum in ♂ usually weak, retinaculum usually close to base of forewing. Frenulum in female usually absent.



In the genus *Apodasmia*, however, the frenulum is represented in the ♀ by a strong tuft of long hairs. In *Chrysochloroma* the costal dilatation is only moderate, and the ♂ frenulum is strong, while that of the ♀ is nearly obsolete.

Div. iii.—Hindwing without basal costal dilatation. Frenulum in ♂ strong, in ♀ represented by a strong tuft of long hairs.

From this last group we may separate

Div. iv.—Forewings with vein 10 arising separately from cell.

Though these divisions are natural, they do not in every instance represent genetic groups. I recognise at least three different lines of ascent between the second and first divisions. This appears of special interest as an example of a tendency, within a group, to develop in a certain direction, whether the tendency be regarded as innate, or as the effect of environment. Between the third and second divisions there does not seem, in the Australian genera, any necessity to assume more than a single stem.

Much caution and the examination of a large amount of material are necessary before basing the generic definitions, in this group, on variations in the neurulation. The variations in vein 11, for instance, may not infrequently be found all to occur within the same species. Other examples of variability will be given in this paper. The stalking or separation of veins 6 and 7 of the hindwing is, on the other hand, very constant; I have, so far, observed only one exception, in the genus *Uliocnemis*, though the examination of larger material may show others. Differences in the shape of the cell, more especially of the discocellulars, sometimes afford valuable characters, as in the genera *Comostola*, *Argyrocosma*, and *Thalassodes*. The shape of the hindwings is sometimes a reliable generic character, but its right application calls for discrimination. The variations in the length of the palpi in both sexes frequently mark out natural genera, but in the more primitive genus *Terpna* they do not seem to have attained fixity, and are, I think, of specific value only. Variations in the antennæ of either sex give good characters in



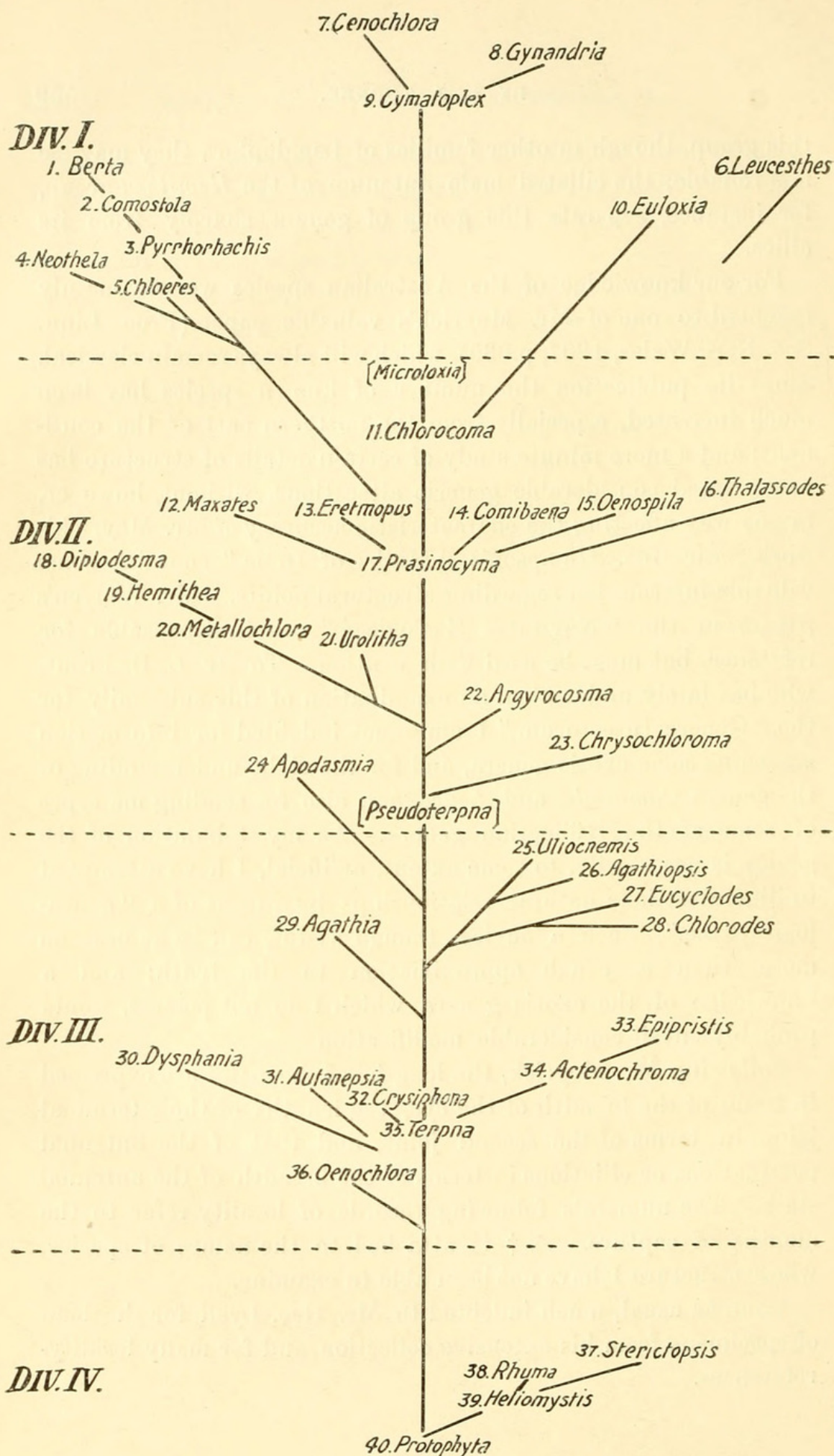
this group, though in other families of Lepidoptera they may be less reliable; the ciliated male antennæ of the *Hemithea*-group, for instance, separate this group of genera sharply from its allies.

For our knowledge of the Australian species we are mainly indebted to one of Mr. Meyrick's valuable papers (Proc. Linn. Soc. N. S. Wales, 1887, p.835), which will always remain classical. Since its publication the number of known species has been much increased, especially from the northern part of the continent; and a more minute study of certain details of structure has necessitated considerable generic alterations, without, however, in any way affecting the characteristic accuracy of Mr. Meyrick's work. Sir Geo. Hampson's "Moths of India" contains some valuable information regarding structural points. Mr. Warren's papers in the "Novitates Zoologicae" are indispensable for reference, but must be used with caution. To Mr. L. B. Prout, who has lately undertaken an examination of this subfamily for the "Genera Insectorum," I am much indebted for information regarding some exotic genera, and for the right understanding of the genera *Comostola* and *Leucesthes*; also for sending me types of some of the Hübnerian genera. As my tabulation of the genera is necessarily, to some extent, artificial, I have attempted to illustrate their natural relationships by means of a "genealogical tree." Such a device, though useful, can be at best no more than a rough approximation to the truth; and a knowledge of the exotic genera, which I do not possess, would probably entail considerable modification.

Following Mr. Meyrick, the lengths of the palpi are expressed in terms of the breadth of the eye, the lengths of their terminal joints in terms of the second joint, and that of the antennal pectinations or ciliations in terms of the breadth of the antennal stalk. The numerals following records of locality refer to the months of capture. A † is attached to the names of species, whose structure I have not been able to examine.

I am, as usual, much indebted to Mr. Geo. Lyell for the loan of specimens from his extensive collection, and for many locality-references.







*Tabulation of Genera.*

- A. Hindwings with a rounded costal expansion at base beyond point of origin of frenulum.
- B. Frenulum and retinaculum absent in both sexes.
- C. Palpi 1 or less, terminal joint minute in both sexes.
- D. Posterior tibiæ without middle spurs.
- E. Tongue absent, palpi minute..... 7. *CENOCHLORA*.
- EE. Tongue present, palpi short but well-developed.
- F. Antennæ pectinated in both sexes ..... 8. *GYNANDRIA*.
- FF. Antennæ pectinated in ♂, simple in ♀..... 9. *CYMATOPLEX*.
- DD. Posterior tibiæ with middle spurs.
- E. Forewings with 10 anastomosing with 9. 6. *LEUCESTHES*.
- EE. Forewings with 10 not anastomosing with 9..... 10. *EULOXIA*.
- CC. Palpi over 1, terminal joint rather long, at least in ♀.
- D. Forewings with discocellulars separate on vein 5, dorsal arising posteriorly to costal.
- E. Hindwings dentate, with a strong projection on vein 4..... 1. *BERTA*.
- EE. Hindwings not dentate, rounded or angled on vein 4, not projecting..... 2. *COMOSTOLA*.
- DD. Forewings with discocellulars not separate on vein 5.
- E. Hindwings markedly elongate..... 3. *PYRRHORHACHIS*.
- EE. Hindwings not elongate.
- F. Both wings with 3 and 4 widely separate at origin.... 4. *NEOTHELA*.
- FF. Both wings with 3 and 4 approximated, connate, or stalked..... 5. *CHLOERES*.
- BB. Frenulum in ♂ present but nearly always weak, retinaculum nearly always close to base of forewing, frenulum in ♀ usually absent.
- C. Palpi 1 or less, terminal joint minute in both sexes... 11. *CHLOROCOMA*.
- CC. Palpi 1 or more, terminal joint more or less elongate, at least in ♀.
- D. Antennæ in ♂ pectinate.



- E. Hindwings with costal edge of cell considerably over  $\frac{2}{3}$  of dorsal edge.
- F. Frenulum in ♂ strong..... 24. CHRYSOCHLOROMA.
- FF. Frenulum in ♂ slender.
- G. Hindwings quadrate, acutely angled and strongly produced on vein 4... 12. MAXATES.
- GG. Hindwings not quadrate.
- H. Posterior tibiæ of ♂ aborted, without spurs..... 13. ERETMOPIUS.
- HH. Posterior tibiæ of ♂ not aborted.
- J. Posterior tibiæ of ♂ with a long slender terminal process about  $\frac{1}{2}$  length of tarsus..... 14. COMIBÆNA.
- JJ. Posterior tibiæ of ♂ with terminal process short or absent.
- K. Posterior tibiæ of ♂ with terminal spurs absent..... 15. OENOSPILA.
- KK. Posterior tibiæ of ♂ with all spurs present..... 17. PRASINOCYMA.
- EE. Hindwings with costal edge of cell about  $\frac{2}{3}$  of dorsal edge.
- F. Hindwings with discocellulars not widely separate on vein 5, 3 and 4 stalked..... 16. THALASSODES.
- FF. Hindwings with discocellulars widely separate on vein 5, 3 and 4 remote at origin..... 22. ARGYROCOSMA.
- DD. Antennæ in ♂ ciliate.
- E. Hindwings with 6 and 7 stalked.
- F. Forewings with 11 and 10 arising out of 9 and running into 12..... 18. DIPLODESMA.
- FF. Forewings with 11 from cell, 10 not running into 12.
- G. Posterior tibiæ of ♂ without middle spurs ..... 19. HEMITHEA.
- GG. Posterior tibiæ of ♂ with middle spurs.
- H. Hindwings angled or produced on vein 4, not produced at tornus... 20. METALLOCHLORA.
- HH. Hindwings with termen straight and long, and with a rounded projection at tornus..... 21. UROLITHA.
- EE. Hindwings with 6 and 7 separate..... 23. APODASMIA.



- AA. Hindwings without costal expansion at base, frenulum and retinaculum in ♂ well-developed, frenulum in ♀ usually represented by a long tuft of hairs.
- B. Forewings with vein 10 stalked with 7, 8, 9.
- C. Thorax with a strong posterior crest.
- D. Posterior tibiae without middle spurs..... 25. *ULIOCNEMIS*.
- DD. Posterior tibiae with middle spurs..... 26. *AGATHIOPSIS*.
- CC. Thorax not crested.
- D. Hindwings with 6 and 7 stalked.
- E. Hindwings with costal edge of cell about  $\frac{2}{3}$  length of dorsal edge. .... 27. *EUCYCLODES*.
- EE. Hindwings with costal edge of cell considerably exceeding  $\frac{2}{3}$ ..... 28. *CHLORODES*.
- DD. Hindwings with 6 and 7 separate or rarely connate.
- E. Hindwings with termen strongly produced on vein 4..... 29. *AGATHIA*.
- EE. Hindwings with termen rounded.
- F. Antennae pectinated in both sexes, in ♂ to apex..... 30. *DYSPHANIA*.
- FF. Antennae in ♀ simple, in ♂ with apical  $\frac{1}{2}$  simple.
- G. Forewings with vein 6 arising near 5, remote from 7..... 31. *AUTANEPSIA*.
- GG. Forewings with vein 6 closely approximated or connate with 7.
- H. Posterior tibiae without middle spurs..... 32. *CRYSIPHONA*.
- HH. Posterior tibiae with middle spurs.
- J. Antennae in ♂ ciliate.
- K. Thorax smooth or only slightly hairy beneath..... 33. *EPIPRISTIS*.
- KK. Thorax very densely hairy beneath..... 34. *ACTENOCHROMA*.
- JJ. Antennae in ♂ pectinate.
- K. Hindwings with 8 diverging from cell at or before middle 35. *TERPNA*.
- KK. Hindwings with 8 closely approximated to cell to well beyond middle..... 36. *OENOCHLORA*.
- BB. Forewings with vein 10 arising separately from cell.



C. Thorax and abdomen crested.

D. Hindwings with 6 and 7 stalked..... 37. STERICTOPSIS.

DD. Hindwings with 6 and 7 separate.

E. Antennæ of ♂ ciliate..... 38. RHUMA.

EE. Antennæ in ♂ pectinate..... 39. HELIOMYSTIS.

CC. Thorax and abdomen not crested..... 40. PROTOPHYTA.

#### Gen.1. BERTA.

*Berta*, Wlk., Cat. Brit. Mus. xxvi. p.1621.

Face smooth. Tongue well-developed. Palpi slender, porrect, moderate in ♂, rather long in ♀; second and terminal joints smooth-scaled; terminal joint in ♂  $\frac{1}{3}$ , in ♀  $\frac{2}{3}$ . Antennæ in ♂ pectinated, apices simple; in ♀ simple. Thorax and abdomen not crested; thorax not hairy beneath. Posterior tibiæ with all spurs present; in ♂ dilated with a long tuft of hairs lying in a groove on inner surface, terminal spurs shortened, and a short stout terminal process. Hindwings elongate, termen dentate with a strong projection on vein 4; a strong rounded costal expansion at base; frenulum and retinaculum obsolete in both sexes. Forewings with 3 and 4 connate or slightly separate, 6 connate, 11 stalked with 7, 8, 9, 10 beyond 6 and anastomosing with 12; discocellulars separate on vein 5, dorsal arising posteriorly to costal. Hindwings with 3 and 4 stalked, 6 and 7 stalked, 8 approximated to cell near base and rapidly diverging; discocellulars moderately oblique, slightly angled or nearly straight on vein 5, costal edge of cell considerably over  $\frac{2}{3}$ .

Differing from *Comostola* only in the shape of the hindwings. Type, *Berta chrysolineata* Wlk.

#### 1. BERTA CHRYSOLINEATA.

*Berta chrysolineata* Wlk., Cat. Brit. Mus. xxvi. p. 1621; Moore, Lep. Ceyl. iii. p. 435, Pl. 196, f.4; Hmps., Moths Ind. iii. p. 516.

*Euchloris leucospilota* Turn., Trans. Roy. Soc. S. Austr. 1904, p. 221.

N.A.: Port Darwin, 1, 12.—N.Q.: Kuranda, 3, 4. Also from Ceylon and India.



## Gen. 2. COMOSTOLA.

*Comostola* Meyr., Proc. Linn. Soc. N. S. Wales, 1887, p. 869.

Face smooth. Tongue well-developed. Palpi slender, porrect, in ♂ moderate, or rather long, in ♀ long; second and terminal joints smooth-scaled; terminal joint usually short in ♂, always elongate in ♀. Antennæ in ♂ pectinated, apices simple; in ♀ simple. Thorax and abdomen not crested; thorax not hairy beneath. Posterior tibiæ with all spurs present; in ♂ dilated, with terminal spurs shortened, and a tuft of long hairs on inner side, sometimes with a short stout terminal process. Hindwings with termen rounded or slightly angled on vein 4, not projecting; a strong rounded costal expansion at base; frenulum and retinaculum obsolete in both sexes. Forewings with 3 and 4 stalked or connate, 6 separate or short-stalked, 11 arising from cell or stalked with 7, 8, 9, 10 beyond 6, not anastomosing; discocellulars separate or widely separate on vein 5, dorsal arising posteriorly to costal. Hindwings elongate; with 3 and 4 stalked, 6 and 7 stalked; 8 connected with cell at a point near base and rapidly diverging; discocellulars nearly straight, slightly oblique, dorsal sometimes curved so as to be more oblique; costal edge of cell considerably over  $\frac{2}{3}$ .

Type, *Iodis læsaria* Wlk. The structure of the cell of the forewings, together with the elongate hindwings, which may have the termen either strongly rounded, or slightly angled on vein 4, but never projecting, are the distinguishing marks of this genus. The separation of the discocellulars of the forewings, sometimes slight, becomes very pronounced in *C. læsaria* and *C. nereidaria*. Vein 11 may either arise free from the cell, as in most *Geometrinæ*; or may be stalked with 7, 8, 9, 10 well beyond 6. In view of the close specific relationship of *C. subtiliaria* Brem., from Eastern Asia, which has the former structure, with *C. læsaria*, I do not think the difference can be made use of for generic subdivision.

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| 1. Hindwings obtusely angled on vein 4. .... | 2. |
| Hindwings rounded.....                       | 5. |



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|--|-------------------------|
| 2. Wings with numerous discal spots edged with pale ochreous .....       | 3.                      |
| Only one discal spot in each wing, not edged with pale ochreous .....    | 4.                      |
| 3. Head with dark red transverse line, costal edge of cell $\frac{3}{4}$ | 2. <i>læsaria</i> .     |
| Head without dark red line, costal edge of cell $\frac{1}{2}$ .....      | 3. <i>nereidaria</i> .  |
| 4. Discal spot of hindwings large, with leaden-metallic scales.....      | 4. <i>leucomerata</i> . |
| Discal spot of hindwings small, without leaden-metallic scales.....      | 5. <i>haplophanes</i> . |
| 5. Wings edged with white.....   | 6. <i>chlorargyra</i> . |
| Wings interruptedly edged with fuscous-red.....                          | 7. <i>eucraspeda</i> .  |

## 2. COMOSTOLA LÆSARIA.

*Iodis læsaria* Wlk., Cat. Brit. Mus. xxii. p.544; *Eucrostis perlepidaria* Wlk., Cat. Brit. Mus. xxxv. p.1610; *Comibæna maculata* Moore, Proc. Zool. Soc. 1867, p.638; *Comostola perlepidaria* Meyr., Proc. Linn. Soc. N. S. Wales 1887, p.869.

Frons green, with a narrow transverse dark red line anteriorly; fillet broadly white. Palpi in ♂ 2, terminal joint  $\frac{1}{2}$ ; in ♀  $2\frac{1}{2}$  terminal joint  $\frac{2}{3}$ . Forewings with costal edge of cell  $\frac{3}{4}$  dorsal; veins 3 and 4 stalked or connate, 11 stalked with 7, 8, 9, 10 beyond 6; two fuscous costal dots representing origin of first and second lines; second line represented by a well-developed series of spots. Hindwings with 3 and 4 stalked. Posterior tibiæ of ♂ dilated, with tuft of hairs, shortened terminal spurs, and very short stout terminal process.

N.A.: Port Darwin, 9, 10—Q.: Brisbane, 1, 2, 3, 4, 5, 11, 12; Southport. Also from Ceylon and India.

## 3. COMOSTOLA NEREIDARIA.

*Comostola nereidaria* Snel. ; *Comostola flavicincta* Warr., Nov. Zool. 1896, p.288.

Frons narrowly green posteriorly, anteriorly yellow-ochreous, which colour is suffused over fillet, either wholly or leaving its anterior edge white. Palpi in ♂  $1\frac{3}{4}$ , terminal joint  $\frac{1}{3}$ ; in ♀  $2\frac{1}{2}$ , terminal joint  $\frac{2}{3}$ . *C. meritaria*, Wlk., which is very similar, differs in neuration. Forewings with costal edge of cell  $\frac{1}{2}$



dorsal; 3 and 4 connate, 11 stalked with 7, 8, 9, 10 beyond 6; darker green than in *C. lasaria*, all spots smaller except the discal which appear disproportionately large; no fuscous costal dots. Hindwings with 3 and 4 stalked. Posterior tibiae of ♂ dilated, but terminal spurs not abbreviated, and without terminal process.

N.Q.: Kuranda, 4; Geraldton, 11. Also from Louisiades and Celebes.

#### 4. COMOSTOLA LEUCOMERATA.

*Chlorochroma leucomerata* Wlk., Cat. Brit. Mus. xxxv. p.1609; *Iodis leucomerata* Meyr., Proc. Linn. Soc. N. S. Wales, 1887, p.889.

Palpi in ♂  $1\frac{1}{2}$ , terminal joint  $\frac{1}{3}$ ; in ♀  $2\frac{1}{2}$ , terminal joint 1. Forewings with 3 and 4 stalked or connate, 11 from cell. Hindwings with 3 and 4 stalked. The discal spots on both wings are sometimes white in the centre. Posterior tibiae of ♂ dilated, with tuft of hairs, shortened terminal spurs, and very short stout terminal process.

N.Q.: Kuranda—Q.: Brisbane, 12; Mt. Tambourine, 2. Also from New South Wales, according to Mr. Meyrick.

#### 5. COMOSTOLA HAPLOPHANES, n.sp. [*ἀπλοφάνης*, of simple appearance].

♂. 23 mm. Head green; fillet snow-white; face ferruginous, lower edge green-whitish. Palpi whitish, external surface of second joint ferruginous; in ♂  $1\frac{1}{2}$ , terminal joint  $\frac{1}{2}$ . Antennae white; pectinations in ♂ 10-12. Thorax and abdomen green, sides and undersurface whitish; legs whitish, anterior pair, except coxae, fuscous anteriorly; posterior tibiae of ♂ dilated with internal groove and tuft, and abbreviated terminal spurs. Forewings triangular, costa nearly straight, strongly arched near base, less so towards apex, apex round-pointed, termen straight, oblique; 3 and 4 connate, 6 short-stalked, 11 from cell; bright green; costal edge yellowish; a small dark ferruginous discal spot; an obscure, dark green, markedly dentate, postmedian line; cilia pale yellow, with a narrow, interrupted, dark ferruginous basal line, best



marked at apex. Hindwings with termen obtusely angled on vein 4; 3 and 4 stalked; colour and markings as forewings. Underside whitish. Type in Coll. Lyell.

N.Q.: Kuranda, in May; one specimen, received from Mr. F. P. Dodd.

#### 6. *COMOSTOLA CHLORARGYRA*.

*Comibæna chlorargyra* Wlk., Cat. Brit. Mus. xxii., p.577; *Comostola conchylias* Meyr., Trans. Ent. Soc. 1889, p.490.

Mr. Prout informs me that this is distinct from *C. dispansa* Wlk., which has a green abdomen.

Forewings with 3 and 4 separate at origin, 11 from cell. Hindwings with 3 and 4 stalked. I have only one specimen for examination. There may be some considerable variation in markings of forewings. Posterior tibiæ of ♂ dilated but without terminal process.

N.Q.: Kuranda, 9,10,3; Townsville, 4,5. Also from New Guinea, Borneo, and Ceylon.

#### 7. *COMOSTOLA EUCRASPEDA*, n.sp. [ἐὺκρασπῆδος, well-bordered].

♀. 24 mm. Head dull red irrorated with blackish, face pale red, fillet narrowly whitish. Palpi whitish; in ♀  $2\frac{1}{4}$ , terminal joint  $\frac{2}{3}$ . Antennæ red, towards apex whitish. Thorax bright green, small spots on shoulders and a large posterior spot reddish irrorated with blackish. Abdomen whitish, with a median dorsal reddish streak [badly rubbed]. Legs pale reddish; posterior pair except tarsi whitish. Forewings with costa rather strongly arched, [apex broken], termen slightly bowed, oblique; 3 and 4 connate, 6 separate, 11 stalked with 7, 8, 9, 10; bright green; a reddish streak thickly irrorated with blackish along costa and termen; costal portion rather broad, with a dentate internal process at middle; terminal portion fine, dilated into spots at tornus and above middle; [cilia abraded]. Hindwings with termen strongly bowed; 3 and 4 short-stalked; 6 and 7 short-stalked; colour and markings as forewings but without costal streak. Type in Coll. Turner.

N.A.: Port Darwin, in November; one specimen, received from Mr. F. P. Dodd.



## Gen.3. PYRRHORHACHIS.

*Pyrrhorhachis* Warr., Nov. Zool. 1896, p.292.

Face smooth. Tongue well developed. Palpi long, slender; terminal joint elongate, especially in ♂. Antennæ in ♂ pectinate, apices simple; in ♀ simple. Thorax and abdomen not crested; thorax not hairy beneath. Posterior tibiæ with all spurs present. Frenulum and retinaculum obsolete in both sexes; hindwings with a strong costal expansion at base. Forewings with 3 and 4 stalked, 11 from cell or stalked with 7, 8, 9, 10 *before* 6, free or anastomosing with 12; discocellulars not separated on vein 5. Hindwings markedly elongate with termen strongly rounded; 3 and 4 stalked, 6 and 7 stalked, 8 approximated to cell near base discocellulars scarcely angled, but slightly oblique.

Type *Eucrostis pyrrhogona* Wlk. In the shape of the hindwings, this agrees with *Comostola chlorargyra*, but differs in the form of the cell of the forewings. I regard the genus as ancestral to *Comostola*.

## 8. PYRRHORHACHIS PYRRHOGONA.

*Eucrostis pyrrhogona* Wlk., Cat. Brit. Mus. xxxv., p.1610; *Iodis marginata* Luc., Proc. Linn. Soc. N. S. Wales 1888, p.1268; *Comostola pyrrhogona* Meyr., Trans. Ent. Soc. 1889, p.491; *Euchloris pyrrhogona* Hmps., Moths Ind. iii., p.500; *Pyrrhorhachis cornuta*, Warr., Nov. Zool. 1896, p.292.

The only Australian species which can be described as blue. There may be a reddish discal spot on each wing margined with ochreous, and containing a few blackish scales, or discal spots may be completely absent. Palpi in ♀ 2, terminal joint  $\frac{2}{3}$ . I have not examined a male.

N.A.: Port Darwin, 9, 10, 12—N.Q.: Thursday Island; Kuranda, 4, 5, 10—Q.: Brisbane, 12. Also from New Guinea, Ceylon, and India.

Gen. 4. NEOTHELA, n.g.[*νεόθηλος*, freshly green.]

Head smooth. Tongue well-developed. Palpi slender, porrect, rough-haired beneath towards base; terminal joint in ♂



minute; [in ♀ probably longer]. Antennæ in ♂ pectinated, apices simple. Thorax and abdomen not crested; thorax slightly hairy beneath. Posterior tibiæ with all spurs present; in ♂ strongly dilated, with a groove containing a tuft of hair on inner side. Hindwings with a strong costal expansion at base; frenulum and retinaculum obsolete in both sexes. Forewings with 3 and 4 widely separate at base, 6 separate, 11 from cell, anastomosing first with 12 and then with 10. Hindwings with 3 and 4 widely separate at base, 6 and 7 stalked, 8 closely approximated to cell near base, thence diverging; discocellulars slightly angled on vein 5, dorsal strongly curved so as to become very strongly oblique; costal edge of cell considerably exceeding  $\frac{2}{3}$ .

Type *N. cissochroa* Turn. This genus differs from *Chloëres* in the wide separation of veins 3 and 4 of both wings.

9. NEOTHELA CISSOCHROA, n.sp. [κισσοχροα, ivy-green.]

♂. 24 mm. Head bluish-green; fillet snow-white; face green. Palpi in ♂  $1\frac{1}{4}$ ; whitish, tinged with green above. Antennæ white; pectinations in ♂, outer row 7, inner row 5. Thorax bluish-green. Abdomen bluish-green, apices of segments, tuft, sides, and under-surface white; under-surface of fourth segment in ♂ occupied by a patch of long coarse whitish-ochreous hairs. Forewings triangular, costa moderately arched, apex round-pointed, termen nearly straight, oblique; bluish-green; lines very slender, white; first at  $\frac{1}{4}$ , obtusely toothed outwardly beneath middle; second at  $\frac{3}{4}$ , finely denticulate; a slender white circle above middle; cilia green. Hindwings with termen bowed on vein 4; colour, discal circle, postmedian line, and cilia as forewings. Type (unfortunately in poor condition) in Coll. Turner.

N.Q.: Townsville, in September; one specimen, received from Mr. F. P. Dodd.

Gen. 5. CHLOERES, n.g. [χλοηρης, green.]

Face smooth. Tongue well developed. Palpi slender; in ♂ short or moderate, with minute terminal joint; in ♀



longer, with longer terminal joint. Antennæ in ♂ pectinate, apices simple; in ♀ simple. Posterior tibiæ with all spurs present; in ♂ sometimes dilated. Frenulum and retinaculum obsolete in both sexes; hindwings with a strong rounded expansion at base. Forewings with 3 and 4 slightly separate, connate, or stalked, 11 from cell, not anastomosing. Hindwings with 3 and 4 stalked or connate, 6 and 7 stalked, 8 approximated to cell near base; discocellulars scarcely angled on vein 5, dorsal bent and moderately oblique.

Type, *Chlorochroma citrolimbaria*, Gn. I place this genus low down on the *Comostola*-stem. The relationship to *Euloxia* is, I think, collateral.

#### 10. CHLOERES CITROLIMBARIA.

*Chlorochroma citrolimbaria*, Gn., Lep. ix. p 366; *nec* Wlk., Cat. Brit. Mus. xxii. p.562: *Chlorochroma inchoata* Wlk., Cat. Brit. Mus. xxii. p.563; *Iodis inchoata* Meyr., Proc. Linn. Soc. N. S. Wales, 1887, p.881; *Iodis illidgei* Luc., Proc. Linn. Soc. N. S. Wales, 1889, p.603.

♂♀. 22-31 mm. Head green, anteriorly yellow; fillet narrowly white; face reddish, lower edge white. Palpi small, slender; whitish; in ♂ 1, terminal joint  $\frac{1}{4}$ ; in ♀  $1\frac{1}{2}$ , terminal joint  $\frac{1}{2}$ . Antennæ yellow, pectinations and apices whitish. Thorax and abdomen green, a median yellowish dorsal line from midthorax; apical segments, sides, and under surface of abdomen white. Legs white; anterior pair reddish; anterior coxæ white; posterior tibiæ in ♂ not dilated and without terminal process. Forewings triangular, costa nearly straight, apex round-pointed, termen nearly straight, oblique; 3 and 4 usually stalked, sometimes connate, 11 from cell; green; without lines; a narrow yellow costal and terminal streak; cilia yellow. Hindwings with termen but slightly bowed; 3 and 4 stalked or connate, 6 and 7 only short-stalked; colour and cilia as forewings. Underside whitish-green.

N.Q.: Kuranda, 4, 5—Q.: Nambour; Brisbane, 5; Mount Tambourine, 2, 5, 10, 11.



Mr. R. Illidge has reared this species from larvæ feeding on *Duboisia*.

11. *CHLOERES CISSINA* n.sp. [*κίσσινα*, ivy-green.]

♂ 25 mm. Head and face green; fillet and antennæ white. Palpi green; in ♂  $1\frac{1}{2}$ , terminal joint  $\frac{1}{4}$ . Thorax bluish-green. Abdomen bluish-green, tuft, sides, and lower surface white. Legs whitish; anterior femora, tibiæ and tarsi reddish-tinged; anterior coxæ greenish; posterior tibiæ in ♂ dilated, with a tuft of long hairs in a groove on inner side, terminal spurs shortened, and a very short stout terminal process. Forewings triangular, costa moderately arched, apex round-pointed, termen slightly bowed, oblique; 3 and 4 slightly separate at origin, 6 separate, 11 from cell; bluish-green; a whitish dot on dorsum at  $\frac{2}{5}$ , and another on submedian representing first line; a series of faint whitish dots on veins at  $\frac{3}{4}$  representing second line; cilia whitish-green. Hindwings with termen strongly bowed; 3 and 4 connate; as forewings but with no trace of first line. Underside whitish-green.

Q.: Killarney; in October, one specimen.

Type in Coll. Turner.

Gen.6. *LEUCESTHES*.

*Leucesthes* Warr., Nov. Zool. 1902, p.348; *Acibdela* Turn., Trans. Roy. Soc. S. Austr. 1906, p.130.

Face smooth. Tongue well developed. Eyes larger in ♂ than in ♀. Palpi slender, short; in ♂  $\frac{2}{3}$ , in ♀ 1; terminal joint minute in both sexes. Antennæ in ♂ pectinated to near apex, terminal  $\frac{1}{8}$  simple; in ♀ simple. Thorax and abdomen not crested. Posterior tibiæ with all spurs present, rather closely approximated. Hindwings narrower than forewings; with a strong rounded costal expansion at base; frenulum and retinaculum obsolete in both sexes. Forewings with 3 and 4 remote at origin, 6 out of 7, 8, 9, opposite or beyond 10; 11 anastomosing with 12 and then with 10; 10 anastomosing or connected with 8+9. Hindwings with 3 and 4 well separated at base; 5 strongly approximated to 6; 6 and 7 stalked, 8 approximated to cell as far as



middle, then gradually diverging; discocellulars angled on vein 5, dorsal curved so as to become rather strongly oblique, costal edge of cell not much shorter than dorsal. Type, *Nearcha alba* Swin.

Mr. L. Prout first pointed out to me that this genus belongs to the *Geometrinæ*, and he is certainly correct. The strong approximation of vein 5 of hindwings to 6, the absence of a frenulum, together with the smooth face and anastomoses of vein 11 of forewings are decisive. The exact place among other genera is more difficult to determine. The somewhat long approximation of vein 8 of hindwings to cell, as in the *Monoctenianæ*, may be ancestral, but may also be a recent modification secondary to the narrowed hindwings, and in either case is nearly as well marked in *Euloxia gratiosata*. The absence of a frenulum is not likely to be found in a primitive genus. The anastomosis of 10 with 9, the pectinations of antennæ to apex, the narrow wings and the white coloration are peculiar characters, but not of great importance. The genus is one of the peculiar forms of Australia, and does not appear to have any near allies.

## 12. LEUCESTHES ALBA.

*Nearcha alba* Swin., Ann. Mag. Nat. Hist. (7), ix. p.79 (Feb., 1902); *Leucesthes margarita* Warr., Nov. Zool. 1902, p.348 (July).

♂♀. 22-24 mm. Head, face, palpi, antennæ, thorax, and abdomen white. Legs whitish. Forewings narrow, triangular, costa slightly arched, apex rounded, termen strongly bowed, strongly oblique; shining white; a suffused whitish-ochreous subcostal streak along veins, and sometimes a narrower streak along median vein; cilia white. Hindwings elongate, narrower than forewings, termen very strongly rounded; shining white; cilia white.

N.W.A.: Roeburne. I have received two specimens, for examination, from Mr. G. Lyell.

## Gen.7. CENOCHLORA.

*Cenochlora* Warr., Nov. Zool. 1898, p.12.

Face smooth, rounded, not projecting. Tongue absent. Palpi half-aborted, slender, very short, less than  $\frac{1}{2}$ . Antennæ with



long pectinations in both sexes, apices simple. Thorax and abdomen not crested. Thorax not hairy beneath. Posterior tibiae without middle spurs in both sexes. Hindwings with a strong rounded costal expansion at base, frenulum and retinaculum obsolete in both sexes. Forewings with 3 and 4 remote at origin, 6 separate, 11 connected with 12 on a point only (four specimens examined). Hindwings with 3 and 4 widely remote at origin, 6 and 7 short-stalked or connate, 8 connected with cell at a point near base, then diverging; discocellulars slightly angled on vein 5, dorsal rather strongly oblique; costal edge of cell considerably over  $\frac{2}{3}$ .

Distinguished from the following genus by the absence of tongue, and half-aborted palpi. It also differs in the neuration. Type *Iodis quieta* Luc.

As *Cenochlora* is one of the best genera that Mr. Warren has characterised, it is surprising that he should have subsequently (Nov. Zool. 1905, p.422) merged it in the equally natural but widely different *Chlorochroma* Gn. There are no less than six points of difference between them, any one of which is sufficient for generic separation.

*Cenochlora* Warr.—(1) Tongue absent. (2) Palpi half-aborted. (3) Antennae with long pectinations in both sexes. (4) Frenulum in ♂ absent. (5) Posterior tibiae without middle spurs in both sexes. (6) Veins 3 and 4 of hindwings widely remote at origin.

*Chlorochroma* Gn.—Tongue present. Palpi well-developed, though short. Antennae in ♀ simple. Frenulum in ♂ present. Middle spurs well developed. Veins 3 and 4 of hindwings closely approximated, connate, or stalked.

- |  |                        |
|--|------------------------|
| 1. Both wings with bases of cilia and discal dots dull reddish | 13. <i>quieta</i> .    |
| Cilia wholly white, no discal dots.....                        | 14. <i>quantilla</i> . |

### 13. CENOCHLORA QUIETA.

*Iodis quieta* Luc., Proc. Roy. Soc. Qsld. 1891, p.79; *Cenochlora felix* Warr., Nov. Zool. 1898, p.12.



♂♀. 18-22 mm. Head, face, and palpi green; fillet snow-white. Antennæ white; pectinations in both sexes 10. Thorax and abdomen green, beneath green-whitish; the latter with one or two median white dots on dorsum. Legs green-whitish; anterior pair green. Forewings triangular, costa gently arched, more strongly at base, apex round-pointed, termen bowed, oblique; green; a white costal streak, tinged with ochreous at base; two dentate whitish lines; first from  $\frac{1}{3}$  costa to  $\frac{1}{3}$  dorsum, outwardly curved; second from  $\frac{3}{4}$  costa to  $\frac{2}{3}$  dorsum, nearly straight; a minute dull reddish median discal dot; cilia dull reddish, apices white. Hindwings with termen strongly bowed; colour and markings as forewings, but first line obsolete.

Although I have not seen the type, I think Mr. Warren is correct in his identification (Nov. Zool. 1905, p.422). It is true that the head is reddish-ochreous and the face ochreous in the original description, but some allowance must be made for the inexactness of Dr. Lucas' descriptions.

Q.: Duaringa; Brisbane, 4; Rosewood, 3, 4; Toowoomba, 4; Bunya Mountains, 12. I have four examples, including one ♀, all taken singly.

#### 14. CENOCHLORA QUANTILLA, n.sp.[quantillus, how little!]

♂. 15 mm. Head and face green; fillet snow-white. Palpi whitish. Antennæ white; pectinations 8. Thorax and abdomen green; beneath white. Legs whitish. Forewings triangular, costa gently arched, more strong at base, apex pointed, termen bowed, oblique; green; first line obsolete; a fine whitish dentate line traceable at  $\frac{3}{4}$ ; cilia white. Hindwings with termen strongly bowed; as forewings. Type in Coll. Turner (slightly worn).

N.Q.: Townsville; in April, one specimen, received from Mr. F. P. Dodd.

#### Gen.8. GYNANDRIA, n.g.

Face smooth, rounded, not prominent. Tongue present but weakly developed. Palpi short, not exceeding 1; second joint



rough-scaled; terminal joint minute in both sexes. Antennæ bipectinate in both sexes, apices simple. Thorax and abdomen not crested. Thorax slightly hairy beneath. Posterior tibiae without middle spurs in both sexes. Hindwing with a strong rounded costal expansion at base; frenulum and retinaculum obsolete in both sexes. Forewings with vein 6 out of 7 (this is probably not a constant character), 11 usually anastomosing with 12, but sometimes separate. Hindwings with 3 and 4 usually stalked, sometimes connate, 6 and 7 stalked, 8 anastomosing shortly with cell near base, then rapidly diverging; discocellulars angled on vein 5, dorsal strongly oblique; costal edge of cell considerably over  $\frac{2}{3}$ .

Type, *Geometra latilineata* Wlk. I do not know whether there are any other species. This and the preceding genus differ from *Cymatoplex* in the pectination of the ♀ antennæ, a character which is found also in the unrelated genera *Uliocnemis* and *Dysphania*.

#### 15. GYNANDRIA LATILINEATA.

*Geometra latilineata* Wlk., Cat. Brit. Mus. xxxv. p.1605; *Eucrostis latilineata* Meyr., Proc. Linn. Soc. N. S. Wales, 1887, p.868.

A pretty and abundant species, of a bright bluish-green colour when fresh but rapidly fading. The antennal pectinations are rather short(♂ 2, ♀ 1). Northern specimens are smaller, with broader lines; in southern specimens the lines are finer, and the anterior line of forewings may be absent.

N.A.: Port Darwin, 1, 10, 11—N.Q.: Kuranda, 2; Townsville—Q.: Duaringa; Maryborough; Gympie; Nambour, 11, 12; Brisbane, 1, 2, 3, 9, 12; Stradbroke Island; Mt. Tambourine; Rosewood, 3; Nanango; Dalby, 12; Miles—N.S.W.: Tenterfield, 2.

Gen.9. CYMATOPLEX, n.g.[*κυματοπλέξ*, wave-beaten.]

Face smooth, rounded, not projecting. Palpi slender, short, not exceeding 1; terminal joint small in both sexes. Tongue present, rather weak. Antennæ pectinate in ♂, apex simple; in



♀ thick and slightly serrate. Thorax and abdomen not crested. Thorax slightly hairy beneath. Posterior tibiae without middle spurs in both sexes. Hindwings with a strong rounded costal expansion at base; frenulum and retinaculum obsolete in both sexes. Forewings with 3 and 4 separate or connate, 6 stalked or separate, 11 free or anastomosing with 12. Hindwings with 3 and 4 separate or connate, 6 and 7 stalked, 8 connected with cell near base, then rapidly diverging, discocellulars slightly angled on vein 5, dorsal moderately oblique, costal edge of cell considerably over  $\frac{2}{3}$ , cell one-half length of wing or more. Type *Iodis crenulata*, Luc.

I have not noticed 3 and 4 of the hindwings to be stalked, but this may occur in the genus.

*Microloxia*, Warr., differs from this genus by the presence of a weak frenulum in the ♂, and forms a connecting link between it and *Chlorocoma*. The European *Eucrostes*, Hb. (type *E. indigenata*, Vill.) differs in the elongate hindwings, with short cell (about  $\frac{2}{5}$ ), and long stalking of 3 and 4, also in 11 of forewings running into 12.

#### 16. CYMATOPLEX CRENULATA.

*Iodis crenulata* Luc., Proc. Linn. Soc. N. S. Wales, 1891, p. 294; *Euchloris dichroa* Low., Trans. R. Soc. S. Austr. 1903, p. 217; *Chlorochroma imparicornis* Warr., Nov. Zool. 1905, p. 422.

♂♀. 17-29 mm. Head pale ochreous; face deep ochreous; fillet snow-white. Palpi and antennae white; pectinations in ♂, outer row 12, inner 8. Thorax and abdomen pale green. Legs white, ochreous-tinged. Forewings triangular, costa nearly straight, apex round-pointed, termen slightly bowed, oblique; pale green, with five or six parallel wavy or dentate transverse whitish lines; a white costal streak with an ochreous streak immediately beneath, in ♀ costal edge ochreous; cilia whitish, sometimes ochreous-tinged. Hindwings with termen bowed; as forewings.

A coastal species. Southern examples are rather larger than northern.

N.A.: Port Darwin, 12—N.Q.: Thursday Island; Townsville, 4, 5, 6, 12—Q.: Brisbane; Stradbroke Island; Southport, 2.



17. CYMATOPLEX HYPOLICHNA, n.sp. [*ὑπόλιχνος*, somewhat dainty.]

♂. 17 mm. Head and face ochreous; fillet snow-white. Palpi whitish-ochreous. Antennæ white, undersurface ochreous; pectinations 8. Thorax green. Abdomen green, apical segments and underside white. Legs white; anterior coxæ green. Forewings triangular, costa slightly arched, apex pointed, termen slightly bowed, oblique; an ochreous streak along costa; costal edge white except towards base; two faint whitish wavy transverse lines; first from  $\frac{1}{3}$  costa to  $\frac{1}{3}$  dorsum; second from  $\frac{3}{4}$  costa to  $\frac{2}{3}$  dorsum; cilia whitish-ochreous. Hindwings with termen bowed; as forewings. Type in Coll. Turner.

N.A.: Port Darwin, in October; one specimen, received from Mr. F. P. Dodd.

## 18. †CYMATOPLEX ARGOCRANA.

*Eucrostis argocrana* Meyr., Proc. Linn. Soc. N. S. Wales, 1887, p.867.

Vic.:—

## 19. †CYMATOPLEX IOCENTRA.

*Eucrostis iocentra* Meyr., Proc. Linn. Soc. N. S. Wales, 1887, p.868.

Q.: Duaringa.

## Gen.10. EULOXIA.

*Euloxia* Warr., Nov. Zool. 1894, p.390.

Face smooth. Tongue well developed. Palpi short, not exceeding 1, second joint hairy beneath, terminal joint minute in both sexes. Antennæ in ♂ with long pectinations, apices simple; in ♀ simple. Thorax and abdomen not crested; thorax only slightly hairy beneath. Posterior tibiae with all spurs developed in both sexes. Hindwings with a strong rounded costal expansion at base; frenulum and retinaculum obsolete in both sexes. Forewings with 3 and 4 separate, 6 separate or short-stalked, 11 anastomosing first with 12, then with 10, or rarely with 12 only. Hindwings with 3 and 4 separate, connate, or short-stalked, 6 and 7 stalked, 8 closely approximated to cell



for some distance, gradually diverging before or at middle; discocellulars slightly angled on vein 5, dorsal slightly or moderately oblique, costal edge considerably over  $\frac{2}{3}$ . Type *Iodis fugitivaria* Gn.

A very natural genus, distinguished from *Chlorocoma* by the absence of a frenulum in the ♂. *Euloxia* is closely allied to *Euchloris* Hb., (type *smaragdaria* Fabr.) which differs in the longer palpi ( $1\frac{1}{4}$  or more), with second joint thickened with dense hairs above and beneath.

*Iodis* Hb., (type *I. chrysoprasaria* Esp. = *vernaria* Hb., nec Linn.) is still more closely allied, but the short palpi are smooth, not rough-haired, beneath, and the ♀ antennæ are shortly pectinated.

1. Fillet deep ochreous-yellow .....	2.
Fillet white or whitish .....	3.
2. Hindwings ochreous-yellow .....	20. <i>gratiosata</i> .
Hindwings green-whitish .....	21. <i>meandrararia</i> .
3. Forewings with oblique whitish postmedian line .....	4.
Forewings without postmedian line .....	7.
4. Face brown or ochreous .....	5.
Face green .....	6.
5. Forewings with postmedian line nearly straight, not dentate .....	22. <i>fugitivaria</i> .
Forewings with postmedian line sinuate and finely dentate .....	23. <i>isadelpha</i> .
6. Forewings with lines narrow, antemedian line bent inwards in disc. ....	24. <i>leucochorda</i> .
Forewings with postmedian line thickened, antemedian not bent inwards in disc. ....	25. <i>hypsihrona</i> .
7. Crown of head green .....	26. <i>†ochthaula</i> .
Crown of head orange with two green dots. ....	27. <i>†beryllina</i> .
Crown of head wholly orange-ochreous .....	28. <i>pyropa</i> .

#### 20. EULOXIA GRATIOSATA.

*Nemoria gratiosata* Gn., Lep. ix. p.351, Pl.xvii. f.1; *Iodis gratiosata* Meyr., Proc. Linn. Soc. N. S. Wales, 1887, p.876.

This species is exceptional in having vein 8 of hindwings approximated to cell as far as middle.

Tas.: Launceston, 3; Hobart; Strahan, 2—Vic.: Melbourne, Beaconsfield, Apsley; Gisborne, 3.



## 21. EULOXIA MEANDRARIA.

*Iodis meandraria* Gn., Lep. ix. p.355; Meyr., Proc. Linn. Soc. N. S. Wales, 1887, p.874.

Vic.: Gisborne, 1, 2, 12; Moe.—Tas.: Hobart.

## 22. EULOXIA FUGITIVARIA.

*Iodis fugitivaria* Gn., Lep. ix. p.354; Meyr., Proc. Linn. Soc. N. S. Wales, 1887, p.876; *Iodis intacta* Wlk., Cat. Brit. Mus. xxii. p.545; *Iodis obliquissima* Wlk., Cat. Brit. Mus. xxii. p.546.

Q.: Toowoomba, Dalby—N.S.W.: Armidale, 2—Vic.: Melbourne; Gisborne, 11—Tas.: Launceston, 1; Deloraine, 11, 12.

23. EULOXIA ISADELPHA, n.sp. [*ισάδελφος*, like a brother.]

♂. 29 mm. Head green; fillet white; face brown. Palpi green. Antennæ white; pectinations in ♂ 5. Thorax green. Abdomen green on dorsum and undersurface, tuft and sides white. Legs with coxæ and femora green; anterior and middle tibiæ and tarsi grey; posterior tibiæ and tarsi white. Forewings triangular, costa gently arched, apex rounded, termen bowed, oblique; bluish-green; antemedian line obsolete; a fine post-median line from beneath  $\frac{3}{4}$  costa, sinuate, finely dentate; cilia bluish-green. Hindwings with termen strongly bowed; pale bluish-green becoming whitish towards costa and base; a fine curved whitish line towards dorsum at  $\frac{3}{4}$ ; cilia bluish-green. Underside pale bluish-green partly suffused with whitish. Type in Coll. Lyell.

Closely allied to *E. fugitivaria*, from which it differs in the differently shaped line on forewings.

W.A.: Waroona, in October; one specimen, received from Mr. G. A. Berthoud.

## 24. EULOXIA LEUCOCHORDA.

*Iodis leucochorda* Meyr., Proc. Linn. Soc. N. S. Wales, 1887, p.875.

Tas.: Deloraine, 12; Lottah.



## 25. EULOXIA HYPSTHRONA.

*Iodis hypsthrona* Meyr., Proc. Linn. Soc. N. S. Wales, 1887, p.874.

The only specimen I have been able to examine has vein 11 anastomosing with 12 only, not with 10. This is probably exceptional.

N.S.W.: Mt. Kosciusko, 1.

## 26. † EULOXIA OCHTHAULA.

*Iodis ochthaula*, Meyr., Proc. Linn. Soc. N. S. Wales, 1887, p.877.

W.A.: Carnarvon, 10.

## 27. † EULOXIA BERYLLINA.

*Iodis beryllina*, Meyr., Proc. Linn. Soc. N. S. Wales, 1887, p.877.

W.A.: Geraldton, 11.

## 28. EULOXIA PYROPA.

*Iodis pyropa*, Meyr., Proc. Linn. Soc. N. S. Wales, 1887, p.878.

In the Victorian specimens I have examined, the dorsal cilia of hindwings are pale green; in the West Australian pale ochreous; otherwise they are identical.

Vic.: Castlemaine, 11; Bendigo, 11—W.A.: Perth, 11; Waroona, 10.

Gen.11, CHLOROCOMA, n.g.[*χλωρόκομος*, green-leaved.]

*Chlorochroma* Gn., Lep. ix. p.365, *nec* Dup.

Face smooth. Tongue well developed. Palpi rather stout, short, 1 or less; terminal joint minute in both sexes. Antennæ in ♂ pectinate, apices simple; in ♀ simple. Thorax and abdomen not crested; thorax slightly hairy beneath. Posterior tibiæ with all spurs present in ♂, dilated, with a tuft of hairs in groove on inner side. Hindwings with a strong rounded costal expansion at base; frenulum in ♂ weak, retinaculum



close to base of forewing; frenulum and retinaculum in ♀ obsolete. Forewings with 3 and 4 separate, 6 short-stalked, 11 anastomosing with 12 and then with 10, or anastomosing with 12 only, or free. Hindwings with 3 and 4 separate, connate, or short-stalked, 6 and 7 stalked, 8 approximated to cell near base, then diverging; discocellulars but slightly angled at vein 5, dorsal slightly or moderately oblique; costal edge of cell considerably over  $\frac{2}{3}$ . Type, *C. dichloraria*, Gn.

A very natural genus, the species being closely inter-related. All the variations in vein 11 of the forewings, and veins 3 and 4 of the hindwings occur within the same species. I regard this genus as arising from *Prasinocyma*; with *Prasinocyma semicrocea*, Wlk., it shows real relationship. In turn it is the parent of *Euloxia*. *Chloëres* I regard as arising from *Prasinocyma* by a separate stem.

1. Face crimson or fuscous-crimson.....	2.
Face deep ochreous.....	10.
Face green.....	12.
2. Crown of head wholly crimson.....	3.
Crown of head green posteriorly.....	5.
3. Hindwings with a fuscous-crimson discal spot.....	29. <i>cadmaria</i> .
Hindwings without discal spot .....	4.
4. Forewings with costal edge and apices of cilia whitish	30. <i>rhodocrossa</i> .
Forewings with costal edge and apices of cilia crimson	31. <i>rhodoloma</i> .
5. Thorax and abdomen with a pale median dorsal line	6.
Thorax and abdomen without dorsal line.....	8.
6. Lines on forewings finely denticulate, cilia crimson	
at apices... ..	32. <i>dichloraria</i> .
Lines on forewings obsolete or not denticulate, cilia	
pale ochreous. ....	7.
7. Veins finely whitish-ochreous.....	33. <i>carenaria</i> .
Veins not outlined with whitish-ochreous.....	34. <i>assimilis</i> .
8. Cilia whitish at apices....	35.† <i>monocyma</i> .
Cilia crimson at apices.....	9.
9. Wings whitish-green, without lines.....	36.† <i>halochlora</i> .
9. Wings deep green, with finely denticulate lines.....	37. <i>externa</i> .
10. Wings with ochreous discal dots....	38. <i>periphracta</i> .
Wings without discal dots.....	11.
11. Anterior coxæ deep ochreous.....	39. <i>melocrossa</i> .
Anterior coxæ silvery-white.....	40.† <i>targocnemis</i> .



- |  |                         |
|--|-------------------------|
| 12. Wings with ferruginous discal dots.....  | 41. <i>tetraspila</i> . |
| Wings without ferruginous discal spots.....  | 13.                     |
| 13. Forewings without lines.....   | 42. <i>asemanta</i> .   |
| Forewings with at least a postmedian line.....                                       | 14.                     |
| 14. Postmedian line of forewings straight, strongly oblique, not reaching costa..... | 43. <i>stereota</i> .   |
| Postmedian line of forewings parallel to termen, finely denticulate or wavy.....     | 15.                     |
| 15. Forewings with a strong white costal streak.....                                 | 45. <i>tachypora</i> .  |
| Forewings with costal edge only ochreous-whitish....                                 | 44. <i>neptunus</i> .   |

## 29. CHLOROCOMA CADMARIA.

*Chlorochroma cadmaria* Gn., Lep. ix. p.365; *Chlorochroma vulnerata* Butl., Ann. Mag. Nat. Hist. (5), ix. p.91, 1882; *Iodis cadmaria* Meyr., Proc. Linn. Soc. N. S. Wales, 1887, p.886.

N.S.W.: Sydney, 1, 11, 12; Katoomba, 3, 4; Bathurst—Vic.: Melbourne, Beaconsfield; Gisborne, 11, 12; Beechworth—Tasm.: Hobart—S.A.: Mt. Lofty—W.A.: Waroona, 2.

## 30. CHLOROCOMA RHODOCROSSA.

*Euchloris rhodocrossa* Turn., Trans. Roy. Soc. S. Austr. 1906, p.128.

W.A.: Bridgetown, 2.

31. CHLOROCOMA RHODOLOMA, n.sp. [*ῥοδολωμος*, rosy-edged.]

♀. 24 mm. Crown, face, and palpi crimson; fillet white. Antennæ white, towards apex grey. Thorax bluish-green, Abdomen bluish-green(fading to whitish). Legs crimson; posterior pair ochreous-whitish. Forewings triangular, costa only slightly arched, apex round-pointed, termen slightly bowed, slightly oblique; bluish-green; without lines; a crimson streak along costa throughout; termen narrowly whitish; cilia crimson, with obscure fuscous dots opposite veins, on dorsum pale green. Hindwings with termen rather strongly bowed; colour and cilia as forewings. Underside pale green, a crimson costal streak on forewing, cilia crimson with a strong, interrupted, basal, dark fuscous line. Type in Coll. Lyell.

W.A.: Waroona; in April; one specimen, received from Mr. G. A. Berthoud.



## 32. CHLOROCOMA DICHLORARIA.

*Chlorochroma dichloraria* Gn., Lep. ix. p.365, Pl.vi. f.8; *Chlorochroma vertumnaria* Gn., Lep. ix. p.365; *Geometra submissaria* Wlk., Cat. Brit. Mus. xxii. p.529; *Chlorochroma congenita* Wlk., Cat. Brit. Mus. xxii. p.564; *Iodis dichloraria* Meyr., Proc. Linn. Soc. N. S. Wales 1887, p.884; *Iodis vertumnaria* Meyr., *op cit.* 1887, p.885.

*C. vertumnaria* Gn.=*C. congenita* Wlk., differs only in the wholly crimson cilia. I regard it as merely a variety. *C. dichloraria* varies much in the extent of crimson in the cilia.

Q.: Toowoomba, 1; Warwick, 10—N.S.W.: Newcastle; Sydney, 4, 9—Vic.: Melbourne; Gisborne, 1, 3, 11; Ballarat, Birchip—Tasm.: Launceston; George's Bay; Hobart, 4, 12; Zeehan, 2.

## 33. CHLOROCOMA CARENARIA.

*Chlorochroma carenaria* Gn., Lep. ix. p.366; *Iodis carenaria* Meyr., Proc. Linn. Soc. N. S. Wales 1887, p.881.

♂♀. 28-42 mm. Crown green posteriorly, anteriorly narrowly dull red; fillet whitish-ochreous; face and palpi dull red. Antennæ whitish-ochreous, inner pectinations tinged with reddish; pectinations in ♂ 5. Thorax and abdomen green; a narrow median dorsal whitish-ochreous line from before middle of thorax; apical segments, sides, and lower surface of abdomen whitish. Legs whitish; anterior pair reddish in front. Forewings triangular, costa slightly arched, apex round-pointed, termen nearly straight, oblique; green; costal edge whitish-ochreous, near base reddish; all veins slenderly outlined in whitish; a slightly curved, not dentate, whitish line from mid-dorsum towards, but not reaching costa shortly before apex, becoming attenuated towards extremity; cilia whitish-ochreous, on tornus green. Hindwings with termen bowed, slightly produced at tornus; colour and markings as forewings; but post-median line slightly dentate. Underside green; basal fourth of costa of forewings reddish.

Vic.: Gisborne, 2, 3, 4—Tas.: Hobart.



## 34. CHLOROCOMA ASSIMILIS.

*Iodis assimilis* Luc., Proc. Linn. Soc. N. S. Wales 1888, p.1265; *Iodis commoda* Luc., *op. cit.* 1892, p.252.

♂. 30-34 mm. Crown posteriorly bluish-green, anteriorly crimson; fillet whitish; face deep crimson. Palpi crimson, beneath whitish. Antennæ whitish, stalk and inner pectinations crimson-tinged; pectinations 4-5. Thorax and abdomen bluish-green, with a median dorsal whitish-ochreous streak from mid-thorax; shoulders narrowly crimson; underside whitish. Legs crimson; posterior pair whitish. Forewings triangular, costa nearly straight except near apex, apex pointed, termen nearly straight, oblique; bluish-green; an ochreous costal streak becoming crimson at base; lines usually obsolete; postmedian line sometimes present, straight, from  $\frac{3}{5}$  costa towards apex; cilia whitish-ochreous, at apex crimson. Hindwings with termen bowed; colour and cilia as forewings. Underside pale green.

*I. commoda* Luc., is the form with postmedian line developed. Q.: Brisbane, 7—W.A.: Waroona, 5 (Berthoud).

## 35.†CHLOROCOMA MONOCYMA.

*Iodis monocyma* Meyr., Proc. Linn. Soc. N.S. Wales, 1887, p.883. W.A.: Carnarvon, 10.

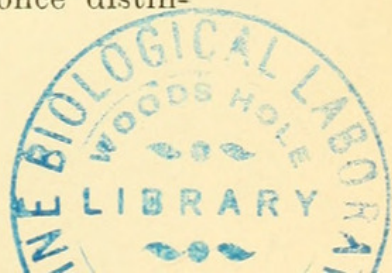
## 36.†CHLOROCOMA HALOCHLORA.

*Iodis halochlora* Meyr., Proc. Linn. Soc. N.S. Wales, 1887, p.878. Perhaps this should be referred to the genus *Euloxia*. S.A.: Quorn, 10.

## 37. CHLOROCOMA EXTERNA.

*Chlorochroma externa* Wlk., Cat. Brit. Mus. xxii. p 564; *Iodis externa* Meyr., Proc. Linn. Soc. N. S. Wales, 1887, p.885.

In my specimens the red line on crown is reduced to a trace. There is a close superficial resemblance between this species and *Prasinocyma semicrocea* Wlk., which may be at once distin-





guished by the longer palpi and green face. Probably the relationship is real, as well as apparent.

N.S.W.: Bathurst—Vic.: Gisborne, 3—Tasm.: Deloraine—S.A.: Mt. Lofty.

### 38. CHLOROCOMA PERIPHRACTA.

*Euchloris periphracta* Turn., Trans. Roy. Soc. S. Austr., 1904, p.219.

Q.: Stradbroke Island, 9, 10.

### 39. CHLOROCOMA MELOCROSSA.

*Iodis submissaria* Meyr., Proc. Linn. Soc. N. S. Wales, 1887, p.882, *nec* Wlk.; *Euchloris xuthocrania* Turn., Trans. Roy. Soc. S. Austr., 1906, p.127; *Chlorochroma citrolimbaria* Wlk., Cat. Brit. Mus. xxii. p.562, *nec* Gn.; *Iodis melocrossa* Meyr., Proc. Linn. Soc. N. S. Wales, 1887, p.879.

Mr. Prout has re-examined the type of *I. melocrossa*, and assures me that it is a form of my species, with the lines reduced to white vein-dots.

Q.: Stanthorpe—Vic.: Melbourne; Castlemaine, 3; Monbulk, 11—Tasm.: Deloraine, Strahan—S.A.: Mt. Lofty.

### 40.†CHLOROCOMA ARGOCNEMIS.

*Iodis argocnemis* Meyr., Proc. Linn. Soc. N.S. Wales, 1887, p.883. W.A.: Perth.

### 41. CHLOROCOMA TETRASPILA.

*Euchloris tetraspila* Low., Trans. Roy. Soc. S. Austr. 1901, p.66.

♂. 25-28 mm. Head green; fillet white; face green. Palpi green; terminal joint crimson. Antennæ white, inner pectinations slightly crimson-tinged; pectinations 6. Thorax and abdomen green; beneath whitish. Legs pale crimson, posterior pair whitish. Forewings triangular, costa moderately arched, apex pointed, termen nearly straight, oblique; green; costal edge pale crimson; a fuscous discal dot margined with ferruginous; lines nearly obsolete, indicated by minute whitish specks on veins;



cilia green, apices whitish. Hindwings with termen angled and slightly produced on vein 4; colour, lines, and cilia as forewings; discal dots as forewings, but slightly larger; cilia on angle sometimes tinged with ferruginous. Type in Coll. Lyell.

The shape of the hindwings is peculiar in the genus.

Vic.: Gembrook, near Beaconsfield—Tasm.: Kelso, 3.

#### 42. CHLOROCOMA ASEMANTA.

*Iodis asemanta* Meyr., Proc. Linn. Soc. N.S. Wales, 1887, p. 879.

A specimen sent by Mr. G. A. Berthoud, which I refer to this species, differs slightly from Mr. Meyrick's description, as follows:—♂. Face green, its upper edge and a few scattered scales crimson; fillet pale pink. Palpi very short ( $\frac{1}{2}$ ); pinkish. Fore and middle legs suffused with pink.

W.A.: Carnarvon; Waterloo, 5.

#### 43. CHLOROCOMA STEREOTA.

*Iodis stereota* Meyr., Proc. Linn. Soc. N. S. Wales, 1887, p. 875.

Vic.: Melbourne, 10; Gisborne, 3, 4, 11, 12.

#### 44. CHLOROCOMA NEPTUNUS.

*Chlorochroma neptunus* Butl., Trans. Ent. Soc. 1886, p. 435;

*Iodis neptunus* Meyr., Proc. Linn. Soc. N. S. Wales, 1887, p. 881.

Antennal pectinations of ♂ 6.

Q.: Rockhampton; Rosewood, 4.

#### 45. CHLOROCOMA TACHYPORA, n.sp. [ταχύπορος, quick of motion.]

♂. 20-24 mm. Head bluish-green, fillet broadly snow-white, face yellowish-green. Palpi extremely short, scarcely exceeding  $\frac{1}{2}$ ; whitish. Antennæ white; pectinations in ♂, anterior 4, posterior 6. Thorax and abdomen bluish-green; tuft, sides, and lower surface white. Legs whitish; anterior pair grey-whitish. Forewings triangular, costa nearly straight, apex round-pointed, termen nearly straight, oblique; a broad white costal streak narrowing at base and apex; lines whitish, dentate, indistinct; first at  $\frac{1}{3}$ , second at  $\frac{2}{3}$ , approaching first towards dorsum; an



obscure darker green median discal dot; cilia whitish-green. Hindwings with termen rather strongly bowed; colour, lines, discal dot, and cilia as forewings. Underside green-whitish.

This little species is nearest *C. neptunus*. The frenulum is very slender. Although the palpi are unusually small, the tongue is well developed. Type in Coll. Turner.

. Q.: Stradbroke Island; in February and August; two specimens.

#### Gen.12. MAXATES.

*Maxates* Moore, Lep. Ceyl. iii. p.436; Hmps., Moths Ind. iii. p.505.

Face smooth. Tongue well-developed. Palpi  $1\frac{1}{2}$ ; second joint long, thickened with rough scales beneath; terminal joint stout, obtuse in ♂,  $\frac{1}{4}$ . Antennæ of ♂ pectinated, apices simple; of ♀ simple. Thorax and abdomen not crested; thorax only slightly hairy beneath. Posterior tibiæ with all spurs present; in ♂ dilated, terminal spurs shortened, and a tuft of long hairs in a groove on inner side. Hindwings with a strong rounded costal expansion; frenulum in ♂ present but weak, retinaculum near base of forewing. Forewings with 3 and 4 connate or stalked; 11 anastomosing with 12. Hindwings quadrate, acutely angled and strongly produced on vein 4; 3 and 4 stalked, 6 and 7 stalked, 8 closely approximated to cell for a short distance, diverging before middle; discocellulars somewhat angled on vein 5, posterior curved and becoming strongly oblique towards dorsal angle of cell; costal edge of cell considerably over  $\frac{2}{3}$ . Type *M. cœlataria* Wlk., from India.

A small genus differing from *Prasinocyma* in the shape of the hindwings.

#### 46. MAXATES TANYGONA.

*Euchloris tanygona* Turn., Trans.Roy.Soc.S.Austr.1904,p.220.

Q.: Mount Tambourine, 11.

Gen.13. ERETMOPOUS, n.g.[ἐρετμοπους, paddle-footed.]

Face smooth. Tongue well-developed. Palpi over 1; second joint thickened with roughish hairs; terminal joint well de-



veloped. Antennæ in ♂ pectinated, apices simple; in ♀ simple. Thorax and abdomen not crested; thorax moderately hairy beneath. Posterior legs of ♂ sub-aborted, tibiæ and tarsi dilated and clothed with rough hair, all spurs absent, tarsi flattened and closely appressed beneath abdomen. Hindwings with a slight costal expansion at base; frenulum in ♂ present but weak; retinaculum close to base of forewing. Forewings with 3 and 4 slightly separate at origin, 6 stalked, 11 from cell, not anastomosing. Hindwings with 3 and 4 connate or stalked\*, 5 strongly approximated to 6, 6 and 7 stalked, 8 closely approximated to cell for some distance, diverging shortly before middle; discocellulars not angled and only slightly oblique.

A development of *Prasinocyma*. The hindlegs of the ♂ have an extraordinary resemblance to those of *Eois eretmopus*, Turn., but have been independently developed, there being no near kinship between the two. Type *Thalassodes marinaria*, Gn.

#### 47. ERETMOPOUS MARINARIA.

*Thalassodes marinaria* Gn., Lep. ix. p.361; Hmps., Moths Ind. iii. p.508; *Geometra discissa* Wlk., Cat. Brit. Mus. xxii. p.517; *Geometra penicillata* Wlk., Cat. Brit. Mus. xxii. p.525.

♂. 38 mm. Crown green, with a very narrow faint reddish line anteriorly; fillet broadly snow-white; face and palpi grey-brown. Antennæ white, towards apices ochreous-tinged; pectinations in ♂ 3. Thorax and abdomen bluish-green; tuft, sides and under surface whitish. Legs whitish; anterior pair dull purple-brown. Forewings triangular, costa nearly straight to near apex, then strongly arched, apex rounded, termen slightly bowed, oblique; bluish-green with faintly paler transverse strigulæ sparsely distributed; costal edge whitish-ochreous, at base whitish; cilia whitish, with minute fuscous dots at end of veins. Hindwings obtusely bowed on vein 4; as forewings. Underside green-whitish; costa of forewings and base of hindwings tinged with ochreous.

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\* Stalked in my exampled, not stalked according to Sir Geo. Hampson.



This seems to agree sufficiently with descriptions drawn from Indian examples, which are, however, rather larger. On a casual inspection it might be confused with *C. albicosta* Wlk.

N.A.: Port Darwin; in December; one specimen, received from Mr. F. P. Dodd. Also from Borneo and India.

Gen. 14. COMIBÆNA.

*Comibæna* Hb., Verz. p.284; *Comostolodes* Warr., Nov. Zool. 1896, p.308; *Probolosceles* Warr., Nov. Zool. 1896, p.368.

Face smooth. Tongue well-developed. Palpi moderate or rather long; second joint roughly scaled; terminal joint in ♂ short, in ♀ moderately elongate. Antennæ in ♂ pectinated, apices simple, in ♀ simple. Thorax not crested; slightly hairy beneath. Abdomen sometimes with faint indications of dorsal crests. Posterior tibiæ with all spurs present; in ♂ with a long slender terminal process about half as long as tarsus. Hindwings with a strong rounded costal expansion at base; frenulum in ♂ present but very slender, retinaculum close to base of forewing; frenulum in ♀ represented by a few weak hairs. Forewings with 3 and 4 connate or stalked, 6 separate or stalked, 11 from cell or stalked with 7, 8, 9, 10 beyond 6, free or running into 12. Hindwings with 3 and 4 stalked, 6 and 7 stalked, 8 closely approximated to cell near base, diverging before middle; discocellulars not angled on vein 5, only moderately oblique.

Although, as will be noted below, there are substantial differences between the neururation of the forewings of the two Australian species, yet, in view of the variability of the same points in the genus *Comostola*, I do not think they can be relied on for generic separation. The genus is best characterised by the posterior tibial process, which is an exaggeration of a structure found to a slighter extent in some other genera; but in the latter (except in *Eucyclodes callisticta*) never attaining half the length of the tarsus. Type *C. pustulata* Hufn., from Europe.



## 48. COMIBÆNA INDUCTARIA.

*Phorodesma inductaria* Gn., Lep. ix. p.370: *Nemoria smaragdus* Hmps., Ill. Het. viii. p.110, Pl.151, f.15; Moths Ind. iii. p.504: *Comostolodes consobrina* Warr., Nov. Zool. 1897, p.210.

♂. 14-16 mm., ♀. 21 mm. Crown and fillet green; face green, narrowly margined above, below, and on sides with white, which sometimes contains a few reddish scales. Palpi whitish, partly greenish-tinged; terminal joint in ♂  $\frac{1}{8}$ , in ♀  $\frac{1}{3}$ . Antennæ white; pectinations in ♂ 5. Thorax green; crossed anteriorly by a narrow white line, margined posteriorly with pale red. Abdomen green; a white dorsal spot at base, and a second and larger white spot about middle, both edged with pale red; apex, sides, and undersurface whitish. Legs whitish; anterior femora and tibiæ annulated in ♂ with green, in ♀ with fuscous. Forewings with costa moderately arched, apex rounded, termen bowed, oblique; 3 and 4 short-stalked; 11 stalked with 7, 8, 9, 10, usually running into 12, sometimes free; bright green; a white costal streak, narrowly edged with pale red, and expanded into spots at  $\frac{1}{3}$  and  $\frac{2}{3}$ ; several white spots edged with pale red; one on dorsum at  $\frac{3}{5}$ , and another on median vein at  $\frac{1}{3}$ , together with first costal spot represent antemedian line; one on tornus, and one on vein 4 at  $\frac{2}{3}$ , together with second costal spot and some intermediate dots represent postmedian line; a terminal series of similar dots on veins; cilia whitish-ochreous with a reddish fuscous basal line. Hindwings with termen strongly bowed; as forewings, but without discal, costal, and dorsal spots, and with large spots on tornus and termination of vein 4. Underside whitish-green.

N.Q.: Cooktown; Kuranda, 3, 4, 9, 10; Townsville, 12.

## 49. COMIBÆNA MARIE.

*Iodis marie* Luc., Proc. Linn. Soc. N. S. Wales, 1888, p.1266; *Probolesceles albipunctata* Warr., Nov. Zool., 1898, p.15; *Probolesceles connata* Warr., Nov. Zool. 1898, p.15.

♂♀. 22-32 mm. Crown and fillet green; face green, narrowly margined above, below, and at sides with white. Palpi purple-



fuscous, base white beneath; in ♂  $1\frac{1}{2}$ , terminal joint  $\frac{1}{6}$ ; in ♀  $2\frac{1}{2}$ , terminal joint  $\frac{2}{3}$ . Antennæ white, base of stalk green. Thorax green. Abdomen grey-brown; with a lateral greenish suffusion before middle, and three triangular snow-white median dorsal spots; apex, sides, and undersurface white. Legs white; anterior and middle pairs annulated with fuscous; anterior tibiæ with a dense posterior tuft of fuscous hairs in both sexes. Forewings triangular, costa gently arched, apex rounded, termen bowed, oblique; 3 and 4 connate, 11 from cell, free; bright green; a slender white costal streak; a minute grey-brown discal dot; a large grey-brown tornal blotch, sometimes pale-centered, somewhat variable in form, with wavy margin; a slender grey-brown terminal line, interrupted by white dots on veins; cilia whitish-ochreous, with a broad interrupted grey-brown basal line. Hindwings with termen rounded; as forewings, but with a large apical instead of a tornal blotch.

The green fillet, white-margined face, and white dots on abdomen are interesting indications of affinity to *C. inductaria*.

Mr. R. Illidge informs me that the larvæ feed on the flowers of *Acacia*, and are concealed by withered fragments of the flowers adhering to them.

N.Q.: Herberton; Kûranda, 3—Q.: Duaringa; Brisbane, 3, 4.

#### Gen. 15. *ÆNOSPILA*.

*Ænospila* Swin., Trans. Ent. Soc. 1892, p. 5; Hmps., Moths Ind. iii. p. 508.

Face smooth. Tongue well developed. Palpi in ♀ very long, second joint long, terminal joint  $\frac{2}{3}$ . Antennæ of ♂ pectinated, apices simple; of ♀ simple. Thorax and abdomen not crested; thorax slightly hairy beneath. Posterior tibiæ of ♂ with terminal spurs absent; of ♀ with terminal spurs shortened, especially outer; inner proximal spur long, outer short in both sexes. Hindwings with a strong costal expansion at base; frenulum in ♀ obsolete. Forewings with 3 and 4 separate, 6 stalked, 11 from cell, not



anastomosing. Hindwings with 3 and 4 long-stalked, 5 closely approximated to 6 at origin, 8 touching cell near base, rapidly diverging; discocellulars only slightly oblique. Type, *O. flavifusata* Wlk.

I have been able to examine only the ♀; for the characters of the ♂ I rely on Sir Geo. Hampson (*loc. cit.*). The posterior tibiae distinguish it from *Prasinocyma*, of which it is an immediate derivative.

#### 50. *ÆNOSPILA FLAVIFUSATA*.

*Thalera flavifusata* Wlk., Cat. Brit. Mus. xxii. p.596; *Thalassodes sinuata* Moore, Proc. Zool. Soc. 1867, p.637; *Thalassodes flavifusata* Hmps., Moths Ind. iii. p.508; *Ænospila flavilinea* Warr., Nov. Zool. 1897, p.212; *Gelasma(?) perlineata* Warr., Nov. Zool. 1899, p.330.

♀. 26-28 mm. Head and face green; fillet snow-white. Palpi whitish-green. Antennæ white, towards apex grey-brown. Thorax and abdomen green; sides and undersurface whitish. Legs whitish; anterior tibiae and tarsi grey-brown. Forewings elongate-triangular, costa slightly arched, apex pointed, termen slightly bowed, oblique; bright green; slightly darker, sharply dentate, antemedian and postmedian lines discernible with difficulty; reddish-fuscous dots on dorsum at  $\frac{1}{3}$  and  $\frac{2}{3}$ , at extremities of lines; a similar discal dot; a snow-white costal streak not extending to base, margined by a slender yellow streak, which becomes reddish towards apex; a narrow dark red terminal line, interrupted by white dots on ends of veins; cilia reddish, apices paler. Hindwings with termen bowed and slightly dentate, tooth on vein 4 being the most developed; colour and markings as forewings, but costal streaks and antemedian line obsolete. Under-side green-whitish.

N.Q.: Cooktown, Cairns, Geraldton; Kuranda, 6. Also from Solomons, Java, Borneo, Ceylon, and India.

#### Gen.16. *THALASSODES*.

*Thalassodes* Gn., Lep. ix. p.359; Hmps., Moths Ind. iii. p.507.

Face smooth, with a slight projecting tuft of scales at lower



edge. Tongue well developed. Palpi rather long, ascending; second joint rough-haired beneath; terminal joint stout, obtuse, well developed in both sexes. Antennæ in ♂ pectinated, apices simple; in ♀ simple. Thorax and abdomen not crested; thorax moderately or densely hairy beneath. Posterior tibiæ with all spurs present; in ♂ sometimes strongly dilated, with a short stout terminal process. Hindwings strongly angled on vein 4; with a moderately strong costal expansion at base; frenulum in ♂ rather slender, retinaculum near base of forewing; frenulum in ♀ obsolete. Forewings with 3 and 4 usually short-stalked, rarely connate, 6 stalked, 11 free. Hindwings with 3 and 4 stalked, 6 and 7 stalked, 8 closely approximated to cell as far as middle, then diverging; discocellulars nearly straight, slightly wavy, strongly oblique, costal edge of cell  $\frac{2}{3}$ . Type, *Thalassodes quadraria* Gn.

As restricted, this is a small genus, which I regard as a development of *Prasinocyma* having most affinity to *P. ocyptera* and *P. albicosta*. Its most striking characteristic is the extremely oblique margin of the cell of hindwing, with its abbreviated costal edge. The three species are extremely similar.

- |                                       |                         |
|---------------------------------------|-------------------------|
| 1. Face purple-brown.....             | 51. <i>quadraria</i> .  |
| Face green.....                       | 2.                      |
| 2. Posterior tibiæ of ♂ dilated.....  | 52. <i>veraria</i> .    |
| Posterior tibiæ of ♂ not dilated..... | 53. <i>dorsilinea</i> . |

#### 51. THALASSODES QUADRARIA.

*Thalassodes quadraria* Gn., Lep. ix. p.360; Hmps., Moths Ind. iii. p.507; *Geometra digressa* Wlk., Cat. Brit. Mus. xxii. p.513; *Geometra dissita* Wlk., Cat. Brit. Mus. xxii. p.519; *Geometra semihyalina* Wlk., Cat. Brit. Mus. xxii. p.528; *Thalassodes dissepta* Wlk., Cat. Brit. Mus. xxii. p.550; *Thalassodes immisaria* Wlk., Cat. Brit. Mus. xxii. p.553; *Thalassodes lepulsata* Wlk., Cat. Brit. Mus. xxii. p.555; *Thalassodes inconclusaria* Wlk., Cat. Brit. Mus. xxii. p.556; *Thalassodes byrsopis* Meyr., Proc. Linn. Soc. N. S. Wales, 1886, p.249; *Iodis byrsopis* Meyr., *op. cit.*, 1887, p.902; *Iodis implicata* Luc., *op. cit.*, 1891, p.293.

Palpi in ♂  $1\frac{1}{2}$ ; terminal joint  $\frac{1}{2}$ . Posterior tibiæ of ♂ dilated, with a groove containing a tuft of hairs on inner side, terminal



spurs not notably abbreviated, and a short stout terminal process.

I doubt whether *Thalassodes pilaria* Gn., from Tahiti, is really identical.

N.A.: Port Darwin, 12—N.Q.: Kuranda, 4; Atherton—Q.: Rockhampton. Also from New Guinea, Celebes, Borneo, Ceylon, and India.

## 52. THALASSODES VERARIA.

*Thalassodes veraria* Gn., Lep. ix. p.360; Hmps., Moths Ind. iii. p.508: *Thalassodes opalina* Butl., Ann. Mag. Nat. Hist.(5). vi. 1882, p.214; *Iodis rhytiphorus* Low., Trans. Roy. Soc. S. Austr., 1893, p.156.

Palpi in ♂  $1\frac{1}{2}$ , terminal joint  $\frac{1}{2}$ . Differs from *T. quadraria* in the green face and green upper surface of palpi. Otherwise they seem almost indistinguishable. My examples are also slightly larger; the postmedian line of forewings is also more distinct, straighter, less wavy, the terminal process of posterior tibiae of ♂ is rather longer, and there is a fine interrupted median dorsal line on abdomen, but I cannot be sure that these differences are constant.

N.Q.: Thursday Island, Cooktown; Kuranda, 5. Also from Java, Ceylon, and India.

## 53. THALASSODES DORSILINEA.

*Thalassodes dorsilinea* Warr., Nov. Zool. 1903, p.364.

♂. 28-30 mm.; ♀. 32-37 mm. Crown bluish-green; fillet broadly white; face green. Palpi of ♂  $1\frac{1}{4}$ , terminal joint  $\frac{1}{4}$ ; of ♀  $1\frac{1}{2}$ , terminal joint  $\frac{1}{3}$ ; green, beneath whitish. Antennae ochreous-whitish, sometimes greenish-tinged, towards base white; pectinations in ♂ 6. Thorax and abdomen bluish-green, with a fine uninterrupted median whitish line from centre of thorax; sides and under surface whitish; thorax only moderately hairy beneath. Legs whitish; anterior and middle tibiae and tarsi pale brownish-ochreous; posterior tibiae of ♂ not dilated, without groove and tuft of hairs, and without terminal process.



Forewings triangular, costa nearly straight, arched before apex, apex round-pointed, termen nearly straight, oblique; bluish-green with small white transverse strigulations; lines whitish, converging; antemedian near base, from beneath  $\frac{1}{6}$  costa to  $\frac{1}{4}$  dorsum, often indistinct; postmedian from beneath  $\frac{3}{5}$  costa to  $\frac{3}{5}$  dorsum, straight; a whitish-ochreous streak along costa from near base; cilia whitish. Hindwings with termen angled on vein 4, straight on each side of angle; colour and markings as forewings, but lines obtusely bent in disc and thence crenate to dorsum. Underside whitish-green.

Mr. L. Prout has kindly examined, for me, the type of this species, which is very like *T. veraria* but considerably smaller, shorter palpi; and is immediately distinguished by the ♂ posterior tibiae.

N.A.: Port Darwin, 12—N.Q.: Kuranda, 1, 2, 3; Geraldton, 5. Also from New Guinea.

#### Gen. 17. PRASINOCYMA.

*Prasinocyma* Warr., Nov. Zool. 1897, p.44.

Face smooth. Tongue well developed. Palpi moderate or rather long; terminal joint in ♂ short or moderate, in ♀ always elongate. Antennæ in ♂ pectinated, apices simple; in ♀ simple. Thorax and abdomen not crested; thorax slightly or moderately hairy beneath. Posterior tibiae with all spurs present; in ♂ sometimes dilated, with a tuft of long hairs in groove on inner side, and terminal spurs abbreviated; rarely with a short terminal process. Hindwings with a strong costal expansion at base; frenulum in ♂ present but slender, retinaculum close to base of forewing; in ♀ obsolete. Forewings with 3 and 4 separate, connate, or short-stalked, 6 separate or stalked, 11 free or anastomosing with 12, rarely also with 10. Hindwings with 3 and 4 usually stalked, sometimes connate, 6 and 7 stalked, 8 closely approximated to cell for some distance, diverging before middle; discocellulars slightly or not at all angled on vein 5, dorsal straight or curved, moderately or rather strongly oblique, costal edge of cell considerably exceeding  $\frac{2}{3}$  dorsal edge. Type,



*Thalassodes vermicularia* Gn., an African species closely allied to *P. albicosta* Wlk.

The species included by me in this genus, show considerable variety of facies, and considerable variation also in certain details of structure, as will be noted below, and may possibly need to be divided.

1. Face crimson.....	54. <i>rhodocosma</i> .
Face ferruginous or brown.....	2.
Face green.....	4.
2. Wings with dark reddish-brown lines.....	55. <i>†exotérica</i> .
Wings without dark reddish-brown lines .....	3.
3. Hindwings with termen angled and projecting on vein 4.....	56. <i>†crossota</i> .
Hindwings with termen rounded.....	57. <i>ocyptera</i> .
4. Hindwings with termen rounded.....	5.
Hindwings with termen angled on vein 4.....	6.
5. Wings with numerous transverse whitish strigulæ.....	58. <i>albicosta</i> .
Wings not strigulated... ..	59. <i>semicrocea</i> .
6. Forewings with a snow-white costal streak .....	7.
Forewings without a snow-white costal streak.....	8.
7. Cilia green barred with white and reddish.....	60. <i>iosticta</i> .
Cilia whitish.....	63. <i>floresaria</i> .
8. Discal dots obscure green.....	9.
Discal dots ferruginous-fuscous.....	10.
9. Wings with slender dark green lines.. ..	61. <i>centrophylla</i> .
Wings with lines represented by white dots on veins..	62. <i>calaïna</i> .
10. Discal dots large, no terminal blotches.....	64. <i>phæostigma</i> .
Discal dots minute, large grey-brown terminal blotches	65. <i>anomæa</i> .

#### 54. PRASINOCYMA RHODOCOSMA.

*Iodis rhodocosma* Meyr., Proc. Linn. Soc. N. S. Wales, 1887, p.889.

Palpi in ♂  $1\frac{1}{2}$ , terminal joint minute; in ♀  $2\frac{1}{2}$ , terminal joint  $\frac{1}{2}$ . Posterior tibiæ of ♂ moderately dilated, with a tuft of hairs from base on inner side, terminal spurs rather short. Forewings with 3 and 4 connate, rarely short-stalked, 6 connate or short-stalked, 11 free, or rarely anastomosing shortly with 12. Hindwings with 3 and 4 stalked; discocellulars very slightly angled, dorsal moderately oblique.



N.Q.: Atherton; Townsville, 3, 4—Q.: Brisbane, 2, 3, 4, 7, 12—N.S.W.: Newcastle, Sydney—W.A.: Waroona, 12.

55. †PRASINOCYMA EXOTERICA.

*Iodis exoterica* Meyr., Proc. Linn. Soc. N. S. Wales, 1887, p.891.

N.S.W.: Newcastle.

56. †PRASINOCYMA CROSSOTA.

*Iodis crossota* Meyr., Proc. Linn. Soc. N. S. Wales, 1887, p.894.  
Q.: Brisbane.

57. PRASINOCYMA OCYPTERA.

*Iodis ocyptera* Meyr., Proc. Linn. Soc. N. S. Wales, 1887, p.887; *Iodis gracilis* Luc., Proc. Linn. Soc. N. S. Wales, 1888, p.1266.

Palpi in ♂  $1\frac{1}{2}$ , terminal joint  $\frac{1}{2}$ ; in ♀ 2, terminal joint  $\frac{3}{4}$ . Posterior tibiae in ♂ not thickened. Forewings with 3 and 4 connate, 6 usually stalked, sometimes connate, 11 free. Hindwings with 3 and 4 stalked; discocellulars straight and rather strongly oblique.

Q.: Brisbane, 2, 4, 8—W.A.: Carnarvon, Geraldton, 10, 11.

The localities for this species are at extreme ends of the continent. Doubtless subsequent discoveries will fill up the gap.

58. PRASINOCYMA ALBICOSTA.

*Geometra albicosta* Wlk., Cat. Brit. Mus. xxii. p.529; *Iodis albicosta* Meyr., Proc. Linn. Soc. N. S. Wales, 1887, p.888; *Iodis bicolora* Luc., Proc. Linn. Soc. N. S. Wales, 1888, p.1265; *Thalassodes flavicosta* Warr., Nov. Zool. 1897, p.214.

Antennal pectinations in ♂ 6. Palpi in ♂  $1\frac{1}{4}$ , terminal joint  $\frac{1}{3}$ ; in ♀  $1\frac{1}{2}$ , terminal joint  $\frac{2}{3}$ . Posterior tibiae in ♂ not dilated. Forewings with 3 and 4 separate, connate, or stalked, 6 separate or stalked, 11 free. Hindwings with 3 and 4 stalked; discocellulars nearly straight, rather strongly oblique.



Mr. Prout has kindly examined for me the type of *T. flavicosta* Warr.

N.A.: Port Darwin—N.Q.: Cape York, 11—Q: Brisbane, 5.

#### 59. PRASINOCYMA SEMICROCEA.

*Geometra semicrocea* Wlk., Cat. Brit. Mus. xxii. p.528;  
*Chlorochroma intermixta* Wlk., Cat. Brit. Mus. xxii. p.563;  
*Chlorochroma decisissima* Wlk., Cat. Brit. Mus. xxii. p.564;  
*Iodis semicrocea* Meyr., Proc. Linn. Soc. N. S. Wales, 1887, p.887; *Iodis subalpina* Luc., Proc. Linn. Soc. N. S. Wales, 1888, p.1264.

Pectinations of antennæ and terminal part of stalk in ♂ sometimes suffused with crimson. Palpi sometimes green, sometimes crimson, beneath whitish; in ♂  $1\frac{1}{2}$ , terminal joint  $\frac{1}{3}$ ; in ♀ 2, terminal joint  $\frac{2}{3}$ .

Q.: Brisbane—N.S.W.: Glen Innes, Sydney—Vic.: Gisborne, 3, 4, 11; Fernshaw, Moe, Bairnsdale—Tasm.: Hobart—S.A.: Mt. Lofty.

#### 60. PRASINOCYMA IOSTICTA.

*Iodis iosticta* Meyr., Proc. Linn. Soc. N. S. Wales, 1887, p.893.

Posterior tibiæ in ♂ greatly dilated, and terminal spurs much abbreviated.

Q.: Brisbane, 8; Southport—N.S.W.: Newcastle.

#### 61. PRASINOCYMA CENTROPHYLLA.

*Iodis centrophylla* Meyr., Proc. Linn. Soc. N. S. Wales, 1887, p.880; *Iodis angulata* Luc., Proc. Linn. Soc. N. S. Wales, 1888, p.1264.

Palpi in both sexes  $1\frac{1}{2}$ , terminal joint  $\frac{1}{3}$ . Posterior tibiæ in ♂ not dilated. Frenulum in ♂ very slender, easily overlooked. Forewings with 3 and 4 short-stalked or connate, 6 separate, 11 anastomosing with 12. Hindwings with 3 and 4 short-stalked or connate; discocellulars angled on vein 5, moderately oblique.

Vein 11 is closely applied to 10 also in my examples, but not anastomosing. I have no doubt that Mr. Meyrick is right in stating that it sometimes anastomoses.



Q.: Brisbane, Stradbroke Island, Toowoomba, 11—N.S.W.: Sydney—Vic.: Melbourne; Beaconsfield, 3, 11; Gisborne, 11—Tasm.: George's Bay; Kelso, 3; Georgetown, 4.

62. PRASINOCYMA CALAINA, n.sp. [καλάϊνος, bluish-green.]

♂♀. 30-33 mm. Head, face, and palpi green; fillet white. Antennæ white; pectinations in ♂ 6, inner row green-tinged. Palpi in ♂  $1\frac{1}{2}$ , terminal joint  $\frac{1}{3}$ ; in ♀ 2, terminal joint  $\frac{2}{3}$ . Thorax and abdomen bluish-green; tuft, sides, and under surface white. Legs white; anterior pair, except coxæ, green. Forewings triangular, costa gently arched, more strongly at base, apex acute, termen nearly straight, oblique; 3 and 4 separate, 6 separate, 11 free; bluish-green; costal edge narrowly whitish-ochreous; antemedian line represented by three or four whitish dots on veins; discal dot linear, obscure, dark green; postmedian line represented by a straight series of white dots on veins at  $\frac{3}{4}$ ; cilia bluish-green, apices whitish. Hindwings with termen angled on vein 4; 3 and 4 connate, discocellulars not angled, dorsal slightly oblique; as forewings, but antemedian line obsolete, and postmedian line angled. Under side whitish-green, darker towards costa of forewings. Type in Coll. Turner.

Q.: Mount Tambourine; in September and in April; two specimens.

63. PRASINOCYMA FLORESARIA.

*Geometra floresaria* Wlk., Cat. Brit. Mus. xxxv., p.1604; *Iodis oxycentra* Meyr., Proc. Linn. Soc. N. S. Wales, 1887, p.888.

Antennal pectinations in ♂ 4. Palpi in ♂  $1\frac{1}{2}$ , terminal joint  $\frac{1}{4}$ ; in ♀ 2, terminal joint  $\frac{1}{3}$ . Posterior tibiæ of ♂ dilated, with terminal spurs abbreviated, and a stout terminal process. Forewings with 3 and 4 separate, 6 separate, 11 free or anastomosing with 12. Hindwings with 3 and 4 connate or short-stalked; discocellulars nearly straight, slightly oblique.

N.Q.: Cairns; Kuranda, 3, 4, 6, 9, 10; Townsville, 12. Also from Flores.



64. PRASINOCYMA PHAEOSTIGMA, n.sp. [*φαιοστιγμος*, darkly branded.]

♀. 40 mm. Head bluish-green; fillet white; face bluish-green, lower edge white. Palpi in ♀ moderately long ( $1\frac{1}{2}$ ), terminal joint  $\frac{2}{3}$ , acute; bluish-green, beneath whitish. Antennæ white, towards apex pale brownish. Thorax and abdomen bluish-green; sides and under surface whitish. Legs whitish; anterior pair pale brownish. Forewings triangular, costa strongly arched at base, thence nearly straight, slightly sinuate, apex round-pointed, termen moderately bowed, oblique; 3 and 4 separate, 6 short-stalked, 11 free or anastomosing (approximated to 12 at a point, probably sometimes anastomosing, anastomosing shortly with 10 on one side only); bluish-green, rather thinly scaled; costal edge narrowly whitish-ochreous; lines obsolete; a fuscous discal spot on posterior edge of cell, surrounded by a brownish halo, and preceded by a crescentic fuscous mark; cilia concolorous. Hindwings with termen rounded, crenulate, dentate on vein 4; 3 and 4 short-stalked, 8 approximated to cell near middle, then diverging, discocellulars angled on vein 5, moderately oblique; as forewings, but discal spot preceded by a roundish spot. Under-side whitish, thinly scaled. Type in Coll. Turner.

N.Q.: Kuranda; in November; one specimen received from Mr. F. P. Dodd.

65. PRASINOCYMA ANOMOEIA, n.sp. [*ἀνόμοιος*, unlike, dissimilar.]

♀. 36 mm. Head green; fillet broadly purple-brown; face green, lower edge purple-brown. Palpi in ♀ 2, terminal joint  $\frac{2}{3}$ , obtuse; purple-brown, undersurface whitish. Antennæ purple-brown. Thorax green, with a large posterior purple-white spot, edged and irrorated with dark fuscous. Abdomen purple-white, with slight dark fuscous irroration; undersurface ochreous-whitish. Legs ochreous-whitish; anterior pair, middle tibiae, and tarsi brownish. Forewings triangular, costa nearly straight to near apex, then strongly arched, apex rounded, termen bowed, oblique, wavy; 3 and 4 connate, 6 connate, 11 free; bright green; costal edge brownish;



a ferruginous erect streak from  $\frac{1}{3}$  dorsum to mid-disc; a minute discal dot, dark fuscous with some ferruginous scales; a very large tornal and terminal blotch with lobed outline, from  $\frac{2}{3}$  dorsum to near costa, then narrowing and ending just below apex, purple-whitish, suffused partly with ferruginous, strigulated with fuscous, and edged with ferruginous-fuscous; a dark fuscous terminal line; cilia ochreous-whitish, with a faint purplish median line. Hindwings with termen dentate on veins 4 and 6; 3 and 4 short-stalked, 8 approximated to cell for a short distance near base; discocellulars nearly straight, oblique; as forewings, but with a large apical and smaller tornal blotch connected with a straight-edged bridge; the latter prolonged along dorsum nearly to base as a narrow streak. Underside whitish-green; a large dark fuscous blotch on forewings from tornus nearly to costa; a smaller subapical blotch on hindwings. Type in Coll. Lyell.

N.Q.: Kuranda; in April; one specimen, received from Mr. F. P. Dodd.

#### Gen. 18. DIPLODESMA.

*Diplodesma* Warr., Nov. Zool. 1896, p. 289.

Face smooth. Tongue well developed. Palpi moderate in ♂, rather long in ♀; second joint rough-scaled beneath; terminal joint in ♂ abbreviated. Antennæ in ♂ ciliated, in ♀ simple. Thorax and abdomen not crested; thorax slightly hairy beneath. Posterior tibiæ in ♂ dilated, middle spurs absent; in ♀ with all spurs present. Hindwings with a strong costal expansion at base; frenulum in ♂ present but slender, retinaculum near base of forewing; frenulum in ♀ obsolete. Forewings with 3 and 4 short-stalked or connate, 6, 7, 8, 9, 10, 11 stalked, 10 and 11 short and running into 12. Hindwings with 3 and 4 stalked, 6 and 7 stalked, 8 touching cell at a point near base, then rapidly diverging; discocellulars nearly straight, moderately oblique.

A derivative of *Hemithea*, from which it differs in veins 10 and 11 of forewing arising out of 9 and running into 12, a character which I have not found elsewhere in this group. Type, *Thalera celataria* Wlk.



## 66. DIPLODESMA CELATARIA.

*Thalera celataria* Wlk., Cat. Brit. Mus. xxxv. p.1614; *Idiochlora contracta* Warr., Nov. Zool. 1896, p.107; *Euchloris thalassica* Turn., Trans. Roy. Soc. S. Austr. 1904, p.221.

Antennal ciliations in ♂ 1. Palpi in ♂  $1\frac{1}{4}$ , terminal joint very short; in ♀ 2, terminal joint  $\frac{2}{3}$ . In two ♀ examples from Port Darwin the discal dots are obsolete.

N.A.: Port Darwin, 2, 10—N.Q.: Kuranda, 3, 4, 10, 12. Also from Sula Islands and India.

## Gen.19. HEMITHEA.

*Hemithea* Dup., Lep. France, iv. 2, p.233; Hmps., Moths Ind. iii. p.490.

Face smooth. Tongue well developed. Palpi in ♂ moderate, terminal joint short; in ♀ long, terminal joint long. Antennæ in ♂ more or less serrate, ciliated, in ♀ simple. Thorax not crested, slightly hairy beneath. Abdomen with a series of minute dorsal crests. Posterior tibiæ in ♂ dilated, with a short terminal process, middle spurs absent; in ♀ with all spurs present. Hindwings with a strong rounded costal expansion at base; frenulum in ♂ present but slender, retinaculum close to base of forewing; frenulum in ♀ obsolete. Forewings with 3 and 4 connate or short-stalked, 11 free or rarely anastomosing with 12. Hindwings with 3 and 4 stalked, 6 and 7 stalked, 8 approximated to cell near base, rapidly diverging; discocellulars nearly straight, moderately oblique. Type, *H. strigata* Müll., from Europe.

With the preceding and two following genera it forms a closely connected natural group, whose affinities are not very clear. *Nemoria* Hb., which is closely allied, differs in the absence of abdominal crests.

- |  |                          |
|--|--------------------------|
| 1. Cilia whitish.....                      | 69. <i>pisina</i> .      |
| Cilia greenish or grey.....                | 2.                       |
| 2. Wings with white lines.....             | 67. <i>insularia</i> .   |
| Wings with green lines and white dots..... | 68. <i>pellucidula</i> . |



## 67. HEMITHEA INSULARIA.

*Hemithea insularia* Gn., Lep. ix. p.385; *Iodis wuka* Pag., J.B. Nass. Ver. xxxix. p.153(1886); *Nemoria iosoma* Meyr., Trans. Ent. Soc. 1889, p.495; *Hemithea pictifimbria* Warr., Nov. Zool. 1896, p.290.

Antennal ciliations in ♂  $\frac{2}{3}$ . Palpi in ♂  $1\frac{1}{4}$ , terminal joint  $\frac{1}{6}$ ; in ♀  $2\frac{1}{2}$ , terminal joint  $\frac{2}{3}$ .

N.Q.: Kuranda, 9, 11; Townsville, 1, 2, 3, 5, 6, 7, 12. Also from New Guinea and Borneo.

## 68. HEMITHEA PELLUCIDULA.

*Nemoria pellucidula* Turn., Trans. Roy. Soc. S. Austr. 1896, p.129.

Antennal ciliations in ♂ 1. Palpi in ♂  $1\frac{1}{4}$ , terminal joint  $\frac{1}{6}$ ; in ♀ 2, terminal joint  $\frac{2}{3}$ .

N.Q.: Kuranda, 5, 9, 10.

## 69. HEMITHEA PISINA.

*Nemoria pisina* Warr., Nov. Zool. 1899, p 26.

Palpi in ♀ 2, terminal joint  $\frac{1}{2}$ .

I identified this species by comparison with the type. Unfortunately the Australian example is a female in poor condition, with the legs broken off. Structurally it agrees with the definition of the genus, so far as can be ascertained.

N.A.: Port Darwin, 3 (Coll. Lyell). Also from Tenimber Islands.

## Gen.20. METALLOCHLORA.

*Metallochloa* Warr., Nov. Zool. 1896, p.290.

Face smooth. Tongue well developed. Palpi in ♂ moderate or rather short, in ♀ moderate or rather long; basal joint hairy, second joint smooth-scaled; terminal joint in ♂ abbreviated. Antennæ in ♂ ciliated, in ♀ simple. Thorax not crested, slightly or moderately hairy beneath. Abdomen usually with three to five rounded metallic median dorsal crests. Posterior tibiæ in ♂ dilated, with a short terminal process; all spurs present. Hind-



wings angulated, and sometimes strongly produced on vein 4; a strong costal expansion at base; frenulum in ♂ present but slender, in ♀ obsolete. Forewings with 3 and 4 connate or short-stalked, 6 connate or short-stalked, 11 free. Hindwings with 3 and 4 long-stalked, 6 and 7 stalked, 8 touching cell at a point near base, then rapidly diverging; discocellulars not angled on vein 5, moderately oblique, dorsal sometimes curved so as to become strongly oblique.

Differs from *Hemithea* in the presence of middle spurs in ♂. Type, *M. meeki* Warr., from the Louisiades.

- |  |                         |
|--|-------------------------|
| 1. Hindwings dentate.....  | 2.                      |
| Hindwings angled, not dentate.....                                       | 3.                      |
| 2. Hindwings crenulate-dentate.....                                      | 70. <i>tetralopha</i> . |
| Hindwings strongly produced in an acute tooth on vein                    |                         |
| 4, not otherwise dentate.....  | 71. <i>decorata</i> .   |
| 3. Wings with pale green basal blotches.....                             | 72. <i>venusta</i> .    |
| Wings without basal blotches.....  | 4.                      |
| 4. Abdomen with metallic crests, ♂ antennal ciliations $1\frac{1}{2}$ .. | 73. <i>militaris</i> .  |
| Abdomen without metallic crests, ♂ antennal ciliations $\frac{2}{3}$     | 74. <i>ametalla</i> .   |

#### 70. METALLOCHLORA TETRALOPHA.

*Euchloris*(?) *tetralopha* Low., Proc. Linn. Soc. N. S. Wales, 1898, p.43.

♂♀. 25-28 mm. Crown and fillet pale yellowish-green; face fuscous-red. Palpi in ♂ 1, terminal joint minute; in ♀  $1\frac{1}{4}$ , terminal joint  $\frac{1}{4}$ ; fuscous-red, beneath whitish. Antennæ dull purple, towards base whitish; ciliations in ♂  $1\frac{1}{2}$ . Thorax pale yellowish-green. Abdomen, basal segments and tuft pale yellowish-green; middle segments whitish densely irrorated with purple, and with four or five large rounded median purple crests with metallic reflections; beneath ochreous-whitish. Legs brownish-ochreous; posterior pair ochreous-whitish. Forewings triangular, costa gently arched, apex rounded, termen bowed, oblique, wavy-crenulate; pale yellowish-green; an ochreous streak along costa strigulated with dark fuscous; a dark fuscous dot on end of cell at  $\frac{2}{5}$ ; a line of cells showing unctuous reflections from midcosta through discal dot to near base, there bent in a V to



end on dorsum at  $\frac{2}{5}$ ; a similar subterminal line parallel to termen, preceded and followed by a few scattered purplish scales; a broad obscure dark median shade from dorsum beyond middle, sinuate, not reaching costa; a dull purple spot on tornus; a blackish terminal line; cilia whitish, basal third pink. Hindwings with termen dentate-crenulate, with a more prominent tooth on vein 4; colour and markings as forewings, but antemedian line and discal dot obsolete. Underside green-whitish; forewings with a tornal fuscous spot, hindwings with a larger apical spot; cilia mostly fuscous.

N.Q.: Kuranda, 5, 6, 7, 9.

#### 71. METALLOCHLORA DECORATA.

*Thalerura*(?) *decorata* Warr., Nov. Zool. 1896, p.369.

♂. 26-28 mm. Crown dull olive-green; fillet yellow; face yellow, upper and lower margin orange-red. Palpi in ♂  $1\frac{1}{4}$ , terminal joint minute; white, upper surface except apex orange-red. Antennæ dull reddish, towards base yellow; ciliations in ♂  $1\frac{1}{2}$ . Thorax and abdomen dull olive-green; the latter with two or three fuscous-reddish median dorsal dots; beneath whitish. Legs whitish. Forewings triangular, costa gently arched, apex acute, termen straight, oblique; dull olive-green; sometimes with sparsely scattered fuscous scales; a fine fuscous costal line, towards apex interrupted; a fuscous spot becoming orange-red on margin of dorsum at  $\frac{2}{5}$ , with several similar minute dots on veins representing antemedian line; a similar but more numerous series of dots on veins at  $\frac{3}{4}$  representing postmedian line; a fine fuscous-reddish terminal line; cilia white, with a slight reddish suffusion at apex and tornus. Hindwings with termen produced in a long very acute tooth on vein 4, straight on each side of tooth; colour and markings as forewings, but first line obsolete; a linear fuscous-reddish discal mark; second line angled, or obsolete; costal edge of tooth whitish; cilia on tooth reddish; a fuscous dot on cilia on each side of base of tooth. Underside green-whitish, with fuscous spots on cilia



at apex and tornus of forewing, and fuscous cilia on tooth of hindwing.

N.Q.: Cooktown; Kuranda, 3, 5, 10, 11.

## 72. METALLOCHLORA VENUSTA.

*Chrysomphe venusta* Warr., Nov. Zool. 1896, p.365.

♂♀. 32-38 mm. Crown yellowish-green; fillet and face purple. Palpi in ♂ 1, terminal joint minute; in ♀ 2, terminal joint  $\frac{1}{3}$ ; purple, beneath white. Antennæ ochreous-purple; ciliations in ♂  $1\frac{1}{2}$ . Thorax yellowish-green. Abdomen yellowish-green, with three rounded median golden-metallic dorsal crests; tuft, sides, and under-surface whitish. Legs whitish. Forewings triangular, costa gently arched towards apex, termen slightly sinuate, oblique; dull olive-green; an irregularly rounded basal patch of paler yellowish-green projecting in middle to centre of disc; costal edge green-whitish with some reddish-fuscous strigulations; lines thick, curved, not dentate, greenish-yellow; first at  $\frac{1}{3}$ , obscured in basal blotch; second from  $\frac{3}{4}$  costa to  $\frac{3}{4}$  dorsum; terminal edge green-whitish; cilia green-whitish, towards apices paler. Hindwings obtusely angled on vein 4; colour and markings as forewings. Underside whitish.

N.Q.: Cooktown; Kuranda, 5, 9, 10, 11, 12.

## 73. METALLOCHLORA MILITARIS.

*Iodis militaris* Luc., Proc. Linn. Soc. N. S. Wales, 1891, p.295; *Metallochlorella dotata* Warr., Nov. Zool. 1896, p.367; *Metallochlorella flavifimbria* Warr., Nov. Zool. 1896, p.367; *Metallochlorella differens* Warr., Nov. Zool. 1897, p.41.

♂♀. 24 mm. Crown bright green, fillet whitish-yellow, face fuscous-purple. Palpi in ♂  $1\frac{1}{4}$ , terminal joint minute; in ♀  $1\frac{3}{4}$ , terminal joint  $\frac{1}{4}$ ; fuscous-purple, beneath white. Antennæ whitish or yellowish; ciliations in ♂ 2. Thorax bright green. Abdomen bright green, with three or four rounded golden-metallic median dorsal crests margined with fuscous-purple; tuft, sides, and undersurface whitish. Legs whitish. Forewings triangular, costa slightly arched, apex round-pointed,



termen straight, oblique; bright green; a fine ochreous streak, interrupted by fuscous dots, along costa; lines obsolete; a fuscous or reddish median discal dot at  $\frac{1}{3}$ ; a similar dot on vein 6 at  $\frac{5}{6}$ ; a terminal series of dark fuscous dots between veins, that at apex larger; cilia whitish-yellow. Hindwings with termen angled on vein 4; colour and markings as forewings, but without subapical dot. Underside green-whitish.

N.Q.: Kuranda, 4, 5; Cairns, 6; Geraldton; Mackay—Q.: Bundaberg; Nambour, 5; Brisbane. Also from Tenimber Islands.

74. METALLOCHLORA AMETALLA, n.sp. [*ἀμεταλλος*, not metallic.]

♂. 22-24 mm. Crown bright green; fillet ochreous; face ochreous with a few dark purple scales. Palpi in ♂  $1\frac{1}{4}$ , terminal joint  $\frac{1}{4}$ ; fuscous-reddish, beneath white. Antennæ ochreous-whitish, towards apex purplish-tinged; in ♂ serrate, ciliations 1. Thorax and abdomen bright green, the latter with a median whitish line on middle segments; tuft, sides, and undersurface whitish. Legs whitish. Forewings triangular, costa slightly arched towards apex, apex round-pointed, termen slightly bowed, oblique; bright green; a fine ochreous costal line interrupted by dark fuscous dots; lines obsolete; a fuscous or reddish median discal dot at  $\frac{1}{3}$ ; a similar dot on vein 6 at  $\frac{5}{6}$ ; a median and postmedian series of slightly paler blotches with darker edges of groundcolour; a terminal series of dark fuscous dots between veins, that at apex larger; cilia whitish-yellow. Underside green-whitish.

Closely allied to *M. militaris*, but the different structure of the ♂ antennæ is sufficient to remove any doubt as to its distinctness. Type in Coll. Turner.

N.A.: Port Darwin; in September and October; two specimens, of which one is in Coll. Lyell.

Gen. 21. UROLITHA.

*Urolitha* Meyr., Proc. Linn. Soc. N. S. Wales, 1887, p. 861.

Face smooth. Tongue well developed. Palpi in ♂ moderate, in ♀ rather long; basal joint hairy, second joint smooth-scaled;



terminal joint in ♂ abbreviated. Antennæ in ♂ ciliated, in ♀ simple. Thorax not crested, slightly hairy beneath. Abdomen sometimes with metallic dorsal crests; in ♂ with lateral tufts on terminal segments. Posterior tibiæ in ♂ dilated; all spurs present. Hindwings with termen straight and long, forming a rounded projection at tornus containing a dark spot; a strong rounded costal expansion at base; frenulum in ♂ present but rather slender, in ♀ obsolete. Forewings with 3 and 4 short-stalked or connate, 6 short-stalked or connate, 11 free or rarely anastomosing with 12. Hindwings with 3 and 4 stalked, 6 and 7 stalked, 8 touching cell at a point near base, then rapidly diverging; discocellulars nearly straight, moderately oblique.

Type *Iodis bipunctifera* Wlk. Closely allied to *Metallochloa* Warr., differing only in the peculiar form of the hindwings, which in this instance appears to be sufficient, also by the lateral abdominal tufts of ♂. The occasional presence of metallic crests on the abdomen is an interesting indication of affinity. They are usually completely absent.

#### 75. UROLITHA BIPUNCTIFERA.

*Iodis bipunctifera* Wlk., Cat. Brit. Mus. xxii., p.546; *Urolitha bipunctifera* Meyr., Proc. Linn. Soc. N. S. Wales, 1887, p.866.

Antennal ciliations in ♂  $1\frac{1}{2}$ . Palpi in ♂  $1\frac{1}{4}$ , terminal joint very short; in ♀ 2, terminal joint  $\frac{1}{2}$ .

Q.: Brisbane, 1, 2, 3, 4; Stradbroke Island, 4, 9—N.S.W.: Newcastle; Sydney, 9, 10, 11.

Gen.22. ARGYROSCOMA, n.g. [*ἀργυροκοσμος*, adorned with silver.]

Face smooth. Tongue well developed. Palpi in ♂ moderate, in ♀ long; second joint well developed, and thickened with rough scales beneath in both sexes; terminal joint in ♂ abbreviated, in ♀ long. Antennæ in ♂ with long pectinations, in ♀ simple. Thorax and abdomen not crested; thorax slightly hairy beneath. Posterior tibiæ with all spurs present, rather closely approximated, in ♂ with a short terminal process. Hindwings with a rounded costal expansion at base; frenulum in ♂ present but



slender, retinaculum near base of forewing; frenulum in ♀ obsolete. Forewings with 3 and 4 remote at origin, 3 being from well before angle, 6 separate, 11 long-stalked with 7, 8, 9, 10, not anastomosing, discocellular oblique and separate on vein 5. Hindwings with 3 and 4 remote at origin, 6 and 7 stalked, 8 approximated to cell at a point near base, rapidly diverging; discocellulars widely separate on vein 5 (or twice-angled), dorsal strongly oblique, costal edge of cell considerably over  $\frac{2}{3}$ .

The neuration, which appears to be constant, is highly peculiar in the remote origin of 3 and 4 of both wings, the long-stalking of vein 11, and the twice-angled discocellulars. Type *Euchloris argosticta* Turn.

#### 76. ARGYROCOSMA ARGOSTICTA.

*Euchloris argosticta* Turn., Trans. Roy. Soc. S. Austr. 1904, p. 220.

Antennal pectinations in ♂ 12. Palpi in ♂  $1\frac{1}{2}$ , terminal joint minute; in ♀ 3, terminal joint  $\frac{2}{3}$ .

N.A.: Port Darwin, 10—N.Q.: Kuranda, 9; Townsville, 1, 2, 3, 7.

#### Gen. 23. CHRYSOCHLOROMA.

*Chrysochloroma* Warr., Nov. Zool. 1896, p. 288.

Head smooth. Tongue well developed. Palpi in ♂ moderate, in ♀ long, ascending, terminal joint in ♂ much shortened and bent downwards. Antennæ in ♂ pectinate, apices simple; in ♀ simple. Thorax and abdomen not crested; thorax densely hairy beneath. Posterior tibiae with outer proximal spur much shortened or absent in ♂. Hindwings quadrate, strongly angled or slightly produced on vein 4; with a moderate costal expansion at base, frenulum and retinaculum in ♂ strongly developed; frenulum in ♀ represented by a weak tuft of scales. Forewings with 3 and 4 separate or connate, 6 connate or stalked, 11 free. Hindwings with 3 and 4 stalked, 6 and 7 stalked, 8 approximated to cell for some distance, diverging before middle.

Type, *Chrysochloroma meeki* Warr., from the Trobriand Islands, off New Guinea.



A small natural genus, which lies near the borderland of the first two groups. There is only a moderate costal expansion at base of forewings; and, while the ♂ frenulum is strongly developed, the weak tuft of scales representing it in ♀ is not always discernible. The peculiar form of the hindwings and ♂ palpi are good distinguishing features. The bending of veins 12 and 11 described by Warren is strongly marked in *C. megaloptera*, less so in *C. orthodesma*, but I do not consider it an important character.

1. Line on wings slender..... 77. *megaloptera*.  
 Lines dilated into fasciæ ..... 78. *orthodesma*.

#### 77. CHRYSOCHLOROMA MEGALOPTERA.

*Euchloris megaloptera* Low., Trans. Roy. Soc. S. Austr., 1894, p.87; *Chrysochloroma subalbida* Warr., Nov. Zool. 1896, p.364; *Euchloris hypoleucus* Low., Proc. Linn. Soc. N. S. Wales, 1897, p.263.

♂♀. 40-47 mm. Head green; fillet broadly white; face reddish-brown, lower third brown-whitish, the darker colour forming a median tooth. Palpi in ♂  $1\frac{1}{2}$ , terminal joint minute; in ♀ 3, terminal joint  $\frac{2}{3}$ ; reddish-brown, beneath white. Antennæ white, apices ochreous-whitish, pectinations tinged with green. Thorax and abdomen green, tuft, sides, and under-surface whitish. Legs whitish; anterior pair, except coxæ and middle tibiæ, and first joints of tarsi green on upper surface in ♂, brownish in ♀. Forewings triangular, costa straight, strongly arched towards apex, apex acute, slightly produced, costa slightly bowed, oblique, very slightly wavy; bright green; a snow-white streak along costa nearly from base, which is edged with dark purple near apex; lines pale green, slender, converging not dentate; antemedian from  $\frac{1}{3}$  dorsum, not reaching costa; postmedian from or from before  $\frac{2}{3}$  dorsum to beneath costa at  $\frac{2}{3}$ , nearly straight; a ferruginous-fuscous discal dot on end of cell; cilia white with a median purple line. Hindwings as forewings but with antemedian line obsolete, and discal dot rather larger. Underside whitish-green, forewings rather darker.



Type *C. megaloptera* in Queensland Museum; type *E. hypoleucus* in Coll. Lyell.

N.A.: Port Darwin, 10—N.Q.: Cooktown; Laura; Townsville, 12. Mr. Dodd has found the larvæ in the nests of the green tree-ant.

#### 78. CHRYSOCHLOROMA ORTHODESMA.

*Euchloris orthodesma* Low., Trans. Roy. Soc. S. Austr. 1894, p. 86.

♀. 34-38 mm. Head and face bluish-green; fillet narrowly white. Palpi in ♀ 2, terminal joint  $\frac{1}{2}$ ; bluish-green. Antennæ brown-whitish, towards base white. Thorax and abdomen bluish-green; beneath whitish. Legs whitish; anterior tibiæ and tarsi brownish. Forewings triangular, costa gently arched, apex acute, termen slightly bowed, oblique; bluish-green; costal edge whitish-ochreous; an inwardly-oblique, broad, suffused, bluish-white median fascia, containing a median dark green discal dot; a similar fascia, slightly waved, before and parallel to termen; cilia pale green. Hindwings as forewings, but second fascia touching termen on dorsal side of angle. Undersurface whitish-green. Type in Queensland Museum.

N.Q.: Cairns; Kuranda, 4, 5, 9.

#### Gen. 24. APODASMIA, n.g. [ἀποδάσμιος, parted from.]

Face smooth, slightly projecting at lower edge. Tongue well developed. Palpi moderately long, porrect; second joint rough-haired above and beneath; terminal joint short in both sexes. Antennæ serrate and ciliated in both sexes; ciliations longer in ♂. Thorax and abdomen not crested; thorax slightly hairy beneath. Posterior tibiæ with middle spurs present; in ♂ not dilated, but with inner terminal spur absent. Hindwings with a strong rounded costal expansion at base beyond origin of frenulum; frenulum in ♂ present but weak, retinaculum small and close to base of forewing; frenulum in ♀ represented by a tuft of long hairs. Forewings with 3 and 4 separate, 6 separate, 11 anastomosing with 12 and 10. Hindwings with 3 and 4 separate, 6 and 7 separate, 8 closely approximated to near middle of cell,



then diverging; discocellulars slightly angled on vein 5, slightly oblique, dorsal curved.

Type, *Fidonia rufonigraria* Wlk. The frenulum in the ♂ is certainly weakly developed, but, contrary to the usual rule, that in the ♀ is represented by a well-marked tuft of hairs. It must certainly be separated from *Epipristis* Meyr., as it has no close affinity to *E. minimaria* Gn. Minor peculiarities are the longer approximation of vein 8 of hindwings to cell, the hairy palpi, serrate antennæ, and absence of inner terminal spur in hindleg of ♂.

#### 79. APODASMIA RUFONIGRARIA.

*Fidonia(?) rufonigraria* Wlk., Cat. Brit. Mus. xxiv. p.1036; *Epipristis rufonigraria* Meyr., Proc. Linn. Soc. N. S. Wales, 1887, p.916.

Palpi 2; terminal very short and alike in both sexes. Antennal ciliations in ♂ 1.

Q.: Brisbane—N.S.W.: Sydney, 9—Vic.: Gisborne, 11—W.A.: Bridgetown, 4.

#### Gen.25. ULIOCNEMIS.

*Uliocnemis* Warr., Proc. Zool. Soc. 1893, p.355; Hmps., Moths Ind. iii. p.487.

Face slightly roughed-scaled. Tongue present. Palpi rather long, ascending; second joint long, roughly hairy beneath; terminal joint bent forwards and porrect, in ♂ short. Antennæ pectinated in both sexes, apices simple. Thorax with a strong posterior crest; beneath hairy. Abdomen with a series of median dorsal crests. Posterior tibiæ with middle spurs absent in ♂, not dilated and without terminal process. Hindwings without costal expansion at base; frenulum and retinaculum in ♂ well developed; frenulum in ♀ (not examined). Forewings with 3 and 4 separate, 6 separate, connate, or short-stalked, 11 free. Hindwings with 3 and 4 connate or short-stalked, 6 and 7 connate or stalked, 8 approximated to cell near base, rapidly diverging; discocellulars scarcely angled, dorsal curved so as to become rather strongly oblique; costal edge of cell considerably over  $\frac{2}{3}$ .



Type, *Phorodesma cassidara* Gn., from Ceylon, in which species, as Mr. L. Prout informs me, the middle spurs of ♂ are wholly absent. The variability of veins 6 and 7 of the hindwing in the same species is exceptional. This character is usually constant in each genus.

#### 80. ULIOCNEMIS PARTITA.

*Comibæna partita* Wlk., Cat. Brit. Mus. xxii. p.573; Butl., Ill. Het. vi. Pl.117, f.11: *Comibæna felicitata* Wlk., Cat. Brit. Mus. xxii. p.579; *Thalera concisiplaga* Wlk., Cat. Brit. Mus. xxii. p.598; *Iodis partita* Meyr., Proc. Linn. Soc. N. S. Wales, 1887, p.892; *Uliocnemis partita* Hmps., Moths Ind. iii. p.488.

Palpi in ♂ 2, terminal joint minute. Antennal pectinations in ♂ 10.

N.Q.: Prince of Wales Island, 6; Kuranda, 3, 5, 6; Townsville, 5—Q.: Brisbane. Also from Borneo and India.

#### Gen.26. AGATHIOPSIS, n.g.

*Agathiopsis* Warr., Nov. Zool. 1896, p.285.

Face smooth. Tongue well developed. Palpi rather short, terminal joint short in both sexes. Antennæ in ♂ pectinated, apices simple; in ♀ simple. Thorax with a strong posterior crest; beneath densely hairy. Abdomen not crested. Posterior tibiæ with all spurs present in both sexes, inner fairly long, outer about  $\frac{1}{2}$ . Hindwings without costal expansion at base; frenulum and retinaculum in ♂ [unknown]; frenulum in ♀ obsolete(?). Forewings with 3 and 4 connate, 6 short-stalked, 10 arising from 8 after 7, 11 free. Hindwings with 3 and 4 stalked, 6 and 7 stalked, 8 anastomosing with cell near base, rapidly diverging; discocellulars slightly angled on vein 5, only slightly oblique.

Type, *Agathiopsis maculata* Warr., from the Louisiades. The characters being based on one female specimen are not complete, but sufficient to show that the genus is allied to *Uliocnemis*, but quite distinct.

#### AGATHIOPSIS BASIPUNCTA.

*Agathiopsis basipuncta* Warr., Nov. Zool. 1896, p.285; *Euchloris amphibola* Turn., Trans. Roy. Soc. S. Austr., 1896, p.128.



Palpi in ♀  $1\frac{1}{4}$ , terminal joint  $\frac{1}{6}$ . For description of the male see Warren, *loc. cit.*

N.Q.: Kuranda, 6, 7. Also from Louisiades.

#### Gen. 27. EUCYCLODES.

*Eucyclodes* Warr., Nov. Zool. 1894, p. 390; *Anisogamia* Warr., Nov. Zool. 1896, p. 286 (*præocc.*).

Face smooth, sometimes with some projecting scales on lower edge. Tongue strongly developed. Palpi in ♂ moderate or rather long, with terminal joint fairly long or abbreviated; in ♀ long. Antennæ in ♂ pectinated, apices simple; in ♀ simple. Thorax and abdomen not crested; thorax densely hairy beneath, usually with a tuft of very long hairs beneath base of forewing. Posterior tibiæ with all spurs present; in ♂ dilated, with a stout terminal process. Hindwings without costal expansion at base; frenulum and retinaculum in ♂ well developed; frenulum in ♀ represented by a pencil of long hairs. Forewings with 3 and 4 widely separate at origin, 6 connate, 11 usually free, rarely anastomosing with 12, or with 12 and 10; discocellulars strongly incurved. Hindwings with 3 and 4 usually stalked, sometimes connate, 6 and 7 stalked, 8 closely approximated to cell for some distance, sometimes nearly to middle; discocellulars very oblique, usually straight, sometimes slightly angled, with dorsal somewhat curved; costal edge of cell short, usually  $\frac{2}{3}$ , rarely  $\frac{3}{4}$ .

Type, *Phorodesma buprestaria* Gn. The genus is a large one in the Papuan region. Its characteristics are the well developed frenulum in both sexes, the dense woolly hairiness of the under-side of the thorax, the wide separation of veins 3 and 4 of the forewings, and the extremely oblique discocellular of hindwing, with consequent abbreviation of the costal edge of the cell. The species are mostly remarkable for the great diversity of colour and markings in the two sexes, a very rare trait in the *Geometridæ*. In *E. metaspila* and *E. buprestaria*, however, the sexes are alike. The larvæ of *E. insperata*, *E. pieroides*, and *E. metaspila* are known. They are very similar, having large flattened projections on both sides of the dorsum of each segment.



It will be most convenient to tabulate the two sexes separately :—

## ♂ ♂.

1. Hindwings with termen dentate.....	2.
Hindwings with termen rounded or wavy, angled or dentate on vein 4 only.....	5.
2. Forewings with a broad white antemedian line.....	82. <i>pieroides</i> .
Forewings with antemedian line slender or incomplete	3.
3. Forewings with a large white costal spot on origin of antemedian line.....	85. <i>fascinans</i> .
Forewings without large white costal spot.....	4.
4. Wings with white median subterminal blotches, and a few white dots..	86. <i>speciosa</i> .
Wings with very numerous white dots and small spots, no blotches.....	87. <i>callisticta</i> .
5. Cilia green or green and white.....	6.
Cilia mostly reddish or purplish.....	8.
6. Lower third of face white.....	7.
Face green, extreme lower edge only white.....	91. <i>moniliata</i> .
7. Wings with broad straight white postmedian lines.....	88. <i>insperata</i> .
Postmedian lines very slender, curved.....	89. <i>erotyla</i> .
8. Wings with termen brown.....	94. <i>buprestaria</i> .
Wings with termen green.....	9.
9. Face green.....	92. <i>metaspila</i> .
Face red.....	93. <i>saturataria</i> .

## ♀ ♀.

1. Hindwings with termen dentate.....	2.
Hindwings with termen rounded or wavy, angled or dentate on vein 4 only.....	5.
2. Forewings with a reddish-brown triangular basal blotch	82. <i>pieroides</i> .
Forewings without basal blotch.....	3.
3. Wings with broad uninterrupted terminal band.....	83. <i>dentata</i> .
Wings without terminal band.....	4.
4. Forewings with a grey-whitish apical blotch.....	84. <i>goniota</i> .
Forewings with a fuscous tornal blotch.....	85. <i>fascinans</i> .
Forewings without blotches.....	86. <i>speciosa</i> .
5. Face green, or green and white.....	6.
Face red, or brown and white.....	8.
6. Forewings with costa and cilia reddish-brown.....	92. <i>metaspila</i> .
Forewings with costa and cilia mostly grey.....	7.
7. Forewings with apical, midterminal, and tornal blotches.....	88. <i>insperata</i> .
Forewings with narrow terminal line only.....	91. <i>moniliata</i> .



- |   |                          |
|---|--------------------------|
| 8. Patagia, except at base, purplish..... | 92. <i>erymnodes</i> .   |
| Patagia green.....                        | 9.                       |
| 9. Wings with termen green.....           | 93. <i>saturataria</i> . |
| Wings with termen brown.....              | 94. <i>buprestaria</i> . |

## 82. EUCYCLODES PIEROIDES.

♀. *Comibæna pieroides* Wlk., Cat. Brit. Mus. xxii. p.580; ♂. *Thalassodes scitissimaria* Wlk., Cat. Brit. Mus. xxvi. p.1564; *Comibæna calcinata* Feld., Reise Nov. Pl.127, f.23; *Iodis pieroides* Meyr., Proc. Linn. Soc. N. S. Wales, 1887, p.897.

Antennal pectinations of ♂  $2\frac{1}{2}$ . Palpi in ♂ 2, terminal joint  $\frac{1}{3}$ ; in ♀ 3, terminal joint  $\frac{2}{3}$ . Discocellulars of hindwing nearly straight.

The larvæ are found in gardens on roses.

N.Q.: Townsville, 3, 4, 5, 6; Stannary Hills—Q.: Duaringa; Rockhampton; Gympie; Brisbane, 3, 4, 5, 10; Stradbroke Island.

## 83. EUCYCLODES DENTATA.

*Anisogamia dentata* Warr., Nov. Zool. 1897, p.34.

♂. Unknown.

♀. 36 mm. Crown and fillet whitish irrorated with brown and dark fuscous, and posteriorly also with green; face green, lower edge with a broad white streak tending to be interrupted. Palpi 3, terminal joint  $\frac{3}{4}$ ; pale brown, beneath white, terminal joint annulated with dark fuscous. Antennæ brown-whitish. Thorax green; a broad posterior median streak from middle whitish irrorated with brown and dark fuscous. Abdomen whitish irrorated with brown and dark fuscous, with some green on basal segments. Legs ochreous-whitish; anterior tibiæ and tarsi broadly annulated with dark fuscous. Forewings triangular, costa strongly arched, apex rounded, termen bowed, oblique, strongly dentate; green, thinly scaled, with slight obscure whitish strigulations; a broad costal streak brown-whitish irrorated and chequered with dark fuscous; a transverse irregularly oval whitish spot before middle, its margins irrorated with fuscous, touching costal streak; a broad terminal band with rounded



dilatations above middle and on tornus, reddish-brown with some fuscous scales; cilia grey-whitish. Hindwings strongly dentate, with more prominent teeth on veins 4 and 6; discocellulars nearly straight; as forewings but without discal spot; some white dots on basal veins; terminal band thickened at apex and above middle, narrower at tornus. Underside green-whitish; a dark fuscous subterminal band, outwardly dentate, inwardly with rounded projections as on upper side.

N.Q.: Cooktown; Cairns, 8; Kuranda, 4, 5.

#### 84. EUCYCLODES GONIOTA.

*Euchloris goniota* Low., Trans. Roy. Soc. S. Austr., 1894, p.86;  
*Anisogamia curvigutta* Warr., Nov. Zool. 1897, p.34.

♂. Unknown.

♀. 32 mm. Crown, fillet, and face whitish-ochreous with some brownish scales. Palpi  $2\frac{1}{2}$ , terminal joint  $\frac{1}{2}$ ; pale brownish, beneath whitish. Antennæ whitish-grey. Thorax green, some hairs in tegulæ and a large posterior spot whitish-ochreous. Abdomen whitish-ochreous with a few brownish scales, under-surface whitish. Legs whitish; anterior tibiæ and tarsi fuscous with whitish annulations. Forewings triangular, costa rather strongly arched, apex round-pointed, termen bowed, oblique, crenulate; green with a few obscure whitish strigulæ; a fuscous costal streak strigulated with whitish-ochreous; a fine, slender, waved, whitish antemedian line from  $\frac{1}{4}$  costa to  $\frac{2}{5}$  dorsum; an ochreous-whitish apical blotch reaching to midtermen, its lower extremity showing a rounded dilatation, irrorated sparsely with fuscous and including a terminal series of fuscous lunules between veins; a series of ochreous-whitish dots on terminal ends of veins between apical blotch and tornus; cilia green, on costal blotch and terminal dots ochreous-whitish tinged with grey. Hindwings with termen dentate, with stronger teeth on veins 4 and 6; as forewings but without antemedian line; apical blotch similar but more elongate. Underside green-whitish; a brownish-fuscous spot on apex of both wings.



My description is taken from the type, which is in the Queensland Museum.

N.Q.: Mackay.

#### 85. EUCYCLODES FASCINANS.

*Iodis fascinans* Luc., Proc. Linn. Soc. N. S. Wales, 1893, p.138.

♂. 32-36 mm. Crown green; fillet green edged with white anteriorly; face green with a broad white streak on lower edge, partly interrupted. Palpi 2, terminal joint  $\frac{1}{4}$ ; pale brownish or fuscous, apices of joints and undersurface white. Antennæ grey, base of stalk white; pectinations  $3\frac{1}{2}$ . Thorax green; a large white posterior spot including a pair of green dots. Abdomen green, with a median and a lateral series of white dots, which may be mixed with fuscous, and may be lost posteriorly in a general white irroration; tuft and undersurface white. Legs white; anterior tibiae and tarsi broadly barred with dark fuscous in front. Forewings triangular, costa moderately arched, apex rounded, termen bowed, oblique, moderately dentate; green, rather strongly scaled, with numerous fine transverse white strigulae, sometimes reduced to dots on veins; a fuscous streak strigulated with white on costa beyond middle; a large white spot touching costa at  $\frac{2}{5}$ , from which sometimes proceeds a fine waved line to  $\frac{2}{5}$  dorsum; a similar but smaller spot at  $\frac{5}{6}$ , giving rise to a dentate interrupted postmedian line; this is succeeded by similar subterminal and submarginal spots and lines, the last line consisting of a series of spots only; a terminal series of white dots on veins; cilia green, apices opposite dots white. Hindwings with termen rounded and dentate; discocellulars nearly straight; as forewings but without antemedian spot and line; base and dorsum sometimes with confluent strigulae; a large ochreous or brown apical spot, margined with white, sometimes containing an interrupted fuscous line. Underside green-whitish; a dark fuscous apical spot on hindwing; sometimes a greenish-fuscous line emitting three processes on apex of forewing.

♀. 28 mm. Differs as follows—Palpi  $3\frac{1}{2}$ , terminal joint  $\frac{1}{2}$ . Abdomen fuscous; basal segment green; a series of median dorsal



dots and undersurface white. Wings green, with obscure whitish strigulae but without white spots. Forewings with a fuscous streak along whole of costa, a large fuscous spot on dorsum near base, another before termen above middle, and a third, smaller, on tornus. Hindwings with a fuscous apical blotch. The under-side is similarly marked.

Though rather small, this ♀, of which there is one example from Kuranda, in Coll. Lyell, is, I think, to be referred to this species, though it is just possible that it may belong to *E. callisticta*.

N.Q.: Kuranda, 4, 5, 11, 12—Q: Brisbane, 1.

#### 86. EUCYCLODES SPECIOSA.

♀. *Iodis speciosa* Luc., Proc. Linn. Soc. N. S. Wales, 1889, p. 1094; ♂. *Euchloris chionoplaca* Low., Trans. Roy. Soc. S. Austr., 1893, p. 288; ♂♀. *Anisogamia albimacula* Warr., Nov. Zool. 1897, p. 33; ♂. *Iodis sideralis* Luc., Proc. Roy. Soc. Qsld., 1898, p. 68.

♂. 35 mm. Crown and fillet green; face green, with a broad interrupted white line on lower edge. Palpi 2, terminal joint  $\frac{1}{3}$ ; dull green, extreme apex and undersurface white. Antennae grey-whitish; basal joint fuscous-brown, its anterior surface and extreme apex white; pectinations 3. Thorax green, with a large white posterior spot edged with fuscous. Abdomen green; with a fuscous-brown dorsal spot about middle; anterior to this are three minute white median dots, posterior a small fuscous spot immediately succeeded by a large white blotch; tuft and undersurface white. Legs white; anterior tibiae and tarsi fuscous barred with white in front; posterior tibiae with a stout terminal process. Forewings triangular, costa moderately arched, apex bowed, oblique, crenulate; green, rather thinly scaled, with a few scattered whitish strigulae; a fuscous streak along costa, interrupted by white strigulae; a minute white dot beneath costa at base; a fine wavy white antemedian line, from  $\frac{1}{3}$  costa to  $\frac{2}{5}$  dorsum, towards dorsum edged on both sides with fuscous; postmedian line represented by a series of white dots on veins at  $\frac{5}{8}$ , joined in middle by a similar series of dots from apex; above



confluence and between veins 3 and 4 is a large white spot narrowly margined with fuscous; a terminal series of very distinct white dots on veins; cilia green, apices white. Hindwings with termen rounded and moderately dentate; discocellulars nearly straight; as forewings but without antemedian line; the large white spot is placed across vein 3, and there are two small white dots between it and termen. Underside green-whitish; a fuscous streak strigulated with whitish along costa of forewing.

♀. 38 mm. Differs as follows—Palpi 3, terminal joint  $\frac{1}{2}$ . Spots on thorax and abdomen more broadly outlined with fuscous; no white blotch on abdomen; penultimate abdominal segments fuscous. White spot on forewings reduced to a linear mark, and that on hindwings absent. Terminal dots on both wings ochreous-whitish outlined with fuscous-brown. An elongate fuscous spot with a brown centre on apex of hindwing. Cilia on terminal spots pale fuscous.

These descriptions are from Brisbane examples. A pair from Kuranda shows, in the male, more irregularly shaped white blotches and smaller terminal dots; no white blotch on abdomen, but middle segments fuscous; in the female, absence of brown apical spot on hindwing, and of brown outlines around terminal dots. Evidently the species is variable within limits.

N.Q.: Cooktown; Geraldton; Kuranda, 5, 6; Mackay—Q.: Brisbane.

#### 87. EUCYCLODES CALLISTICTA.

*Euchloris callisticta* Turn., Trans. Roy. Soc. S. Austr. 1904, p. 222.

Palpi in ♂  $1\frac{1}{2}$ , terminal joint  $\frac{1}{6}$ . Antennal pectinations in ♂ 4. Discocellulars of hindwing not angled, dorsal curved. Posterior tibiae of ♂ with terminal process unusually long, exceeding  $\frac{1}{2}$  tarsus.

♀. Unknown.

N.Q.: Kuranda, 3, 4, 5, 11, 12.



## 88. EUCYCLODES INSPERATA.

*Thalassodes insperata* Wlk., Cat. Brit. Mus. xxii. 555; *Iodis insperata* Meyr., Proc. Linn. Soc. N. S. Wales, 1887, p.895.

Antennal ciliations of ♂  $2\frac{1}{2}$ . Palpi in ♂  $1\frac{1}{2}$ , terminal joint  $\frac{1}{4}$ ; in ♀ 2, terminal joint  $\frac{1}{2}$ . Discocellulars of hindwing nearly straight.

N.Q.: Mareeba, 12—Q.: Brisbane, 4, 8; Stradbroke Island, 10; Southport—N.S.W.: Newcastle; Sydney—Vic.: Melbourne—Tas.: George's Bay.

## 89. EUCYCLODES EROTYLA n.sp. [έρωτυλος, a darling.]

♂. 29 mm. Crown green with a white posterior spot; fillet narrowly white; face green, lower third and lateral edges white. Palpi fuscous, beneath white; in ♂  $1\frac{3}{4}$ , terminal joint  $\frac{1}{4}$ . Antennæ white, sharply barred with fuscous on dorsum, towards apex grey; pectinations in ♂ 2. Thorax green; a broad white fascia from before middle, containing laterally paired green spots behind middle. Abdomen green, a series of median dorsal spots, tuft, sides, and under surface white. Legs white; anterior femora fuscous anteriorly, anterior tibiae and tarsi fuscous annulated with white. Forewings triangular, costa rather strongly arched, apex round-pointed, termen bowed, oblique, very slightly wavy; green with numerous white transverse strigulae; a broad fuscous costal streak spotted and strigulated with white; transverse lines very slender, curved, white mixed with pale fuscous; antemedian from  $\frac{1}{4}$  costa to  $\frac{2}{5}$  dorsum; postmedian from  $\frac{3}{4}$  costa, shortly bifurcated above dorsum, one branch ending on  $\frac{4}{5}$  dorsum, the other just before tornus; subterminal similar but interrupted; one or two small white spots just above tornus; three or four white terminal dots on veins; cilia green, apices white. Hindwings with termen wavy, angled and toothed on vein 4; discocellulars slightly angled on vein 5, dorsal curved; as forewings but antemedian line obsolete, and white strigulae very pronounced on dorsum. Underside whitish. Type in Coll. Turner.

♀. Unknown.



Q.: Brisbane; in May; one specimen received from Mr. R. Illidge.

90. *EUCYCLODES ERYMNODES*, n.sp. [*ἐρυμνωδης*, like a fortification.]

♂. Unknown.

♀. 28 mm. Crown and face dull purplish mixed with white; fillet white. Palpi slender; dull purplish, beneath white; in ♀ 3, terminal joint  $\frac{3}{4}$ . Antennæ grey. Thorax dull purplish; tegulæ and bases of patagia green. Abdomen dull purplish, some obscure median dorsal dots, apex, sides, and undersurface white. Legs white; anterior tibiæ and tarsi pale fuscous. Forewings triangular, costa rather strongly arched, apex round-pointed, termen bowed, oblique, very slightly wavy; pale green; a basal fascia prolonged as a broad costal streak dull purplish; the costal streak shows a strong triangular tooth in disc at  $\frac{1}{3}$ ; continuous with costal streak is a terminal fascia of the same colour, showing a large rounded expansion in middle, and another on tornus; these expansions are paler, ochreous-tinged with some pale fuscous irroration; a dark purplish terminal line interrupted on veins; cilia ochreous-whitish with some purplish tinge. Hindwings with termen wavy, angled and toothed on vein 4; discocellulars nearly straight; as forewings but without costal streak; terminal fascia expanded at apex and beneath middle. Undersurface whitish. Type in Coll. Lyell.

N.Q.: Kuranda; in June; one specimen received from Mr. F. P. Dodd.

#### 91. *EUCYCLODES MONILIATA*.

♀. *Anisogamia moniliata* Warr., Nov. Zool. 1897, p.34; ♂. *Anisogamia undilinea* Warr., Nov. Zool. 1897, p.35.

♂. 30 mm. Crown green; fillet broadly snow-white; face green, lower edge with a white streak, sometimes interrupted in middle. Palpi  $1\frac{1}{2}$ , terminal joint  $\frac{1}{3}$ ; green, beneath white. Antennal stalk white; pectinations  $2\frac{1}{2}$ , grey. Thorax green, with a median and two posterior white spots. Abdomen green, median dorsal spots, tufts, sides, and undersurface white. Legs white; anterior



pair ochreous-grey in front; posterior tibiae with a very stout terminal process. Forewings triangular, costa moderately arched, apex round-pointed, termen bowed, oblique, scarcely wavy; bright green; a white streak along costa, sparsely irrorated with pale fuscous; lines slender, white, sharply dentate, sometimes interrupted; antemedian from  $\frac{1}{4}$  costa to  $\frac{2}{5}$  dorsum; postmedian from beneath  $\frac{3}{4}$  costa, first outwardly curved, then bent inwards to  $\frac{3}{4}$  dorsum; a terminal series of white dots on veins; cilia green, apices grey-whitish. Hindwings with termen wavy, bent and slightly toothed on vein 4; discocellulars nearly straight; as forewings but without basal line, and with some white dots on basal veins. Underside whitish; costal area of forewing suffused with green; costal edge of forewing white, with an ochreous subcostal streak towards base.

♀. 32-36 mm. Head as in ♂. Palpi  $1\frac{3}{4}$ , terminal joint  $\frac{1}{3}$ ; pale brown, beneath whitish. Antennae pale brown, towards base white. Thorax green, a broad posterior median band extending to middle brown mixed with whitish. Abdomen brown mixed with whitish, base green, undersurface whitish. Legs ochreous-whitish; anterior pair grey in front. Wings shaped as in ♂. Forewings green; a broad costal streak whitish densely irrorated with pale fuscous; antemedian line as in ♂; postmedian line obsolete; a small whitish linear discal dot at  $\frac{1}{3}$ ; a fine ochreous-whitish terminal band, very slender in middle, anteriorly interruptedly edged with fuscous-brown; cilia ochreous-whitish. Hindwings as forewings but without antemedian line. Underside green-whitish; costal edge of forewings pale brownish.

There need be no doubt, I think, as to these forms being sexes of the same species.

N.Q.: Cooktown; Kuranda, 2, 5, 10.

## 92. EUCYCLODES METASPILA.

*Comibaena metaspila* Wlk., Cat. Brit. Mus. xxii. p.580; *Iodis metaspila* Meyr., Proc. Linn. Soc. N. S. Wales, 1887, p.895; *Iodis eucalypti* Luc., Proc. Linn. Soc. N. S. Wales, 1888, p.1267.



Antennal pectinations of ♂  $2\frac{1}{2}$ . Palpi in ♂  $2\frac{1}{2}$ , terminal joint  $\frac{1}{4}$ ; in ♀  $2\frac{3}{4}$ , terminal joint  $\frac{1}{3}$ . Discocellulars of hindwing slightly angled on vein 5; dorsal curved.

N.Q.: Cairns, 8—Q.: Toowoomba, 11; Brisbane.

#### 93. †EUCYCLODES SATURATARIA.

*Chlorochroma saturataria* Wlk., Cat. Brit. Mus. xxxv. p.1609; *Iodis saturataria* Meyr., Proc. Linn. Soc. N. S. Wales, 1887, p.895.

I have seen only the type (♀) in the British Museum, sent by Mr. Diggles, and probably taken in the neighbourhood of Brisbane. It seems closely allied to *E. metaspila*, and probably the sexes are similar as in that species.

#### 94. EUCYCLODES BUPRESTARIA.

*Phorodesma buprestaria* Gn., Lep. ix. p.371, Pl.vii. f.4; *Iodis buprestaria* Meyr., Proc. Linn. Soc. N. S. Wales, 1887, p.890.

Antennal pectinations in ♂ 2. Palpi in ♂  $1\frac{1}{4}$ , terminal joint minute; in ♀  $1\frac{1}{2}$ , terminal joint  $\frac{1}{5}$ . Discocellulars of hindwing very slightly angled on vein 5, dorsal slightly curved.

N.S.W.: Sydney, 11—Vic.: Melbourne, 11; Nhill, 9.—Tas.: Launceston.

#### Gen.28. CHLORODES.

*Chlorodes* Gn., Lep. ix. p.378.

Face smooth. Tongue well developed. Palpi in both sexes  $1\frac{1}{2}$ ; second joint roughly hairy above and beneath; terminal joint equally short in both sexes. Antennæ in ♂ pectinate, extreme apices simple; in ♀ simple. Thorax and abdomen not crested; thorax hairy beneath. Posterior tibiæ with all spurs present; in ♂ not dilated and without terminal process. Hindwings without costal expansion at base; frenulum and retinaculum in ♂ well developed; frenulum in ♀ represented by a tuft of long hairs. Forewings with 3 and 4 well separated at origin, 6 short-stalked, 11 free, or anastomosing with 12 only, or with both 12 and 10; discocellulars scarcely incurved, nearly straight. Hindwings with 3 and 4 slightly separate or nearly connate, 6 and 7 long-



stalked, 8 closely approximated to cell, sometimes nearly as far as middle, then gradually diverging; discocellulars but slightly angled, or nearly straight, moderately or rather strongly oblique; costal edge of cell considerably over  $\frac{2}{3}$ .

Type, *Chlorodes boisduvalaria* Le G. The separation of 3 and 4 is better marked in the forewing, which is unusual. The roughly hairy palpi are another peculiarity, as is the pectination of the ♂ antennæ nearly to apex. Structurally this genus comes near *Terpna*, with the important exception of the stalking of 6 and 7 of the hindwings.

#### 95. CHLORODES BOISDUVALARIA.

*Geometra boisduvalaria* Le G., Rev. Zool. 1841, p.257; *Chlorodes mirandaria* Gn., Lep.ix. p.379, Pl.v. f.7; *Iodis boisduvalaria* Meyr., Proc. Linn. Soc. N. S. Wales, 1887, p.892.

Vic.: Gisborne, 2; Mt. St. Bernard, 2—Tas.: Launceston.

I have seen a drawing, by Mr. A. Simson of Launceston, of the larva of this species. It has paired dorsal processes on each segment, analogous to those of *Eucyclodes*.

#### Gen.29. AGATHIA.

*Agathia* Gn., Lep.ix. p.380; Meyr., Proc. Linn. Soc. N. S. Wales, 1887, p.899; Hmps., Moths Ind. iii. p.485.

Face rounded, strongly convex, smooth. Tongue well developed. Palpi rather long in ♂, longer in ♀; basal joint as long as second joint; terminal joint in ♂ very short, in ♀ elongate. Antennæ simple in both sexes, in ♂ minutely ciliated. Thorax not crested; hairy beneath. Abdomen sometimes smooth, sometimes with small median dorsal crests; in ♂ with large tuft and lateral crests on terminal segments, and with an extrusible tuft of hairs near base on ventral surface. Posterior tibiæ with all spurs present; in ♂ dilated, with a groove containing hairs on inner surface, and a short stout terminal process. Hindwings with a long acute tooth on vein 4; without basal costal expansion; frenulum and retinaculum in ♂ well developed; frenulum in ♀ represented by a tuft of long hairs. Forewings with 3 and



4 separate but approximated at origin, 6 separate, 11 free or rarely anastomosing with 12. Hindwings with 3 and 4 separate but approximated at origin, 6 and 7 separate but approximated, 8 anastomosing with cell near base, closely approximated to  $\frac{1}{3}$ , then diverging; discocellulars scarcely angled, scarcely oblique except lower end of dorsal, which is strongly curved.

Type, *A. lycenaria* Koll., from India, China, Java, and Borneo.

#### 96. AGATHIA LÆTATA.

*Phalaena lætata* Fabr., Ent. Syst. iii. 2, p.164; Moore, Lep. Ceyl. iii. Pl.197. f.1: *Agathia hilarata* Gn. Lep.ix. p.381; *Agathia catenaria* Wlk., Cat. Brit. Mus. xxii. p.591; *Agathia quinaris* Moore, Proc. Zool. Soc. 1867, p.639; *Agathia carissima* Butl., Ill. Het. ii. p.50, Pl.36, f.7; *Agathia lacunaria* von Hedeman, Hor. Soc. Ent. Ross.xiv. p.512, Pl.iii. f.4; *Agathia asterias* Meyr., Proc. Linn. Soc. N. S. Wales, 1887, p.899; *Agathia prasinaspis* Meyr., Trans. Ent. Soc. 1889, p.495; *Agathia prasina* Swin., Ann. Mag. Nat. Hist.(6) xii. p.219; *Agathia iodoides* Luc., Proc. Linn. Soc. N. S. Wales, 1891, p.296; *Agathia distributa* Luc., *op. cit.* 1891, p.296; *Agathia lætata* Hmps., Moths Ind. iii. p.487; *Agathia disconnecta* Warr., Nov. Zool. 1896, p.362.

Palpi in ♂  $1\frac{1}{2}$ , terminal joint minute; in ♀ 3, terminal joint 1. I have a long series, and am satisfied that they constitute one species, which is notably polymorphic. The abdomen may be either smooth or crested, either uniformly fuscous-purple or reddish on dorsum, or green with fuscous-purple or reddish spots, or with any intermediate combination. The antemedian line of forewings may be fairly broad and entire, or broken into spots or obsolete. The postmedian line may be entire or interrupted. The terminal line may be entire and broad, or interrupted, or nearly obsolete. Similar variations exist in the dark band of the hindwings. The white spot at base of the sharp tooth on hindwings is usually sharply defined clear white, but may be suffused. For the extra-Australian references I follow Sir Geo. Hampson.

N.A.: Port Darwin, 3—N.Q.: Cape York, 7; Cooktown; Port Douglas; Cairns; Geraldton; Kuranda, 2, 4, 5, 6, 7, 10; Townsville, 7; Mackay—Q.: Duaringa, Brisbane, Southport.



## Gen.30. DYSPHANIA.

*Dysphania* Hb., Verz. p.175; *Euschema* Hb., Verz. p.175; Hmps., Moths Ind. iii. p.467.

Face smooth. Tongue well developed. Palpi moderate, porrect; basal and second joints somewhat rough-haired beneath; basal joint as long as second joint; terminal joint long in both sexes. Antennæ pectinated to apex in both sexes. Thorax not crested; densely hairy beneath. Abdomen without dorsal crests; in ♂ with large terminal tuft, and lateral tufts on penultimate segment. Tibial spines short; posterior tibiæ of ♂ strongly dilated. Hindwings without costal basal expansion; frenulum and retinaculum in ♂ strongly developed; frenulum in ♀ represented by a few short hairs. Forewings with 3 and 4 separate, 6 stalked, 11 free or anastomosing with 12; a small fovea on underside above base of vein 1 in both sexes. Hindwings with 3 and 4 separate, 6 and 7 connate or separate, 8 approximated to cell near base, gradually diverging.

Type, *E. militaris* Linn., from India, China, and Java.

Although differing markedly in size and coloration, this genus does not show any striking divergence in structure from *Terpna*, but only several minor peculiarities.

## 97. DYSPHANIA FENESTRATA.

*Heleona fenestrata* Swainson, Zool. Illust. Pl.116; *Euschema tentans* Wlk., Cat. Brit. Mus. xxxi. p.175; *Dysphania chalybeata* Butl., Ann. Mag. Nat. Hist.(4), xviii. p.127 (1876); *Dysphania magnifica* Swin., Cat. Oxf. Mus.ii. p.377.

♂♀. 76-98 mm. Head and face yellow or orange. Palpi in both sexes  $2\frac{1}{2}$ , terminal joint  $\frac{1}{2}$ ; yellow or orange; first and second joints sometimes dark purple on outer surface; terminal joint fuscous. Antennæ dark fuscous; pectinations in ♂, inner row  $2\frac{1}{2}$ , outer row 3; in ♀, inner row  $1\frac{1}{2}$ , outer row 2. Thorax dark purple, anteriorly and posteriorly broadly yellow or orange. Abdomen yellow or orange with 4 or 5 dark purple or fuscous rings. Legs dark fuscous; coxæ yellow or orange. Forewings elongate-triangular, narrower in ♂, costa gently arched, apex



rounded, termen scarcely bowed, strongly oblique; dark purple, with whitish semihyaline markings; a short broad streak from base of dorsum to mid-disc at  $\frac{1}{6}$ ; a broad fascia, interrupted by veins, from beneath  $\frac{1}{3}$  costa outwardly oblique, then curved inwards, narrowing, and suffused, to mid-dorsum; a similar fascia, usually narrower and more interrupted, from  $\frac{3}{5}$  costa to tornus; and a third similar fascia from  $\frac{3}{4}$  costa ending opposite mid-termen; cilia dark purple. Hindwings with termen gently rounded; dark purple; a whitish semihyaline blotch in cell; several similar blotches; variably developed, beyond cell; a sub-terminal series of conspicuous yellow or orange spots, the two central spots being displaced towards termen; cilia dark purple. Underside similar.

The large size and conspicuous colouring are undoubtedly aposematic. In this, the species differs from all other Australian *Geometrinae* which are protectively coloured; the *Terpna*-group imitate the bark of trees, while the colour of the majority of species is assimilated to foliage.

This species varies according to locality, forming local races. In the Cairns district is developed a dark form, the pale blotches being relatively reduced, especially in the hindwing; and the head, thorax, abdomen, and hindwings being decorated with yellow. In Torres Straits the pale blotches are larger, and yellow is replaced by orange. At Port Darwin the pale blotches are still further enlarged and confluent, the dark purple areas being reduced to a minimum, the decoration is also orange.

N.A.: Port Darwin, 9—N.Q.: Banks Island, 2; Bloomfield River; Dunk Island; Cairns; Geraldton, 11; Ingham; Townsville, 5. Also from New Guinea and Moluccas.

I have received a closely allied but distinct species from Kei Island; and other allied species occur in the Archipelago.

Gen.31. AUTANEPSIA, n.g. [*αὐτανεψία*, a cousin.]

Head with an anteriorly directed crest on crown, face rough-haired. Tongue well developed. Palpi rather long, porrect; basal and second joints densely hairy beneath; terminal joint long



in both sexes. Antennæ in ♂ pectinated, apices simple; in ♀ simple. Thorax not crested, beneath densely hairy. Abdomen with dorsal crests slightly indicated by some loose spreading hairs; terminal segments in ♂ with lateral tufts. Posterior tibiæ with all spurs present; in ♂ not dilated. Hindwings without basal costal expansion; frenulum and retinaculum in ♂ strong; frenulum in ♀ represented by a strong tuft of scales. Forewings with 3 and 4 remote at origin, 5 approximated at origin to 6, 6 widely separate from stalk of 7, 8, 9, 10, which arises from well before angle of cell, 11 anastomosing with 12 and 10. Hindwings with 3 and 4 widely separate, 6 and 7 separate, 8 approximated to cell as far as middle, diverging rather abruptly; dorsal disco-cellular strongly curved.

Type, *Hypochroma wilsoni* Feld. Distinguished from *Terpna* mainly by the peculiar neuration of the forewing, which was noted by Mr. Meyrick.

#### 98. AUTANEPSIA WILSONI.

*Hypochroma wilsoni* Feld., Reise Nov. Pl. 125, f. 4; Meyr., Proc. Linn. Soc. N. S. Wales, 1887, p. 906.

Palpi in both sexes 2, terminal joint  $\frac{2}{3}$ . Antennal pectinations in ♂, inner row 3, outer row 5.

N.Q.: Stannary Hills (Dr. T. Bancroft)—Vic.: Melbourne; Gisborne, 10.

#### Gen. 32. CRYPSIPHONA.

*Crypsiphona* Meyr., Proc. Linn. Soc. N. S. Wales, 1887, p. 901.

Face smooth. Tongue well developed. Palpi obliquely ascending, basal and second joints with long rough hairs beneath; basal joint longer than second joint; terminal joints short in both sexes. Antennæ in ♂ pectinated, apices simple; in ♀ simple. Thorax not crested, or with a slight anterior crest; beneath densely hairy. Abdomen without dorsal crests; in ♂ with lateral tufts of hair on each segment. Posterior tibiæ without middle spurs in both sexes; in ♂ sometimes dilated, with groove containing hair-tuft. Hindwings without costal expansion at base; frenulum and retinaculum in ♂ strongly developed; frenulum in



♀ represented by a tuft of long hairs. Forewings with 3 and 4 separate, 6 separate or short-stalked, 11 anastomosing with 12 and 10. Hindwings with 3 and 4 separate, 6 and 7 separate or connate, 8 closely approximated to cell near base, rapidly diverging; discocellulars nearly straight, rather strongly oblique, costal edge of cell considerably exceeding  $\frac{2}{3}$ .

Type, *C. melanosema* Meyr. An endemic development of *Terpna*, differing in the palpi, absence of middle spurs, and of dorsal abdominal crests.

99.†CRYPSIPHONA MELANOSEMA.

*Crypsiphona melanosema* Meyr., Proc. Linn. Soc. N. S. Wales, 1887, p.901.

W.A.: Albany, 9, 12.

100.†CRYPSIPHONA AMAURA.

*Crypsiphona amaura* Meyr., Proc. Linn. Soc. N. S. Wales, 1887, p.902.

W.A.: Albany, 9, 10.

101. CRYPSIPHONA OCCULTARIA.

*Phalaena occultaria* Don., Ins. N. Holl. p.36; *Hypochroma occultaria* Gn., Lep.ix. p.281; *Crypsiphona occultaria* Meyr., Proc. Linn. Soc. N. S. Wales, 1887, p.903.

Palpi in ♂  $1\frac{1}{4}$ , in ♀  $1\frac{1}{2}$ ; terminal joint minute in both sexes. Antennal pectinations in ♂ 3. Posterior tibiæ in ♂ not dilated.

N.Q.: Townsville, Stannary Hills—Q.: Duaringa, Gayndah, Nambour; Brisbane, 2, 3, 9; Mt. Tambourine; Nanango; Dalby; Warwick, 10—N.S.W.: Newcastle; Sydney, 4; Bathurst—Vic.: Melbourne; Beaconsfield, 11; Gisborne, 2, 3—Tas.: Hobart—S.A.: Mount Lofty—W.A.: Albany; Waroona, 7.

Gen.33. EPIPRISTIS.

*Epipristis* Meyr., Proc. Linn. Soc. N. S. Wales, 1887, p.916.

Face smooth, rounded. Tongue well developed. Palpi moderate, porrect; second joint smooth above, smooth or slightly hairy



beneath; terminal joint stout, moderate, somewhat longer in ♀. Antennæ simple in both sexes; ciliations in ♂ minute. Thorax and abdomen not crested; thorax smooth or but slightly hairy beneath. Posterior tibiæ with all spurs present; in ♂ not dilated. Hindwings without costal expansion at base; frenulum and retinaculum in ♂ well developed; frenulum in ♀ represented by a tuft of long hairs. Forewings with 3 and 4 separate but closely approximated at origin, 6 separate, 11 anastomosing shortly with 12. Hindwings with 3 and 4 separate but closely approximated at origin, 6 and 7 separate, 8 closely approximated to cell at a point near base, rapidly diverging; discocellulars nearly straight, but slightly oblique. Type, *Hypochroma minimaria* Gn.

*Actenochroma* Warr., is sufficiently distinguished from this genus by the dense woolly hairiness of the underside of the thorax, and the longer approximation of vein 8 of hindwings to the cell.

#### 102. EPIPRISTIS MINIMARIA.

*Hypochroma minimaria* Gn., Lep. ix. p.279; *Hypochroma parvula* Wlk., Cat. Brit. Mus. xxi. p.435; *Acidalia truncataria* Wlk., Cat. Brit. Mus. xxiii. p.774; *Epipristis oxycyma* Meyr., Proc. Linn. Soc. N. S. Wales, 1887, p.916; *Pseudoterpna minimaria* Hmps., Moths. Ind. iii. p.479.

Palpi of ♂  $1\frac{1}{2}$ , terminal joint  $\frac{1}{3}$ ; of ♀ 2, terminal joint  $\frac{1}{2}$ . Antennal ciliations in ♂ extremely minute.

N.A. : Port Darwin, 1, 3, 10, 11—N.Q. : Cape York, 8—Q. : Duaringa. Also from Borneo, Ceylon, and India.

#### Gen.34. ACTENOCHROMA.

*Actenochroma* Warr., Proc. Zool. Soc. 1893, p.350.

Face smooth, lower edge somewhat projecting. Tongue strong. Palpi moderate, obliquely ascending; basal joint with long spreading hairs beneath, second joint smooth or slightly hairy beneath. Antennæ in ♂ slightly serrate, ciliated in tufts; in ♀ simple. Thorax not crested; beneath densely hairy. Abdomen with several median dorsal crests; terminal segments in ♂ with slight



lateral tufts. Posterior tibiæ with all spurs present. Hindwings without basal costal expansion; frenulum and retinaculum in ♂ well developed; frenulum in ♀ represented by a tuft of long hairs. Forewings with 3 and 4 separate but approximated at origin, 6 separate, 11 free or anastomosing with 12 and 10. Hindwings with 3 and 4 separate, 6 and 7 separate, 8 approximated to cell for some distance, diverging before middle.

Type, *A. turneri*. Differs from *Terpna* in the ♂ antennæ. Probably the palpi and other points vary as in that genus; and I have, therefore, refrained from drawing up the definition too rigidly on the single Australian species.

### 103. ACTENOCROMA TURNERI.

*Hypochroma turneri* Luc., Proc. Linn. Soc. N. S. Wales, 1889, p.1096; *Actenochroma* (?) *prasina* Warr., Nov. Zool. 1896, p.282.

♂♀. 38-44 mm. Crown green with some whitish, and sometimes with some brownish, scales; face reddish-fuscous, upper third green, lower edge white. Palpi  $1\frac{1}{2}$ , terminal joint very short in both sexes; above reddish-fuscous, beneath whitish-ochreous. Antennæ fuscous; ciliations in ♂  $\frac{2}{3}$ . Thorax green; tegulæ and sometimes a posterior spot brownish-fuscous; sometimes a central whitish spot. Abdomen pale purple-fuscous and greenish, either colour preponderating; under surface whitish-ochreous. Legs whitish-ochreous; anterior coxæ, femora, and tibiæ suffused with purplish; anterior tarsi annulated with dark fuscous. Forewings rather elongate-triangular, costa nearly straight; apex rounded, termen strongly bowed, oblique, slightly crenulate; green with extensive areas of purplish-fuscous suffusion, extreme costal edge ochreous; a streak along costa purplish with dark fuscous strigulations; a similar basal patch, sometimes bisected; sometimes an irregular white subcostal suffusion from base to first line; first line dentate from  $\frac{1}{4}$  costa to  $\frac{1}{4}$  dorsum, dark fuscous; second line similar, from  $\frac{3}{4}$  costa bent first outwards, then inwards to mid-dorsum; included median area suffused with purplish-fuscous towards dorsum and second line, and with a small suffused discal spot of the same colour; terminal



area extensively suffused with purplish-fuscous, leaving an apical area, and a spot on mid-termen, green; a dark fuscous terminal line interrupted on veins; cilia greenish mixed with purplish-fuscous, sometimes with a whitish spot opposite mid-termen. Hindwings with termen rounded, crenulate; as forewings but without first line and apical green patch. Underside pale purplish more or less suffused with ochreous towards base; on forewing a large dark fuscous roundish discal spot, with a whitish spot on its terminal side; on hindwing a purplish-fuscous discal dot; a whitish postmedian line, on forewings narrow and interrupted, on hindwings broad; a whitish spot on mid-termen of both wings.

A handsome but variable species. In two of my examples vein 11 is free; in the third it approaches 12 but fails to anastomose, and then anastomoses with 10. The posterior tibiae of the ♂ are not dilated in my one example.

N.Q.: Kuranda, 5, 6; Mackay. Also from Louisiades.

#### Gen.35. TERPNA.

*Terpna* H.-Sch., Ausser. Schmett.; *Hypochroma* Gn., Lep. ix. p.275; Meyr., Proc. Linn. Soc. N. S. Wales, 1887, p.904(*præocc.*).

Face smooth (rarely hairy), sometimes slightly rounded, sometimes slightly projecting at lower edge. Tongue well developed. Palpi moderate or long, porrect or ascending, basal and second joints densely hairy beneath, second joint smooth or hairy beneath; basal joint as long as second; terminal joint short or moderate, and equal or nearly so in both sexes, or much longer in ♀. Antennæ in ♂ pectinated, apices simple; in ♀ simple. Thorax not crested; beneath densely hairy. Abdomen usually with small median dorsal crests, but these are sometimes obsolete; in ♂ with lateral tufts on terminal segments. Posterior tibiae with all spurs present; in ♂ sometimes dilated, with a groove and tuft of hairs on inner side. Hindwing without rounded costal expansion at base; frenulum and retinaculum in ♂ always strongly developed; frenulum in ♀ represented by a tuft of long hairs more or less



developed. Forewings with 3 and 4 separate, 5 widely separate from 6, 6 separate but closely approximate, or connate, 11 free, or anastomosing with 12, or with 12 and 10. Hindwings with 3 and 4 separate, 6 and 7 separate, 8 approximated to cell to  $\frac{1}{3}$  or to about middle, diverging gradually or rather abruptly; discocellulars angled on vein 5 or nearly straight, slightly or moderately oblique, dorsal curved or nearly straight.

Type, *Terpna hæmataria* H.-Sch., Ausser. Schmett., f 205, 206. A large genus; vein 8 of the hindwings varies in the length of its approximation to the cell and in the abruptness of its divergence, but the extremes seem to be connected by intermediates. In the palpi there are also considerable variations, but I have not seen my way to divide the genus on this ground, though on a wide survey of the whole group this might be possible. The species are coloured to imitate the bark of trees, being speckled, mottled, and often variable; they are difficult to distinguish by description. The undersides, which are much more constant, are valuable for identification.

This genus must not be identified with *Pseudoterpna* Hb., of which the type is *pruinata* Hufn. In that species there is a well marked basal costal expansion of the hindwing, and the frenulum, though fairly strong in the ♂, is obsolete in the ♀.

1. Forewings with antemedian line forming two strong rounded projections..... 111. *cinerea*.  
Antemedian line of forewings without rounded projections..... 2.
2. Discal spot of forewings above linear..... 3.  
Discal spot of forewings above, when developed, not linear..... 9.
3. Hindwings beneath bright orange towards base... 104. *emiliaria*.  
Hindwings not orange beneath..... 4.
4. Forewings beneath tinged with reddish..... 5.  
Forewings beneath not tinged with reddish..... 6.
5. Wings above green-whitish with fuscous lines..... 106. *myriosticta*.  
Wings above brown-whitish with reddish-brown lines..... 107. *paroptila*.
6. Wings above green..... 105. *muscosaria*.  
Wings above whitish or grey..... 7.



- |   |                             |
|---|-----------------------------|
| 7. Wings beneath with a subterminal series of white spots in a dark band..... | 109. <i>erebata</i> .       |
| Wings beneath without subterminal white spots....                             | 8.                          |
| 8. Forewings with antemedian line straight.....                               | 108. <i>percomptaria</i> .  |
| Forewings with antemedian line strongly dentate...                            | 110. <i>chlora</i> .        |
| 9. Hindwings above pinkish-tinged.....  | 112. <i>metarhodata</i> .   |
| Hindwings above not pinkish-tinged.....                                       | 10.                         |
| 10. Wings above bright green.....   | 11.                         |
| Wings above not bright green.....   | 12.                         |
| 11. Wings beneath with subterminal band reddish.....                          | 114. <i>viridicata</i> .    |
| Wings beneath with subterminal band fuscous.....                              | 12.                         |
| 12. Wings above irrorated and strigulated with blackish                       | 115. <i>acanthina</i> .     |
| Wings above not irrorated with blackish....                                   | 116. <i>hypochromaria</i> . |
| 13. Wings beneath with crimson or reddish markings..                          | 14.                         |
| Wings beneath without crimson or reddish markings .....                       | 113. <i>deteriorata</i> .   |
| 14. Wings above with blackish crenated terminal line..                        | 117. <i>subrubescens</i> .  |
| Wings above without terminal line.. .....                                     | 118. <i>quadrilinea</i> .   |

## 104. TERPNA EMILIARIA.

*Hypochroma emiliaria* Gn., Lep. ix. p.280; Meyr., Proc. Linn. Soc. N. S. Wales, 1887, p.911; *Hypochroma aurantiacea* Luc., Proc. Linn. Soc. N. S. Wales, 1891, p.297; *Hypochroma subornata* Warr., Nov. Zool. 1896, p.360; *Hypochroma purpurissata* Luc., Proc. Roy. Soc. Qsld., 1901, p.77; *Hypochroma assidens* Luc., *op. cit.* p.79.

♂♀. 38-48 mm. Head whitish- or greenish-grey more or less mixed with dark fuscous, less commonly brownish-whitish; lower part of face sometimes dark fuscous. Palpi in ♂  $2\frac{1}{2}$ , terminal joint  $\frac{1}{2}$ ; in ♀ 3, terminal joint 1; colour as head on upper surface; lower surface whitish usually suffused with purple-reddish; whitish more or less mixed with fuscous, sometimes mostly fuscous; pectinations in ♂  $2\frac{1}{2}$ . Thorax whitish variably mixed with pale reddish, greenish, and dark fuscous scales. Abdomen with dorsum coloured as thorax but usually paler; sides orange-ochreous; under surface whitish-ochreous. Legs whitish-ochreous; anterior coxæ reddish; middle and anterior tibiæ and tarsi fuscous anteriorly, with ochreous-whitish or greenish annulations; posterior tibiæ in ♂ dilated, with internal groove and tuft.



Forewings triangular, costa slightly arched, apex rounded, termen bowed, oblique, crenulate; whitish more or less irrorated and suffused with dark fuscous, pale reddish, and often with greenish; lines distinct, blackish, antemedian sometimes preceded and postmedian succeeded by a fuscous suffusion, leaving a pale median area; antemedian line slightly outwardly curved, crenulate, from  $\frac{1}{3}$  costa to  $\frac{1}{4}$  dorsum; postmedian sinuate, dentate, from  $\frac{2}{3}$  costa to slightly beyond mid-dorsum; a linear dark discal mark, outwardly oblique, beneath midcosta; a whitish, much dentate, subterminal line; a blackish terminal line, often interrupted and thickened into dots between veins; cilia whitish with pale reddish or greenish suffusion, and some dark fuscous irroration. Hindwings with termen rounded, dentate; colour and markings as forewings but without antemedian line; with tufts of raised scales before middle of disc, and on dorsum; dorsal cilia orange-ochreous. Underside of forewings with base suffused with purple-reddish; a bright orange subcostal streak reaching to middle; a triangular median white blotch including a large roundish discal spot; a broad dark fuscous terminal band including a subterminal series of white dots. Underside of forewings bright orange bordered by a median whitish transverse line; sometimes preceded by an elliptical blackish discal spot, but this is usually completely absent; a broad terminal dark fuscous band, mixed with whitish on termen; cilia whitish.

Very variable in the coloration of the upper surface, but always recognisable by the under side.

N.A.: Port Darwin, 10—N.Q.: Prince of Wales Island, 5, 6; Thursday Island; Cape York, 8; Cooktown; Cairns; Kuranda, 3, 5; Cardwell; Dunk Island; Stannary Hills; Herberton—Q.: Gympie; Brisbane, 1. Also from New Guinea.

#### 105. TERPNA MUSCOSARIA.

*Hypochroma muscosaria* Gn., Lep. ix. p.281, Pl.vi., f.3; Meyr., Proc. Linn. Soc. N. S. Wales, 1887, p.912: *Hypochroma cetraria* Feld., Reise Nov., Pl.125, f.7; *Hypochroma squamata* Feld., Reise Nov., Pl.126, f.14.



♂♀. 36-54 mm. Palpi in ♂  $1\frac{3}{4}$ , terminal joint  $\frac{1}{3}$ ; in ♀  $2\frac{1}{4}$ , terminal joint  $\frac{2}{3}$ . Posterior tibiæ in ♂ dilated with internal groove and tuft.

Q.: Brisbane, Stanthorpe—N.S.W.: Newcastle; Sydney, 11, 2; Mt. Kosciusko(2,700 ft.)—Vic.: Warburton.

#### 106. TERPNA MYRIOSTICTA.

*Pseudoterpna myriosticta* Turn., Trans. Roy. Soc. S. Austr. 1904, p.223.

Palpi in ♀  $1\frac{1}{2}$ , terminal joint  $\frac{1}{3}$ .

Q.: Eumundi, near Nambour, 11; Brisbane, 6.

#### 107. TERPNA PAROPTILA.

*Pseudoterpna paroptila* Turn., Trans. Roy. Soc. S. Austr. 1906, p.130.

N.Q.: Atherton.

#### 108. TERPNA PERCOMPTARIA.

*Hypochroma percomptaria* Gn., Lep.ix. p.280, Pl.vi., f.4; Meyr., Proc. Linn. Soc. N. S. Wales, 1887, p.907.

Palpi in both sexes  $1\frac{3}{4}$ , terminal joint  $\frac{1}{4}$ . Antennal pectinations in ♂ 4. Posterior tibiæ in ♂ not dilated.

N.Q.: Mt. Molloy, 12—Q.: Brisbane—N.S.W.: Newcastle—Vic.: Melbourne; Gisborne, 1, 2, 3, 4, 12—W.A.: Albany.

#### 109. TERPNA EREBATA.

*Hypochroma erebusata* Wlk., Brit. Mus. Cat. xxi. p.443; *Hypochroma erebata* Meyr., Proc. Linn. Soc. N. S. Wales, 1887, p.914.

Palpi in ♂ 2, terminal joint  $\frac{1}{2}$ ; in ♀  $2\frac{1}{4}$ , terminal joint  $\frac{2}{3}$ . Antennal pectinations in ♂ 5. Posterior tibiæ in ♂ not dilated.

Q.: Duaringa; Gympie; Brisbane, 1, 2, 3, 4, 11.

#### 110. TERPNA CHLORA.

*Phalena chlora* Cram., Pap. Exot. iv. Pl.398, f.C: *Hypochroma crenaria* Gn., Lep. ix. p.278; Meyr., Proc. Linn. Soc. N. S. Wales, 1887, p.915; *Hypochroma lariaria* Wlk., Cat. Brit. Mus. xxi. p.433;



*Hypochroma distenta* Wlk., Cat. Brit. Mus. xxi. p.434; *Boarmia leucostigmata* Nietn., Edinb. New Phil. Journ. 1862, p.387; *Hypochroma irrorataria* Moore, Proc. Zool. Soc. 1867, p.632; *Hypochroma sublimbata* Butl., Ann. Mag. Nat. Hist.(5)x. p.232; *Hypochroma paulinaria* Pag., Jahrb. Nass. Ver. 1885, p.47, Pl.i. f.1; *Pingasa candidaria* Warr., Nov. Zool. 1894, p.382; *Pseudoterpna chlora* Hmps., Moths Ind. iii. p.473.

Palpi long, ascending; in ♂ 2, terminal joint 1; in ♀ 3; terminal joint  $1\frac{1}{2}$ . Antennal pectinations in ♂ 2. Posterior tibiæ in ♂ dilated, with internal groove and tuft. Hindwings with 8 approximated to cell to  $\frac{1}{3}$ , then abruptly diverging. The elevated tufts of scales on the hindwings of this and some other species are of specific value only.

N.Q.: Cairns, Atherton, Stannary Hills; Townsville, 4; Dunk Island—Q.: Rockhampton; Nambour; Brisbane, 2, 5; Stradbroke Island. Also from the Malay Archipelago, Ceylon, and India.

#### 111. TERPNA CINEREA.

*Pingasa cinerea* Warr., Nov. Zool. 1894, p.382; *Hypochroma singularis* Kershaw, Vict. Naturalist, 1897, p.104; *Skorpiesthes unda-scripta* Luc., Proc. Roy. Soc. Qsld. 1899, p.143.

♂, 42 mm. Head ochreous-whitish. Palpi  $1\frac{1}{2}$ , terminal joint  $\frac{1}{3}$ ; ochreous-whitish; outer aspect of second joint pale fuscous. Antennæ ochreous-whitish. Thorax ochreous-whitish. Abdomen ochreous-whitish, crests pale reddish-brown. Legs ochreous-whitish. Forewings triangular, costa gently arched, apex rounded, termen bowed, oblique, crenulate; ochreous-whitish; costa strigulated with pale grey; a dark fuscous line from  $\frac{1}{4}$  costa, forming two rounded projections outwardly in disc, then strongly inwardly oblique to  $\frac{1}{4}$  dorsum; an oval dark fuscous discal ring before middle; a fine postmedian dark fuscous line from  $\frac{3}{4}$  costa, at first transverse, then strongly inwardly oblique to mid-dorsum, with numerous very acute dentations, placed closely in transverse part, widely separate in oblique part; this line is followed by two fuscous blotches, one above middle, the other above tornus; a fine dark fuscous terminal line; cilia ochreous-whitish. Hindwings



elongate, termen strongly bowed, strongly dentate; vein 8 closely approximated to cell to  $\frac{1}{4}$ , abruptly diverging; colour as forewings; a ridge of raised scales before middle of disc; no ante-median line nor discal dot; postmedian line and blotches as forewings; terminal area suffused with pale grey. Underside whitish; forewings with oval fuscous discal spot; both wings with fuscous terminal bands, in forewings especially broad at apex, in hindwings narrow at apex.

♀. 48 mm. Palpi 2, terminal joint  $\frac{2}{3}$ . Wings finely irrorated with pale grey; lines mixed with pale reddish scales; discal mark of forewings inconspicuous and linear; postmedian blotches pale reddish.

Q.: Wynnum, near Brisbane—Vic.: Narracan, 2.

This species is remarkable for its attitude during rest. The forewings are directed directly forwards, the costæ being parallel, while the hindwings are directed backwards, their dorsal edges being appressed to the abdomen. It appears to be very retired in its habits, and very hard to distinguish on the bark of the stems of *Melaleuca*.

#### 112. TERPNA METARHODATA.

*Scotosia metarhodata* Wlk., Cat. Brit. Mus. xxvi. p.1724; *Hypochroma metarhodata* Meyr., Proc. Linn. Soc. N. S. Wales, 1887, p.908.

Palpi  $1\frac{1}{2}$ , terminal joint short in both sexes. Antennal pectinations in ♂  $2\frac{1}{2}$ . Posterior tibiæ in ♂ not dilated.

Q.: Brisbane—N.S.W.: Newcastle, 9; Sydney, 3, 4, 9—Vic.: Sale, 1.

#### 113. TERPNA DETERIORATA.

*Hypochroma deteriorata* Wlk., Cat. Brit. Mus. xxi. p.441; Meyr., Proc. Linn. Soc. N. S. Wales, 1887, p.913; *Hypochroma nigraria* Feld., Reise Nov. Pl.126, f.1.

Palpi in ♂  $1\frac{1}{4}$ ; terminal joint  $\frac{1}{4}$ . Antennal pectinations in ♂ 4. Posterior tibiæ in ♂ slightly dilated.

N.S.W.: Sydney, 4, 10.



## 114. TERPNA VIRIDICATA.

*Hypochroma viridicata* Luc., Proc. Linn. Soc. N. S. Wales, 1889, p.1094.

♂. 4.4 mm. Palpi 2, terminal joint  $\frac{1}{2}$ . Antennal pectinations 3. Forewings triangular, costa straight, apex rounded, termen bowed, oblique; mossy green, markings blackish-fuscous; an interrupted wavy line from midcosta to  $\frac{2}{5}$  dorsum; an ill-defined discal spot beyond this line; an interrupted dentate line from  $\frac{2}{3}$  costa to  $\frac{3}{4}$  dorsum, containing two conspicuously dark teeth about middle. Hindwings with termen rounded; colour and markings as forewings. Underside pale ochreous; a dark fuscous oval discal spot on forewings; a linear reddish discal mark on hindwings; a broad reddish subterminal band on both wings, containing in forewings a suffused fuscous spot above middle.

Q.: Brisbane, Buderim Mountain, near Nambour; in December, one specimen in the Queensland Museum, in poor condition; taken by Mr. C. J. Wild.

## 115. TERPNA HYPOCHROMARIA.

*Cleora(?) hypochromaria* Gn., Lep. ix. p.234; *Hypochroma hypochromaria* Meyr., Proc. Linn. Soc. N. S. Wales, 1887, p.909; *Pseudoterpna bryophanes* Turn., Trans. Roy. Soc. S. Austr., 1904, p.222.

Palpi in both sexes 2, terminal joint  $\frac{1}{2}$ . Antennal pectinations in ♂ 3. Posterior tibiæ of ♂ dilated, with internal groove and tuft.

N.Q.: Cape York, 4—Q.: Brisbane, 5, 8, 9, 11—N. S. Wales. —.

## 116. TERPNA ACANTHINA.

*Hypochroma acanthina* Meyr., Proc. Linn. Soc. N. S. Wales, 1887, p.910.

Palpi in ♂  $1\frac{1}{4}$ , terminal joint minute. Antennal pectinations in ♂ 3. Posterior tibiæ in ♂ not dilated.

Q.: Duaringa.



## 117. TERPNA SUBRUBESCENS.

*Hypochroma subrubescens* Warr., Nov. Zool. 1896, p.101.

♂. 30 mm. Head white, face with a dark green transverse line below middle. Palpi in ♂  $1\frac{1}{2}$ , terminal joint short; fuscous, extreme base and apex whitish. Antennæ whitish, towards apex grey; pectinations in ♂ 2. Thorax white mixed with dark green. Abdomen white; tuft and underside ochreous-whitish. Legs ochreous-whitish; anterior pair dark fuscous annulated with whitish; posterior tibiæ in ♂ not dilated. Forewings triangular, costa nearly straight, apex rounded, termen bowed, oblique; white, faintly pinkish-tinged, with dark green irroration in places; costa with minute dark green strigulations; lines dark green mixed with blackish; a transverse line at base not reaching costa; a strongly dentate line at  $\frac{1}{4}$ ; a short line from midcosta to a somewhat triangular white-centred discal spot; postmedian finely dentate, outwardly curved from  $\frac{2}{3}$  costa, lost in disc; subterminal with blackish dentations, sinuate, edged posteriorly by a fine white line; a crenulate blackish terminal line, touching termen on veins; cilia white, with some greenish and pinkish suffusions, interrupted by blackish bars opposite veins. Hindwings with termen rounded; colour as forewings but without basal and ante-median lines and discal dot. Underside whitish-ochreous; forewings with a blackish discal spot and a broad crimson streak above dorsum; both wings with fine postmedian lines and broad sub-terminal bands, partly crimson, partly blackish-fuscous.

N.Q.: Townsville, 4; Mackay(type).

## 118. TERPNA QUADRILINEA.

*Hypochroma quadrilinea* Luc., Proc. Roy. Soc. Qsld. 1891, p.80;  
*Actenochroma ochrea* Warr., Nov. Zool. 1896, p.360.

♂♀. 32-44 mm. Head whitish; face whitish with some reddish and dark fuscous scales, rarely mostly dark fuscous. Palpi in both sexes  $2\frac{1}{2}$ , terminal joint  $\frac{1}{2}$ ; fuscous, apex and undersurface whitish. Antennæ whitish; pectinations in ♂ 2. Thorax and abdomen whitish. Legs whitish; anterior pair suffused with pale fuscous leaving whitish annulations; posterior tibiæ in ♂ not



dilated. Forewings triangular, costa nearly straight, apex rounded, termen bowed, oblique, slightly crenulate; whitish, markings fuscous or fuscous-brown; a series of dots on costa, those marking commencement of lines being larger; antemedian line from  $\frac{1}{3}$  costa to  $\frac{1}{3}$  dorsum, often obsolete except at extremities; a suffused fuscous median discal spot containing a whitish central dot; postmedian from  $\frac{3}{4}$  costa to  $\frac{3}{4}$  dorsum, fine, dentate, sometimes partly obsolete; sometimes a blotch on dorsum following antemedian; a suffused irregular blotch between postmedian and termen; besides these markings, a variable amount of irroration sometimes forming strigulae; cilia whitish. Hindwings with termen rounded, crenulate; colour, irroration and cilia as forewings; no antemedian line; discal dot minute or absent; postmedian curved, finely dentate. Underside ochreous-whitish; markings dark reddish or dark fuscous, one or the other shade preponderating; both wings with discal spots, larger on forewings, fine postmedian lines, and broad subterminal bands; forewings with a broad longitudinal streak above and parallel to dorsum.

A variable species. My examples are mostly undated, but I suspect there are two seasonal forms, a larger paler summer form with markings on underside mostly reddish, and a smaller darker winter form with markings on underside mostly fuscous.

N.Q.: Kuranda, 3; Mackay—Q.: Brisbane, 12—N.S.W.: Byron Bay, 1.

Gen.36. OENOCHLORA.

*Oenochlora* Warr., Nov. Zool. 1896, p.353.

Face smooth. Tongue well developed. Palpi stout, rather long, obliquely ascending; second joint smooth, or only slightly roughened beneath; terminal joint stout and rather short in both sexes. Antennae in ♂ pectinated nearly to apex; in ♀ serrate. Thorax and abdomen not crested; thorax hairy beneath; abdomen in ♂ with slight lateral tufts on terminal segments. Posterior tibiae with all spurs present; in ♂ strongly dilated, with internal groove and tuft. Hindwings without basal costal expansion; frenulum and retinaculum in ♂ well developed; frenulum in ♀ represented by a tuft of long hairs. Forewings



with 3 and 4 separate, 6 separate, 11 anastomosing strongly with 12 and 10, sometimes the anastomosis with 12 is replaced by a short connecting bar. Hindwings with 3 and 4 separate, 6 and 7 separate, 8 closely approximated to cell from near base to beyond middle; discocellulars not angled, but rather strongly inwardly curved, only slightly oblique.

Type, *Oenochlora imperialis* Warr. The true position of this genus is not open to doubt. The only important character in which it differs from *Terpna* is the longer approximation of vein 8 of hindwings to the cell, a primitive trait in which it agrees with *Rhuma* and *Heliomystis*.

#### 119. OENOCHLORA IMPERIALIS.

*Oenochlora imperialis* Warr., Nov. Zool. 1896, p.354; *Euarestus nobilitans* Luc., Proc. Roy. Soc. Qsld. 1899, p.142; *Euarestus patrocinatus* Luc., Proc. Roy. Soc. Qsld. 1899, p.142.

♂♀. 40-44 mm. Head and face bright green. Palpi 2, terminal joint  $\frac{1}{3}$ ; purple, extreme apices of joints and basal part of underside ochreous-whitish. Antennæ whitish, towards base purple; pectinations in ♂ 3. Thorax bright green. Abdomen green; usually with a brownish or brownish-fusca band before middle; apex and undersurface whitish-ochreous. Legs whitish-ochreous; anterior femora suffused in front with fuscous-purple; middle and anterior tibiæ and tarsi annulated with fuscous. Forewings triangular, costa rather strongly arched towards base, apex acute and slightly produced, termen straight, rounded towards tornus; bright green; markings very variable; costal edge purplish dotted with fuscous; antemedian line obsolete or very faintly indicated; postmedian line darker green, slender, straight, from  $\frac{3}{4}$  costa to  $\frac{2}{3}$  dorsum, sometimes with minute purplish dots on veins, the whole line often obsolete; sometimes one or two whitish-ochreous spots outlined with reddish-purple, immediately following middle of postmedian line; sometimes a large purplish tornal blotch; cilia green. Hindwings with termen but slightly bowed, tornal angle prominent; colour as forewings; costa suffused with pale purplish; sometimes a dark green median transverse line; sometimes



irregular patches of purplish suffusion in dorsal area beyond this line. Underside pale orange-ochreous; a discal dot, and a broad irregular subterminal band on both wings purple; terminal area greenish.

N.Q. : Cooktown, Cairns; Kuranda, 3, 4, 5, 11, 12—Q. : Brisbane; Mount Tambourine, 2.

Gen.37. STERICTOPSIS.

*Sterictopsis* Warr., Nov. Zool. 1898, p.257.

Face smooth or shortly rough-haired. Tongue well developed. Palpi moderate, ascending, basal and second joints densely rough-haired beneath, second joint rough-haired on uppersurface, terminal joint short in both sexes. Antennæ in ♂ pectinated, apices simple. Thorax with a short but dense posterior crest; beneath densely hairy. Abdomen with four large dense median dorsal crests. Posterior tibiæ with all spurs present; in ♂ dilated, with internal groove and tuft. Hindwings without basal costal expansion; frenulum and retinaculum in ♂ strongly developed. Forewings with 3 and 4 separate, 6 separate or stalked, 10 arising separately from cell, 11 free, or anastomosing with 12, or with 12 and 10. Hindwing with 3 and 4 well separated at base, 6 and 7 short-stalked, 8 closely approximated to cell as far as middle, then diverging; discocellulars not angled, only moderately oblique, dorsal curved.

Type, *Hypochroma paratorna* Meyr. In the separate origin of vein 10 and the thoracic crest this agrees with *Heliomystis*. The main point of distinction is the stalking of 6 and 7 of the hindwings. The shorter approximation of vein 8 to cell is an additional point. I have examined the structural characters of the type of *Sterictopsis inconsequens* Warr.

120. STERICTOPSIS PARATORNA.

*Hypochroma paratorna* Meyr., Proc. Linn. Soc. N. S. Wales, 1887, p.906; *Pseudoterpna argyraspis* Low., Trans. Roy. Soc. S. Austr., 1893, p.157; *Sterictopsis inconsequens* Warr., Nov. Zool., 1898, p.257.



Antennal pectinations in ♂ 3. Palpi  $1\frac{1}{2}$ . Though easily recognised by the structural characters, this seems to be a very variable species. I have two examples before me, both males, and both from Gisborne. The first corresponds generally to Mr. Meyrick's description, but differs in details; the first line is obsolete on one side, on the other very slender and dentate, the discal spot pale-centred, the second line is reduced to streaks on veins, there is a dentate subterminal line in costal area only, and the terminal line is obsolete. The second example is melanic, the greater part of the forewings is suffused with dark fuscous, and the whole of the hindwings is dark fuscous except for a very slight imperfect subterminal line. The two examples are certainly conspecific.

Q.: Duaringa, 10—Vic.: Gisborne, 11, 12—S. Austr.: Mount Lofty.

Gen.38. RHUMA.

*Rhuma* Wlk., Cat. Brit. Mus. xxi. p.483.

Face smooth. Tongue well developed. Palpi moderate, porrect or obliquely ascending; basal joint with long spreading hairs; second joint smooth; terminal joint short in both sexes. Antennæ in ♂ slightly serrate, ciliated; in ♀ simple. Thorax with a small posterior crest; beneath densely hairy. Abdomen with strong median dorsal crests. Posterior tibiæ with all spurs present; in ♂ strongly dilated, with internal groove and tuft, middle spurs long, terminal spurs abbreviated, and with a short stout terminal process. Hindwings without basal costal expansion; frenulum and retinaculum in ♂ well developed; frenulum in ♀ represented by a tuft of long hairs. Forewings with 3 and 4 separate, 6 separate, 10 arising separately from cell, 11 free. Hindwings with 3 and 4 widely separate, 6 and 7 separate, 8 closely approximated to cell to well beyond middle; discocellulars not angled, moderately oblique, dorsal curved.

Type, *Rhuma subaurata* Wlk. Closely allied to *Heliomystis*. The thoracic crest is less marked, and the ♂ antennæ not pectinated.



## 121. RHUMA SUBAURATA.

*Rhuma subaurata* Wlk., Cat. Brit. Mus. xxi. p.484.

♂♀. 32-40 mm. Crown fuscous-grey; face whitish or whitish-ochreous with two fuscous dots below middle. Palpi in ♂  $1\frac{1}{4}$ , terminal joint very short; in ♀  $1\frac{1}{2}$ , terminal joint  $\frac{1}{4}$ ; fuscous, apex whitish. Antennæ fuscous, inner surface towards base whitish; ciliations in ♂ 1. Thorax fuscous-grey; apices of tegulæ and bases of patagia white. Abdomen fuscous-grey; beneath pale ochreous. Legs fuscous; anterior tibiæ and tarsi annulated with white; posterior pair whitish-ochreous. Forewings triangular, costa gently arched, apex rounded, termen bowed, oblique; fuscous-grey; median area white; markings dark fuscous; a quadrangular spot beneath costa near base; three similar costal spots in white area; antemedian line at  $\frac{1}{4}$ , represented by a curved series of three or four large dots; an oval white-centered discal spot beneath midcosta; postmedian line represented by a series of large dots on veins, from  $\frac{3}{4}$  costa, angled in disc, thence sinuate to mid-dorsum in ♂, to  $\frac{2}{3}$  dorsum in ♀; a fine interrupted crenulate subterminal line, preceded by a darker shade; veins in outer part of disc suffused with ochreous; an interrupted terminal line; cilia fuscous-grey, obscurely barred with whitish. Hindwings with termen rounded; colour and markings as forewings, but without first line, median area not white, dorsal cilia usually ochreous. Underside deep ochreous with dark fuscous circular discal spots and broad subterminal bands on both wings.

Q.: Brisbane 11.

## Gen. 39. HELIOMYSTIS.

*Heliomystis* Meyr., Proc. Linn. Soc. N. S. Wales, 1887, p.900.

Face shortly hairy. Tongue well developed. Palpi moderate, porrect, basal and second joints densely hairy beneath, second joint hairy on upper surface, terminal joint moderate. Antennæ in ♂ pectinated nearly to apex. Thorax with a dense posterior crest; beneath densely hairy. Abdomen with strong median dorsal crests. Posterior tibiæ with all spurs present; in ♂ dilated,



with internal groove and tuft. Hindwings without basal costal expansion; frenulum and retinaculum in ♂ strong. Forewings with 3 and 4 separate, 6 connate, 10 arising separately from cell, 11 anastomosing with 12. Hindwings with 3 and 4 separate, 6 and 7 separate, 8 approximated to cell beyond middle; discocellulars angled on vein 5, dorsal strongly angled towards base beneath vein 5, then rather strongly oblique.

Type, *H. electrica* Meyr.

#### 122. HELIOMYSTIS ELECTRICA.

*Heliomystis electrica* Meyr., Proc. Linn. Soc. N. S. Wales, 1887, p.900.

Antennal pectinations 4. Palpi in ♂ 2, terminal joint  $\frac{1}{2}$ .

Vic.: Gisborne, 12.

#### Gen.40. PROTOPHYTA, n.g. [πρωτοφυτος, first-born.]

Face smooth. Tongue well developed. Palpi moderate, obliquely ascending; basal joint with long spreading hairs; second joint rough-haired above and beneath; terminal joint moderate. Antennæ in ♂ pectinated, apices simple. Thorax and abdomen not crested; thorax densely hairy beneath. Posterior legs of ♂ [unknown]. Hindwings without costal expansion at base; frenulum and retinaculum in ♂ well developed. Forewings with 3 and 4 separate, 6 separate, 10 arising separately from cell, 11 anastomosing with 12. Hindwings with 3 and 4 separate, 6 and 7 separate, 8 closely approximated to cell to well beyond middle; discocellulars incurved, not oblique.

Type, *Pseudoterpna castanea* Low. I regard this as the most primitive genus so far known, and as almost in the direct line of ancestry of *Terpna*.

#### 123. PROTOPHYTA CASTANEA.

*Pseudoterpna castanea* Low., Proc. Linn. Soc. N. S. Wales, 1898, p.45.

♂. 39 mm. Head ochreous-whitish. Palpi in ♂  $1\frac{1}{2}$ , terminal joint  $\frac{1}{3}$ ; ochreous-whitish. Antennæ ochreous-whitish; pecti-



nations in ♂ 3. Thorax ochreous-whitish, anteriorly suffused with reddish-brown. Abdomen ochreous-whitish. Legs fuscous annulated with whitish; [posterior pair broken]. Forewings rather elongate-triangular, costa slightly arched, apex rounded, termen bowed, oblique, crenulate; ochreous-whitish, markings reddish-brown; a suffused subcostal streak bisected by a whitish line near base; a wavy line from  $\frac{1}{3}$  costa to  $\frac{1}{4}$  dorsum, darker towards dorsum; a similar line from mid-costa to  $\frac{2}{5}$  dorsum, followed by a dark fuscous mark on dorsum; an interrupted subterminal line; an interrupted terminal line, obsolete towards apex; cilia ochreous-whitish. Hindwings with termen dentate, teeth on veins 4 and 6 more prominent; colour and cilia as forewings; a suffused antemedian brown band obsolete towards costa; a double brown subterminal line. Underside ochreous-whitish, with reddish-brown subapical circular blotches on both wings.

Type(redescribed) in Coll. Lyell.

N.S.W.: Liverpool near Sydney; one specimen on tea-tree bark, in January.

*Species unrecognised or wrongly referred.*

124. *Hypochroma velutinata* Wlk., Cat. Brit. Mus. xxi. p.442, is a synonym of *Gastrina cristaria* Gn.(*Boarmianæ*).

125. *Hypochroma dissentanea* Wlk., Cat. Brit. Mus. xxi. p.442, and

126. *Hypochroma dissonata* Wlk., Cat. Brit. Mus. xxi. p.443, are both synonyms of *Ectropis fractaria* Gn.(*Boarmianæ*).

127. *Hypochroma nyssiata* Feld., Reise Nov. Pl.125, f.3, is probably a species of *Hypographa* (*Monoctenianæ*).

128. *Iodis glauca* Luc., Proc. Linn. Soc. N. S. Wales, 1888, p.1263, belongs to the genus *Asthena* (*Larentianæ*).

129. *Hypochroma maculata* Luc., Proc. Linn. Soc. N. S. Wales, 1889, p.1095, from Mackay.

130. *Iodis barnardæ* Luc., Proc. Linn. Soc. N. S. Wales, 1891, p.293, from Duaringa.



131. *Iodis multincta* Luc., Proc. Linn. Soc. N. S. Wales, 1891, p.295, from Brisbane.
132. *Hypochroma diffundens* Luc., Proc. Linn. Soc. N. S. Wales, 1891, p.298, from Duaringa.
133. *Iodis nitida* Luc., Proc. Linn. Soc. N. S. Wales, 1892, p.252, from Eumundi, near Nambour, Q.
134. *Iodis ipomopsis* Low., Trans. Roy. Soc. S. Austr. 1892, p.14, from Balhannah and Belair, S.A.
135. *Hypochroma eugramma* Low., Trans. Roy. Soc. S. Austr., 1892, p.14, from Adelaide.
136. *Euchloris microgyna* Low., Trans. Roy. Soc. S. Austr. 1894, p.85, is a synonym of *Asthena glauca* Luc. (*Larentianæ*).
137. *Eucrostes nanula* Warr., Nov. Zool. 1897, p.211. The type is much worn and so imperfect as to be unrecognisable.
138. *Hypochroma conspurcata* Luc., Proc. Roy. Soc. Qsld. 1898, p.68, from Brisbane.
139. *Hypochroma munita* Luc., Proc. Roy. Soc. Qsld, 1901, p.78, from Cairns.
140. *Euchloris pisochroa* Turn., Trans. Roy. Soc. S. Austr. 1906, p.128, belongs to the genus *Aplochlora* (*Boarmianæ*).

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POSTSCRIPT (added 2nd November, 1910).—Mr. L. B. Prout informs me, in a letter received as this is going through the press, that there is a specimen of "*Nemoria*" *pisina* Warr., in the British Museum, from North-West Australia; and that it is a male, with two pairs of spurs on the posterior tibiæ; also that there is another example from Port Moresby, which answers to the description of *Iodis neomela* Meyr. The synonymy will therefore stand as follows:—

#### METALLOCHLORA NEOMELA.

*Iodis neomela* Meyr., Trans. Ent. Soc. 1889, p.492; *Nemoria pisina* Warr., Nov. Zool. 1899, p.26.

N.A.: Port Darwin—N.W.A. Roebuck Bay Also from New Guinea and Tenimber Islands.

The reference for *Comostola nereidaria* Snel., is Tijd. v. Ent. 1881, p.76, Pl. 10, f. 10, 11. Mr. Meyrick has recorded this species from New Guinea.

Corrigendum.—In the Table, on p. 560, for 32 *CRYSIPHONA*, read 32 *CRYSIPHONA*. The break in the main line to allow for the insertion of this name, is accidental, and therefore without significance.





Turner, Alfred Jefferis. 1910. "Revision of Australian Lepidoptera, v." *Proceedings of the Linnean Society of New South Wales* 35, 555–653.  
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