

of females\* for the purpose of measuring the index of cranial breadth, amongst which I found many dozens of the well-marked above-mentioned transversal depressions. Many elderly females had the greater part of the depression quite strongly marked, and I found that in some cases the depression was not less than from 3 to 4 millemetres. I possess a skull from one of these villages of the south coast of New Guinea, on which the above-described saddle-ridge is well marked, and I believe this acquired cranial deformation has a great chance of being more or less transmitted from generation to generation by inheritance, and is therefore still more worthy of record. A more complete account of these cases of cranial deformation, with measurements and illustrations, will be found in my letter to Professor R. Virchow, of Berlin. [*Vide* Sitzungsberichte der Berliner Gesellschaft für Anthropologie Ethnologie und Urgeschichte, 1881.]

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DESCRIPTIONS OF AUSTRALIAN MICRO-LEPIDOPTERA.

BY E. MEYRICK, B.A.

VI. TORTRICINA. (Continued)

The present instalment concludes the *Tortricina*, so far as they are at present known. It treats of the two remaining families, the *Grapholithidæ* and the *Conchylidæ*, as defined in the preceding paper (No. V.). These families are far less prominent in the Australian region than they are in the Northern hemisphere, and especially in Europe; their main groups are indeed wholly absent and the representatives of the families consist chiefly of specially developed groups, with scattered outliers of some northern types. Descriptions are here given of 55 species, of which 45 are new to science.

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\* Married females in many parts of New Guinea have the habit of shaving their hair, and present, therefore, for a biologist a more suitable object for cranial measurement than the men with their large frizzled wigs.



The *Grapholithidæ* are represented by 49 species, less than half the *Tortricidæ*, of which in Europe they are very considerably more than double. Even of this number 4 are species introduced from Europe and now fully naturalised; of the remaining 45 species 2 are common to Australia and New Zealand, 2 are endemic to New Zealand, and the remainder are endemic to Australia. The character of this fauna is strikingly peculiar and of great interest, but before discussing its nature, it will be necessary to make some remarks upon the internal classification of the family.

In my view the *Grapholithidæ*, as at present known, are divisible into six equivalent groups of genera, by the following characters; these groups are mostly natural subdivisions, and the characters defined will be found to hold almost universally, though it is not denied that exceptions may occur within the limits of the group.

- A. (*Penthina* group.) thorax crested; antennæ entire; veins 7 and 8 of forewings separate (rarely stalked); veins 3 and 4 of hindwings from a point (rarely stalked).
- B. *Eudemis* group.) thorax slightly crested; antennæ entire; veins 7 and 8 of forewings separate; veins 3 and 4 of hindwings remote at origin.
- C. (*Pædisca* group.) thorax smooth; antennæ entire; veins 7 and 8 of forewings separate; veins 3 and 4 of hindwings from a point.
- D. (*Grapholitha* group.) thorax smooth; antennæ entire; veins 7 and 8 of forewings separate; veins 3 and 4 of hindwings stalked.
- E. (*Palæobia* group.) thorax smooth; antennæ entire; veins 7 and 8 of forewings stalked; veins 3 and 4 of hindwings stalked.
- F. (*Strepsiceros* group.) thorax smooth; antennæ of male with a deep notch; veins 7 and 8 of forewings separate; veins 3 and 4 of hindwings stalked.



Comparing the relative proportions of these groups in Australia, New Zealand, and Europe, and adding the proportion of *Tortricidæ* as a standard of comparison, we have the following results ; and although the actual number of species indicated from this region will doubtless be largely increased, there is no reason to suppose that the proportions will be materially changed.

		Europe.	Australia.	New Zealand.
<i>Tortricidæ</i> ..	..	..151	.. 79	.. 24
<i>Grapholithidæ</i> {	Group A..	87	.. 9	.. 1
	„ B..	13	.. 0	.. 0
	„ C..	70	.. 0	.. 0
	„ D..	230	.. 6	.. 0
	„ E..	1	.. 14	.. 0
	„ F..	1	.. 14	.. 3

Here we have two-thirds of the Australian species corresponding to two species in Europe, whilst the remaining third corresponds to four hundred species ; whilst in New Zealand the family is hardly present at all. In the only other region of which the *Tortricina* are at all known, North America, the relative proportions of the various groups are much the same as in Europe, and groups E. and F. are not known to be represented at all.

The indigenous Australian species of *Grapholithidæ* are referable to eleven genera, of which three, containing nine species, occur also in Europe and North America ; the other eight, with thirty-four species, are new and endemic, one only extending to New Zealand. The two peculiar New Zealand species belong to two endemic genera, one of which is very abnormal, the other nearly allied to Australian genera. The four introduced European species belong to four other genera, which are not otherwise represented in the region ; there can be no doubt that they came over with their food-plants, but all are now well established and of common occurrence, and two at least are found in New Zealand as well as in Australia. It may be remarked that one of them,



*Crociosema plebeiana*, seems to be already much more plentiful here than at home; indeed, if it were not so marked an European type, it might be argued that it was really introduced from Australia into Europe, but it is not probable that this was the case.

The principal feature of the family is the development of the nearly-allied groups of *Palæobia* and *Strepsiceros*, which are apparently almost confined to the Australian region. The two European species of these groups are very similar in facies to the Australian, but generically distinct. The peculiar larval habit of at least one species of *Palæobia*, which mines blotches beneath the cuticle of leaves, in the same manner as many of the smaller *Tineina*, is unprecedented in the *Tortricina*. Two species of *Strepsiceros*, which occur in both Australia and New Zealand, are the only *Tortricina* which appear to be indigenous to both countries; and under those circumstances it becomes a question of importance whether they are really indigenous to both, that is to say, whether their occurrence in one or other is not due immediately to human agencies. Of the two species in question, *S. ejectana* is an excessively abundant species in various parts of Australia, and is known to feed on several common Australian shrubs; in New Zealand it seems to occur more sparingly, and the specimens I took were decidedly dwarfed; it does not seem at all improbable that it may have been accidentally transported with some one of its foodplants from Australia to New Zealand, and subsequently have maintained itself on allied plants. *S. zopherana*, on the other hand, occurred to me in great abundance in New Zealand, and I have only met with occasional individuals round Sydney; it is not inconceivable that in this case the previous process may have been reversed, but further evidence is required. If however these species are really indigenous to New Zealand, I am surprised that peculiar species of the genus have not occurred there; though it is true that we have there the nearly allied but peculiar genus *Hendecasticha*. In view of the otherwise complete



specific difference between the *Tortricina* of Australia and New Zealand, the matter is deserving of a full investigation.

The little genus *Stigmonota* is also worthy of notice, as being, with the exception of the abnormal and doubtful genus *Epitymbia* the sole representative of the large *Grapholitha* group. Its presence probably indicates the antiquity of the genus; the species are very similar in facies to the European.

Of the *Conchylidæ* there are five Australian and one New Zealand species, all endemic, distributed amongst four endemic genera, the New Zealand species being congeneric with an Australian one. These appear to form two groups, both of which are very distinct from anything yet known to occur in other parts of the world, and are characterised by the structure of the hindwings. These in all other known genera of the family contain eight veins, of which 3 and 4 are stalked or from a point; but in one Australian type, represented by the genus *Heliocosma*, these veins 3 and 4 are widely remote at origin and parallel, whilst in the other type, of which the other three genera are examples, there are only six veins in the hindwings altogether. The curious bladder-like swelling of the forewings in *Coscinoptycha*, and the spherical radiating tuft of hairs on the hindwings of *Oistophora*, are abnormal and remarkable characters to which no analogy is found elsewhere. The facies of *Heliocosma* is that of the normal European type, but the species of the other group are eccentric and peculiar in appearance, and indeed are hardly recognisable superficially as belonging to the *Tortricina*. The origin of the whole of the Australian forms may probably be referred to some single ancestor of extinct type, finding its way hither at a very remote period, perhaps intermediate in structure between *Heliocosma* and *Paramorpha*, which have many points of resemblance. The habit of the only larva of this family which I have yet met with is also very extraordinary, for it constructs for itself a portable case of the fragments of the flowers on which



it feeds, exactly after the fashion of some of the smaller *Tineina*, such as *Coleophora*.

If the general remarks on the three families of *Tortricina* are compared, it will be seen that the evidence of all points in the same direction. All alike show indications of long isolation and great specialisation, and are distinguished by the disproportionate development of peculiar endemic groups. We have at present too little knowledge of other extra-European regions to be able to understand precisely the bearing of individual peculiarities, but the main lines of difference are clearly defined and instructive, and it may be anticipated that, when the fauna of the Malayan region is made known, we shall be in a position to furnish valuable evidence on the process of immigration of the Australian *Micro-Lepidoptera*.

It may be mentioned that according to the number of species at present known, the proportion of *Tortricina* to *Tineina* is in the European region 35 per cent., and in the Australasian only 16 per cent., or less than half the European.

## Fam. II. GRAPHOLITHIDÆ.

Lower median vein of hindwings pectinated with long hairs above towards base; vein 2 of forewings rising from before posterior third of lower margin of cell.

The Australian and New Zealand species of the family described hereafter are referred to seventeen genera, which may be analytically separated as follows :

### I. Forewings with 12 veins.

#### A. Veins 7 and 8 of forewings stalked.

1. Veins 3 and 4 of hindwings from a point 1. Phricanthes.

2. Veins 3 and 4 of hindwings stalked.

a. Hindwings with a membranous discal

ridge near base      ..      ..      .. 11. Epitymbia.

b. Hindwings smooth.



- i. Costa in male with basal fold ..14. Holocola.
- ii. Costa in male simple .. ..13. Palæobia.
- B. Veins 7 and 8 of forewings separate.
- 1. Veins 3 and 4 of hindwings from a point.
  - a. Vein 7 of hindwing rising from cell  
much before upper angle .. .. 5. Scoliopecta.
  - b. Vein 7 of hindwing rising from  
upper angle of cell.
  - i. Thorax smooth .. .. 8. Aphelia.
  - ii. Thorax crested.
    - \* Thorax with three crests; apex  
of forewings falcate .. .. 6. Epalxiphora.
    - \*\* Thorax simply crested; apex of  
forewings rounded.
    - † Palpi porrected .. .. 4. Penthina.
    - †† Palpi ascending, appressed  
to face .. .. 3. Antithesia.
- 2. Veins 3 and 4 of hindwings stalked.
  - a. Costa in male with basal fold.
    - i. Antennæ of male notched above  
basal joint.
      - \* Veins 6 and 7 of hindwings stalked 15. Bathrotoma.
      - \*\* Veins 6 and 7 of hindwings  
separate .. .. 16. Strepsiceros.
    - ii. Antennæ of male simple .. .. 12. Crocidosema.
  - b. Costa in male simple.
    - i. Hindwings in male with discal  
groove and ridge near base ..10. Carpocapsa.
    - ii. Hindwings in male smooth.
      - \* Thorax crested .. .. 2. Helictophanes
      - \*\* Thorax smooth .. .. 9. Stigmonota.
- 3. Veins 3 and 4 of hindwings separate  
at origin .. .. 7. Eudemis.
- II. Forewings with 11 veins .. ..17. Hendecasticha



1. PHRICANTHES, *n. g.*

Thorax with a moderate erect crest. Antennæ in male thickened, shortly ciliated. Palpi rather short, porrected, second joint densely rough-haired beneath and at apex above, terminal joint exposed. Posterior tibiæ fringed with short hairs above. Forewings moderately broad, costa in male simple, arched, hind-margin slightly sinuate beneath apex; surface with raised scales. Hindwings strongly rounded, broader than forewings. Forewings with veins 7 and 8 stalked, vein 7 running to costa, secondary cell indicated, vein 1 simple at base. Hindwings with veins 3 and 4 rising from a point, 5 approximated to 4 at base, 6 and 7 separate, diverging.

Belonging to the group of *Penthina*, and very similar in facies to *Helictophanes*, but distinguished by the peculiar and abnormal neuration of forewings, in which veins 7 and 8 are stalked and both run to costa before apex, and vein 1 is not furcate at base; the neuration of hindwings is normal.

The only species is of moderate size, and rather conspicuously marked.

1. Phric. asperana, *n. sp.*

♂ ♀.  $6\frac{1}{2}$ "-8". Head white, mixed above with dark fuscous, forehead with a small blackish spot. Palpi white, second joint black at base and with two interrupted black rings externally. Antennæ dark ochreous-grey, with slender blackish annulations. Thorax dark fuscous mixed with black, and on shoulders with whitish. Abdomen light brownish-ochreous. Anterior tibiæ black with two white rings, tarsi black with base and two rings slenderly white; middle tibiæ white with three narrow black rings, tarsi white with apex, a broad band near base, and two slender rings black; posterior tibiæ whitish-ochreous minutely speckled with black, tarsi whitish-ochreous with slender blackish rings at base of joints. Forewings moderate, apex very obtuse,



dorsal half with numerous spots of roughened scales ; white, costa and inner margin strongly strigulated with blackish, alternate spots larger, last four costal spots broader and close together ; a dark grey blotch, mixed with ochreous and transversely strigulated with black, extending along inner margin from base to two-thirds, and reaching two-thirds across wing, rather ill-defined, rounded posteriorly ; a slender ferruginous transverse streak from costa at one-fourth, reaching half across wing, blackish on costa ; a small grey irregularly triangular spot on disc at two-thirds ; a rather broad grey streak, coarsely mixed with black, from costa at three-fourths to anal angle, posteriorly rather undefined, anterior edge closely preceded by a slender irregular grey line ; some small irregular black streaks on hindmargin, connected together by a slender ferruginous streak close to hindmargin, extending to above apex ; cilia grey, mixed with dark grey, towards anal angle whitish. Hindwings smoky brownish-ochreous ; cilia pale ochreous, with a dark ochreous-grey line near base, extremities dark fuscous round apex.

Superficially somewhat similar to *Helictophanes tricolorana*, but differing by the ferruginous marks on forewings, and the smoky brownish-ochreous hindwings, besides other details.

Generally taken at rest on the trunks of *Eucalyptus* ; tolerably common on the sandy coast near Sydney, in thin scrub, and occurs also at Waratah on the Hunter River, in October, December, and January.

## 2. *HELICTOPHANES*, *n. g.*

Thorax with a moderate erect crest. Antennæ in male moderately ciliated. Palpi moderate, porrected, second joint roughly haired beneath and at apex above, terminal joint exposed. Posterior tibiæ fringed with hairs above. Forewings moderately broad, costa slightly arched, in male simple, hindmargin rounded or slightly sinuate. Hindwings rounded-elongate, broader than forewings. Forewings with veins 7 and 8 separate, 7 running to



costa (? or hindmargin), secondary cell distinct, vein 1 furcate at base. Hindwings with veins 3 and 4 stalked, 5 approximated to 4 at base, 6 and 7 stalked.

Allied to *Penthina*, but distinguished from all other genera of the group by the stalking of veins 3 and 4 of hindwings; the stalking of veins 6 and 7 of hindwings, and the termination of vein 7 of forewings on the costa, are also noticeable characters.

I have only been able to thoroughly examine the neurulation of *H. uberana*; but the other two species appear to agree in all essential points, as well as they can be made out, and especially in the stalking of veins 3 and 4 of hindwings, which is distinct.

The three species may be separated as follows:

- a. Forewings white and black; hindwings yellow..1. *tricolorana*.
- b. Forewings ochreous-brown; hindwings dark-grey 2. *uberana*.
- c. Forewings light ochreous; hindwings pale  
brownish-ochreous .. .. .3. *fungiferana*.

#### 1. *Helict. tricolorana*, n. sp.

♂. 7". Head, palpi, and thorax dark fuscous mixed with whitish, second joint of palpi with an ochreous spot on outer side. Antennæ brownish-ochreous. Abdomen dark fuscous, tinged with ochreous. Legs blackish-fuscous, tibiae and tarsi with slender whitish rings. Forewings moderate, costa gently arched, apex obtusely rectangular, hindmargin hardly oblique; white, costa and inner margin very shortly strigulated with black; basal patch blackish, mixed with dark grey and whitish, its outer edge extending from one-third of costa to one-third of inner margin, irregular, slightly angulated in middle; a dark fuscous-grey ill-defined blotch extending along inner margin from basal patch to three-fourths, reaching half across wing, somewhat rounded posteriorly; two or three small black marks immediately beyond its posterior edge; a small black triangular spot at apex of wing, slenderly produced along hindmargin, and containing



two oblique white streaks before apex; from its anterior angle proceeds a slender blackish sinuate line at first inwards, then curved outwards to anal angle; a dark fuscous-grey cloudy streak parallel and close to lower half of hindmargin: cilia whitish with two black lines (?). Hindwings deep yellow, apex and hindmargin broadly suffused with dark fuscous; cilia grey-yellowish, with a dark fuscous line near base.

A distinct and handsome species, superficially separable from *Phric. asperana* by the yellow hindwings, and the entire basal patch, black apical spot, and absence of ferruginous markings on forewings.

One specimen, taken at Sydney in October.

2. *Helict. uberana*, n. sp.

♂ ♀.  $6\frac{1}{2}$ "- $7\frac{1}{2}$ ". Head, palpi, thorax, and antennæ ochreous-brown, sometimes mixed with dark fuscous. Abdomen dark fuscous. Legs grey-whitish, anterior tarsi black with base and two narrow median rings whitish, anterior and middle tibiæ, and middle and posterior tarsi banded with dark fuscous. Forewings moderate, costa bent before apex, apex obtusely rounded; ochreous-brown, more or less irrorated and suffused with dark fuscous; costa with slender oblique whitish strigulæ, the interspaces between which are black; a small subquadrate black spot on costa at one-fourth, and a blackish ill-defined spot on disc at one-third, indistinctly connected; a small subquadrate black spot on costa in middle; some indistinct dark fuscous transverse strigulæ towards anal angle and hindmargin: cilia ochreous-brown or dark fuscous. Hindwings dark fuscous-grey; cilia fuscous-grey, with a dark suffused line near base.

*Var.* Forewings with a large round ochreous-yellow blotch in disc above middle at two-thirds from base.

Recognisable by the rich ochreous-brown colour, and peculiarly rounded apex of forewings; the variety characterised is curious, but appears to belong to this species without doubt.



Seven specimens of the type, and one of the variety, taken at rest on fences round Sydney, in October and December; in repose the tips of the forewings are peculiarly bent in beneath the extremity of the abdomen, causing an appearance of deformity.

3. *Helict. fungiferana*, *n. sp.*

♂.  $6\frac{1}{4}$ ". Head and thorax pale ochreous, mixed with whitish, centre of thorax with a large square blackish spot. Palpi blackish. Antennæ brownish-ochreous. Abdomen brownish-ochreous, segments suffused with dark grey towards base. Legs whitish-ochreous, anterior and middle tibiæ and all tarsi banded with blackish. Forewings moderate, costa gently arched, apex rectangular, hindmargin rather bowed outwards below middle; light ochreous, with two clusters of tufts of raised scales towards inner margin, the first about one-fourth, the second in middle, and some scattered tufts above anal angle; some irregular blackish scales along inner margin towards base; a large dark grey triangular costal blotch, mixed with black, extending on costa from one-fourth nearly to apex, anteriorly attenuated, its apex reaching two-thirds across wing a little before anal angle, indistinctly connected with hindmargin before anal angle by two or three dark grey and blackish scales: cilia light brownish-ochreous. Hindwings pale brownish-ochreous, transparent at base, hindmargin suffused with dark fuscous-grey; cilia pale brownish-ochreous, with a darker line near base.

Somewhat resembling *Penth. helicana* in colour and type of marking, but characterised by the tufts of raised scales towards inner margin, and the much larger costal blotch.

One specimen taken in scrub near Parramatta, New South Wales, in September.

3. *ANTITHESIA*, Gn.

Thorax with a strong erect crest. Antennæ in male thickened, ciliated. Palpi rather short, ascending, closely appressed to face,



second joint shortly rough-haired beneath, terminal joint short, distinct. Posterior tibiæ fringed with hairs above. Forewings moderately broad, costa gently arched, in male simple, hindmargin rounded. Hindwings rounded-elongate, broader than forewings. Forewings with veins 7 and 8 separate, vein 7 running to hindmargin, secondary cell distinct. Hindwings with veins 3 and 4 rising from a point, 5 approximated to 4 at base, 6 and 7 separate, diverging.

Larva sixteen-legged, feeding in rolled leaves.

The genus only differs from *Penthina* in the form of the palpi, which are bent upwards and appressed to the face; but unless the two genera can be connected by indefinable gradations, this appears to me a sufficient point of distinction.

I have two Australian species; the genus is scantily represented in Europe.

1. *Ant. phyllanthana*, n. sp.

♂ ♀.  $6\frac{1}{2}$ "- $7\frac{1}{2}$ ". Head and palpi dark fuscous mixed with whitish-grey. Antennæ dark ochreous-fuscous. Thorax in male whitish-ochreous or pale ochreous mixed with dark fuscous, in female almost wholly dark fuscous. Abdomen ochreous-grey, anal tuft of male whitish-ochreous. Legs whitish-ochreous, anterior and middle tibiæ and all tarsi banded with dark fuscous. Forewings moderate, costa gently arched, apex obtuse, hindmargin somewhat oblique; light reddish-fuscous, somewhat suffused with whitish, in female more or less wholly suffused with dark fuscous-grey; basal patch blackish-grey, irregularly suffused with white and light reddish towards base, outer edge extending from costa at one-third to inner margin before middle, somewhat concave below middle; central fascia blackish, on lower half mixed or suffused with light reddish, moderately broad, anterior edge well-defined, extending from just before middle of costa to just beyond middle of inner margin, separated on costa from basal



patch by a subquadrate white spot ; costa between central fascia and apex suffused with blackish, with five pairs of oblique whitish strigulæ ; beyond central fascia the disc is wholly suffused with dark grey, except an ovate reddish-white patch on anal angle, emitting a curved whitish line from its anterior end reaching half across wing, and two sinuate whitish lines close together from its apical end, meeting and terminating a little below apex ; sometimes a reddish-white mark on hindmargin below apex ; in female these markings are often almost obliterated in the dark fuscous-grey suffusion : cilia light reddish-fuscous, beneath anal angle whitish, in female sometimes wholly whitish or wholly blackish-fuscous. Hindwings fuscous-grey, hindmarginal edge darker ; cilia whitish-grey, with a dark grey line near base.

A variable insect, ranging from light reddish-fuscous to dark grey, but generally showing a small clear white spot on costa before middle, and a whitish patch on anal angle ; some forms recall the European *Penth. profundana*, F.

Larva dull green, but undescribed ; feeding in rolled-up leaves of *Phyllanthus Ferdinandi*, (a small tree belonging to the *Euphorbiaceæ*) in December.

Rather common on fences in Sydney, where the food-plant is only grown in gardens, being a native of Queensland ; occurs in January and February.

## 2. *Ant. sphærocosmana*, n. sp.

♂.  $8\frac{1}{2}$ ". Head, palpi, antennæ, and thorax ochreous, face and outer side of palpi mixed with blackish, basal joint of antennæ blackish. Abdomen grey, anal tuft whitish-ochreous. Anterior and middle legs whitish-ochreous, broadly banded with dark fuscous ; posterior legs whitish. Forewings strongly dilated posteriorly, costa slightly arched, considerably bent beyond middle, apex obtuse-angled, hindmargin straight, not oblique ; reddish-ochreous, slightly mixed with whitish-ochreous, and with



a few scattered metallic-grey scales ; basal patch dark slaty-grey mixed with blackish, becoming reddish-ochreous towards inner margin, its outer edge defined by a thick curved blackish line from costa before one-third, becoming obsolete below fold ; costa shortly and obliquely strigulated with blackish throughout ; a small blackish subquadrate oblique spot on middle of costa, between which and basal patch the costa is broadly suffused with dark slaty-grey, except on extreme edge ; a triangular blackish space at apex, extending along apical third of costa and upper half of hindmargin, shading into ground-colour towards disc, intersected by two or three oblique irregular partially confluent leaden-metallic lines from costa to hindmargin about middle, and containing short oblique pale ochreous costal strigulae, of which the last is more conspicuous and produced to hindmargin beneath apex ; inner margin obscurely strigulated with dark grey ; an irregular suffused fuscous spot on inner margin towards anal angle, extending nearly to middle of disc : cilia dark slaty-grey, with a blackish basal line, towards anal angle reddish-ochreous. Hindwings dark fuscous-grey ; cilia grey, tips more whitish-grey.

A very distinct and elegantly-marked species, differing considerably in form of wing from the preceding.

One fine specimen in the collection of Mr. G. Masters, taken on the Richmond River.

#### 4. PENTHINA, Tr.

Thorax with a strong erect crest. Antennae in male shortly ciliated. Palpi moderate, porrected, second joint roughly haired above and below, terminal joint distinct. Posterior tibiae fringed with hairs above. Forewings rather broad, costa in male simple, rather strongly arched. Hindwings rounded, broader than forewings. Forewings with veins 7 and 8 separate, 7 running to hindmargin, secondary cell distinct. Hindwings with veins 3 and 4 from a point, 5 approximated to 4 at base, 6 and 7 separate.



This genus is the type of a considerable group, characterised usually by the presence of a well-marked thoracic crest, the origin of veins 3 and 4 of hindwings from a point, and the approximation of 5 to 4 at base. *Sericoris*, Tr., separated from *Penthina* by the less well-marked crest, appears to me at present insufficiently distinguished, but is not represented in Australia, the two species described below belonging truly to *Penthina*.

Larva sixteen-legged, feeding in rolled or spun-together leaves, or in stems and seedheads.

The genus is rather numerously represented in Europe and North America; of the two Australian species *P. helicana* may be separated from *P. doxasticana* by the dark triangular costal spot.

1. *Penth. doxasticana*, *n. sp.*

♂ ♀. 6"-7 $\frac{3}{4}$ ". Head, palpi, antennæ, and thorax light grey or dark grey, crest of thorax sometimes black. Abdomen ochreous-grey, edges of segments whitish. Legs whitish, anterior and middle tibiæ and all tarsi banded with dark fuscous. Forewings posteriorly dilated, costa slightly arched, apex nearly rectangular, hindmargin slightly oblique; light grey, irrorated with blackish scales in rows, sometimes suffused with darker grey; costa with numerous short oblique blackish strigulæ, more or less suffused with ferruginous; central fascia generally obsolete or indicated by two or three faintly darker spots, sometimes tolerably distinct but ill-defined, narrow, dark grey, from middle of costa to inner margin before anal angle, interrupted beneath costa; four or five alternate costal strigulæ towards apex dilated into very small subquadrate black spots: cilia ferruginous-grey with a sharply defined black basal line on upper half of hindmargin, wholly whitish on lower half, blackish beneath anal angle. Hindwings fuscous-grey, paler at base, hindmarginal edge darker; cilia whitish or grey-whitish, with a dark grey line near base.

Perhaps more allied to the European *P. profundana*, F. than to any other species, but very distinct; the white cilia on lower half



of hindmargin apparently indicate some relationship with *Ant. phyllanthana*.

I took five specimens in a grass-field near Parramatta, New South Wales, in June and July, flying at sunset; and also one near Brisbane, in September.

2. *Penth. helicana*, n. sp.

♀.  $7\frac{1}{2}$ ". Head, palpi, antennæ, and thorax pale ochreous, suffused with reddish-fuscous. Abdomen dark ochreous-grey. Legs whitish-ochreous, anterior and middle tibiæ and all tarsi banded with dark fuscous. Forewings rather broad, costa moderately arched, apex nearly rectangular, hindmargin slightly sinuate beneath apex; pale ochreous-fuscous, towards costa mixed with whitish; costa shortly strigulated with blackish; inner margin suffused with ochreous-fuscous; outer edge of basal patch indicated by an indistinct interrupted dark fuscous line from costa at one-fourth to inner margin before middle, before which the groundcolour is mixed with dark grey strigulæ; a dark fuscous triangular costal blotch, mixed with blackish, extending on costa from a little before middle to three-fourths, its apex reaching half across wing beyond middle of disc, connected with anterior extremity of a small cloudy ovate dark fuscous spot on disc at two-thirds; an ovate reddish-ochreous-fuscous clearly-defined blotch before hindmargin above middle, its lower and narrow end resting on middle of hindmargin; a small irregular ochreous-fuscous spot above anal angle; a small roundish black apical spot: cilia pale brownish-ochreous, whitish-ochreous towards anal angle, with a whitish-ochreous line at base along hindmargin, on upper half with three or four dark fuscous-grey transverse bars starting from black dots on hindmargin. Hindwings fuscous-grey; cilia whitish-grey, with a dark grey line.

In form resembling the European *P. semifasciana*, Hw., but not capable of being confused with any other.



One specimen in the thick forest-growth on the Bulli Pass (2000 feet), New South Wales, in October; a second, much worn at Rosewood, Queensland, in September; and a third in Mr. G. Masters' collection, from the Richmond River.

5. SCOLIOPLECTA, *n. g.*

Thorax with a small erect crest. Antennæ in male moderately ciliated. Palpi moderate, porrected, second joint roughly haired beneath and at apex above, terminal joint distinct. Posterior tibiæ loosely scaled above. Forewings moderately broad, costa in male simple, slightly arched, hindmargin slightly oblique. Hindwings rounded, broader than forewings. Forewings with veins 7 and 8 separate, 7 running to hindmargin. Hindwings with veins 3 and 4 from a point, 5 parallel to 4, 6 and 7 remote at origin, 7 rising from upper margin of cell considerably before the angle.

Apparently allied to the group of *Penthina*, but the neuration of the hindwings is abnormal, and separates the genus from all others of the family with which I am acquainted. The only species is a handsome and distinct insect.

1. Scol. comptana, Walk.

(*Sciaphila comptana*, Walk., Brit. Mus. Cat. 353).

♂. 8". Head dark fuscous mixed with whitish. Palpi whitish, mixed with dark fuscous beneath, second joint with three obscure dark fuscous bands. Antennæ grey. Thorax dark fuscous, mixed with white posteriorly. Abdomen dark fuscous, segments ochreous-tinged towards base. Legs ochreous-white, all tarsi and tibiæ with sharply-defined black bands. Forewings moderate, costa hardly arched, hindmargin slightly oblique, hardly rounded; deep ferruginous, coarsely mixed with black, and with a few scattered leaden-metallic scales, with two sharply defined white bands; disc with numerous small tufts of raised scales; costa and inner margin shortly strigulated with blackish;



base of wing mixed with white; first band from costa at one-third to inner margin before middle, rather irregularly margined, somewhat attenuated beneath costa, shortly dilated on inner margin; second band from costa at two-thirds to inner margin at three-fourths, rather narrow throughout, slightly dilated on inner margin, its anterior margin emitting a short oblique tooth in middle; three white costal strigulae before apex, from the anterior one of which proceeds a faint leaden-metallic line to anal angle, the two posterior nearly confluent with a white sinuate streak near hindmargin above middle; beyond the second band the black colour tends to form thick lines along the veins: cilia white, towards anal angle ochreous, with a blackish line near base. Hindwings deep yellow towards base, posteriorly very broadly suffused with dark fuscous, sometimes almost wholly dark fuscous; cilia whitish, with a broad dark fuscous line near base.

Easily known by the white bands on the roughened dark ferruginous and black forewings.

Three specimens taken at Parramatta and Murrurundi, New South Wales, in October and November. Walker's type is said to be from Sydney.

#### 6. EPALXIPHORA, *n. g.*

Thorax with a very large erect crest on each side of back, and a small double crest behind. Antennae in male thinly ciliated. Palpi moderate, straight, porrected, second joint with closely-appressed scales, terminal joint exposed. Posterior tibiae fringed with hairs above. Forewings oblong, moderately broad, costa in male simple, dilated before middle, straight towards apex, apex acutely produced, falcate, hindmargin obliquely rounded beneath. Hindwings rounded-trapezoidal, broader than forewings, indented beneath apex. Forewings with veins 7 and 8 separate, 7 running to hindmargin. Hindwings with veins 3 and 4 from a point, 5 moderately approximated to 4 at base, 6 and 7 stalked.



The facies of this genus is very singular, and it seems rather uncertain to what group it is most allied, but it agrees in its main characters with *Penthina*, differing widely, however, in the peculiar triple crest of the thorax, and the conspicuously falcate apex of forewings.

The only species is from New Zealand, and is of large size.

1. *Epalk. axenana*, *n. sp.*

♂. 12½". Head ochreous-white, spotted with light ochreous irrorated with dark fuscous. Palpi light ochreous irrorated with fuscous. Antennæ whitish-ochreous, slenderly annulated with dark fuscous. Thorax light greyish-ochreous mixed with fuscous, with two black transverse lines towards anterior margin, side-tufts whitish-ochreous. Abdomen whitish-ochreous. Legs pale ochreous, anterior and middle tibiae and all tarsi banded with dark fuscous, posterior tibiae ochreous-whitish. Forewings elongate, oblong, apex falcate; whitish-ochreous, irregularly mixed and clouded with brownish-ochreous, extreme costal edge white, obscurely spotted beneath with fuscous; the veins posteriorly marked with dark fuscous; outer edge of basal patch represented by a blackish-fuscous spot on costa at one-fifth, contracted in middle, and a blackish-fuscous cloudy spot, somewhat outwardly oblique, on inner margin before middle, connected together by a narrow ill-defined, twice strongly angulated, ochreous-fuscous streak; a narrow reddish-fuscous streak starting from costa at two-fifths, very oblique, extending to disc above anal angle a little below middle, thence bent rather obliquely inwards and ending just before reaching anal angle, most distinct towards extremities; a longitudinal elongate dark ochreous-grey-fuscous spot in middle of disc, its upper edge emitting a sharp inwardly oblique tooth in middle, its posterior extremity touching the oblique transverse streak; a dark reddish-fuscous transverse spot on inner margin slightly beyond middle, its apex almost suffused into the central spot; a flattened triangular dark reddish-



fuscous spot along costa from near middle to a little before apex, its apex reaching one-fourth across wing; an ill-defined sinuate fuscous streak extending from central transverse streak above angulation to hindmargin below apex: cilia ochreous-white, transversely barred with dark reddish-fuscous. Hindwings whitish, faintly mottled with pale grey towards hindmargin, with two or three scattered faint grey spots; cilia white, with a row of dark grey spots along base.

Very irregularly marked, and dissimilar to any other known species.

One specimen taken at rest on a tree-trunk near Wellington, New Zealand, in January.

#### 7. EUDEMIS, Hb.

Thorax slightly crested. Antennæ in male thinly ciliated. Palpi rather short, porrected, second joint shortly rough-scaled beneath and at apex above, terminal joint distinct. Posterior tibiæ with appressed scales. Forewings elongate, subtriangular, costa hardly arched, in male simple, hindmargin obliquely rounded. Hindwings rounded, broader than forewings. Forewings with veins 7 and 8 separate, 7 running to hindmargin, secondary cell indicated. Hindwings with veins 3 and 4 separate at origin, 5 slightly approximated to 4 at base, 6 and 7 separate.

Larva sixteen-legged, feeding in spun-up shoots.

Allied to *Sericoris*, but distinguished from all other genera of this family by the separation of veins 3 and 4 of hindwings at base.

The only species found in Australia is not native, but has been introduced from Europe with the vine, on which it feeds; there are several other European species.

##### 1. Eud. botrana, Schiff.

(*Grapholita parvulana*, Walk., Brit. Mus. Cat. 391.)



♂ ♀ .  $4\frac{3}{4}$ "-5". Head and palpi ochreous. Antennæ grey. Thorax ochreous, mixed with blackish-fuscous. Abdomen dark ochreous-grey, anal tuft ochreous-whitish. Legs ochreous-whitish, anterior and middle tibiae and tarsi suffusedly banded with dark fuscous. Forewings elongate, costa nearly straight, somewhat bent before apex, hindmargin rounded, very oblique; whitish, with numerous scattered blackish-grey transverse strigulae, costa and inner margin finely strigulated; costa and inner margin suffused with greyish-ochreous near base; outer edge of basal patch represented by a slender greyish-ochreous slightly-curved fascia from one-fourth of costa to one-third of inner margin; central fascia straight, extending from costa slightly beyond middle to inner margin slightly beyond middle, broad and blackish-grey towards costa, rapidly attenuated below middle and greyish-ochreous; a small triangular blackish-grey ochreous-tinged spot on inner margin before anal angle; a greyish-ochreous slender streak from costa beyond central fascia to hindmargin below middle, dilated towards hindmargin into a roundish spot; a greyish-ochreous apical spot, containing two white costal strigulae before apex, extreme apex blackish; a slender somewhat interrupted blackish line along hindmargin: cilia pale ochreous, towards anal angle whitish, with two dark grey lines. Hindwings grey, paler and subtransparent towards base; cilia pale grey, with a dark grey line near base.

Described from Australian specimens, which however do not seem to differ noticeably from others from the south of France.

Taken rather commonly at Parramatta, New South Wales, and also at Rosewood, Queensland, in August, September, March and May. The larva feeds in the shoots of vines; but as the imago seems to occur also in the native bush, it is possible that it may have adapted itself to other foodplants.

#### 8. APHELIA, Stph.

Thorax smooth. Antennæ in male shortly ciliated. Palpi elongate, porrected, second joint roughly haired above and below,



attenuated posteriorly, terminal joint distinct or partly concealed. Posterior tibiae fringed with hairs above. Forewings elongate, rather narrow, costa in male simple, slightly arched, apex acute, hindmargin straight, very oblique. Hindwings rounded-elongate, broader than forewings. Forewings with veins 7 and 8 separate, 7 running to hindmargin, secondary cell distinct. Hindwings with veins 3 and 4 from a point, 5 very closely approximated to 4 at base, 6 and 7 stalked.

A small genus of rather doubtful affinity, but apparently connected with *Sericoris* by the rootfeeding species of *Orthotania*. The larva is believed to feed in the stems of *Juncus*. The species described below appears to occur all over the world, whether introduced or indigenous it is hard to say; it is at all times very variable, but I do not think the local forms can be maintained as distinct species. It is abundant through Europe, and occurs also in North America; I have taken it in Ceylon, and it is found in both Australia and New Zealand.

1. *Aph. lanceolana*, *Hb.*

♂ ♀.  $6\frac{1}{2}$ "-9". Head, palpi, antennae, and thorax varying from pale ochreous to ochreous-brown, sometimes reddish-tinged; palpi variable in length (in one New Zealand specimen extremely elongate). Abdomen elongate, varying from whitish-ochreous to fuscous. Legs whitish-ochreous, more or less suffused with fuscous. Forewings elongate, costa very slightly arched, apex acute, hindmargin very oblique, slightly rounded beneath; very variable; pale ochreous, often almost wholly suffused with fuscous, sometimes unicolorous fuscous mixed with reddish-ochreous; costa generally with numerous very fine oblique darker strigulae; sometimes a straight ill-defined dark fuscous central streak from base to apex, entire or interrupted so as to form two or three irregular spots, or visible at apex only, or wholly absent: cilia varying from whitish-ochreous to fuscous. Hindwings grey-whitish, slightly darker at apex; cilia grey-whitish, sometimes with a darker line.



The description refers to Australian and New Zealand forms only, so far as I am acquainted with them.

Occurs, not commonly, round Sydney, Parramatta, and Campbelltown, New South Wales, from December to March, in damp places and at light; also in the district of Duaringa, Queensland; and I took it at Hamilton, New Zealand, in January.

#### 9. STIGMONOTA, Hw.

Thorax smooth. Antennæ in male shortly ciliated. Palpi rather short, arched, ascending, second joint roughly haired beneath, terminal joint distinct. Posterior tibiæ loosely scaled. Forewings short, moderately broad, costa in male simple, gently arched, hindmargin rounded or somewhat sinuate. Hindwings rounded, broader than forewings. Forewings with veins 7 and 8 separate, 7 running to hindmargin, secondary cell distinct. Hindwings with veins 3 and 4 stalked, 5 parallel to 4, 6 and 7 separate.

Belongs to the group of *Grapholitha*, in which it is distinguished by the ascending palpi, and the parallel veins 4 and 5 of the hindwings. The species are small, and usually dark with a pale often obsolete spot on middle of inner margin. The known larvæ feed principally in the seed-pods of *Leguminosæ*.

The genus is represented by some number of species in Europe and North America; and I am acquainted with five from Australia, which may be thus distinguished:

##### A. Hindwings orange towards base.

- |                           |    |    |    |                 |
|---------------------------|----|----|----|-----------------|
| 1. Dorsal blotch distinct | .. | .. | .. | 1. zapyrana.    |
| 2. Dorsal blotch obsolete | .. | .. | .. | 2. conficitana. |

##### B. Hindwings wholly fuscous.

- |                           |    |    |    |                  |
|---------------------------|----|----|----|------------------|
| 1. Dorsal blotch distinct | .. | .. | .. | 3. parvisignana. |
| 2. Dorsal blotch absent.  |    |    |    |                  |

##### a. Costa clearly strigulated throughout

- |              |    |    |    |                |
|--------------|----|----|----|----------------|
| with whitish | .. | .. | .. | 4. iridescens. |
|--------------|----|----|----|----------------|

- |                                |    |    |    |                 |
|--------------------------------|----|----|----|-----------------|
| b. Costa without pale strigulæ | .. | .. | .. | 5. floricolana. |
|--------------------------------|----|----|----|-----------------|



1. *Stigm. zapyrana*, n. sp.

♂ ♀ . 5"-5½". Head, antennæ, and thorax dark fuscous, face more or less whitish. Palpi ochreous-whitish. Abdomen blackish, beneath with white rings. Legs ochreous-white, anterior tibiæ with two dark fuscous rings, all tarsi banded with dark fuscous. Forewings short, broad, costa hardly arched, hindmargin slightly oblique, rounded beneath; dark fuscous, with a slight ochreous reflection; costa with numerous whitish strigulæ, more oblique towards base; a moderately narrow ochreous-white transverse parallel-sided blotch on middle of inner margin, reaching half across wing, rather curved outwards towards its extremity, containing three slender blackish lines parallel to its anterior edge, the first and third often broken or obsolete; three blue metallic transverse lines; first from before middle of costa, very short, oblique; second from beyond middle of costa to anal angle, angulated outwards in middle, below angulation leaden-metallic; third from costa at three-fourths to hindmargin beneath apex; lower half of second metallic line bordered posteriorly with ochreous-whitish, between which and hindmargin is a row of four or five short black linear marks, separated by whitish scales: cilia metallic silvery-grey, becoming bright blue in certain lights. Hindwings bright deep orange, with a rather narrow blackish border along hindmargin, somewhat variable in breadth, rather attenuated at anal angle; cilia ochreous-white, more ochreous towards anal angle, with a blackish line near base.

A very handsome species, conspicuously distinct by the bright orange hindwings of both sexes.

Rather common, flying briskly in the hot sunshine round the purple blossoms of *Hardenbergia monophylla* (*Leguminosæ*); occurs at Sydney, Parramatta, and Bulli, New South Wales; near Melbourne; and at Brisbane, Helidon, and Toowoomba, Queensland; in September, October, and December.



2. *Stigm. conficitana*, Walk.

(*Carpocapsa conficitana*, Walk., Brit. Mus. Cat. 412).

♀. 5". Head and thorax dark fuscous. Forewings in form resembling *S. zapyrana*; dark fuscous; dorsal blotch obsolete; only distinct markings a transverse silvery-metallic line crossing dorsal half of wing towards hindmargin, followed by a row of four or five black linear dots. Hindwings dull orange, hindmargin and inner margin broadly and suffusedly dark fuscous.

Nearly allied to *S. zapyrana*, but in a considerable series of both sexes of that species I have seen no specimen approaching it; distinguished by the obsolescence of the dorsal blotch and costal markings, and by the duller colour, broader hindmarginal band, and dark suffusion of inner margin of hindwings.

Walker's type is stated to be from Moreton Bay, Queensland; I have seen no other.

3. *Stigm. parvisignana*, *n. sp.*

♀. 5½". Head, antennæ, and thorax dark fuscous, face mixed with whitish. Palpi ochreous-whitish. Abdomen blackish, beneath with white rings. Legs whitish, tarsi banded with dark fuscous. Forewings moderately broad, costa somewhat bent before apex, hindmargin rather oblique; dark fuscous; costa with numerous whitish anteriorly blackish-margined oblique strigulæ; a narrow white parallel-sided streak from middle of inner margin, reaching half across wing, curved outwards towards extremity, containing a slender blackish central line; three indistinct bluish-metallic lines from costa, placed as in *S. zapyrana*, but obscure, lower half of second distinct, silvery-metallic, blackish-margined; between it and hindmargin is a row of four short black linear marks: cilia dark fuscous, extremities whitish. Hindwings dark fuscous, somewhat paler towards base; cilia dark fuscous, extremities whitish towards anal angle.



Resembling *S. zapyrana* in the markings of the forewings, but rather darker and more obscure, dorsal streak more slender and with a single dark line, and hindwings wholly dark fuscous.

One specimen taken in bush near Sydney in August.

4. *Stigm. iridescens*, *n. sp.*

♂ ♀.  $3\frac{3}{4}$ "-4". Head and thorax dark fuscous, mottled with ochreous-white. Palpi whitish, beneath mixed with dark fuscous. Antennæ dark fuscous. Abdomen dark greyish-fuscous, beneath in male snow-white, in female whitish-grey. Legs whitish, tarsi banded with dark fuscous. Forewings rather elongate, in female slightly broader, costa hardly arched, hindmargin obliquely rounded; dark greyish-fuscous, very finely transversely strigulated with whitish; costa with short oblique broader whitish strigulae throughout; about eight ill-defined grey-whitish transverse lines from inner margin between base and two-thirds, reaching about half across wing, in female more indistinct; a faint bluish-metallic line from costa beyond middle to anal angle, angulated outwards in middle, distinct and silvery-metallic on lower half; between lower half of this line and hindmargin the ground colour is suffused with whitish (less distinctly in female), with a row of about five short linear black marks: cilia grey, whitish towards base, with a black basal and another black central line. Hindwings in male fuscous-grey, hindmargin narrowly dark fuscous, in female wholly dark fuscous, towards apex blackish; cilia grey-whitish, with a dark fuscous basal line.

Distinguished by the absence of a dorsal blotch, and by the grey-whitish transverse lines and suffusion at anal angle of forewings; the very fine whitish strigulation causes the ground-colour to appear lighter than in the allied species.

Four specimens taken at Parramatta and Murrurundi, New South Wales, in October.



5. *Stigm. floricolana*, *n. sp.*

♂ ♀.  $3\frac{3}{4}$ "-4". Head, antennæ, and thorax dark fuscous, face and palpi whitish-ochreous. Abdomen blackish-fuscous, beneath ochreous-whitish. Legs grey-whitish, tarsi suffusedly banded with dark fuscous. Forewings moderate, costa hardly arched, hindmargin rather oblique; dark fuscous, with a slight golden tinge; costa with short oblique black strigulæ, between which near apex the costal cilia are shortly ochreous-white; the wing is crossed by numerous irregular very faint leaden-metallic lines, often obsolete; cilia silvery-grey, towards base silvery-whitish, with a black basal line. Hindwings dark fuscous, darker towards hindmargin; cilia grey-whitish, with a dark fuscous line near base.

Characterised by the entire absence of any pale markings on forewings, except in cilia.

This small and inconspicuous species frequents the flowers of *Bursaria spinosa*, (a shrub belonging to the *Pittosporæ*,) sitting on them in the hot sunshine; it is not uncommon near Parramatta and occurs also at Bowenfels on the Blue Mountains, 2,500 feet above the sea.

## 10. CARPOCAPSA, Tr.

Thorax smooth. Antennæ in male thickened, not ciliated. Palpi moderate, ascending, appressed to face, second joint shortly rough-scaled beneath, terminal joint distinct. Posterior tibiæ loosely scaled. Forewings moderately broad, costa in male simple, slightly arched, hindmargin rather oblique, slightly sinuate. Hindwings rounded, broader than forewings, in male with a short membranous ridge on lower median near base, and a grooved channel below it. Forewings with veins 7 and 8 separate, 7 running to hindmargin. Hindwings with veins 3 and 4 stalked, 5 nearly parallel to 4, 6 and 7 separate.

Allied to *Stigmonota*, but separated from it and other allied genera by the ridge and groove of the hindwings in male. From



*Epitymbia*, which has a somewhat similar structure, it differs by the separation of veins 7 and 8 of forewings, and the absence of a costal fold.

The larvæ feed in fruits, and the genus is indigenous in Europe and North America; the only species found in Australia has been introduced together with the apple-tree,

1. *Carp. pomonella*, L.

♂ ♀.  $7\frac{1}{2}$ "-9". Head, palpi, and thorax dark greyish-fuscous, slightly sprinkled with whitish. Antennæ dark fuscous. Abdomen dark fuscous, segmental margins whitish-tinged. Legs whitish, anterior and middle tibiæ and all tarsi dark fuscous with slender whitish rings. Forewings moderately broad, posteriorly dilated, costa hardly arched, hindmargin oblique, indented beneath apex; ashy-grey, with numerous irregular transverse greyish-fuscous lines, coalescing to form a rather narrow transverse band at one-third from base; a moderately broad elongate-ovate coppery-fuscous patch on anal angle, extending along hindmargin nearly to apex, preceded and followed by a silvery-metallic line, and containing two small silvery marks on anal angle; the anterior silvery line is preceded by a blackish streak, extending from inner margin half-way across wing; cilia silvery-grey, towards base silvery-whitish, with a black basal line. Hindwings fuscous-grey, apex rather darker; cilia grey-whitish, with a dark fuscous line near base.

Described from Australian specimens.

Common round Melbourne and elsewhere in Victoria, and plentiful in Tasmania, where the larva causes considerable damage in orchards; I have also specimens from Wellington in New Zealand, where it is probably of general occurrence; taken from October to December.

11. *EPITYMBIA*, *n. g.*

Thorax smooth. Antennæ in male thickened, not ciliated. Palpi moderate, porrected, second joint with appressed scales,



terminal joint distinct. Posterior tibiæ fringed with hairs above. Forewings somewhat oblong, posteriorly dilated, costa in male with a short narrow basal fold, shortly arched at base, slightly sinuate in middle, hindmargin oblique. Hindwings as broad as forewings, hindmargin indented below middle; a large membranous scaled ridge on submedian vein towards base, and a thickened place above it on subcostal (? in male only). Forewings with veins 7 and 8 stalked, 7 running to hindmargin. Hindwings with veins 3 and 4 stalked, 5 approximated to 4 at base, 6 and 7 stalked.

A peculiar and abnormal genus, not evidently related to any other; I have placed it here, because the ridge of the hindwings (though much larger and more conspicuous) is analogous to what is found in *Carpocapsa*, but it disagrees in the stalking of veins 7 and 8 of forewings, and of veins 6 and 7 of hindwings, and in the presence of a small and inconspicuous costal fold; the form of the wings is also unusual, and the location of the genus must therefore remain uncertain at present.

1. *Epit. alaudana*, *n. sp.*

♂. 8". Head, palpi, antennæ, thorax, and abdomen dark fuscous. Legs pale greyish-ochreous, anterior and middle tibiæ and all tarsi dark fuscous with pale greyish-ochreous rings. Forewings moderate, dilated posteriorly, costa abruptly bent at base, sinuate in middle, hindmargin obliquely rounded; dark fuscous, irregularly mixed with black; a small somewhat oblong, rather oblique, ochreous-whitish spot on middle of inner margin; an ochreous-whitish band along hindmargin, irrorated with fuscous, and on hindmarginal edge becoming fuscous, moderately broad on costa and gradually attenuated to anal angle, its anterior edge sharply defined and emitting a short tooth in middle: cilia dark fuscous mixed with ochreous-whitish, especially towards anal angle. Hindwings whitish-ochreous above the ridge, suffused with fuscous-grey below the ridge and towards



hindmargin; cilia ochreous-whitish, with two broad suffused grey lines.

Not like any other species known to me.

One male taken in bush near Parramatta, New South Wales, in September.

## 12. CROCIDOSEMA, Z.

Thorax smooth. Antennæ in male somewhat thickened, not ciliated. Palpi moderate, porrected, second joint somewhat arched, roughly haired beneath and at apex above, terminal joint nearly concealed. Posterior tibiæ loosely scaled. Forewings elongate, rather narrow, costa in male with short basal fold, slightly arched, hindmargin sinuate, oblique. Hindwings elongate-trapezoidal, broader than forewings; in male with a dense erect tuft of hairs on surface at base beneath lower median vein. Forewings with veins 7 and 8 separate, 7 running to hindmargin, secondary cell distinct. Hindwings with veins 3 and 4 stalked, 5 very closely approximated to 4 at base, 6 and 7 separate.

Belongs to the group of *Pædisca* and *Grapholitha*, amongst which it is distinguished by the conspicuous tuft of hairs on base of hindwings in male. There is only one species in the genus, which has been introduced from Europe, where however it seems to have been but little noticed; it was originally described by Zeller from a single Sicilian specimen, and was subsequently met with in Spain, and latterly also in other southern localities.

### 1. *Croc. plebeiana*, Z.

♂ ♀.  $5\frac{1}{2}$ "- $7\frac{1}{2}$ ". Head and palpi ochreous-whitish, sometimes tinged with greyish-ochreous above. Antennæ whitish, indistinctly suffused with grey. Thorax ochreous-whitish, mixed or suffused with fuscous-grey. Abdomen grey, anal tuft of male whitish. Legs ochreous-whitish, anterior and middle tibiæ and all tarsi ringed with dark fuscous. Forewings rather narrow



not dilated, costa slightly arched, hindmargin sinuate, oblique; whitish, more or less ochreous-tinged, especially in female, with coarse irregular scattered blackish-grey strigulæ; costa with fine oblique blackish-grey strigulæ, and four small dark ochreous-grey spots towards apex; basal patch dark ochreous-grey strigulated with whitish, in female obsolete above middle, its outer edge extending from costa at one-fourth to inner margin beyond one-third, very obtusely angulated about middle; central fascia dark ochreous-grey, ill-defined, oblique, running from middle of costa to inner margin before anal angle, slender towards costa, rather broader beneath, containing a short longitudinal black mark near inner margin, above which is often a small silvery spot; beyond central fascia the wing is more or less suffused with ochreous-grey, except on a partially whitish, strongly silvery-margined, oval patch on anal angle, extending about half across wing, and containing near its posterior edge three black dots; above this patch is sometimes a blackish mark towards apex: cilia silvery-white, mixed with ochreous-grey points, and becoming dark grey towards apex. Hindwings rather thinly scaled, fuscous-grey; cilia silvery-white, with a dark grey line near base and a faint grey central line.

A dull-looking species, but not closely resembling any other.

Common near cultivated ground, and also comes freely to light; occurs round Sydney, Parramatta, and Morpeth, New South Wales, and at Melbourne, from December to March, and in July; I have also received it from the district of Duaringa, in Queensland. Prof. Zeller informs me that the larva feeds on *Althea* and *Lavatera* (*Malvaceæ*), with either of which it may have been introduced.

### 13. PALÆOBIA, *n. g.*

Thorax smooth. Antennæ in male ciliated. Palpi moderate, porrected, second joint with a long dense tuft of hairs beneath towards apex, terminal joint concealed. Posterior tibiæ fringed



with hairs above. Forewings elongate, rather narrow, costa in male simple, moderately arched, hindmargin rather strongly sinuate below apex. Hindwings elongate, broader than forewings. Forewings with veins 7 and 8 stalked, 7 running to hindmargin, secondary cell indicated or distinct. Hindwings with veins 3 and 4 stalked, 5 closely approximated to 4 at base, 6 and 7 stalked.

Larva sixteen-legged, mining in blotches in leaves, or feeding in spun-up shoots.

This genus may be regarded as the type of a small group, to which *Rhopobota* and *Holocola* also belong, related in general characters to the group of *Grapholitha* (particularly to the genus *Phoxopteryx*), but distinguished by the stalking of veins 7 and 8 of forewings. The same character suffices to separate it from the group of *Strepsiceros*, between which and the group of *Grapholitha* it is apparently intermediate. *Palæobia* differs from *Holocola* by the absence of a costal fold in male, and from *Rhopobota* by the dense tuft of palpi. Superficially it much resembles *Phoxopteryx* in form, colour, and marking, but the apex of forewings is never actually falcate. The mining habit of the larva of at least one species is very curious, and unparalleled among the *Tortricina*.

The genus is probably rather numerously represented in Australia; I am acquainted with nine species, which may be tabulated as follows:

- A. Forewings whitish, with dark grey and ferruginous markings; apex strongly produced.
  - 1. Anterior half of costa whitish.
    - a. Central fascia distinct . . . . .3. *volutana*.
    - b. Central fascia merged with costal spot . .1. *anguillana*.
  - 2. Anterior half of costa dark ferruginous.
    - a. Costa beyond middle whitish . . . .4. *erythrana*.
    - b. Costa beyond middle dark ferruginous . .2. *infectana*.



B. Forewings whitish-ochreous or ochreous-brown; apex shortly produced.

1. Head and thorax ochreous-brown.

a. Hindwings dark fuscous .. .. 8. *crepusculana*.

b. Hindwings golden brownish-ochreous.

i. Cilia of forewings brownish-ochreous 5. *hibbertiana*.

ii. Cilia of forewings grey, with two  
white subapical spots .. .. 6. *himerodana*.

2. Head and thorax pale ochreous mixed

with fuscous .. .. 7. *fidana*.

3. Head and thorax whitish-ochreous, face

white .. .. 9. *segetana*.

1. *Pal. anguillana*, *n. sp.*

♀.  $5\frac{3}{4}$ ". Head ochreous-fuscous above, whitish on sides, strongly tufted between antennæ. Palpi ochreous-white, tuft dark fuscous towards extremity. Antennæ dark fuscous. Thorax ochreous-grey, paler on shoulders. Abdomen grey. Legs whitish, anterior tibiæ and all tarsi banded with dark fuscous. Forewings moderately narrow, costa moderately arched, apex strongly produced, hindmargin rounded beneath; whitish, with a few grey scales, and with a faint greyish suffusion towards anal angle; anterior half of costa strigulated with blackish; a dark grey irregularly semi-oval patch on anterior half of inner margin, extending from base to a little beyond middle, and at its broadest part reaching a little more than half across wing; a rather larger dark ferruginous irregularly oblong patch on posterior half of costa, extending on costa from a little before middle to apex, and reaching nearly two-thirds across wing, its lower edge parallel to inner margin and rather ill-defined, its anterior edge outwardly oblique and somewhat parallel to posterior edge of the grey patch: cilia silvery-whitish, with a dark grey line near base.

Nearly allied to *P. infectana*, but distinguished readily from it by the whitish colour extending along anterior half of costa, the



clearer colouring, and the rather larger size. In form of markings it recalls *Phox.* (?) *obtusana*, Hw.

Larva light green (undescribed); feeds in spun-up shoots of *Correa speciosa* (*Rutaceæ*) in September; the imago emerged in October.

One specimen bred as above from a larva found near Parramatta, New South Wales; a second taken near the same place in August.

2. *Pal. infectana*, *n. sp.*

♂.  $4\frac{1}{2}$ "- $4\frac{3}{4}$ ". Head and thorax brownish-ochreous. Palpi ochreous-white, second joint with a dark fuscous spot, tuft dark fuscous towards extremity. Antennæ dark fuscous. Abdomen dark grey, extremity whitish. Legs whitish, anterior and middle tibiae and all tarsi banded with dark fuscous. Forewings narrow, costa moderately arched, apex strongly produced, hind margin rounded beneath; dull dark ferruginous, becoming greyer towards inner margin, and mixed with dark fuscous; costa obliquely strigulated throughout with ashy-whitish; an ill-defined whitish longitudinal streak starting from base beneath costa, bent downwards at one-third and ending in an oval silvery-whitish patch on anal angle; between this streak and inner margin the basal third is suffused with dark fuscous-grey; cilia grey. Hindwings light fuscous grey; cilia grey with a pale line at base.

Distinguished by the whitish colour being confined to a sinuate longitudinal streak from base to anal angle, so that the whole costa is dark ferruginous; and also by the dull rather confused colouring, and small size.

Two specimens taken in low scrub near Sydney in August and April, and two others at Mittagong (2000 feet) in March.

3. *Pal. volutana*, *n. sp.*

♂. 7". Head ochreous-whitish, greyish-tinged on crown. Palpi ochreous-white, extremity of tuft greyish-tinged. Antennæ



dark fuscous. Thorax dark grey, on shoulders ochreous-whitish. Abdomen grey. Legs whitish, anterior tibiæ and all tarsi ringed with dark fuscous. Forewings moderately narrow, somewhat broader posteriorly, costa moderately arched, apex strongly but obtusely produced, hindmargin rounded beneath; white, with a few irregular dark grey strigulæ; costa strigulated throughout with dark grey; a dark grey broadly semi-oval patch on anterior half of inner margin, extending almost from base to middle, at its broadest part reaching more than half across wing, posteriorly merged into an ill-defined grey suffusion extending along inner margin to anal angle; central fascia dark ferruginous, narrow, oblique, starting from middle of costa, beneath middle merged in the grey suffusion; an ill-defined dark ferruginous elongate-triangular patch towards apex, its base resting on apex and upper half of hindmargin, its apex meeting central fascia above middle; a narrow ill-defined greyish suffusion along lower half of hindmargin; cilia silvery grey. Hindwings fuscous-grey; cilia grey-whitish, with an indistinct darker line near base.

Differs from both the preceding species by the costa being white beyond middle, so that there is a distinct well-defined central fascia; the grey dorsal patch is rather more restricted and more clearly defined, and the insect is considerably larger. From *P. erythrana*, which is also smaller, it is at once separated by the well-defined grey dorsal patch towards base, and the absence of the dark ferruginous streak along anterior half of costa.

One specimen taken by Mr. G. H. Raynor at Warragul, in Gippsland, Victoria, in December.

#### 4. *Pal. erythrana*, *n. sp.*

♂.  $5\frac{1}{2}$ ". Head ochreous-fuscous, face whitish. Palpi white, second joint with two dark fuscous spots, tuft dark fuscous towards extremity. Antennæ grey. Thorax brownish-ochreous, paler posteriorly. Abdomen dark grey, with an ochreous band



near base, anal tuft silvery-whitish. Legs ochreous-whitish, anterior and middle tibiæ and all tarsi banded with dark fuscous. Forewings narrow, costa moderately arched, apex strongly but obtusely produced; white, on dorsal half slightly reddish-tinged, and suffused with grey along inner margin; costa shortly strigulated with dark fuscous-grey; a cloudy dark fuscous-grey spot in disc at one-third from base; a dark reddish-ferruginous moderately broad streak from base along costa to middle, thence bent downwards and ending in a dark grey spot on disc at two-thirds from base; three irregular oblique dark ferruginous lines from costa between middle and apex to hindmargin; an ill-defined cloudy grey patch on hindmargin, darkest towards apex, extending obscurely to anal angle, and tending to unite on disc with the spot at two-thirds; apex dark ferruginous; cilia grey, mixed with ferruginous, becoming dark ferruginous at apex, where the extremities are dark fuscous; costal cilia white. Hindwings ochreous-fuscous, more greyish towards hindmargin; cilia grey.

Distinguished from all other species by the dark ferruginous streak along anterior half of costa, bent downwards in middle so as to leave posterior half of costa white.

One specimen taken in dry bush near Sydney, in October.

5. *Pal. hibbertiana*, *n. sp.*

♂ ♀. 4"-5 $\frac{3}{4}$ ". Head and thorax dark ochreous-fuscous. Palpi whitish-ochreous, second joint with a dark fuscous spot, tuft blackish-fuscous towards extremity. Antennæ dark fuscous. Abdomen dark ochreous-fuscous. Legs whitish, anterior and middle tibiæ and all tarsi banded with dark fuscous. Forewings moderately narrow, somewhat dilated posteriorly, costa moderately arched, apex obtusely produced; rather dark fuscous, beyond middle suffused with blackish; costa obscurely strigulated with blackish, with four pairs of pale strigulæ between middle and apex, the first two pair leaden metallic and produced as



obscure lines to anal angle, third and fourth pair whitish, third connected with hindmargin below apex by a short leaden-metallic line; a whitish or ochreous-white streak beneath costa from base nearly to middle, sharply defined beneath but suffused into ground-colour towards costa; in male a moderately large roundish ochreous-whitish patch on anal angle, mixed with fuscous, in female not indicated; apex ferruginous-tinged: cilia brownish-ochreous, mixed with whitish, especially towards anal angle, with a dark fuscous spot at apex. Hindwings golden brownish-ochreous, towards hindmargin dark fuscous, in female more fuscous-tinged throughout; cilia brownish-ochreous, mixed with whitish towards extremities, with an obscure dark grey line near base.

Nearly allied to *P. himerodana*, but smaller and darker, especially in male; the first two pairs of costal pale strigulæ not white but leaden-metallic, the whitish streak from base rather shorter and more suffused, the cilia brownish-ochreous, and a large pale patch on anal angle in male.

Larva slender, cylindrical, pale yellowish; head broad, pale brown: mining first a straight gallery, then a large crumpled blotch in leaves of *Hibbertia volubilis* (*Dilleniaceæ*), the lower surface of the mine contracting and the upper becoming shrivelled and brown; feeding in November and December. Pupa pale brown, lying free within the mine. The imagos from these larvæ emerged late in December.

Common at Sydney, flying in the sunshine near its foodplant, and occurs also in the forest on the Bulli Pass, New South Wales, from September to December, and in March; I also bred it plentifully from the larvæ as above.

6. *Pal. himerodana*, *n. sp.*

♂ ♀.  $5\frac{1}{4}$ "- $6\frac{1}{2}$ ". Head and thorax ochreous-brown, in female rather darker. Palpi white, second joint with a dark grey spot,



tuft dark grey towards apex. Antennæ dark fuscous. Abdomen dark fuscous, somewhat ochreous-tinged. Legs ochreous-whitish, anterior and middle tibiæ and all tarsi banded with dark fuscous. Forewings moderately narrow, hardly dilated, costa moderately arched, apex obtusely produced; light ochreous-brown in male, darker in female and suffused with dark fuscous, especially on posterior half; costa indistinctly strigulated with dark fuscous before middle, between middle and apex with four pairs of white oblique strigulæ, separated with dark fuscous; from each of the first three pairs proceeds an irregular obscure leaden-metallic line, the first two running to near anal angle, the third to hindmargin beneath apex; a slender white central longitudinal streak from base to middle, somewhat bent downwards at extremity. margined beneath posteriorly by an obscure blackish streak; a black line along lower half of hindmargin: cilia metallic-grey on hindmargin, grey mixed with whitish towards anal angle, dark fuscous towards apex, with two white subapical spots, the lower one smaller. Hindwings golden brownish-ochreous, more dark fuscous towards apex; cilia grey, tinged with ochreous.

Very like the preceding, but larger and more lightly coloured, with four pairs of white costal strigulæ, the longitudinal streak from base clear white and black-margined beneath posteriorly, the cilia metallic-grey, with two small clear white subapical spots.

Taken rather commonly on the dry grassy hills near Murrundi, New South Wales, in November, flying readily in the afternoon sunshine.

#### 7. *Pal. fidana*, *n. sp.*

♂ ♀.  $4\frac{1}{2}$ "- $6\frac{1}{2}$ ". Head and thorax pale ochreous, mixed above with fuscous. Palpi white, tuft dark fuscous-grey towards extremity. Antennæ dark fuscous. Abdomen grey. Legs whitish, anterior and middle tibiæ and all tarsi banded with dark fuscous. Forewings moderately narrow, slightly dilated, costa moderately arched, apex obtusely produced; pale dull



whitish-ochreous or brownish-ochreous, rather narrowly suffused with fuscous-grey along inner and hind margins; costa shortly strigulated with blackish, and with several pale strigulæ towards apex, of which the last two or three are faintly produced to hindmargin below apex; some scattered black dots in disc towards base, and sometimes one larger spot at about one-third from base; a grey-whitish roundish patch on anal angle, margined with faint metallic-grey, and surrounded by a blackish-fuscous suffusion extending to apex; a slender blackish line along hindmargin: cilia silvery-white in middle, greyish towards anal angle, dark fuscous round apex, with a small white subapical dash. Hindwings in male grey, sometimes ochreous-tinged; in female fuscous-grey, more strongly ochreous-tinged; cilia grey.

Easily recognised by the pale ochreous groundcolour, grey suffusion on inner and hind margins, and the whitish anal patch.

Rather common amongst low heath-like scrub in some localities round Sydney, probably attached to some species of *Hibbertia*; it occurs in November and December, and again in March.

8. *Pal. crepusculana*, n. sp.

♂.  $5\frac{1}{4}$ ". Head and thorax dark ochreous-brown, abdomen dark grey; rest as in *P. fidana*. Forewings in form as in *P. fidana*; wholly suffused with dark fuscous-grey, mixed with a few pale ochreous scales. Hindwings dark grey.

This species appears to be certainly distinct from *P. fidana*, to which it is nevertheless very closely allied, differing only in the very marked dark general suffusion. In the absence of a series of better specimens, I have merely indicated the species by what appears to be a sufficient diagnosis, as it might prove to be a local form only.

Two specimens, in rather poor condition, taken by Mr. G. H. Raynor at Warragul in Gippsland, Victoria, in December.



9. *Pal. segetana*, *n. sp.*

♂.  $5\frac{3}{4}$ ". Head whitish-ochreous, face white. Palpi ochreous-white, with a grey spot on second joint, tuft grey towards extremity. Antennæ ochreous-whitish. Thorax pale ochreous. Abdomen light grey. Legs ochreous-white, anterior tarsi grey at base of joints. Forewings narrow, costa moderately arched, apex obtusely produced; whitish-ochreous, with numerous coarse irregular brownish-ochreous transverse strigulæ and lines; costa with numerous very short ill-defined dark fuscous strigulæ; a slender black line along hindmargin: cilia whitish-ochreous, with a broad suffused brownish-ochreous line near base. Hindwings grey, cilia grey-whitish.

A very distinct species, well characterised by the whitish-ochreous transversely strigulated forewings, without darker markings.

Mr. G. H. Raynor took one specimen at Warragul in Gippsland, Victoria, in December.

14. *HOLOCOLA*, *n. g.*

Thorax smooth. Antennæ in male somewhat thickened, ciliated. Palpi moderate, porrected, second joint with a dense tuft of hairs beneath towards apex, terminal joint almost concealed. Posterior tibiæ fringed with hairs above. Forewings elongate, narrow, costa in male with a strong basal fold, slightly arched, hindmargin sinuate below apex, obliquely rounded. Hindwings elongate, broader than forewings. Forewings with veins 7 and 8 stalked, 7 running to hindmargin, secondary cell indicated or distinct. Hindwings with veins 3 and 4 long-stalked or coincident, 5 closely approximated to 4 at base, 6 and 7 separate.

Larva sixteen-legged, feeding in spun-up shoots.

This genus is only separated structurally from *Palæobia* by the strong costal fold of male, agreeing with it in neuration and all



other respects ; but superficially the species bear a much closer resemblance to *Strepsiceros*, with which they agree in the costal fold of male and neuration of hindwings, differing in the stalking of veins 7 and 8 of forewings, and the absence of the notch on the antennæ of male. The species are small grey insects, marked as in *Strepsiceros*.

There are five species, distinguished as follows :

A. Forewings mostly suffused with dark fuscous-

grey . . . . .1. *triangulana*.

B. Forewings not dark grey.

1. An oblique dark streak from inner margin before middle.

*a.* This streak produced in disc to three-fourths from base . . .2. *perspectana*.

*b.* This streak interrupted at middle . .3. *thalassinana*.

2. Oblique streak represented only by a discal spot.

*a.* Costal half of forewings grey . .4. *quietana*.

*b.* Costal half of forewings whitish . .5. *biscissana*.

1. *Hol. triangulana, n. sp.*

♂ ♀ .  $6\frac{1}{2}$ "- $7\frac{1}{2}$ ". Head and thorax light ashy-grey, mixed with blackish. Palpi light ashy-grey, internally whitish, second joint with three oblique blackish bands. Antennæ dark fuscous. Abdomen grey. Legs grey-whitish, anterior and middle tibiæ and all tarsi banded with blackish, posterior tibiæ grey. Forewings narrow, costa slightly arched, hindmargin rounded, rather oblique; light ashy-grey, more or less wholly suffused with dark fuscous-grey, especially along disc, and with indistinct transverse dark fuscous strigulæ; costa strongly strigulated with blackish; a moderately broad, outwardly very oblique, straight blackish streak, from inner margin before middle, reaching half across wing in middle of disc, anteriorly suffused, posteriorly sharply defined, truncate above, sometimes connected with costa



at one-fourth by an oblique blackish line ; beyond this streak are some whitish scales ; a small outwardly oblique blackish acute triangular spot on anal angle, reaching nearly half across wing, followed by some whitish scales, and with a whitish suffusion between its apex and costa ; a blackish irregular very oblique line from costa at three-fourths to hindmargin above middle, on its lower half bordered anteriorly with dull leaden, preceded by three ill-defined blackish spots ; cilia grey, paler along base, mixed with blackish. Hindwings grey, darker posteriorly, thinly scaled towards base ; cilia whitish-grey or grey.

The largest and darkest species of the genus, readily known by the strong dark fuscous-grey suffusion of the forewings ; in form of markings most resembling *H. thalassinana* ; the forewings are very markedly elongate.

Taken rather commonly by Mr. G. H. Raynor near Melbourne.

## 2. *Hol. perspectana*, Walk.

(*Grapholita perspectana*, Walk., Brit. Mus. Cat. 393.)

♂ ♀ .  $5\frac{1}{2}''$ - $6\frac{1}{2}''$ . Head and thorax ashy-whitish, with a few black scales. Palpi light ashy-grey, beneath and internally white, second joint with a blackish band near apex. Antennæ grey. Abdomen in male dark grey, in female ochreous-grey. Legs whitish, anterior and middle tibiæ and all tarsi ringed with dark fuscous. Forewings narrow, costa hardly arched, hindmargin oblique, hardly rounded ; whitish, with numerous irregular very oblique grey strigulæ ; costa with several broader very oblique blackish strigulæ ; a more or less distinct subquadrate blackish oblique blotch on inner margin near base, its apex tending to be suffusedly produced posteriorly ; a narrow very oblique blackish streak from inner margin before middle, anteriorly suffused, posteriorly sharply defined, its apex somewhat curved outwards, extending to disc above middle at three-fourths from base ; a small oblique, blackish-grey triangular spot on anal angle, not



reaching half across wing; a short oblique cloudy blackish-grey streak from apex, anteriorly suffused and almost meeting the oblique streak from inner margin; cilia with basal half white irregularly barred with blackish-grey, outer half light grey. Hindwings light grey, thinly scaled towards base; cilia grey-whitish, with a suffused grey line near base.

Very similar to *H. thalassinana*, but always larger and less variable; distinguished by the extreme obliqueness of the markings, and the length of the blackish streak from inner margin before middle, which extends along the disc uninterruptedly to three-fourths from base.

Very common amongst *Leptospermum* scrub from September to February, and I have taken it in May; it occurs round Sydney and Wollongong, in New South Wales; at Melbourne and Brisbane; and at Brighton in Tasmania.

3. *Hol. thalassinana*, *n. sp.*

♂ ♀. 4"-5½". Head and thorax whitish, thorax mixed with grey on back. Palpi whitish, second joint with a blackish spot in middle and a blackish band towards apex. Antennæ grey. Abdomen in male dark grey, with whitish anal tuft, in female ochreous-grey. Legs white, anterior and middle tibiae and tarsi with slender dark fuscous rings. Forewings narrow, costa hardly arched, hindmargin oblique, hardly rounded; dull white, with fine very oblique grey strigulae, in male almost entirely suffused with light grey; costa with several broader oblique blackish strigulae; a small oblique subquadrate dark fuscous-grey blotch on inner margin near base, anteriorly suffused; a straight oblique moderately broad dark fuscous-grey streak from inner margin before middle, anteriorly suffused, posteriorly generally sharply defined, reaching half across wing, truncate above, sometimes obsolete towards inner margin; generally two dark fuscous-grey linear dots, longitudinally placed, beyond this above middle, not connected; a rather broad oblique triangular dark



fuscous-grey spot on anal angle, reaching half across wing, sometimes obscured by a greyish suffusion towards hindmargin; sometimes a dark fuscous-grey spot towards apex; cilia with basal half white barred with black, outer half light grey. Hindwings grey or light grey, thinly scaled towards base; cilia whitish, with a faint grey line near base.

Closely allied to *H. perspectana*, but smaller and greyer, with markings variable in intensity, but less well defined than in *H. perspectana* as a rule; the streak from inner margin before middle less oblique and extending only to middle of disc, its apex followed by two linear marks with which it is not connected.

Larva rather stout, pale green, head pale brown; feeding in spun-up shoots of *Leptospermum laevigatum* (*Myrtaceæ*), growing on coast sand-hills.

Abundant amongst its foodplant on sand-hills near the sea, at Sydney and Newcastle, New South Wales, from December to February; the larvæ were found in January, and imagos were bred from them the same month.

#### 4. *Hol. quietana*, n. sp.

♀.  $5\frac{1}{2}$ ". Head and palpi wholly white. Antennæ grey. Thorax white, irregularly suffused with black. Abdomen grey. Legs white, anterior and middle tibiæ and tarsi narrowly ringed with dark fuscous. Forewings narrow, costa slightly arched, apex slightly produced, hindmargin oblique, hardly rounded; whitish, very finely sprinkled with grey, upper half suffused with grey except along costa towards base; costa finely and obliquely strigulated with dark grey; a small somewhat oval dark fuscous-grey spot in disc below middle, midway between base and apex, connected above with the grey suffusion; a slight greyish suffusion towards anal angle, containing a blackish dot below middle above anal angle, and two or three scattered black scales above it: cilia white, irrorated with grey towards



extremities, with a strong black apical dash. Hindwings light grey, darker along hindmargin, more whitish-grey and thinly scaled towards base; cilia whitish, with a faint grey line.

The male of this species is unknown to me, but in neuration and superficial characters it agrees with this genus, in which it is easily recognisable by the grey costal and white dorsal halves of the forewings. It has a superficial resemblance to *Streps. seditiosana*, from which it may be known by the wholly white head and palpi, the tuft of the palpi, and the absence of a dark longitudinal streak on forewings from base.

I took one specimen amongst scrub near Brisbane, in September.

5. *Hol. biscissana*, n. sp.

♂ ♀.  $3\frac{1}{2}$ "-4". Head and thorax whitish mixed with grey. Palpi whitish, tuft of second joint grey towards extremity. Antennæ grey. Abdomen dark grey. Legs whitish, anterior and middle tibiæ and tarsi ringed with dark fuscous. Forewings narrow, costa slightly arched, apex somewhat produced, hindmargin sinuate; whitish, coarsely irrorated with grey scales, tending to form irregular hardly oblique strigulæ; costa obliquely strigulated with blackish; a small irregular dark fuscous grey spot in disc below middle at one-third from base, and a similar one below middle at two-thirds from base; from posterior half of costa run two or three very oblique dark grey lines to hindmargin above middle, the first of which tends to enclose with the second discal spot a round whitish patch on anal angle; a blackish apical dot; cilia whitish, becoming grey posteriorly, crossed by a blackish spot at apex. Hindwings grey; cilia grey, at base whitish.

A distinct species, characterised by its small size, the coarse and not oblique strigulation of forewings, and the two well-marked dark discal spots at one-third and two-thirds from base.

Five specimens, taken amongst low scrub near Sydney and on the Bulli Pass, New South Wales, in October and January.



15. BATHROTOMA, *n. g.*

Thorax smooth. Antennæ in male ciliated, with an excavated notch immediately above basal joint. Palpi moderate, porrected, second joint rough-haired beneath and towards apex above, terminal joint distinct. Posterior tibiæ fringed with hairs above. Forewings elongate, narrow, costa in male with a strong basal fold, almost straight, hindmargin sinuate. Hindwings trapezoidal, broader than forewings, posterior angle prominent, apex produced. Forewings with veins 7 and 8 separate, 7 running to hindmargin, secondary cell distinct. Hindwings with veins 3 and 4 coincident, 5 approximated to 4 at base, 6 and 7 stalked.

Belongs to the group of *Strepsiceros*; distinguished from *Strepsiceros* by the stalking of veins 6 and 7 of hindwings, and the position of the notch immediately above basal joint of antennæ, from *Tmetocera* by the costal fold of male, from *Hendecasticha* by the 12 veins of forewings; the peculiarly shaped prominent-angled hindwings are a special feature.

Of the three species described below, only the first two belong truly to this genus; the third, *B. scopulosana*, is only known to me in the female, and is placed provisionally in this genus, to which it has an evident affinity, until the male is known; but it is discordant in the separation of veins 6 and 7 of hindwings, and cannot remain here.

The three species described may be thus separated:

- a.* Forewings with a subquadrate dark blotch on inner margin at one-third.
  - 1. Dorsal spot beyond middle erect, triangular 1. *constrictana*.
  - 2. Dorsal spot beyond middle flattened, semi-oval . . . . . 3. *scopulosana*.
- b.* Forewings without dark dorsal blotch . . . 2. *ruficomana*.
  - 1. Bathr. *constrictana*, *n. sp.*

♂ ♀ . 5"-6½". Head ochreous-brown on crown and face, behind whitish finely irrorated with grey. Palpi deep ochreous-brown.



Antennæ dark fuscous. Thorax white, irrorated with grey, anterior margin and one or two spots on back blackish. Abdomen ochreous-grey, anal tuft of male ochreous. Legs whitish, anterior and middle tibiæ and tarsi banded with dark fuscous. Forewings very narrow, costa almost straight, hindmargin sinuate below apex, slightly oblique; white, very finely irrorated with grey scales, tending to form very fine strigulæ, especially along costa, where they cause a narrow greyish suffusion; costa rather obliquely and coarsely strigulated with blackish, and inner margin also generally with a few short blackish strigulæ; a small grey blackish-margined somewhat triangular spot on inner margin close to base, reaching two-thirds across wing; a rather large subquadrate erect dark grey blotch, mixed with blackish, on inner margin at one-third, reaching half across wing, rather ill-defined anteriorly; a small triangular dark grey spot on inner margin about three-fourths, reaching one-third across wing; a small blackish apical spot, slenderly produced along hindmargin nearly to anal angle: cilia dark fuscous with a blackish basal line, beneath anal angle whitish and becoming grey posteriorly. Hindwings thinly scaled, grey, somewhat darker at apex; cilia grey-whitish, with an indistinct grey line near base.

Distinctly characterised by the white forewings, dark grey dorsal spots, and ochreous-brown head.

Rather common at rest on certain fences near Sydney, and at Parramatta, and also beaten from a species of *Melaleuca*; it occurs from September to November, and in January.

## 2. *Bathr. ruficomana*, *n. sp.*

♂ ♀.  $4\frac{3}{4}$ "- $5\frac{3}{4}$ ". Head reddish-ochreous on crown and face, behind light ashy-grey. Palpi deep reddish-ochreous. Antennæ grey. Thorax grey, more or less suffused with dark fuscous. Abdomen ochreous-grey, in male suffused with yellowish-ochreous. Legs grey-whitish, anterior and middle tibiæ and all tarsi suffusedly banded with dark fuscous. Forewings very narrow,



costa straight, hindmargin slightly sinuate, hardly oblique; light grey, with very fine whitish transverse strigulae; a darker grey suffusion towards costa, attenuated posteriorly and ceasing before apex, in male more blackish-grey and more distinct; costa obscurely strigulated with dark grey; the veins obscurely indicated by irregular longitudinal dark grey lines; a hardly paler patch on anal angle, preceded and followed by an obscure leaden-metallic line, and containing a row of four or five ill-defined blackish dots; a small blackish apical spot, slenderly produced along hindmargin nearly to anal angle: cilia reddish-ochreous, with a black basal line, beneath anal angle whitish mixed with grey. Hindwings thinly scaled, grey, darker posteriorly; cilia grey, with a whitish basal line.

In form of wing closely resembling the preceding, but the forewings are grey, without any trace of dark dorsal spots, the cilia and head reddish-ochreous.

Four specimens, (one male, three females) taken at rest on a fence in Sydney, in December and January.

### 3. Bathr. (?) scopulosana, *n. sp.*

♀. 6½". Head ochreous-whitish, between antennae dark grey. Palpi whitish-ochreous, mixed with grey beneath. Antennae grey-whitish, suffusedly annulated with dark fuscous. Thorax whitish-ochreous, with a few black scales, and with a grey spot mixed with blackish behind. Abdomen dark fuscous. Legs ochreous-whitish, anterior and middle tibiae and all tarsi suffusedly banded with dark fuscous. Forewings moderately narrow, costa slightly arched, hindmargin sinuate below apex, slightly oblique; whitish-ochreous, somewhat suffused with brownish-ochreous posteriorly, and with a few scattered black scales; costa finely and obliquely strigulated with blackish; a subquadrate blotch on inner margin about one-third, black on inner margin, becoming ochreous-brown and shading gradually into groundcolour above, reaching half across wing, blackmargined



on each side, outer edge indented below middle, and connected with costa at one-fourth by an irregular inwardly oblique blackish line; between this blotch and base the inner margin is narrowly blackish; an elongate very narrowly semi-ovate blackish-fuscous spot along inner margin from beyond middle to beyond three-fourths, posteriorly whitish-margined; a roundish patch on anal angle is indistinctly indicated by a slender interrupted blackish boundary line, and contains a row of four or five ill-defined linear blackish dots; a small ferruginous apical spot; a row of linear black dots along hindmargin: cilia ochreous-fuscous, with a blackish spot above apex, and three broadly suffused blackish bars below apex, with a whitish line along base, towards anal angle wholly grey mixed with whitish. Hindwings dark grey, very thinly scaled and almost transparent towards base; cilia whitish, with an indistinct grey line near base.

Markings placed much as in *B. constrictana*, but groundcolour tinged with ochreous, no dorsal spot close to base, spot at one-third brown above, spot at three-fourths flattened, elongate, semi-ovate, and head not brown.

Two specimens taken at rest on fences near Sydney and Parramatta, in October.

#### 16. STREPSICEROS, *n. g.*

Thorax smooth. Antennæ in male ciliated, with an excavated notch at about one-fifth from base. Palpi moderate, porrected, second joint roughly haired, often with a more or less dense tuft beneath towards apex, terminal joint more or less concealed. Posterior tibiæ fringed with hairs above. Forewings elongate, narrow, costa in male with a strong basal fold, gently arched, apex generally somewhat produced, hindmargin more or less sinuate. Hindwings elongate-trapezoidal, broader than forewings apex somewhat produced. Forewings with veins 7 and 8 separate, 7 running to hindmargin, secondary cell distinct. Hind-



wings with veins 3 and 4 long-stalked or coincident, 5 closely approximated at base to 4, 6 and 7 separate.

Larva sixteen-legged, feeding in spun-up shoots or between joined leaves of the *Myrtaceæ*.

This genus is the type of a group which is rather extensively represented in the Australian region, compared with the other groups of the family. The other known genera belonging to this group are *Tmetocera*, *Bathrotoma*, and *Hendecasticha*, the whole being characterised by the possession of a sharply excavated semicircular notch on the stalk of the antennæ of male; the antennæ of the female are simple. *Tmetocera* is the only genus found in Europe, and is distinguished from all the others by the absence of a costal fold in male. *Strepsiceros* differs from *Bathrotoma* in the separation of veins 6 and 7 of hindwings, and the position of the notch on the antennæ, which is remote from the basal joint; from *Hendecasticha* in the twelve-veined forewings. The genus is subject to variation in the structure of veins 3 and 4 of hindwings, which are sometimes on a long stalk, sometimes wholly coincident, so that there appear to be only seven veins; and in the palpi, which have often, but not always, a tuft beneath on the second joint; but these forms are connected by intermediate gradations, and are not available for generic characters. The species are generally small grey inconspicuous insects, with very similar markings.

There are eleven Australian species known to me, of which two occur in New Zealand also, and appear to be indigenous there, equally as in Australia. The following is a tabulation of them:

A. A broad white streak along part or whole of costa.

1. Costal streak extending from base to apex.

a. Costal streak interrupted before middle 9. *plinthinana*.

b. Costal streak entire .. .. 10. *obeliscana*.



2. Costal streak extending from base to one-third .. .. . 4. *seditiosana*.
  3. Costal streak extending from before middle to apex .. .. . 11. *sicariana*.
- B. Costa not broadly white.
1. A white subcostal streak.
    - a. Subcostal streak extending from base to apex .. .. . 8. *zopherana*.
    - b. Subcostal streak extending from middle to apex .. .. . 7. *sollicitana*.
  2. A white central longitudinal suffused streak only .. .. . 6. *fluidana*, ♂.
  3. No white longitudinal markings.
    - a. Forewings reddish-ochreous .. .. . 6. *fluidana*, ♀.
    - b. Forewings grey or dark fuscous.
      - i. A slender white transverse streak posteriorly .. .. . 5. *pericyphana*.
      - ii. No white markings.
        - \*. Forewings light, with well-defined entire dark central fascia .. 1. *limnephilana*.
        - \*\*. Forewings dark or mottled, without entire fascia.
        - †. Forewings somewhat dilated, with broad dark suffused central streak.. .. . 2. *ejectana*.
        - ††. Forewings elongate, without central streak.. .. . 3. *macropetana*.

1. *Streps. limnephilana*, *n. sp.*

♀. 6"-6½". Head, palpi, and thorax light ashy-grey, slightly mixed with fuscous. Antennæ grey. Abdomen grey, extremity whitish. Legs grey-whitish, anterior and middle tibiæ and all tarsi banded with dark fuscous. Forewings moderate, posteriorly dilated, costa moderately arched, hindmargin nearly straight,



oblique; whitish, finely and densely irrorated with ashy-grey; costa with a few short blackish strigulæ; some blackish scales towards inner margin near base; outer edge of basal patch indicated by an obscure blackish transverse line at one-third, in one specimen forming a short erect ochreous-fuscous black-margined streak from inner margin, reaching one-third across wing; central fascia narrow, oblique, ochreous-fuscous irregularly margined with black, suffused with black in middle and on inner margin, running from middle of costa to inner margin before anal angle; a blackish streak from apex along upper half of hindmargin: cilia ashy-whitish, with two faint grey lines, and obscurely barred with blackish. Hindwings fuscous-grey; cilia whitish, with two suffused grey lines.

The male being as yet unknown, it is not certain whether the species is correctly referred to this genus, but the general similarity to *S. ejectana*, and the identity of all non-sexual characters, are sufficient to warrant its position. The male may perhaps have a tuft of raised scales on the forewings, as in *S. ejectana*, and may also differ somewhat in marking. The female may be easily known from *S. ejectana* by the clearer and lighter groundcolour, and the well-defined entire central fascia, which in *S. ejectana* is partial and suffused, as well as by the absence of the dark fuscous longitudinal streak.

Five specimens, all females, taken on open swampy ground at Waratah on the Hunter River, New South Wales, in January.

## 2. *Streps. ejectana*, Walk.

(*Sciaphila ejectana*, Walk., Brit. Mus. Cat., 350; (?) *Sciaphila absconditana*, ibid. 351; *Sciaphila servilisana*, ibid. 356; *Sciaphila saxana*, ibid. 357; *Conchylis ligniferana*, ibid. 363).

♂ ♀.  $5\frac{3}{4}$ "-7". Head, palpi, and thorax grey irrorated with ashy-whitish, and with a few black scales, shoulders ochreous-tinged; palpi not tufted. Antennæ dark fuscous, in male thickened and notched at one-fifth from basal joint. Abdomen



grey. Legs whitish-grey, anterior and middle tibiæ and tarsi suffusedly banded with dark fuscous-grey. Forewings moderate, slightly dilated posteriorly, costa gently arched, hindmargin nearly straight, oblique; light ashy-grey, with a few scattered black scales, in male more or less wholly suffused irregularly with dark grey, especially towards costa and hindmargin; costa and inner margin coarsely strigulated with blackish; a strong tuft of raised scales in male towards inner margin at one-third from base; a cloudy irregular somewhat sinuate broad dark fuscous longitudinal streak in disc, mixed with ochreous and blackish, extending from near base to beyond middle, thence bent downwards to inner margin before anal angle; in male this streak is more or less obscured through the general dark suffusion; an ill-defined triangular dark fuscous blotch on upper half of hindmargin, its apex extending inwards to disc at three-fourths, sometimes ochreous-tinged, in male often cloudy and suffused, especially beneath, generally containing two or three longitudinal black streaks: cilia grey, mixed with whitish points, irregularly and indistinctly barred with blackish. Hindwings dark grey; cilia grey, with a dark grey line near base; veins 3 and 4 long-stalked.

The markings of this species are very obscure and confused, especially in the male, but it cannot well be mistaken for any other; it is comparatively the broadest-winged species of the genus, and the raised tuft of scales on forewings in male is a peculiar character; its dark cloudy colouring, and the absence of any white markings distinguish it from all but the much narrower-winged and differently marked *S. macropetana*, and the more clearly marked *S. limnephilana*.

Larva cylindrical, active, dull green, more yellowish on sides and towards extremities, dorsal spots paler; head and second segment, or posterior half of second segment, black. Feeds amongst spun-together shoots of *Kunzea capitata* and *Darwinia*



*fasciculata* (*Myrtaceæ*), and probably other plants of the same order, in December, January, and doubtless other months.

Extremely abundant in the bush round Sydney, readily disturbed and very active, especially towards sunset, almost without intermission from July to March; occurs also at Melbourne; and I took it not uncommonly at Wellington and Hamilton, New Zealand, in January, frequenting a shrub which I believe to be *Leptospermum ericoides*. The New Zealand specimens do not differ perceptibly from Australian, except in being slightly smaller than the average; and there seems no reason to suppose that the species has been artificially introduced from either country into the other.

3. *Streps. macropetana*, *n. sp.*

♂ ♀. 7"-8 $\frac{3}{4}$ ". Head, palpi, and thorax light ochreous-grey, mixed with dark grey and dark fuscous; palpi not tufted. Antennæ dark fuscous, in male thickened and notched at one-eighth from basal joint. Abdomen grey, segmental margins ochreous-whitish. Legs ochreous-whitish, anterior and middle tibiæ and all tarsi suffusedly banded with dark fuscous. Forewings elongate, narrow, costa gently arched, hindmargin nearly straight, very oblique; ashy-grey, variable in depth, finely and closely irrorated with whitish; costa finely and obliquely strigulated with blackish-grey; numerous indistinct dark grey longitudinal strigulæ in disc, towards hindmargin more distinct and forming connected lines; often there is a faint irregular ochreous suffusion, especially towards middle of disc; two or three raised scales near inner margin towards base; often a slender oblique anteriorly suffused black streak from inner margin at one-third, reaching half across wing, frequently interrupted or obsolete; often a small indistinct dark fuscous triangular spot on inner margin before anal angle; between this and the oblique streak at one-third the ground colour is often paler, forming an irregularly oblong patch; sometimes a small cloudy dark grey



triangular patch on upper half of hindmargin, darkest towards apex; a row of three or four black linear dots near hindmargin above anal angle, preceded and followed by a faint leaden-metallic line: cilia grey, irregularly mixed with blackish, and irrorated with whitish points. Hindwings thinly scaled, grey, darker at apex; cilia grey-whitish, with a grey line near base; veins 3 and 4 long-stalked.

The largest species of the genus, with very elongate forewings; variable, but generally very uniform in colouring, with very few darker markings, of various character in different specimens.

Larva cylindrical, with scattered hairs; rather pale yellowish-green, above rather darker dull green, dorsal spots faintly whitish; head amber, second segment rather lighter amber; anal segment with slight indications of a black plate. Feeds between joined leaves of *Eucalyptus* sp.—, in June.

A common species, occurring amongst *Eucalyptus* scrub round Sydney and Parramatta, at Bulli, Blackheath on the Blue Mountains, and Newcastle, in New South Wales; at Melbourne, and near Duaringa, Queensland; from July to October, and from January to March.

#### 4. *Streps. seditiosana*, n. sp.

♂ ♀.  $4\frac{3}{4}$ "- $5\frac{1}{4}$ ". Head, palpi, and thorax grey, densely irrorated with whitish; palpi not tufted. Antennæ dark fuscous, in male thickened and notched at one-fifth from basal joint. Abdomen grey. Legs grey-whitish, anterior and middle tibiæ and all tarsi suffusedly ringed with dark fuscous. Forewings narrow, costa slightly arched, hindmargin somewhat sinuate, oblique; dull whitish, costal half suffused with dark grey (in female slightly ochreous-tinged) except along basal third of costa and towards apex; costa shortly strigulated with dark fuscous; a dark fuscous strongly marked central streak from base to middle, posteriorly abruptly attenuated and somewhat bent upwards, posterior edge



blackish and sharply defined; an ill-defined grey suffusion about anal angle, and another on hindmargin beneath apex; a silvery-metallic line from anal angle reaching half across wing, and another near hindmargin extending to costa before apex: cilia grey, whitish towards base, with a blackish spot at apex. Hindwings very thinly scaled, grey, darker posteriorly; cilia whitish-grey, with an indistinct darker line near base; veins 3 and 4 stalked.

A distinct species, sufficiently characterised by the dark central longitudinal streak from base to middle.

Three specimens (one male, two females) taken in low scrub at Sydney and above the Bulli Pass, New South Wales, from August to October.

#### 5. *Streps. pericyphana*, *n. sp.*

♂.  $4\frac{1}{4}$ "- $4\frac{3}{4}$ ". Head white, mixed with dark grey above. Palpi somewhat tufted, white, with a dark fuscous spot near base, and a dark fuscous band towards apex of second joint. Antennæ grey, in male abruptly swollen and notched at about one-fifth from basal joint. Thorax blackish, mixed with reddish-ochreous on sides. Abdomen ochreous-grey. Legs whitish, anterior and middle tibiae and all tarsi sharply and narrowly ringed with dark fuscous. Forewings very narrow. costa nearly straight, hindmargin sinuate, oblique; blackish-fuscous, mixed with ochreous-brown, and coarsely irrorated with white; costa with white obscure strigulae arranged in pairs; two ill-defined white angulated strigulae crossing wing near base; two or three short oblique white strigulae near together on inner margin before middle; an irregularly sinuate snow-white streak crossing wing from near costa at three-fourths to anal angle, angulated inwards about middle, preceded on inner margin by a small somewhat triangular dark fuscous anteriorly whitish-margined spot; in this white streak are several faint leaden-metallic spots on its posterior edge,



and there is an obscure leaden-metallic line near hindmargin; cilia white, outer half grey irrorated with blackish. Hindwings very thinly scaled, grey; cilia grey.

This small species is of peculiar appearance, and very distinct from any other, being characterised by its small size, very narrow forewings, dark colouring, and the pure white transverse streak posteriorly.

Three specimens taken at rest on a fence near Sydney, in October. In repose the apex of the forewings is obliquely bent in round the abdomen, as though deformed; a habit which is not perceptible in any other species of the genus, but is similar to that noticed in the case of *Helictophanes uberana*.

#### 6. *Streps. fluidana*, n. sp.

4"-5". ♂. Head and thorax white, more or less sprinkled with ochreous and grey. Palpi white, second joint tufted, tuft dark grey towards extremity. Antennæ grey, in male thickened and notched at about one-fourth from basal joint. Abdomen ochreous-whitish, indistinctly suffused with grey towards base of segments. Legs white, anterior and middle tibiæ and all tarsi ringed with dark fuscous. Forewings narrow, costa slightly arched, apex produced, hindmargin sinuate, obliquely rounded beneath; grey, densely irrorated with white, and more or less suffused posteriorly with reddish-ochreous; along the costa the grey alternates with the white to form coarse oblique strigulæ; a more or less distinct narrow central longitudinal white streak from base, almost reaching anal angle, but posteriorly dilated and suffused, sometimes crossed by ill-defined strigulæ; sometimes a dark grey spot on submedian fold before middle; a row of four or five sharply-defined linear black dots near lower half of hindmargin, preceded and followed by a silvery-metallic line, the second metallic line extending to costa before apex; apex and hindmargin beyond this line reddish-ochreous: cilia white on



costa, grey on hindmargin, with a black spot at apex, and a white basal spot on middle of hindmargin. Hindwings thinly scaled, grey; cilia grey-whitish, with a faint grey line near base; veins 3 and 4 on a very long stalk.

♀. Head, palpi, &c., as in male; thorax partially suffused with reddish-ochreous. Forewings more elongate than in male, wholly reddish-ochreous, sprinkled with grey-whitish; costa very narrowly white, and posteriorly with short oblique white strigulæ; two or three blackish scales on inner margin; the silvery-metallic lines and black dots above anal angle as in male; cilia as in male. Hindwings as in male.

Easily distinguished from its allies by the reddish-ochreous partial suffusion towards hindmargin in male, and the wholly reddish-ochreous forewings of female; nearest to *S. sollicitana*, but differing from it and the other allied species by the absence of any white costal or subcostal streak.

Larva undescribed; feeding in spun-up shoots of *Leptospermum lanigerum* (*Myrtaceæ*), in October (and doubtless other months).

Abundant amongst its foodplant, flying out in numbers when disturbed, round Sydney, and at Bulli, and Blackheath on the Blue Mountains, from August to March.

#### 7. *Streps. sollicitana* n. sp.

♂ ♀.  $3\frac{1}{2}$ "-5". Head and thorax white, sides suffused with grey. Palpi white, second joint tufted beneath, tuft more or less suffused with grey towards extremity. Antennæ dark grey, in male thickened and notched at about one-fifth or one-sixth from basal joint. Abdomen grey, segmental margins and anal tuft of male silvery-whitish. Legs whitish, anterior and middle tibiæ and all tarsi ringed with dark fuscous. Forewings very narrow, costa slightly arched, apex rather produced, hindmargin sinuate, rather oblique; rather dark grey, densely irrorated with white; along the costa the dark grey alternates with the white to form



oblique coarse strigulæ; a rather broad white longitudinal streak rather above middle from base to middle of disc, dilating gradually, ill-defined at extremity; a rather narrow white longitudinal streak beneath costa from middle to apex, generally interrupted at half its length by a very oblique grey line; a slender blackish-grey oblique streak from inner margin at one-third, reaching half across wing, forming a small spot above submedian fold; between this and base are several blackish-grey transverse strigulæ, not crossing the white longitudinal streak; a faint silvery-metallic mark above anal angle, and a faint silvery-metallic line near hindmargin; a small black apical spot, above which is a snow-white spot in cilia: cilia dark grey, with a blackish spot at apex, and a white spot at base on middle of hindmargin. Hindwings rather thinly scaled, grey, apex dark grey; cilia light grey, with a dark grey line near base; veins 3 and 4 coincident.

Allied to *S. fluidana*, but without any ochreous colouring, and with a white subcostal streak from middle to apex.

Six specimens taken amongst low scrub near Sydney and Parramatta, in October, December, and January.

8. *Streps. zopherana*, *n. sp.*

♂ ♀. 5"-6". Head, palpi, and thorax grey, more or less irrorated with white, head sometimes almost wholly white; palpi not tufted. Antennæ dark fuscous, in male somewhat thickened and notched at about one-eighth from basal joint. Abdomen dark grey, segmental margins silvery-whitish. Legs whitish, anterior and middle tibiæ and all tarsi sharply banded with dark fuscous. Forewings very narrow, costa slightly arched, apex produced, hindmargin sinuate, very oblique; dark grey, irrorated with whitish; costa very obliquely strigulated with blackish-grey; a rather broad ill-defined white streak beneath costa from base to apex, crossed by an oblique dark grey fascia-like streak before



middle, and three or four slender dark grey very oblique strigulae between that and apex; middle of disc somewhat suffused with blackish; an ill-defined black spot in disc above anal angle; generally a row of about three ill-defined black spots above anal angle towards hindmargin, preceded and followed by an obscure silvery-metallic line: cilia dark grey, paler towards anal angle, with a blackish apical spot, costal cilia white. Hindwings thinly scaled, grey, darker at extremity; cilia pale grey, with an indistinct darker line near base; veins 3 and 4 coincident.

Distinguished from all others by the white subcostal streak from base to apex, but variable in intensity of colouring.

Four specimens taken in the scrub near Sydney in December; I found the species very abundant amongst, I believe, *Leptospermum ericoides*, near Dunedin, and also took it at Hamilton and Wellington, in New Zealand during January. The New Zealand specimens do not differ from the Australian; the species is evidently at home in New Zealand, but appears to be scarce in Australia, and it is possible that it may have been artificially introduced thither.

#### 9. *Streps. plinthinana*, n. sp.

♂. 6". Head and thorax white, with a few grey scales. Palpi rather elongate, somewhat tufted beneath, white, the hairs greyish-tinged towards extremities. Antennae grey, in male notched at about one-eighth from basal joint. Abdomen ochreous-grey. Legs whitish, anterior and middle tibiae and all tarsi suffusedly banded with dark fuscous. Forewings narrow, costa gently arched, apex produced, hindmargin sinuate, rather oblique; dark reddish-fuscous, coarsely irrorated and suffused with white, especially towards anal angle; a broad well-defined white streak along costa from base to apex, posteriorly attenuated, crossed by an oblique dark reddish-fuscous fascia-like streak before middle; costal edge strigulated finely with brownish-grey, one or two of



the strigulae towards apex crossing the white streak; some irregularly placed blackish scales beneath the white streak posteriorly: cilia light reddish-fuscous, becoming whitish towards anal angle, extremities greyish-tinged, with a dark fuscous apical spot, costal cilia white. Hindwings thinly scaled, grey; cilia light grey, with a faint darker line near base.

Nearly allied to *S. zopherana*, but forewings somewhat broader, and characterised by the general reddish tint, and costal, not subcostal, white streak.

One specimen taken at Parramatta in November.

10. *Streps. obeliscana n. sp.*

♂ ♀. 5"-6". Head dull white, greyish-tinged on sides. Palpi elongate, not tufted, white, sometimes externally greyish-tinged. Antennae grey, in male slightly thickened, and notched at about one-tenth from basal joint. Thorax grey, suffused with white on back. Abdomen whitish, tinged with ochreous grey towards base of segments. Legs whitish, anterior and middle tibiae and tarsi suffusedly banded with dark fuscous-grey. Forewings narrow, costa gently arched, hindmargin sinuate beneath apex, very oblique; rather light grey, slightly brownish-tinged, irrorated with whitish, especially towards inner margin; a broad white costal streak from base to apex, attenuated posteriorly, sharply-defined beneath, costal edge irrorated and sometimes in male suffused with brownish-grey towards base, towards apex with slender oblique brownish-grey strigulae, of which two or three cross the white streak; the lower margin of the white streak is indented by a short tooth of the groundcolour before middle, beyond this irregularly margined by a blackish line; a sharply-defined small black spot above anal angle, beyond which is a small oval space preceded and followed by a silvery-metallic line, and sometimes enclosing two or three black dots; cilia brownish-grey, mixed with whitish towards anal angle,



with a blackish apical spot, costal cilia white. Hindwings thinly scaled, in male whitish-grey, in female pale grey; cilia in male white, in female whitish, with a faint darker line near base.

Distinguished from all by the broad uninterrupted white costal streak from base to apex, and light grey groundcolour.

Abundant amongst *Leptospermum* scrub, generally in sandy places, round Sydney and at Parramatta, from August to December.

#### 11. *Streps. sicariana* n. sp.

♂. 7". Head white, with one or two grey scales. Palpi elongate, not tufted, white mixed with grey beneath, terminal joint dark grey. Antennæ grey, in male slightly thickened, and notched at about one-tenth from basal joint. Thorax white. Abdomen light silvery-grey, anal tuft whitish. Legs whitish, anterior and middle tibiæ and tarsi suffusedly banded with dark fuscous-grey. Forewings moderately narrow, costa gently arched, hindmargin slightly sinuate beneath apex, very oblique; dark fuscous-grey, dorsal half suffusedly white sprinkled with grey; a sharply-defined fusiform white streak along costa from before middle to apex, acutely attenuated at each extremity, suffusedly margined beneath with blackish, costal edge with slender oblique brownish-grey strigulæ, of which two or three towards apex cross the white streak; an oblique blackish mark above submedian fold before middle; cilia white, extremities of hindmarginal cilia mixed with grey, with a black apical spot, and a dark grey smaller spot a little below it. Hindwings thinly scaled, grey; cilia whitish, with a faint grey line near base.

Allied to *S. obeliscana*, but very distinct from that species through its larger size, dark colour, and the white costal streak extending only from before middle to apex.

One specimen taken in dry scrub near Sydney in February.



17. *HENDECASTICHA* *n. g.*

Thorax smooth. Antennæ in male ciliated, with an excavated notch near base. Palpi moderate, porrected, second joint densely rough-haired above and below, terminal joint nearly concealed. Posterior tibiæ fringed with hairs above. Forewings elongate, narrow, costa in male with a basal fold, nearly straight, hindmargin sinuate. Hindwings elongate-trapezoidal, broader than forewings. Forewings with 11 veins, vein 7 running to costa, secondary cell indicated, upper basal fork of vein 1 nearly obsolete. Hindwings with veins 3 and 4 coincident, 5 approximated to 4 at base, 6 and 7 stalked.

Nearly allied to *Strepsicerus*, but distinguished from it and the other genera of the group by the possession of only 11 veins in the forewings, the normal veins 7 and 8 being probably coincident; in the neuration of the hindwings it resembles *Bathrotoma*.

The only species is from New Zealand.

1. *Hend. æthaliana* *n. sp.*

♂ ♀.  $3\frac{3}{4}$ "- $4\frac{3}{4}$ ". Head, palpi, thorax, and abdomen dark fuscous, sprinkled with ashy-whitish. Antennæ dark fuscous, in male notched a little above basal joint. Legs whitish-grey, all tibiæ and tarsi suffusedly banded with dark fuscous-grey. Forewings narrow, costa hardly arched, hindmargin slightly sinuate, very oblique; dark fuscous, coarsely irrorated with grey and ashy-whitish scales, especially on basal half and before apex, tending to form irregular transverse lines; sometimes there is an irregular ochreous suffusion towards inner margin before middle, and above anal angle: cilia dark fuscous sprinkled at base with ashy-whitish. Hindwings dark fuscous; cilia dark fuscous, with a blackish line at base.

I took this species rather commonly in January amongst rank grass and herbage on some swampy ground near Hamilton on the Waikato, New Zealand; its small size and dark colouring make it very inconspicuous on the wing.



## FAM. III. CONCHYLIDÆ.

Lower median vein of hindwings not pectinated; vein 2 of forewings rising from posterior fourth of lower margin of cell.

This family appears to be very scantily represented in the Australian region by a few peculiar genera; none of the previously described genera have yet occurred. The four genera with which I am acquainted may be thus distinguished:

- A. Veins 3 and 4 of hindwings remote at origin 1. *Heliocosma*.
- B. Veins 3 and 4 of hindwings stalked or from a point.
  - 1. Palpi very long .. .. 2. *Paramorpha*.
  - 2. Palpi moderate.
    - a. Forewings in male with a raised membranous ridge near base .. .. 4. *Coscinoptycha*.
    - b. Forewings in male without membranous ridge .. .. 3. *Oistophora*.

1. *HELIOCOSMA*, *n. g.*

Thorax smooth. Antennæ in male thickened, laterally compressed, pubescent. Palpi very long, straight, porrected, second joint roughly haired, attenuated, terminal joint long, exposed. Posterior tibiæ fringed with hairs above. Forewings elongate, somewhat dilated, costa in male simple, slightly arched, bent before apex, hindmargin obliquely rounded; surface with rough scales. Hindwings broader than forewings, rounded-ovate. Forewings with veins 7 and 8 separate, 7 running to hindmargin, secondary cell indicated, vein 1 furcate at base. Hindwings with 8 veins, 3 and 4 remote at origin, 5 parallel to 4, 6 and 7 remote at origin, nearly parallel.

Larva sixteen-legged, case-bearing, feeding on flowers.

The species of this genus in superficial appearance nearly resemble *Conchylis*, but the genus differs widely from all others of the family in the remoteness of veins 3 and 4 of the hindwings



at origin, these veins being from a point or stalked in all other described genera; it resembles *Paramorpha* in the structure of the palpi, and has the rough scales on the surface of the forewings in common with all the other Australian genera, and with the European *Phtheochroa*. The case-bearing habit of the larva is at present unique amongst *Tortricina*.

The two species are readily known:

- a. Forewings carmine, with white markings . . 1. *rhodopnoana*.
- b. Forewings whitish, with ochreous markings 2. *incongruana*.

1. *Hel. rhodopnoana*, n. sp.

♀.  $7\frac{1}{2}$ ". Head and palpi whitish-ochreous. Antennæ light brownish-ochreous. Thorax light ochreous-brown, shoulders tinged with carmine. Abdomen ochreous-grey, extremity ochreous. Legs ochreous-grey, anterior coxæ and femora carmine. Forewings rather narrow, triangular, costa straight, bent before apex, hindmargin slightly sinuate, oblique; bright carmine, deeper posteriorly, becoming ochreous-orange along inner margin towards base; a narrow oblique silvery-white anteriorly blackish-margined streak from inner margin at one-third, nearly reaching costa, its extremity uniting with apex of a slender ill-defined white streak from base beneath costa; a second narrow oblique silvery-white anteriorly black-margined streak from inner margin just beyond middle, reaching nearly to costa, the ground colour tinged with orange along its anterior edge; from middle of its posterior edge proceeds a much slenderer white anteriorly blackish-margined streak to inner margin a little before anal angle; between first and second white oblique streaks is a tuft of raised scales near inner margin, a slender crescentic outwardly concave white blackish-margined mark beneath costa a little before apex, and another similar rather larger mark beneath it and anal angle, not quite touching either; a silvery-white streak from apex along hindmargin, ending in a small dilated silvery-white anteriorly blackish-margined spot below middle of hindmargin: cilia



carmine, with a white spot beneath apex and another below middle of hindmargin, between these two spots the basal third is carmine, central third white, apical third grey, extremities above apex dark grey. Hindwings pale ashy-grey, cilia whitish.

An extremely beautiful and distinct species, of which the male is as yet unknown.

One specimen taken by Mr. G. H. Raynor near Melbourne in November.

2. *Hel. incongruana*, *Walk.*

(*Conchylis incongruana*, Walk., Brit. Mus. Cat., 363; *Eromene apertella*, ibid. Suppl., 1762.)

♂ ♀. 5"-8". Head, palpi, and thorax white, more or less suffused on sides with light brownish-ochreous. Antennæ whitish-ochreous, in male dilated and laterally compressed. Abdomen whitish-ochreous. Legs whitish, anterior and middle tibiæ and tarsi obscurely infuscated. Forewings moderately narrow, dilated, triangular, costa bent towards apex, hindmargin nearly straight, oblique; whitish, faintly and irregularly suffused with pale ochreous; a short ochreous-orange streak along costa at base; generally an ill-defined reddish-ochreous spot on submedian fold near base; a slender (in male almost linear) strongly marked ochreous-orange fascia parallel to hindmargin, running from slightly beyond middle of costa to middle of inner margin, which it does not quite reach, posteriorly black-margined, on its anterior edge towards inner margin are two tufts of raised scales; sometimes two or three blackish scales on inner margin before anal angle, and in disc above it; a short cloudy oblique blackish apical streak; in female a moderately narrow ferruginous hindmarginal band, extending along hindmargin from apex to anal angle, enclosing a small white spot on hindmargin below middle, anterior margin somewhat sinuate; between it and central fascia is often a cloudy ferruginous suffusion in disc, but in male both this and the hindmarginal band are wholly absent: cilia in male



whitish, along base ochreous, extremities and a line before middle blackish, broadly interrupted below apex and beneath middle of hindmargin with whitish; cilia in female similar, but ochreous replaced by orange, and there is a dark ferruginous spot at apex, and an orange spot at anal angle. Hindwings in male pale grey, in female whitish-grey; cilia whitish.

In general appearance recalling the European *Conchylis straminea*, Hw.; the dissimilarity of the sexes is so singular that I long accounted them as distinct species.

The larva lives in a portable case composed of fragments of petals of the flowers on which it feeds, adding fresh pieces towards the mouth as it grows; these are at first white, but quickly become withered, and the whole case has a ragged appearance; the larva feeds on flowers of *Lysinema pungens* and *Epacris* sp. (*Epacrideæ*) in August; from those found an imago was bred in October.

A common species, occurring round Sydney, and at Blackheath on the Blue Mountains, and also at Melbourne, in dry sandy scrub amongst its foodplants, from October to March.

(NOTE.—*Conchylis diemeniana*, Z., Hor. Soc. Ent. Ross. 1877, 138, if correctly referred to this family, would probably belong to *Helioscosma*; but I am inclined to doubt whether the species is referable to this neighbourhood at all; I have not however seen a specimen, nor does the description come near any of the *Tortricina* known to me. Zeller's description is taken from a single female type from Tasmania, without palpi, and the neuration does not seem to have been made out; it is therefore impossible to quote the species under any generic head, but it is very unlikely to be a true *Conchylis*. It may be briefly described as slaty-fuscous, with the head, thorax, and basal third of forewings pale yellow.)

## 2. PARAMORPHA, n. g.

Thorax smooth. Antennæ of male strongly ciliated. Palpi very long, straight, porrected, second joint roughly haired,



attenuated, terminal joint long, exposed. Posterior tibiæ fringed with hairs above. Forewings elongate, narrow, costa in male simple, moderately arched, apex acute, hindmargin oblique; surface with raised scales. Hindwings rounded, elongate-ovate, broader than forewings. Forewings with veins 7 and 8 separate, 7 running to hindmargin, secondary cell absent, upper fork of vein 1 obsolete. Hindwings with 6 veins, 3 and 4 stalked from posterior angle of cell, 5 from upper angle of cell to apex, 6 free.

This genus has a peculiar facies from the remarkably narrow and elongate forewings; in the structure of the palpi it resembles *Heliocosma*, but the singular neuration of the hindwings causes it to be classed with *Oïstophora* and *Coscinoptycha* as forming a peculiar and abnormal group, probably confined to the Australian region.

The two species (one Australian, the other from New Zealand) may be easily distinguished;

- a. Forewings faint whitish-grey . . . . .1. *aquilana*.
- b. Forewings densely irrorated with dark grey . .2. *ad reptella*.

1. Par. *aquilana* n. sp.

♂ ♀.  $5\frac{1}{4}$ "- $6\frac{1}{4}$ ". Head, antennæ, thorax, and abdomen white. Palpi white, beneath sharply dark fuscous. Legs whitish, anterior tibiæ and tarsi greyish-tinged. Forewings very narrow, costa gently arched, hindmargin nearly straight, very oblique; white, almost wholly suffused with faint pale grey except towards anterior half of costa, and with very fine scattered dark grey scales; five sharply defined very oblique short black strigulæ on costa between middle and apex, and one shorter (sometimes absent) on costa before middle; a large sharply defined black dot in disc at two-thirds from base, followed by some raised scales; a small tuft of raised scales before this, another below it, two others in a straight line between this lower one and the base at equal distances, and sometimes another obliquely above and beyond the anterior of these, each of these



tufts generally immediately preceded by a small black dot; sometimes a faint grey angulated transverse line from four-fifths of costa to anal angle; a sharp black line along hindmargin: cilia white, faintly suffused with grey, with two indistinct grey lines. Hindwings whitish-grey; cilia whitish, with two very faint grey lines.

Readily known by its pale whitish colouring and black dots.

The imago frequents damp or swampy ground, flying low amongst the herbage; it occurs tolerably commonly round Sydney and Parramatta, and at Blackheath on the Blue Mountains (3,500 feet), in September, and again in February and March.

## 2. *Par. adreptella* Walk.

(*Gelechia adreptella* Walk., Brit. Mus. Cat. 654).

♂ ♀.  $6\frac{1}{2}$ "- $6\frac{3}{4}$ ". Head, palpi, and thorax pale grey irrorated with whitish; palpi beneath sharply dark fuscous. Antennæ, abdomen, and legs whitish, anterior and middle pair infuscated. Forewings very narrow, costa gently arched, somewhat bent before middle, hindmargin straight, very oblique; light grey, more whitish towards base of costa, distinctly ochreous-tinged, and thickly irrorated with dark grey; a suffused black spot in disc at two-thirds from base; between this and base are about eight black dots in upper half of wing, irregularly arranged, tending to be followed by raised scales; two or three tufts of raised scales towards submedian fold; a very indistinct angulated transverse dark grey line from three-fourths of costa to anal angle; an ill-defined blackish line along hindmargin; cilia grey, with light points, and two indistinct dark grey lines. Hindwings whitish, towards apex pale grey; cilia whitish, with a suffused faint grey line near base.

Larger than *P. aquilana*, with the costa of forewings distinctly bent, and the groundcolour appearing much darker from the



close irroration of dark grey scales, and distinctly ochreous-tinged; the black dots are also differently arranged.

Three specimens taken in the swampy forest near Cambridge and Hamilton, on the Waikato, New Zealand, in January. Walker's type is unset, but certainly referable to this species.

### 3. *OÏSTOPHORA* *n. g.*

Thorax smooth. Antennæ of male hardly thickened towards base, very finely ciliated. Palpi moderate, porrected, second joint very roughly haired above and below towards apex, terminal joint concealed. Posterior tibiæ thinly haired above. Forewings elongate, narrow, costa in male simple, moderately arched, apex acute, hindmargin oblique; surface with tufts of rough scales. Hindwings broader than forewings, apex rather produced; a very large expansible tuft of long hairscales towards base beneath lower median vein. Forewings with veins 7 and 8 separate, 7 running to hindmargin, secondary cell absent, upper basal fork of vein 1 obsolete (?). Hindwings with 6 veins, 3 and 4 short-stalked from posterior angle of cell, 5 from upper angle of cell to apex, 6 free.

Related to *Paramorpha*, but abnormal in facies; distinguishable by the short palpi, and especially by the large expansible tuft of hairs on the hindwings in both sexes.

#### 1. *Oïst. pterocosmana* *n. sp.*

♂ ♀. 8"-8½". Head and thorax white, slightly mixed with ochreous. Palpi white, beneath sharply dark fuscous. Antennæ whitish-ochreous. Abdomen whitish, anal tuft of male ochreous. Legs whitish, anterior and middle tibiæ and tarsi suffusedly banded with dark fuscous. Forewings very narrow, costa bent towards apex, hindmargin straight, very oblique; ochreous-whitish, irregularly irrorated with dark fuscous; costal edge blackish towards base; five short very oblique cloudy blackish strigulæ on costa between middle and apex, and one still shorter



before middle; a tuft of raised scales beneath costa near base; two black dots obliquely placed in disc close to base; four or five tufts of raised scales in disc between one-fourth and middle, each preceded by a black or dark fuscous dot; two raised tufts transversely placed in disc beyond middle, preceded by cloudy blackish dots; a cloudy interrupted angulated blackish line from three-fourths of costa to anal angle; a sharply defined black line along hindmargin, tending to be interrupted on the veins: cilia whitish, with two broad indistinct grey lines. Hindwings whitish-grey or pale grey; cilia grey-whitish.

Two specimens, taken at Sydney and Melbourne respectively, in October.

#### 4. COSCINOPTYCHA *n. g.*

Thorax smooth. Antennæ of male much thickened, dentate, strongly ciliated, basal joint swollen, of female slender, simple. Palpi moderate, porrected, second joint roughly haired above and below towards apex, terminal joint in male concealed, in female exposed. Posterior tibiæ smooth above. Forewings elongate, narrow, costa in male simple, nearly straight, bent before apex, hindmargin oblique; surface with tufts of raised scales, and in male with a membranous longitudinal ridge towards base. Hindwings broader than forewings, apex elongate, almost acute. Forewings with veins 7 and 8 separate, vein 7 running to hindmargin, secondary cell absent, upper basal fork of vein 1 obsolete. Hindwings with 6 veins, 3 and 4 in male from a point or short-stalked, in female long-stalked from posterior angle of cell, 5 from upper angle of cell to apex, 6 free.

This peculiar genus is well defined by the curious swollen bladder-like ridge on the forewings of male, the strongly dentate and ciliated antennæ of male, the rather short palpi, and the smooth posterior tibiæ; it is very abnormal in appearance.



1. *Cosc. improbana* n. sp.

♂ ♀.  $6\frac{3}{4}$ "- $7\frac{1}{2}$ ". Head silvery-white. Palpi white, basal two-thirds of second joint sharply dark fuscous beneath. Antennæ in male fuscous, basal joint white; in female whitish. Thorax white, somewhat mixed with fuscous. Abdomen whitish. Legs whitish, anterior and middle tibiæ and tarsi broadly banded with dark fuscous. Forewings very narrow, costa somewhat bent close to base and a little before apex, almost sinuate in middle, hindmargin nearly straight, very oblique; white, in male with an irregular ochreous-grey suffusion towards margins; about seven irregularly placed black linear spots on costa; in male a raised longitudinal bladder-like membranous ridge, extending in disc from near base to two-fifths, its costal half clothed with white scales, dorsal half naked, pellucid, and shining; in female this is absent, but there is a small irregular blackish spot in disc at two-fifths; a grey cloudy spot on inner margin at two-fifths, extending half across wing, in male containing a transverse blackish mark, in female obscurely mixed with blackish; a rather broad grey transverse central suffusion, containing in male a short longitudinal black linear mark near middle, in female a small roundish black spot and some scattered black scales; a row of indistinct linear blackish spots along hindmargin: cilia whitish, suffused with grey, obscurely barred with darker. Hindwings thinly scaled, whitish, apex greyish-tinged; cilia whitish, faintly greyish-tinged round apex.

Of this curious species, which for some time I did not recognise as belonging to the *Tortricina*, I have three specimens (two males and one female), beaten from bushes of *Kunzea capitata* near Sydney, in December.

For convenience of reference, a list is here subjoined of the species described by Walker in the British Museum Catalogues under the head of *Tortricina*; the number given refers to the page of the Catalogue, and after each species is given its proper generic



and specific name, as determined in the present and preceding papers.

*Teras retractana*, Walk., p. 288 = *Cacæcia postvittana*, Walk.,  
according to type, but not  
by description, which is un-  
identifiable.

„ *responsana*, Walk., p. 297 = *Cacæcia responsana*.

„ *postvittana*, Walk., p. 297 = „ *postvittana*.

„ *dotatana*, Walk., p. 298 = „ *postvittana*.

„ *mersana*, Walk., p. 298 = *Capua* sp., but too worn to be  
recognisable.

„ *scitulana*, Walk., p. 298 = *Cacæcia postvittana*.

„ *basialbana*, Walk., p. 299 = „ *postvittana*.

„ *similana*, Walk., p. 300 = *Anisogona similana*.

„ *secretana*, Walk., p. 300 = *Cacæcia postvittana*.

„ *solana*, Walk., p. 300 = *Dichelia solana*.

„ *miserana*, Walk., p. 301 = *Cacæcia miserana*.

„ *canigerana*, Walk., p. 301 = „ *miserana*.

„ *immersana*, Walk., p. 302 = *Cryptoptila immersana*.

„ *obliquana*, Walk., p. 302 = *Cacæcia obliquana*.

„ *excessana*, Walk., p. 303 = „ *excessana*.

„ *oblongana*, Walk., p. 303 = „ *oblongana*.

„ *inaptana*, Walk., p. 304 = „ *oblongana*.

„ *incessana*, Walk., p. 304 = *Arotrophora incessana*.

„ *spurcatana*, Walk., p. 305 = *Cacæcia spurcatana*.

„ *biguttana*, Walk., p. 306 = „ *biguttana*.

„ *conditana*, Walk., p. 306 = *Pyrgotis conditana*.

„ *servana*, Walk., p. 306 ; type worthless and not identifiable.

„ *semiferana*, Walk., p. 306 = *Capua semiferana*.

„ *priscana*, Walk., p. 307, } types worthless and unrecog-  
„ *antiquana*, Walk., p. 307, } nisable.

„ *congestana*, Walk., p. 308. type too worn to be identified,  
perhaps = *Cacæcia spurcatana* or *C. excessana*.



*Teras maoriana*, Walk., p. 308; type represented by one unrecognisable forewing.

*Pandemis secundana*, Walk., p. 310 = *Cacæcia postvittana*.

„ *mediana*, Walk., p. 311 = *Anisogona similana*.

„ *consociana*, Walk., p. 311 = *Cacæcia postvittana*.

„ *gavisana*, Walk., p. 312 = *Pyrgotis gavisana*.

*Cacæcia metaxanthana*, Walk., p. 315 = *Acroceuthes metaxanthana*.

„ *chrysophilana*, Walk., p. 315 = *Aristocosma chrysophilana*.

*Batodes jactatana*, Walk., p. 317 = *Cacæcia jactatana*.

*Dichelia reversana*, Walk., p. 321 = „ *postvittana*.

„ *fædana*, Walk., p. 321 = „ *postvittana*.

„ *sobriana*, Walk., p. 322 = „ *postvittana*.

„ *retractana*, Walk., p. 322 = *Dichelia* (?) *retractana*.

*Tortrix magnana*, Walk., p. 330 = *Acropolitis magnana*.

„ *polygraphana*, Walk., p. 330 = *Cacæcia polygraphana*.

„ *canana*, Walk., p. 331 = *Acropolitis canana*.

„ *impletana*, Walk., p. 331 = *Thrincophora impletana*.

„ *dolosana*, Walk., p. 331 = *Acropolitis dolosana* (?).

„ *velutinana*, Walk., p. 332; type headless and mangled, probably not belonging to the *Tortricina*, unrecognisable.

„ *signigerana*, Walk., p. 332 = *Acropolitis signigerana*.

„ (?) *innotatana*, Walk., 333; type lost, description unidentifiable.

*Lophoderus lætiferanus*, Walk., p. 336, belongs to the *Æcophoridæ* (*Tineina*).

*Sciaphila conjunctana*, Walk., p. 348 = *Asthenoptycha conjunctana*.

„ *disputana*, Walk., p. 349 = *Dichelia disputana*.

„ *rudisana*, Walk., p. 349 = *Acropolitis signigerana*.

„ *basiferana*, Walk., p. 350 belongs to the *Tineidæ* (*Tineina*).

„ *ejectana*, Walk., p. 350 = *Strepsiceros ejectana*.

„ *absconditana*, Walk., p. 351; type worn, unidentifiable, perhaps = *Streps. ejectana*.

„ *debiliana*, Walk., p. 351 = *Cacæcia miserana*.

„ *sidneyana*, Walk., p. 352; type very worn, unrecognisable



*Sciaphila inconcisana*, Walk., p. 352; type worn to pieces, unrecognisable.

„ *projectana*, Walk., p. 352 = *Acroceuthes metaxanthana*.

„ *comptana*, Walk., p. 353 = *Scolioplecta comptana*.

„ *flexivittana*, Walk., p. 353 = *Cacæcia jactatana*.

„ *transtrigana*, Walk., p. 354 = „ *spurcatana*.

„ *turbulentana*, Walk., p. 355 = „ *spurcatana*.

„ *fusiferana*, Walk., p. 355; type worn, unrecognisable.

„ *detritana*, Walk., p. 356; worn, prob. = *Capua semiferana*.

„ *servilisana*, Walk., p. 356; mangled, = *Strepsiceros ejectana*

„ *spoliatana*, Walk., p. 356; type worn to pieces, unidentifiable.

„ *infimana*, Walk., p. 357; type very worn, unidentifiable.

„ *saxana*, Walk., p. 357 = *Strepsiceros ejectana*.

*Olindia vetustana*, Walk., p. 358; type doubtfully identifiable, not recognised.

*Conchylis incongruana*, Walk., p. 363 = *Helioscosma incongruana*.

„ *ligniferana*, Walk., p. 363 = *Strepsiceros ejectana*.

„ *divulsana*, Walk., p. 364; type in fragments, unidentifiable, perhaps = *Dich. fusciceps*.

„ *fuscicepsana*, Walk., p. 364 = *Dichelia fusciceps*.

„ *tasmaniana*, Walk., p. 365 = „ *tasmaniana*.

„ *notatana*, Walk., p. 365, probably belongs to the *Gelechiidæ* (*Tineina*).

„ *cepsana*, Walk., p. 366 = *Dichelia fusciceps*.

„ *humerana*, Walk., p. 366 = „ (?) *humerana*.

„ (?) *amænana*, Walk., p. 366 = *Tortrix amænana*.

„ *vacuana*, Walk., p. 367 = *Capua vacuana*.

„ *decisana*, Walk., p. 367, belongs to the *Ecophoridæ* (*Tineina*).

„ *mundulana*, Walk., p. 668 = *Dichelia fusciceps*.

„ (?) *subfurcatana*, Walk., p. 368 = *Tortrix subfurcatana*.

„ (?) *sparsana*, Walk., p. 369, belongs to the *Bombycina*.

„ *plagiatana*, Walk., p. 370 = *Pyrgotis plagiatana*.



- Conchylis leucaniana*, Walk., p. 370=*Tortrix leucaniana*.  
 ,, *recusana*, Walk., p. 371=*Pyrgotis plagiatana*.  
 ,, *marginana*, Walk., p. 371= ,, *gavisana*.  
*Penthina trifasciana*, Walk., p. 377, belongs to the *Tineidæ* (*Tineina*)  
 ,, *indecretana*, Walk., p. 377=*Acropolitis signigerana*.  
*Pædisca immersana*, Walk., p. 380=*Cacæcia postvittana*.  
 ,, *lignigerana*, Walk., p. 380=*Acropolitis lignigerana*.  
 ,, *confusana*, Walk., p. 381=*Arotrophora confusana*.  
 ,, *luciplagana*, Walk., p. 381=*Dichelia luciplagana*.  
 ,, *morosana*, Walk., p. 382; type worn and unrecognisable,  
 probably belongs to *Tineidæ* (*Tineina*).  
 ,, *privatana*, Walk., p. 382=*Cacæcia jactatana*.  
*Grapholita parvulana*, Walk., p. 391=*Eudemis botrana*.  
 ,, *extrusana*, Walk., p. 391, belongs to the *Pyralidina*.  
 ,, *decolorana*, Walk., p. 392,=*Capua decolorana*.  
 ,, *mutatana*, Walk., p. 393=*Capua vacuana*.  
 ,, *perspectana*, Walk., p. 393=*Holocola perspectana*.  
*Carpocapsa conficitana*, Walk., p. 412=*Stigmonota conficitana*.  
*Tospitis transitana*, Walk., p. 430, belongs to *Bombycina*.  
*Argua scabra*, Walk., p. 448, probably belongs to *Geometrina*.  
*Uraba lugens*, Walk., p. 448, belongs to *Pyralidina*.  
*Teras absumptana*, Walk., p. 1780; type lost, description un-  
 recognisable.  
 ,, *punctilineana*, Walk., p. 1780; type lost, description un-  
 recognisable.  
 ,, *cuneiferana*, Walk., p. 1780=*Cacæcia obliquana*.  
 ,, *abjectana*, Walk., p. 1781; type lost, description unrecog-  
 nisable.  
 ,, *pauculana*, Walk., p. 1781=*Tortrix leucaniana*.  
 ,, *contractana*, Walk., p. 1782; type lost, description unrecog-  
 nisable.  
 ,, *constrictana*, Walk., p. 1785; type lost, description un-  
 recognisable.



*Gobæa copiosana*, Walk., p. 1805 ; type lost, description unrecognisable.

The following descriptions, erroneously placed by Walker under various groups, refer truly to species of the *Tortricina*.

*Scopula arcuatalis*, Walk., = *Arotrophora arcuatalis*.

*Tinea admotella*, Walk., p. 485 = *Capua semiferana*.

*Gelechia intactella*, Walk., p. 652 = *Tortrix leucaniana*.

„ *ad reptella*, Walk., p. 654 = *Paramorpha ad reptella*.

*Eromene transcissella*, Walk., p. 1762 = *Arotrophora arcuatalis*.

„ *apertella* Walk., p. 1762 = *Helioscosma incongruana*.

### ADDENDUM.

#### *Holocola triangulana*.

Whilst this paper was passing through the press, I have bred the above species from the larva. Larva moderate, cylindrical, slightly thickest in middle ; whitish-grey, faintly purplish-tinged ; head and a plate on second segment ochreous-brown : it feeds in a good deal of web and refuse amongst spun shoots of *Acacia decurrens*, (*Leguminosæ*). Pupa with a transverse row of small close oblique spikes on each abdominal segment, stronger posteriorly ; lying free where the larva fed. The larva was found in August, and the imago emerged early in November.

### ON THE PLANTS OF NEW SOUTH WALES—No. III.

BY THE REV. DR. WOOLLS, D.D., F.L.S., &c.

Of the remaining orders of the Calycifloræ, eighteen are represented in Queensland, fifteen in New South Wales, and twelve in Victoria, so that including the great order Leguminosæ, we have

		Orders.		Genera.		Species.
Queensland	..	19	..	168	..	506
New South Wales		16	..	124	..	524
Victoria	..	14	..	76	..	349





Meyrick, Edward. 1881. "Descriptions of Australian Micro-Lepidoptera."  
*Proceedings of the Linnean Society of New South Wales* 6, 629–706.  
<https://doi.org/10.5962/bhl.part.11888>.

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