

represented by obscure pinkish blotches: cilia reddish-brown, tips more or less whitish. Hindwings dark fuscous, in male reddish-tinged: cilia in ♂ grey, in ♀ basal half white, with interrupted dark basal line. Undersides fuscous-grey, pink-tinged, in ♀ paler.

In general appearance very like *P. ewingii* (Westw.) but narrower-winged and without the peculiar reniform of that species.

Gouland Downs. One of each sex taken in February. Holotype (♂) and allotype (♀) in coll. Cawthron Institute.

PYRAUSTIDAE.

Scoparia pura n. sp.

♂ ♀. 21-22 mm. Head grey mixed with fuscous. Maxillary palpi grey, labial fuscous. Antennae fuscous, in ♂ shortly ciliated. Thorax dark greyish-fuscous. Abdomen grey, anal tuft ochreous. Legs grey, anterior tarsi infuscated. Forewings moderately dilated, costa arched at base, thence straight, apex rounded, termen straight, oblique; grey, strongly suffused with white on basal area and beneath costa to second line; an interrupted blackish line at base; *first line indicated by thick brownish-black posterior margining, outwardly oblique on upper half, inwardly angled at middle*; orbicular dot-like, detached, black; reniform X-shaped, black; second line irregular, indented beneath costa, incurved on lower $\frac{2}{3}$ and dentate above dorsum, white, strongly black-margined anteriorly; a marginal series of black dots, preceded by an obscure white shade: cilia fuscous-grey with a darker basal line. Hindwings greyish-fuscous, darker apically: cilia as in forewings. Female paler in all respects.

Near *S. nomeutis* Meyr., but structurally distinct in the much shorter antennal ciliations; the angled first line is also a good distinguishing character.

Common on the tableland of Mount Arthur at 4,000 ft. to 5,000 ft. in January. Holotype (♂), allotype (♀), and a series of paratypes in coll. Cawthron Institute.

Scoparia falsa n. sp.

♂ ♀. 21-24 mm. Head grey. Palpi brown, mixed with white on upper surface and white basally beneath. Antennae brown, very shortly ciliated in both sexes. Thorax grey mixed with blackish. Abdomen ochreous-grey. Legs whitish-ochreous, anterior tibiae and tarsi infuscated and annulated with ochreous. Forewings moderate, costa slightly arched, apex obtuse, termen faintly sinuate, oblique; pale brown, densely irrorated with white and with scattered blackish-brown scales; an indistinct short blackish-brown line from middle of base; first line obscure, evenly curved, white, margined on costa with brown; *a thick brownish-black discal streak from first line to reniform, margined beneath with brown*; claviform irregular, blackish, touching discal streak; reniform thick X-shaped, brownish-black, connecting with basal streak; second line obscure, white, anteriorly margined by a series of blackish dots, moderately indented beneath costa; veins interruptedly marked with blackish: cilia pale brownish mixed with white. Hindwings ochreous-grey, in ♀ fuscous tinged: cilia grey-whitish.

Belongs to *rotuella* group, but is not closely allied to any species.

A male and two females taken at Gouland Downs in February, and a male bred from moss taken from the Dun Mountains at about 2,000 ft.; the latter specimen emerged on 15th December. Holotype (♂), allotype (♀), and one paratype in coll. Cawthron Institute.

Scoparia gracilis n. sp.

♂ ♀. 16–19 mm. Head fuscous mixed with white. Palpi fuscous, white beneath basally and partially white above. Antennae fuscous, ciliations in ♂ $\frac{1}{2}$. Thorax blackish-fuscous with a white anterior median spot and margins of patagia whitish. Abdomen dark greyish-fuscous. Legs greyish-fuscous, tarsi annulated with whitish. Forewings narrow, costa almost straight, apex rounded, termen slightly rounded, oblique; *pale-brownish, irrorated with black and white*; lines white; a very irregular white-margined black band at base; *first line curved, a little oblique with a slight indentation at middle, posteriorly broadly margined on upper half with black*; claviform rather large, detached, black; an outwardly-oblique broad white fascia from costa at middle, not reaching half across wing; reniform obscurely 8-shaped, lower half white, black above; second line broadly indented beneath costa, weakly curved to just above dorsum; subterminal broad, suffused, interrupted at middle; a thin terminal line: cilia greyish-fuscous with darker basal line. Hindwings greyish-fuscous: cilia as in forewings.

Near *S. critica* Meyr., but the form of the lines is different and there are no yellow markings.

Mount Arthur Tableland, 4,000 ft. to 5,000 ft. Fairly common in December, and one specimen taken in the middle of January. Holotype (♂), allotype (♀), and a series of male paratypes in coll. Cawthron Institute.

PTEROPHORIDAE.

Platyptilia ferruginea Philp., *Trans. N.Z. Inst.*, vol. 54, p. 150.

Since describing the above species from the unique ♀ taken at the Mount Arthur Tableland the male has been added to the collection of the Cawthron Institute, a single specimen of that sex having been secured by Dr. Tillyard at Goulard Downs early in February. It agrees exactly in colour and markings with the holotype, but is smaller, having a wing-expanse of only 18 mm., as against 21 mm. in the female.

TORTRICIDAE. (See also p. 212.)

Cnephasia latomana (Meyr.), *Trans. N.Z. Inst.*, vol. 17, p. 145.

I found this species fairly common on the Mount Arthur Tableland in December, at elevations from 4,000 ft. to 4,500 ft. The type specimen was a female, and, though Mr. G. V. Hudson took both sexes on Gordon's Pyramid in 1889, the male, as far as I am aware, has not been described. In appearance the sexes differ considerably, and it may be useful to briefly indicate the differences. While the ground-colour of the female is almost pure-white, that of the male is densely irrorated with fuscous and ferruginous. The area is also much reduced, so that the space is often almost wholly taken up by the markings. In the female the markings are ochreous-tinged, but in the male they are bright ferruginous. The hindwings of the male are dark fuscous, in strong contrast to the whitish ones of the female. The general effect is to produce a whitish female and a reddish male.

Tortrix argentosa n. sp.

♂ ♀. 16–17 mm. Head, palpi, and thorax greyish-white. Antennae grey, ciliations in ♂ $\frac{3}{4}$. Abdomen ochreous-grey-whitish, anal tuft ochreous-white. Legs ochreous-white, anterior pair and spurs infuscated. Forewings

elongate, costa strongly arched, apex pointed, termen rounded, very oblique; *silvery white*; extreme edge of costa, from base to a varying point, blackish; a black dot in disc at $\frac{3}{4}$, frequently absent: cilia greyish-white. Hindwings and cilia pale greyish-white.

Near *T. indigestana* Meyr., but whiter and without any reddish suffusion in disc.

Dun Mountain, at 3,000 ft. Eight males and one female taken flying in the evening among low shrubs and herbage. Holotype (♂), allotype (♀), and a series of ♂ paratypes in coll. Cawthron Institute.

OECOPHORIDAE.

Borkhausenia pallidula n. sp.

♂. 13-14 mm. Head pale whitish-ochreous. Palpi whitish-ochreous, outwardly infuscated. Antennae whitish-ochreous, annulated with fuscous, ciliation in ♂ 1. Thorax white mixed with pale fuscous. Abdomen ochreous-whitish, basal segments white, anal tuft brighter ochreous. Legs whitish-ochreous, more or less infuscated. Forewings rather elongated, costa evenly arched, apex blunt-pointed, termen rounded, very oblique; *white, irrorated with pale fuscous; many blackish-fuscous scales, tending to form an irregular spot in disc at $\frac{3}{4}$ and a series of terminal dots*: cilia grey-whitish, fuscous-tinged apically, with a fuscous basal line. Hindwings grey-whitish, fuscous-tinged apically: cilia grey-whitish with an indistinct dark basal line.

An obscure but quite distinct form.

Goulard Downs, in February. A series of eight males beaten from undergrowth. Holotype (♂) and a series of paratypes in coll. Cawthron Institute.

GLYPHIPTERYGIDAE. (See also p. 213.)

Glyphipteryx octonaria n. sp.

♂. 11-13 mm. Head and thorax bronzy-fuscous. Palpi fuscous-black with five white bands. Antennae fuscous, clothed with grey pubescence. Abdomen fuscous. Legs greyish-fuscous, tarsi annulated with whitish. Forewings broad, posteriorly dilated, costa evenly arched, apex rounded, termen sinuate-indentured, oblique; golden bronze, more fuscous at base and on area before tornus; eight violet-white metallic costal strigae, all more or less dark-margined; first, second, and third before middle, outwardly oblique, not reaching centre of wing; fourth beyond middle, oblique below costa, thence excurved to tornus, pink on lower $\frac{3}{4}$; remaining strigae more distinctly whitish on costa and pink on lower portions; fifth outwardly oblique, joining sixth, which is transverse, and extending half across wing; seventh and eighth inwardly oblique, short; a violet-pink metallic patch on termen beneath costa and a larger one above tornus: cilia whitish, round apex bronzy-black but white opposite costal strigae. Hindwings dark fuscous, bronzy on apical half: cilia dark fuscous.

Near *G. codonias* Meyr., but a smaller species with differently arranged strigae.

Goulard Downs. Three males found on low forest herbage early in February. Holotype (♂) and two paratypes in coll. Cawthron Institute.

PLUTELLIDAE.

Orthenches similis n. sp.

♂ ♀. 14–16 mm. Head white, tinged with fuscous. Palpi fuscous, second joint with apical ring white, terminal joint mixed with white. Antennae alternately ringed with blackish-fuscous, and white interrupted with fuscous scales. Thorax greyish-fuscous with purplish-violet sheen. Abdomen greyish-fuscous, anal tuft paler. Legs white, anterior pair infuscated and all tarsi annulated with fuscous. Forewings elongate, costa evenly arched, apex rounded, termen rounded, oblique; white, thickly irrorated with brown; markings dark brown; outer margin of basal patch very strongly oblique; an outwardly-oblique thick fascia from before middle reaching half across wing, enclosing a white spot in apical portion; ternal and terminal area dark brown, interrupted by upright white fascia from tornus which unites with white apical area of costa; two or three brown spots on costa above white ternal fascia; sometimes a series of white terminal dots: cilia greyish-fuscous with dark basal line, on costa mixed with white and sometimes with subapical and ternal white spots. Hindwings greyish-fuscous, darker apically: cilia greyish-fuscous with a dark basal line.

Very similar in appearance to *O. semifasciata* Philp., but the light and dark areas in that species are more pronounced, the ground-colour being less irrorated with brown.

Common at Nelson from November to January in *Nothofagus* forest to 2,000 ft. Generally beaten from a species of *Gaultheria*. Holotype (♂), allotype (♀), and a long series of paratypes in coll. Cawthron Institute.

NYMPHALIDAE.

Danaida chrysippus petilia Stoll., *Suppl. Cramer's Papillons Exotiques*, 132, pl. 28, f. 3.

An example of this butterfly was captured in January at Nelson by Mr. W. Wastney. Mr. G. V. Hudson (*Trans. N.Z. Inst.*, vol. 40, p. 104, 1908) published the first record of the species for New Zealand, a specimen having been brought to Mr. E. C. Sherlock, who states that he saw another at the same locality, a few miles from the Thames. Mr. Hudson gives a description and a figure. The Nelson specimen, which Mr. Wastney has kindly presented to the Cawthron Institute, is evidently the Australian subspecies *petilia*, and from Mr. Hudson's figure it would appear that the Thames specimen also belongs to that form. Both specimens are females.

PLUSIIDAE.

Sericea spectans Guen., *Noct.*, vol. 3, p. 172.

A specimen of this common Australian species was captured by Mr. W. Wastney at Nelson in February, evidently a chance arrival from the Commonwealth. A short description is appended.

Expanse of wing, 88 mm. Head, thorax, and abdomen dark chocolate-brown. Forewings dark chocolate-brown, slightly ochreous-tinged on basal area and with violet metallic sheen in disc and towards dorsum; three or four irregular dark-brown fasciae near base; a double dark-brown fascia before middle; a broad dark-brown fascia beyond middle, broadly excurved on upper half to encircle a large black-ringed eye-spot; sub-terminal and terminal waved dark-brown lines. Hindwings dark chocolate-brown with a median pale-margined fascia and a ternal blackish blotch containing two bluish-white spots.

Somewhat similar in appearance to *Dasypodia selenophora* Gn., but easily distinguished, apart from the generic characters, by the violet sheen, the difference in the transverse fasciae, and the absence of the terminal series of white dots.

CRAMBIDAE.

Crambus abditus n. sp.

♂. 27 mm. Head ochreous-white. Labial palpi 4, ochreous-white. Maxillary palpi white. Antennae ochreous-white. Thorax brassy-yellow. Abdomen and legs whitish-ochreous. Forewings moderate, costa evenly arched, apex acute, termen almost straight, very oblique; brassy-yellow; *costa margined throughout with white*; a straight well-defined white median longitudinal stripe, margined with fuscous above except near base, and more narrowly beneath on basal half; some obscure white terminal streaks above median streak: cilia white. Hindwings white, faintly tinged with ochreous: cilia white.

In the acute apex of the forewings this species recalls the much larger *C. angustipennis* Zell., but the markings are altogether different.

Bred by Mr. C. Lindsay from a larva found at Otarama, Canterbury, in October. Holotype (♂) in coll. Canterbury Museum.

TORTRICIDAE.

Tortrix scruposa n. sp.

♂. 17 mm. Head greyish-white. Palpi grey, terminal segment short and bluntly pointed. Antennae grey, ciliation 1. Thorax grey, patagia brown. Abdomen (missing). Legs grey, anterior pair infuscated. Forewings strongly arched at base, thence straight to apex, apex rounded, termen rounded, oblique; *white*; *markings bronzy-brown*; basal patch indicated by an irregular fascia, projecting at middle; *two curved fasciae beyond this, second broken up into spots*; median fascia directed towards tornus, evenly dilated from costa, interrupted at $\frac{2}{3}$; *four or five interrupted irregular fasciae between median fascia and apex*: cilia greyish-white, darker round apex. Hindwings fuscous grey: cilia grey with a darker basal line.

Not readily comparable with any other *Tortrix*.

Mount Ruapehu, in January. One male taken by Mr. C. C. Fenwick, who retains the type.

Tortrix subdola n. sp.

♂. 15-16 mm. Head greyish-white, face darker. Palpi greyish-white, darker apically, second segment thickened with scales, apex truncate, terminal segment very short, hardly projecting. Antennae annulated alternately with fuscous and whitish, ciliations in ♂ $\frac{3}{4}$. Thorax fuscous-grey. Abdomen whitish-grey, anal tuft ochreous-white. Legs whitish-grey, anterior pair strongly infuscated. Forewings, costa strongly arched, apex pointed, termen rounded, very oblique; *silvery-white tinged with grey*; extreme edge of costa, for short distance basally, fuscous; median costal area more clearly white; *a speckling, consisting of groups of one to four black scales, throughout*; *a prominent black discal dot*: cilia whitish-grey with darker basal line. Hindwings and cilia greyish-white.

Very similar in appearance to *T. argentosa* Philp., but the black speckling is absent in that species. From *T. indigestana* Meyr. the structure of the palpi is a good distinguishing character.

Taken by Messrs. C. C. Fenwick and Morris N. Watt at Ruapehu in December and January. Five males were forwarded for examination. Holotype (♂) and paratypes in coll. C. C. Fenwick.

ELACHISTIDAE.

Elachista watti n. sp.

♂. 7-8½ mm. Head white, slightly mixed with pale fuscous. Palpi white. Antennae fuscous-grey. Thorax white mixed with fuscous. Abdomen greyish-fuscous, anal tuft ochreous-white. Legs ochreous-white, anterior pair infuscated. Forewings lanceolate; *metallic white, more or less infuscated, particularly on basal ¼ of costa*; a linear spot of fuscous below fold at $\frac{2}{5}$; a median fuscous streak from $\frac{3}{4}$ to near apex; both these markings usually obscure or absent: cilia pale fuscous, round apex clear white. Hindwings and cilia greyish-fuscous.

Near *E. exaula* Meyr., but the conspicuous black markings of that species are absent.

Taken by Messrs. Fenwick and Watt at Waimarino, in January. Five males were sent for examination. Holotype (♂) in coll. C. C. Fenwick.

GLYPHIPTERYGIDAE.

Simaethis albifasciata n. sp.

♂ ♀. 11-12 mm. Head and thorax bronzy-brown densely sprinkled with white. Palpi ringed with bronzy-brown and white alternately, second segment slightly tufted beneath. Antennae bronzy-brown annulated with white, *ciliations in ♂ 4*. Abdomen bronzy-brown, segmental divisions white. Legs pale brown mixed with white, anterior tarsi annulated with white. Forewings, costa slightly arched, apex rounded, termen straight, oblique; bronzy-brown mixed with blackish; a patch of white scales at base above middle; *a broad irregular band of white scales at ¼*; a small white spot on costa beyond middle giving rise to a very irregular line composed of violet and blue metallic scales mixed with white; this line is strongly excurved at middle and is there preceded by a similar but short line in disc; a broad white subterminal band of white scales, followed on the median portion by a line of metallic scales; a terminal line of white scales more or less interrupted at middle: cilia bronzy-brown with a thick black basal line and white tips at middle and tornus. In female there is a greater admixture of white. Hindwings pale bronzy-brown; a straight white fascia from termen before tornus directed towards $\frac{2}{3}$ of costa, and reaching half-way across wing; a fragmentary white fascia between this and termen: cilia as in forewings but paler and white tips inconspicuous.

Structurally only comparable with *S. marmarea* Meyr., but the prominent white subterminal band is sufficient to distinguish it, and there are several other differences.

A male and female taken in forest on the Mount Arthur Tableland track in December at an elevation of 4,000 ft.; and a female secured at Goulard Downs in February. Mr. C. C. Fenwick has a specimen captured on Mount Ruapehu in January. Holotype (♂) and allotype (♀) in coll. Cawthron Institute.

TINEIDAE.

Lindera tessallatella Blanch., *Hist. fis. y pol. d Chile, Zool.*, vol. 7, p. 105, 1852.

This well-known Australian species has now to be recorded from New Zealand. Five specimens have been taken in Nelson on dates ranging from December to June. In the Dominion Museum collection is an example which came from the collection of the late Mr. Norris, but it has no label, and no data are available. Mr. J. G. Myers has reared the species from a larva found in old sacking and rubbish at Aramoho, the moth emerging on 26th October.

In general appearance this species is very similar to the Oecophorid *Borkhausenia pseudospretella* Stt., and no doubt specimens have been frequently passed over for that species. As the publication in which Blanchard's description appeared is not easy of access to New Zealand students I here give a short description of the species.

♂ ♀. 16-34 mm. Head, palpi, and thorax ochreous. Antennae ochreous, obscurely annulated with fuscous. Abdomen and legs pale ochreous. Forewings, costa moderately and evenly arched, apex broadly rounded, termen very oblique; pale ochreous, densely covered with fuscous dots and strigulae; round apical half of costa and on dorsum the dots are larger; a prominent large spot on fold at $\frac{1}{2}$; cilia ochreous mixed with fuscous. Hindwings and cilia dull fuscous.

Mallobathra strigulata n. sp.

♂. 15-17 mm. Head dark brown, sometimes ochreous-tinged. Antennae ochreous, blotched with fuscous, ciliations in ♂ $2\frac{1}{2}$. Thorax dark bronzy-brown. Abdomen dark brown. Legs brown, anterior tarsi annulated with ochreous. Forewings, costa evenly arched, apex rounded, termen obliquely rounded, dark bronzy-brown with numerous transverse wavy ochreous bands, inseparable on apical half of wing; near base, especially on dorsal part of wing, some violet metallic scales; on dorsum at middle the bronzy-brown colouring forms a dark semicircular spot margined before and behind by a clearer area of ochreous; cilia bronzy-brown mixed with ochreous. Hindwings and cilia dark fuscous.

In general appearance near *M. crataea* Meyr., but nearly twice as large and with clearer markings.

Nelson, in forest at 2,500 ft. Not uncommon in December. Holotype (♂) and a series of paratypes in coll. Cawthron Institute.

Mallobathra fenwicki n. sp.

♂. 14 mm. Head dark brown, ochreous-tinged. Antennae dark brown, obscurely annulated with ochreous, ciliations in ♂ 3. Thorax dark purplish-brown. Abdomen rich dark brown. Legs brown, tarsi annulated with ochreous. Forewings, costa evenly arched, apex broadly rounded, termen oblique; dark shining purplish-brown with slight ochreous admixture; an obscure ochreous mark on termen before $\frac{1}{2}$ and a more prominent triangular ochreous patch before tornus; cilia concolorous with wing. Hindwings and cilia dark purplish-fuscous but less bright than forewings.

Close to *M. homolapa* Meyr., but differing chiefly in the pronounced purplish sheen.

Mount Ruapehu, in January. Two or three examples taken by Messrs. Fenwick and Watt. Holotype (♂) in coll. C. C. Fenwick.

The Tibial Strigil of the Lepidoptera.

By ALFRED PHILPOTT, F.E.S., Assistant Entomologist, Cawthron Institute, Nelson.

[Read before the Nelson Institute, 13th September, 1922; received by Editor, 21st October, 1922; issued separately, 6th June, 1924.]

Plate 18.

THE antennae of insects, being frequently clothed with hair, and often bearing dentate or pectinate processes, stand in need of some method by which they can be kept free from dust, particles of food, and other matter, which if not removed would sooner or later interfere with the carrying-out of their functions. Few insects have entirely naked legs; in almost all cases the limbs are clothed with spines, hair, setae, or scales, such armature acting as combing or brushing organs for the head, wings, and other parts of the body. For the treatment of the antennae, however, special structures have been evolved in several groups. In the ants, for instance, the apical spur of the anterior tibia and the base of the opposing first tarsal segment are armed with a row of spines, the antennae being drawn through them; in the honey-bee the first tarsal segment has, near its base, a transverse rounded notch which fulfils the same purpose. In the Coleoptera the members of the Carabidae have the anterior tarsi armed beneath with a complicated series of combs and brushes. But in the Lepidoptera alone does an antenna-cleaning apparatus appear as an ordinal character.

In the literature at my disposal I have been unable to discover any detailed description of the lepidopterous strigil. Meyrick (*Handbook of British Lepidoptera*, p. 4) says, "The anterior tibia [in Lepidoptera] is . . . furnished beneath with a median spine-like process," but does not make further reference to the structure. Sharp (*Cambridge Natural History*, vol. 6, p. 314) states that "the front tibia [in the Lepidoptera] usually possesses on its inner aspect a peculiar movable pad; this seems in some cases to be a combing-organ; it also often acts as a cover to peculiar scales." J. B. Smith (*Revision of the Deltoid Moths, Bulletin of the United States National Museum*, No. 48) describes at some length the very peculiar modifications of the legs in that group of Lepidoptera, but I have not had an opportunity of examining any species dealt with by him.

Though in this paper I treat these structures as strigils or combs for the antennae, it must be remembered that their actual use in such a connection has not been observed;* it is because the modification of the antennae and the tibial structure seem to be correlated that I adopt this provisional view of the function of the latter. It will be found that, in general, those species with the most "plumose" antennae have the most highly developed strigils; further, when the male has strongly pectinated antennae and the female simple ones, or nearly so, the former will be found to have a well-developed tibial structure, while that of the latter may be barely half the size. It may also be observed that the position and shape of the organ, together with the modification of the tibia, are such as would be suitable for the function indicated.

Except in certain instances, to be referred to, it does not appear that the study of the tibial strigil will prove of much value to the systematist.

*Since the above was written the act of passing the antennae through the strigils has several times been observed. It is not uncommon to see moths which have been put in the cyanide killing-bottle, as soon as the effects of the fumes begin to be felt, commence to comb their antennae rapidly with the strigils.