

The Butterflies and Moths
of New Zealand

A SUPPLEMENT
TO THE
BUTTERFLIES AND MOTHS
OF
NEW ZEALAND.

BY
G. V. HUDSON

WITH 10 COLOURED PLATES

New Zealand:
FERGUSON & OSBORN, LIMITED
PRINTERS AND PUBLISHERS
202 LAMBTON QUAY, WELLINGTON

1939

INTRODUCTION.

Ten years have now elapsed since the publication of my book on the Butterflies and Moths of New Zealand, and during that time about two hundred new species of Lepidoptera have been discovered in this country. Many new observations have also been made on the life histories, habits, and distribution of the species already known, but this additional information has either been published in scattered periodicals not generally accessible, or else not published at all. The present volume has been undertaken in order to bring the earlier work, as far as possible, up to date, and to rectify any errors or omissions. It is to be regarded in every respect as a supplement to the "Butterflies and Moths of New Zealand," and is intended to be used solely in conjunction with that book. For this reason both the pages and the plates in the supplement are numbered in continuation of those in the earlier work, but a separate index has been prepared for the supplement alone. It is hoped that this arrangement will enable naturalists to use the two volumes with almost the same facility as if they had been issued simultaneously.

In preparing this supplement the greatest difficulty has been experienced in dealing with the numerous very obscure species described by the late Mr. Alfred Philpott shortly before his death. These species were, in most cases, described from one or two specimens only, often in very poor condition. It was the practice of Stainton, and many other lepidopterists of his day, to abstain from describing obscure or doubtful forms until a full series was available, or at least until some facts in connection with the habits or life histories of the apparently new species had come to light, enabling its specific distinctness to be apprehended by subsequent workers without difficulty. In my opinion there is much to be said in favour of this procedure, but seeing that Mr. Philpott has named and described these doubtful forms, their omission from the present work would not have been justified. Due regard has been paid to the fact that, in most cases, Mr. Philpott's earlier views on the very difficult question of the validity of species have proved correct, and on this account every effort has been made to give the fullest possible consideration to his opinion. No described form has been dismissed as an actual synonym where the evidence adduced seemed to indicate the probability, or even the possibility, of its being entitled to specific rank.

In this book no attempt has been made to deal with the question of genitalia, but full references are given to works on this subject in so far as they relate to New Zealand Lepidoptera. In fact the present author freely admits that he is not qualified to discuss the value of characters derived from a study of the genital appendages of the male insect, never having embarked on this line of research. It may, however, be well to mention that Mr. Edward Meyrick,* one of the most experienced workers on the systematic study of the Micro-Lepidoptera of the world, expressed his conviction that the importance of genitalie investigation is overvalued at the present time. Even those not specially versed in the subject must often observe, when comparing the figures of genitalia of the same species made by different morphologists, greater discrepancies than those often adduced as sufficient to constitute reliable specific distinctions. The structures are complicated, they have three dimensions, and in preparing the subjects as microscope slides it is obviously almost impossible to arrange that they will be on view in exactly the same position, or be subjected to exactly the same treatment. Any worker with artistic experience will fully realize that diverse representations must always result, in the same way that a portrait, or a landscape, will always be differently portrayed by different artists. Again great differences in genitalia sometimes occur in well known species of Lepidoptera, and in such cases are admitted to be only varietal, or racial, in their nature. An excellent example of this is given by Dr. Jordan in his Presidential address to the Entomological Society of London for the year 1930. All the insects possessing the diverse genitalia figured by Dr. Jordan are universally admitted to belong to one species, the Pine Hawk Moth, *Hyloicus*

*Mr. Meyrick died on 31st March, 1938.

(*Sphinx*) *pinastri*. Yet in other cases much less striking differences have been taken as a reason for separating forms as species which in other respects appear to be identical. Species which are only recognisable by differences in their genitalic structure must usually be dissected before their identity can be determined, and this course is open to insuperable objections either when the habits of the living insect form the subject of our investigations, or when only a limited number of specimens of a species are available for examination. It is hoped that the foregoing remarks will be deemed sufficient to explain why only a brief notice has been given of species which are apparently solely founded on genitalic characters. References are, however, given in every case to the figures and descriptions of all New Zealand forms, so that those who are interested in these "Laboratory species" may consult the works wherein they are described.

Since my last publication extensive additions have been made to our knowledge of the distribution of Lepidoptera in New Zealand, mainly due to the labours of Messrs. Clarke, Lindsay, Commander Patterson, the late Mr. Philpott, Mr. E. S. West and others. The numerous fresh localities, which are here recorded for so many of our rarer species, are chiefly based on the extensive collections and observations made by these entomologists. Additional information on distribution has also been gained through an examination of the collection, made by the late Mr. C. C. Fenwick, now incorporated in the collection of the Dominion Museum. I have great pleasure in expressing my indebtedness to all these workers, as well as to Mr. Gilbert Archey, Auckland Museum, Dr. Oliver, Dominion Museum, Professor Speight, Canterbury Museum, and Dr. Miller, Cawthron Institute, who have allowed me free access to the invaluable collections in their charge.

Mr. E. Meyrick continued his regular help in regard to the very difficult questions relating to the identification and classification of species, and without this aid no useful supplement to my previous work could have been attempted.

G. V. HUDSON.

"Hillview," Karori,
Wellington, New Zealand.
1937.

SUPPLEMENT

BUTTERFLIES

Danaus plexippus (page 26.) The following occurrences of this fine species are subsequent to those enumerated in my previous work:—

One at Kaitaia in the autumn of 1928; one at Whangarei, Feb. 1, 1929 (W. K. Hounsell); one at Kara near Whangarei, middle of March, 1929 (Capt. D. T. Wood); a very perfect specimen taken by Max Kirkness in Gloucester Street, Wanganui, May 8, 1929. One taken by Stanley Clarke at Karori, Wellington, Jan. 23, 1930; over 100 larvae found on milkweed, in garden, Titirangi, Auckland, February, 1930, and many butterflies reared by Mr. T. Skeates.

In 1934 one specimen was taken at Napier by Mr. C. Minet in February; one specimen seen by Miss Betty Batham on February 4, at 6 p.m., in a sheltered valley on the Otago Peninsula, and one specimen taken at Petane, H.B., on March 1.

The season 1934-35, a very hot summer, was the one during which the largest number of specimens were obtained. Mr. Falla, then of the Auckland Museum, tells me.—“They were so numerous in the neighbourhood of Auckland that Mr. T. Skeates of Titirangi collected or purchased several dozen larvae and pupae. These were obtained from residents who found the insects on specimens of the swan plant, *Gomphocarpus fruticosus*. Mr. Skeates subsequently carried on breeding in a large cage and succeeded in raising three successive generations in the course of the summer and autumn. I believe that he was unfortunate enough to lose the whole stock owing to some accident or disease, but not before he had released a number in his district.” In addition two were taken at Napier, male and female, in 1935; one at Otakeho by Mr. L. G. Mackie, March 8, 1935, and one at Kilbirnie, Wellington, by Miss Wilkinson on April 1, 1935.

In 1936, one larva was found at Hokianga on February 3; one female butterfly at the Bay of Islands on February 5, and two butterflies, male and female, at Devonport on March 3.

In 1937 Mr. Skeates resumed breeding operations on a large scale, and caused living specimens to be liberated in various localities.

Dodonidia helmsi (page 30.) There is little doubt that this insect passes the winter as a young larva, possibly about half grown. The butterfly is not met with later than the second week in February, at which time the eggs must

be deposited. Larvae fully threequarters grown have been found as early as October 4. Also from Tophouse.

Erebia pluto (page 31.) Of late years several attempts have been made to substitute the specific name *merula*, Hewitson, for this well-known butterfly. The reasons for the proposed change were very fully set out by Mr. Philpott (see *Trans. N.Z. Inst.*, LIX., 481), and need not be repeated here. The name *merula* (“Blackbird”) was not adopted in my “Butterflies and Moths of New Zealand,” neither is it adopted now for the following reasons:—

(1.) The insect was named *Erebia pluto* by Fereday in 1872. It was then described as “a black butterfly found on the bare summits of the snowy mountains.” Despite the extreme brevity of this description there is no other butterfly in New Zealand to which it can possibly be applied. Hewitson’s name *merula* only dates from 1875, thus Fereday’s name *pluto* has actual priority by three years.

(2.) The name *Erebia pluto* has been in general use for over 50 years. If changed now much literature would be invalidated and unnecessary confusion would result.

(3.) The fact that this most interesting and characteristic New Zealand butterfly was named *Erebia pluto* by New Zealand’s earliest lepidopterist (R. W. Fereday) is an additional reason for its retention.

Mr. Clarke states* that *Erebia pluto* does not seem to be as plentiful on the mountains in the Manapouri—Te Anau District as at Wakatipu and to the North.

Hypolimnias bolina (page 32.) The following occurrences of this fine butterfly are subsequent to those already enumerated:—

Two male specimens taken at Coromandel by C. Curtis; one male seen by Mr. E. S. Gourlay, at Nelson, in February, 1929; one female taken at Napier in February, 1929; one female taken by Mrs. Ian Higgie at Okoia, Wanganui, on May 8, 1929; one male taken by Douglas Paul at Wanganui, May 18, 1929; one specimen seen by Mr. Crump, at Ocean Bay, in 1932; one male seen in the grounds of Scots College, Wellington, by Bruce Lambie, on April 15, 1936. Mr. Falla has kindly supplied me with the following particulars of the occurrences of this butterfly around Auckland during the autumn of 1936:—One female at Auckland, April 4; one male at Tauranga, April 6; one female Kaitaia, April 13; one female, Tauranga,

**Trans. N.Z. Inst.*, LXIII., 115.

April 16; one male, Waihopo, May 4; one male, Auckland, May 13; one male, Te Kao, May 26; one male, Great Barrier Island, May 29.

Precis villida (page 33.) In that charming little volume, "A Moth Hunter's Gossip" (1937), the author, Mr. P. B. M. Allan, gives us two figures photographed from Petiver's old book on British Butterflies, published in 1717, which unquestionably represent the upper and undersides of *Precis villida*. The specimen from which these figures were taken is stated to have been captured by Albin, on Hampstead Heath (London) and was named by him "The Hampstead Eye." It is figured in Petiver's book on the same plate as several well-known British Butterflies, including the Wall Butterfly (*Pararge megera*), and the Speckled Wood (*P. aegeria*). Attempts have been made, in recent years, to identify "The Hampstead Eye" as a variety of one of these common British species, but, as already stated, Petiver's figure is an excellent representation of *Precis villida* both as regards wing outline and markings on the upper and under surfaces. The explanation apparently now generally accepted is that Petiver made an error in the locality, and that the specimen figured as "The Hampstead Eye" was received by him with other insects collected in the Far East, which it is known he possessed. Assuming this to be the case, we have also to assume that the same error was made by Albin, and this seems rather unlikely. Albin was a contemporary of Petiver's and would surely have seen that Petiver's figure of "The Hampstead Eye" was really copied from the butterfly he captured on Hampstead Heath. As stated in my previous work (B. & M. of N.Z., p. 33), *Precis villida* was very common on the coast hills around Wellington as far north as Paekakariki (and possibly much further) during the summer of 1886-1887, and stray specimens have been taken in New Zealand, at odd times, since then. Nearly all those I captured in 1886-1887 were in poor condition, and their sudden appearance at that time can only be attributed to an extensive migration from Australia, where the butterfly is extremely common. On the wing *Precis villida* is strikingly similar to *Vanessa cardui*, being timid in habit and a very rapid flier. It also clearly shares with *Vanessa cardui* a strong migratory instinct. Thus it seems to me quite possible that, over 200 years ago, *P. villida* might have had a much more extensive geographical range than now, and it may well be a true record that the butterfly was captured on Hampstead Heath, early in the eighteenth century, as stated by Albin and Petiver. Both are reputed to have been careful and trustworthy observers in their day, and it is evident that Stephens was of this opinion when he named "The Hampstead Eye" *Cynthia hampstediensis* in 1828.

The above should be substituted for the concluding paragraph on *Precis villida* (pages 33 and 34.)

Mr. J. T. Salmon, of the Dominion Museum, has kindly informed me that a specimen of this butterfly was captured

at Papaitonga, presumably by the late A. P. Buller, in April, 1896.

Vanessa gonerilla (page 34.) On several occasions I have seen the females depositing their eggs on nettles towards the end of April, and have found the egg on the nettle leaf after observation. It is, perhaps, doubtful if a larva resulted, whether it would succeed in getting through the winter. Such eggs are very likely infertile, as most of the other vanessids which hibernate, do not pair until the spring.

Vanessa cardui (page 36.) On October 2, 1927, and October 20, 1936, I observed very wasted specimens of this species sucking honey from wallflowers and daisies in my garden at Karori. These individuals may possibly have hibernated in New Zealand, although in England *Vanessa cardui* does not hibernate, and is stated to be unable to survive the winter. If not hibernated the butterflies must have been migrants from Australia.

Chrysophanus salustius (page 36.) The larva of this species escapes from the egg by eating a large, rather irregular, round hole out of the crown of the eggshell. It does not devour the rest of the shell, which remains attached to the underside of the leaf of the foodplant, where it is very conspicuous. On February 22nd, 1938, quite a number of these eggshells were observed with the recently emerged larva close by feeding on the fleshy portion of the leaf.

Lycaena labradus (page 40.) The following notes on the preparatory stages of this butterfly are taken from a paper by Mr. S. Lindsay in *Records of Canterbury Museum*, IV., 5, 345.

Mature larva, length 10mm., greatest breadth 4mm., flattened ventrally, head very small, retracted under thorax; general form like a woodlouse. *Colour*.—Bright green, dorsal and lateral stripe pale grey. *Body surface* with few weak hairs, sixteen legs. *Food plant*—*Carmichaelia subulata*, prostrate form. *Locality*—Birdling's Flat, January 26, 1930.

Young larva, length 5mm., greatest breadth 2½mm.; differs from adult in being covered with short, weak hairs; body segments more constricted at joints, and grey dorsal line with central dark green streak. *Locality*—Nelson. *Food plant*—Small clover (*Medicago lupulina*). E. S. Gourlay, August 2, 1930.

Pupa, 7mm. long, stout, pale greyish fuscous, covered with numerous minute, pale fuscous, irregular spots, dorsal and lateral line of black spots, spiracles black, attached posteriorly by silk pad. ♂ Imago emerged February 26, 1930.

Family PIERIDAE.

Eyes glabrous. Anterior legs fully developed; posterior tibiae without middle-spurs. Forewings with veins 7, 8, and 9 stalked or coincident. Hindwings with or without praecostal spur.

A family of considerable extent, generally distributed, but more numerous in tropical regions. The species are of moderate or large size, usually coloured with white, black, yellow, and sometimes red.

Egg long, subcylindrical ribbed. Larva rather elongate, somewhat attenuated at extremities, usually with more or less close short hairs. Pupa with head more or less pointed, attached by tail and a central belt of silk.

Genus.—PIERIS, Schrank.

Club of antennae abrupt. Forewings with vein 6 out of 8, 7 out of 8 near apex or absent, 9 absent, 10 separate.

A large genus of nearly universal distribution, formerly absent from New Zealand, but now represented by a single species introduced by man.

PIERIS RAPAE.

(*Pieris rapae*, Linn. 1758).

THE SMALL WHITE BUTTERFLY.

(Plate LXII., fig. 7♂, 27♀. Plate LIV., fig. 24 larva, 25 pupa.)

This well-known European insect was first reported in New Zealand by Mr. E. S. West of Napier in the Entomologist's Monthly Magazine for October, 1930, page 224. Mr. F. D. Logan detected the first example, a female, over the flower-beds of a bowling green at the north end of Napier on March 15, 1930. Five days later, on March 20, Mr. West himself captured a second specimen, a male, in the gardens of the Boys' High School, at a distance of nearly three miles from the locality of the first capture. Both were in perfect condition, apparently freshly emerged. Several keen observers, including Dr. P. Marshall, state that they observed the insect in New Zealand some time earlier but, in the absence of any published data, no definite particulars regarding its appearance prior to 1930 can be given.

In commenting on this note the editor of the Entomologist's Monthly Magazine, Commander Walker, stated that the butterfly was completely naturalized throughout Canada and the United States, having been first observed at Quebec in 1860 and has since 1897 extended its range to the Hawaiian Islands, having presumably been imported with cabbages from California. He considers that the specimens taken at Napier were probably the offspring of some butterfly which was conveyed by a ship from Hawaii to New Zealand. Seeing that no more reasonable explanation of its arrival in New Zealand has been suggested, Commander Walker's theory must at any rate be accepted in the meantime.

The following account of this butterfly is taken from Mr. Frohawk's latest book on British Butterflies (December, 1934).

“**HAUNTS AND DISTRIBUTION.** The Small White is one of the most abundant of the British butterflies. Except for the Shetlands and the Hebrides, it occurs everywhere throughout Britain. Abroad its range extends

through Europe and Asia to Japan, and it is common over the whole of temperate America.

“Being a migratory species like the Large White, in some years vast flights invade our shores from abroad; at times the swarms are so dense as to obscure the sun, and resemble snowstorms, also vessels at sea are completely covered by them. Upon reaching the coast they spread inland over the country. Consequently, owing to such immigrations, it is much more abundant in some years than in others. It is to be met with everywhere, in fields, gardens, lanes, woods and open downs; it also frequents the largest towns.

“The Small White generally resorts to white flowers and white or variegated foliage, for the purpose of resting for the night and for alighting during dull weather. On August 19th of one year, between 10 and 11 a.m., I found one at rest on an unexpanded blossom of a white Everlasting Pea, which it very closely resembled both in form and colour; the whole day being dull and sunless, it remained motionless until the sun appeared at noon on the following day, when it flew off. During the same month, on four consecutive evenings, I observed another specimen visit a bed of crimson Petunias, with the exception of one plant with white flowers, which the butterfly carefully selected each evening to rest upon for the night; it chose one of the white unexpanded blossoms to settle upon, and as soon as it had alighted with closed wings, it became hardly distinguishable.

“**TIME OF APPEARANCE.** The Small White is the first butterfly to emerge from the chrysalis in early spring. In exceptional cases during a continuance of mild weather, it has made its appearance on the wing as early as February, occasionally in March; but the normal time for its first occurrence is during the first or second week in April, according to the mildness of the season. It is fully out in May, when the first eggs are laid; these produce the second brood towards the end of June and in July; in fine warm summers these again in turn lay their eggs, which result in a third brood at the end of August and in September. The butterflies of this late emergence remain on the wing until the middle of October and occasionally as late as the end of that month. The offspring of the autumn brood pupate and remain in that state throughout the winter. During very warm weather the stages are rapidly passed through, and three broods are produced during the year; but in cold summers only two broods occur.

“**HIBERNATION.** The Small White hibernates in the pupal state, which occupies from six to eight months.

“**EGG.** The eggs are deposited singly on the under-surface of the leaves, and usually not more than one on a leaf. The egg stands erect, is of an elongated conical form, a little convex just below the summit, fullest about the middle, and slightly less near the base, which is firmly attached to the leaf. It has twelve longitudinal keels, with the intervening spaces between the keels delicately ribbed transversely. The colour when first laid is a very pale

yellowish-green-white; in twenty-four hours it becomes deeper in tone, inclining to primrose-yellow. The egg stage lasts from three days to a week, according to the temperature. In very warm weather the eggs hatch when three days old.

"*LARVA*. The young larva remains upon the egg for about two hours to feed on the shell, which forms its first meal. It then moves on to the leaf and eats a circular hole in the cuticle of one side, close to the egg site; it turns round and rests in a straight position and generally about its own length from the hole, with its head furthest away. After resting for a short time it returns to the same spot and again feeds and quickly eats through the whole substance of the leaf, if young and tender; after a few meals taken from the same spot it commences at a fresh place, each hole increasing in size, until the leaf is perforated in many places.

"The larva grows rapidly, and after moulting four times it attains full growth when about twenty days old; it then measures from 23 mm. to 25 mm. in length. The body is cylindrical, being only slightly tapered at the first and last segments. The head is rather smaller than the first segment. The ground colour is pale green, darkest above and palest below, which is whitish-green. Along the centre of the back is a yellowish line extending from the head to the last segment. Down each side is a very pale, indistinct spiracular line, on which is situated a series of bright gamboge-yellow marks, one on the second and third segments, and two on each of the other eight segments; the last is without any. The spiracles are flesh-coloured outlined by black. The entire surface is thickly sprinkled with small black points, varying in size, some extremely small; each emits a very fine, short, pale-coloured hair. The hairs are longer near each extremity and below the spiracular line. The head is green and sprinkled with points and hairs similar to those on the body; the eye spots are black. The larval state occupies twenty days.

"*PUPA*. The pupa is attached by a fine silken cincture round the middle, and by the cremastral hooks to a pad of silk.

"The normal sites for pupation are under copings on walls, ledges of sheds, palings and buildings generally. The colouring of the pupa, which is highly sensitive to backgrounds, usually harmonises with its surroundings. The pupae resulting from the spring parents are frequently attached to the leaves of the food plants, when they are invariably green, rendering them difficult to detect.

"The colour varies greatly in different specimens and is more or less in harmony with the surroundings; it ranges from cream-white, buff, pale drab, to dull grey or dusky. In other specimens it varies from pale ochreous to green. Numerous black dots are scattered over the surface of the pupa, and along the beak of the head is a conspicuous black streak.

"The pupa averages 19 mm. long. The head has a frontal beak; the thorax has a strongly-angulated dorsal

keel; the abdomen terminates in a long cremaster provided with hooks; and along the ventral surface the wings form a slight swelling, otherwise the outline is almost straight. The pupal state of those that hibernate lasts from six to eight months.

"*IMAGO*. The average expanse of the wings is 50 mm., but the Small White varies in size; small specimens sometimes measure only 38 mm. and large ones, as much as 57 mm.

"There is a distinctive sexual difference both in colouring and in markings.

"*Male*. Glaucaous-white; the apex of the fore-wing is black or grey; there is a single black spot near the middle of the wing, and the hind-wing has a black spot on the costa; the base of all the wings is powdered with black and grey scales, and there is grey along the costa of the fore-wing.

"*Female*. Creamy-white to yellowish-buff; the apex of the fore-wing is black or grey; there are two black spots, one as in the male, the other near, and sometimes united to, the club-shaped dash along the inner margin. The hind-wing has the costal spot similar to that of the male; the base of the wings are suffused with grey, mostly on the fore-wings.

"*Underside*. (Both sexes). Both sexes are similar on the under-side. The apex of the fore-wing and the whole of the hind-wing varying from pale ochreous-yellow to light lemon-yellow, more or less dusted with grey, especially along the lower half of the discal cell. The fore-wing is white, except for the tip, with two black spots.

"*LIFE OF IMAGO*. This butterfly lives for about twenty days."

It is almost needless to point out that in New Zealand the butterfly has increased its numbers with prodigious rapidity. I am much indebted to Mr. J. Muggeridge, Government Entomologist, for supplying me with the following details regarding the spread of the insect throughout the country:—

1930. Napier-Hastings-Greenmeadows.

1931-32.—It was found in Wellington, Palmerston North, Taumarunui, Te Puke and in the South Island it was reported from Timaru.

1932-33.—It had spread over Taranaki, through the Waikato, and was found as far north as Auckland. In the South Island, in addition to Timaru it was reported from Christchurch and vicinity, and also from near Blenheim.

1933-34.—In the North Island it had spread north to Helensville. In the South Island it was reported from parts of Marlborough. It was also reported from near Greymouth, and certainly it had spread over a large part of the Canterbury Plains.

1934-35.—It could be found practically anywhere in the North Island, while in the South Island it was found as far south as Roxburgh and places south of Dunedin.

1935-36.—Invasion of New Zealand completed.

In the *New Zealand Journal of Agriculture* for Aug. 20, 1935, p. 109, Mr. Muggeridge informs us that the pupal parasite (*Pteromalus puparum*), introduced by the Department of Agriculture for the control of this destructive insect, has proved very effective in the Hawke's Bay and Manawatu Districts. Large numbers of the larval parasite (*Apanteles glomeratus*) have also been liberated, but up to the present this species has played no part in the control of the butterfly though, of course, it may do so later.

Specimens taken at Masterton in September, 1936, and kindly given to me by Mr. A. H. Ahrens, agree with the spring form of the insect as described by Messrs. Frohawk and South. Specimens taken in October and later on in the season agree with descriptions given of the summer brood. From this it appears probable that there may be as many as four broods of the insect during an average New Zealand summer. The butterfly is on the wing from about the first week in August until the middle of May, and an example of *Pieris rapae* was actually observed flying at Rona Bay, Wellington, on June 24, 1938.

Family SPHINGIDAE.

Deilephila celerio (page 42.) I find that a specimen of this very rare species was taken by Archdeacon Monaghan at Horsley Downs, North Canterbury.

Family ARCTIADAE.

Metacrias huttoni (page 43.) In December, 1932, Mr. E. S. West discovered this species on the Ruahine Mountains, at an elevation of between 4,000 and 5,000 feet above sea-level. Although a hairy caterpillar, presumably the larva of a *Metacrias*, had been found once or twice on the Tararua, Mr. West was the first to actually capture any species of *Metacrias* in the North Island. Since 1932 he has revisited the locality many times, and has succeeded in finding quite a number of the larvae, from which a good series of both sexes have been reared. On the Ruahines the larvae were taken on *Coriaria lurida* and *Senecio latifolius*, but when the supply of these food plants ran out sow-thistle was substituted with success. Subsequently Mr. West found the larva on *Raoulia australis*, so that it is evidently rather an indiscriminate feeder. From observations extending over several seasons, Mr. West finds that the larvae hibernate, usually when quite small, resume feeding in October, and give rise to moths in December. A second generation of larvae is produced at midsummer, giving rise to moths about mid-March; these in turn deposit eggs in the autumn. The young larvae from the autumnal eggs hibernate.

Mr. C. E. Clarke records *Metacrias huttoni* from Taki-timo Mountains and Mararoa River (South Island). Mr. S. Lindsay reports it from Jack's Pass (Hanmer), Mount Grey and Upper Rakaia.

Metacrias erichrysa (page 43.) Specimens of this very local insect have been taken by Mr. Lawford White

at the head of the Rakaia River, and by Mr. R. C. Cooper at the head of the Waimakariri. Mr. S. Lindsay reports it from Goat Pass near Arthur's Pass, and Mr. C. E. Clarke from Mount Kemp and Kepler Range, Te Anau District.

Metacrias strategica (page 44.) Also from Broken River and Oreti River.

Celama parvitis (page 44.) Also from Nelson, Price's Valley Bush, Banks Peninsula, and Lake Te Anau.

Nyctemera annulata (page 45.) The larva feeds freely on greenhouse cinerearias and is sometimes very destructive. Mr. L. A. Hay has also found it feeding on common lettuce, but the benefit it confers in checking ragwort more than compensates for these minor depredations.

Family NOCTUIDAE.

Sub-family CARADRINIDES.

Bityla defigurata (page 76. Plate LIV., fig. 21 larva.) The length of the fullgrown larva is about 1½ inches. Cylindrical with slightly sloping posterior segments. Head deep blackish-brown, with several whitish dots on crown. Body dark greenish-brown slightly mottled and striped with paler brown, especially on back of thoracic segments; a broad ochreous-white lateral line encompassing a much finer brown line, the fine line more or less faintly margined with pinkish-ochreous; an interrupted black dorsal line, much stronger on posterior segments; a subdorsal series of dull red spots, one spot on the side of each segment; a conspicuous series of whitish dots above legs, much fainter on segments without legs. Legs and prolegs dull greenish-brown. Foodplant *Muehlenbeckia*. Larva full-grown about December.

This larva is apparently subject to some variations, and in some individuals the cream-coloured lateral line is not apparent. The dull greenish-brown ground colour and series of rusty-red subdorsal spots are very characteristic.

The pupa is subterranean.

Bityla pallida (page 76. Plate X., fig. 10, and Plate LV., fig. 2.) The last named figure is taken from a specimen of this very rare insect, captured by Dr. Arthur Clark, at Napier, in November, 1933, and kindly given to me. All the markings are very much more distinct than in the original type specimen, the recent capture being clearly in much fresher condition. The basal, first, and second lines consist of clear brownish-black lunate marks, almost separated where they cross the veins; the claviform and orbicular are rather small, but clearly outlined in blackish-brown; the median shade is very pale brown, but quite distinct; beyond the second line the fore-wing is clear cream colour. The hind-wings are pearly-white, with the veins suffusedly marked in pale brown, and the terminal area is slightly clouded with pale brown.

Cosmodes elegans (page 77.) Also from Pitt Island (Chathams).

Sub-family AGROTIDES.

Genus.—ECTOPATRIA, Hampson.

Proboscis fully developed; palpi porrect, extending to well beyond the frons, the 2nd joint fringed with hair, the 3rd moderate; frons with slight vertical ridges; eyes smooth; antennae of male ciliated; head and thorax clothed with hair and scales, the latter with slight tufts behind tegulae and on metathorax; hind tibiae with one to three spines between the spurs. Fore-wing with vein 3 from before angle of cell; 5 from above angle; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind-wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle.

Represented by one species only.

ECTOPATRIA ASPERA.

(*Ectopatria aspera*, Walk., Cat. xi., 601; *E. provida*, ib., xv., 1737; *E. canescens*, ib., xxxiii., 757; *Ectopatria aspera*, Hampson, Cat. Lep. Phal. B.M., iv., 654, pl. lxxvii., 27; Philp., Trans. N.Z. Inst., lix., 482.)

(Plate LV., fig. 30 ♂.)

Over seventy years ago Walker described a moth from Auckland, under the name of *Ectopatria provida*, and seven years later he named another Auckland specimen of the same species *E. canescens*. Both these names are, however, synonyms of *E. aspera*, an Australian species, described in 1857. Apparently no specimens of *E. aspera* have been taken in New Zealand since the Auckland examples were found, but during the summer of 1927-1928 the species was re-discovered at Nelson by Messrs. Philpott and Gourlay.

The expansion of the wings is $1\frac{1}{2}$ inches (36-38 mm.) The fore-wings are dull bluish-grey, very faintly and sparsely speckled with white; the basal and first lines are very indistinct; the orbicular is small oval; the claviform elongate, both indistinct; the reniform faintly outlined in blackish, its lower portion somewhat dilated; second line, obscure, dentate, with a few of the dentations faintly marked in blackish; a pale wavy subterminal line; veins 4, 5 and 6 finely marked in black between second and subterminal lines; a series of black terminal dots; the cilia are whitish, broadly barred with blackish-grey. The hind-wings are pale grey, becoming dark grey on apex and termen in male, wholly dark grey in female; the cilia are white, with a dusky line.

The perfect insect appears from October till March.

Described and figured from a specimen kindly given to me by Mr. Philpott.

Euxoa radians (page 47.) Also from Lake Manapouri.**Euxoa admirationis** (page 47.) Also from Birdlings Flat. Common in Te Anau-Manapouri District.**Agrotis ypsilon** (page 48.) The fullgrown larva of this species is figured on Plate LIII., fig. 16.**Agrotis spina** (page 48.) Also from Titahi Bay, Dunedin, and Te Anau District.**Agrotis innominata** (page 48.) Also from Napier, Paekakariki (in May), and Milford Sound.**Graphiphora compta** (page 48.) Also from Whangarei and Te Anau.

Sub-family POLIADES.

Austramathes purpurea (page 49.) Also from Puketitiri, Hawke's Bay, and Takitimo Mountains.**Andesia pessota** (page 49.) Has also occurred at Stephens Island, Porter's Pass, Cave Creek, Broken River, Lumsden, Garston and Takitimo Mountains.**Homohadena fortis** (page 49.) Also from Price's Bush, Porter's Pass, Arthur's Pass, Macetown, McKinnon's Pass and Pitt Island (Chathams).

Sub-family MELANCHRIDES.

Ichneutica dione (page 50.) Has also occurred on the mountains around Lake Ohau, Mount Earnslaw, and Kepler Mountains.**Ichneutica ceraunias** (page 50.) Also from Waiouru, Jack's Pass (Hanmer), Mount Earnslaw, and mountains around Lakes Ohau and Te Anau.**Ichneutica lindsayi** (page 50.) Apparently locally common on Flat Top mountain, Lake Manapouri.**Ichneutica cana** (page 50.) Also from Arthur's Pass and Ben Lomond (3,000 feet).**Ichneutica marmorata** (page 51.) Also from Waiouru, Waimarino, Ruapehu, Tongariro, Arthur's Pass, Mount Cook, and mountains around Lake Ohau.**Ichneutica nervosa** (page 51.) This species has since occurred on the Mount Arthur Tableland, at about 4,000 feet and on the mountains around Lake Ohau. Also on Ben Lomond (Lake Wakatipu), Arthur River and Milford Track.**Leucania purdii** (page 52.) A more detailed account of the life history of this species is given by Mr. A. V. Chappell in Trans. N.Z. Inst., LX., 263. This species also occurs on Mount Ruapehu, at Ohakune, Levin, Mount Arthur, Jack's Pass, Arthur's Pass, Waiho Gorge and Milford Track.**Leucania acontistis** (page 52.) Also from Waiouru (North Island) and from Jack's Pass, Mount Cook, Alexandra, Lumsden, Humboldt Range (Lake Wakatipu), and Te Anau (South Island).**Leucania unica** (page 52.) Apparently generally distributed throughout the South Island.**Leucania toroneura** (page 52.) Also from Christchurch, Lake Tekapo, Mount Cook, Lake Ohau, Lumsden, Macetown and Te Anau.**Leucania phaula** (page 53.) Also from Taupo, Waimarino, Waiouru, and Lake Te Anau.**Leucania alopa** (page 53.) Also from Waiho Gorge and Te Anau-Manapouri District.**Leucania blenheimensis** (page 53.) According to Mr. A. V. Chappell (Trans. N.Z. Inst., LX., 559) the larva is pale yellowish-brown, with pale dorsal and subdorsal lines, and a broad dark brown line above creamy lateral line; ventral surface same as upper surfaces. It is nocturnal in habit. The foodplant is New Zealand flax (*Phormium tenax*). The very young larvae ate grass (*Bromus unio-*

loides) readily, but would not eat *Phormium*. Larvae obtained in June.

This species also occurs at Pukeatua Bush, Lake Coleridge, Waipori, Waiho Gorge, and McKinnon Pass.

Leucania semivittata (page 53.) Also from Waimarino, Lowry Bay (Wellington), Mount Cook, Waiho Gorge, and Te Anau-Manapouri District.

Leucania sulcana (page 53. Plate LIII., fig. 1 larva.) The figure is taken from a larva just before the last moult. An additional foodplant is sedge (*Gahnia setifolia*.) This species also occurs at Ohakune, Days Bay (Wellington), Lake Wakatipu, Lake Te Anau, and Stewart Island.

Leucania stulta (page 54.) The reference to the North Island locality should be deleted. See remarks under *Leucania paraxysta* below.

LEUCANIA PARAXYSTA.

(*Leucania paraxysta*, Meyr., Trans. N.Z. Inst., lx., 483.)

(Plate LV., fig. 25 ♂; 26 ♀.)

This bright-looking species has occurred fairly commonly at Waiouru and Waimarino at elevations of about 2,800 feet above sea-level. It is probably generally distributed over the central plateau of the North Island.

The expansion of the wings of the male is 1½ inches; of the female 1¼ inches (36-37 mm.) The fore-wings are pale brownish-ochreous, paler in the female; the veins are finely marked in blackish-grey, blacker towards termen; there are slender whitish streaks along upper and lower margins of cell; a fine brown streak above lower of these expanded to fill space between veins 4 and 5 to termen; in male wedged shaped brownish marks resting on termen between veins 5 8, in female less distinct; a narrow brownish streak between veins 3 and 4 from near origin to termen; a narrow brown streak along fold from base to middle becoming broader and more cloudy from middle to termen; *no black dots*; the cilia are pale brownish-ochreous, darker in male. The hind-wings are greyish-ochreous with paler cilia.

There is slight variation in the distinctness of some of the smaller markings.

Closely allied to *Leucania stulta*, from which it differs in its smaller size, brighter colouring, and more distinctly marked veins.

The perfect insect appears in December and January, and is attracted by sugar and light.

ALETIA LOREYI.

(*Aletia loreyi*, Dup., Lep. Fr., 7, 81, pl. 105, 7; Hamps., Cat., 5, 492.)

(Plate LXII., fig. 19 ♂.)

A single specimen of this very wide-ranging species was captured by Mr. C. Lindsay at Spirits Bay, North Auckland.

The expansion of the wings is nearly 1½ inches (35 mm.) The fore-wings are elongate-oblong with the termen oblique; *pale brownish-ochreous with dark ochreous-brown markings*; an elongate spot below vein 1 near base; *a strong longitudinal median line from base to the origin of veins 4, 5 and 6; a small white spot at the end of this*; other veins finely marked in dark brown with darker streaks between them, especially towards termen. Hind-wings white with veins marked in very pale brown; five

black dots on termen towards apex. The head and thorax are warm brownish-ochreous with a darker transverse line on anterior portion of thorax. Abdomen whitish, becoming very pale brown towards apex.

The perfect insect appears in February.

Described and figured from the New Zealand specimen now in the Dominion Museum.

This species occurs in England and Ireland as a rare immigrant only. It is also found in South Europe, South Asia, Africa, Australia, Fiji, and Kermadec Islands.*

Aletia micrasta (page 54.) This description, and the figure given on Plate VII., fig. 13, both refer to the female insect. The expansion of the wings of the male is slightly over 1¼ inches (34 mm.) Relatively shorter-winged than the female with the antennae flatly dentate, very shortly ciliated. The fore-wings are darker and less reddish in tint than in the female and the hind-wings rather dark greyish-brown.

Aletia fibrata (page 55.) Also from Jack's Pass, (Hanmer.)

Aletia nullifera (page 55.) Also from Otira River; Arthur's Pass, 3,000 feet, Mount Cook, and Te Anau-Manapouri District.

Aletia griseipennis (page 55.) Also from Jack's Pass (Hanmer), Mount Cook, and very common in the Te Anau-Manapouri District.

Aletia temenaula (page 56.) According to Mr. Lindsay (Records of Canterbury Museum, iv., 345), the adult larva is about 1 inch in length (25 mm.), elongate, smooth, ochreous; with numerous pale brownish-black longitudinal stripes; sixteen legs. Foodplant—Tussock grass (*Poa caespitosa*). The larva was found at Birdling's Flat on January 26 and the moth emerged on February 28. Occurs also at Omakau, Nevis, Luggate and Loburn.

Aletia falsidica (page 56.) Also from Arthur's Pass.

Aletia cuneata (page 56.) Also from Waiouru, Mount Whakaari (Kaikouras), Mount Cook, Freehold Range, Lake Ohau common, Bold Peak (Lake Wakatipu), and Mount Kemp.

ALETIA SAPIENS.

(*Aletia sapiens*, Meyr., Trans. N.Z. Inst., lx., 484.)

(Plate LV., fig. 10 ♂.)

This species has occurred at Waiouru and at Waimarino on the central plateau of the North Island.

The expansion of the wings is 1¼ inches (37 mm.). It differs from *Leucania phaula* in its much shorter and broader wings, and in the warmer ground colour of the fore-wings, which are a deep rich brown instead of very dull ochreous-brown. Its broader wings also distinguishes it from *Aletia micrasta*.

The perfect insect appears in December. It is attracted by sugar.

*Meyrick: Revised Handbook of British Lepidoptera, 140.

ALETIA EUCROSSA.

(Aletia eucrossa, Meyr., Trans. N.Z. Inst., lviii., 313.)

(Plate LV., fig. 28 ♀.)

This very obscure, but distinct species, was discovered by Phillip Shepherd at Waiuku.

The expansion of the wings is $1\frac{3}{4}$ inches (36 mm.). The fore-wings are very pale grey with darker discal and subterminal areas; a series of very oblique blackish marks on costa; traces of very jagged first line; orbicular obscure, white, blackish-edged with shaded centre; claviform very obscure blackish-margined; reniform indistinct, somewhat rectangular, with three clear white dots around junction of veins 3 and 4; veins in disc irregularly marked in black and less distinctly on subterminal area; second line indistinct, but very acutely dentate on veins; cilia dull white barred with blackish-grey. The hind-wings are greyish-ochreous, paler towards body; cilia whitish with dusky line. The head and thorax are grey; the abdomen greyish-ochreous.

The perfect insect appears in March.

ALETIA LACUSTRIS.

(Aletia lacustris, Meyr., Trans. Royal Soc., N.Z., lxiv., 151.)

(Plate LV., fig. 27 ♂.)

This species was discovered by Mr. Lawford White at Lake Rotoroa, near Nelson.

The expansion of the wings is slightly over $1\frac{1}{2}$ inches (40 mm.). The fore-wings are somewhat elongate-triangular, grey with faint olive-greenish tinge; first and second lines wavy-dentate, interruptedly edged internally with blackish, sometimes indistinct; median shade obscure, darker grey, widely interrupted in disc; orbicular rounded; reniform transverse-oblong, light grey, obscurely edged with whitish laterally; subterminal line obscure, whitish, interrupted; a terminal series of blackish marks: cilia dark grey mixed with whitish. The hind-wings are grey becoming dark grey posteriorly; cilia grey-whitish, a more or less distinct grey sub basal shade.

In general appearance very like *Aletia inconstans* but rather stouter, broader winged, with larger reniform, and less tinged with brown.

The perfect insect appears in March and is attracted by light.

Aletia inconstans (page 57.) Also from Stephen's Island, Ure River (Marlborough), Jack's Pass (Hanmer), Porter's Pass, and Dunedin.

ALETIA MITIS.

(Agrotis mitis, Butl., Proc. Zool. Soc., London, 1877, 383, pl. xlii., 5; Aletia gourlayi, Philp., Trans. N.Z. Inst., liii., 337; Aletia mitis, ib., lviii., 359 and lix., 483.)

(Plate XLIX., fig. 31 ♂.)

Originally discovered by Mr. John D. Enys at Castle Hill, West Coast Road, this undoubtedly distinct species seems to have been unrecognised by New Zealand collectors since Butler's description was written over half a century ago. In recent years, however, further specimens have been taken, on flowers of Dracophyllum, by Mr. E. S. Gourlay, at Arthur's Pass; also by Dr. A. Jefferis Turner in the same locality, and by Mr. S. Lindsay at Castle Hill.

The description of *Aletia gourlayi* given on page 57 may be taken as applicable to *A. mitis* except that many specimens are slightly darker in colour and less blue than

the figure and description of that form would indicate. The general silvery-grey colour, and the narrow dark median band of the fore-wings may, however, be taken as characteristic of the species.

The perfect insect appears in February. It is apparently rare, and evidently subalpine in its habitat.

Aletia munda (page 57.) Also from Puketitiri and Waipawa River, Ruahine Mountains, 2,000 feet, Mount Grey (South Island.)

Aletia cucullina (page 58.) Also from Mount Cook.

Aletia longstaffi (page 58.) Also from Takitimo Mountains.

Aletia obsecrata (page 58.) Also from Lake Hawea, Paradise and McKinnon's Pass.

Aletia parmata (page 58.) Also from Jack's Pass.

Aletia empyrea (page 59.) Also from Mount Cook, Minaret Peaks, Lake Wanaka, and Flat Top Mountain, Lake Manapouri.

Physetica caerulea (page 59.) Occurs also at Pohangina (North Island) and at Clarence Bridge, Jack's Pass (Hanmer), Mount Cook, and Te Anau-Manapouri District (South Island).

Dipaustica epiatra (page 59.) Also from Waiouru, Waipukurau, and McKinnon Pass.

Persectania disjungens (page 60.) Apparently generally distributed throughout New Zealand except north of the central plateau of the North Island.

Persectania steropastis (page 60.) Also from Whangarei, Maungaturoto, Ruapehu, Waiouru, Wellington, Ure River, Marlborough, Arthur's Pass, and the Lake Te Anau District.

Persectania composita (page 61.) A figure of a rather darkly coloured specimen of the larva of this very common insect is given on Plate LIII., fig. 28.

Persectania similis (page 61.) Also from Waimarino; several at sugar.

A figure of the female of this species is given on Plate LV., fig. 22.

Persectania arotis (page 61.) Some specimens in the Dominion Museum collection, taken by Mr. Fenwick at Dunedin, have the fore-wings much browner than usual, and the hind-wings very dark grey. In other respects they appear identical. Also occurs at Lake Te Anau and Takitimo mountains.

Persectania atristriga (page 61.) Apparently generally distributed.

Persectania propria (page 62.) Occurs at Waiouru, and Puketitiri (North Island). Generally distributed in the South Island.

Erana graminosa (page 62.) Also from Whangarei, Waiho Gorge and Te Anau.

Melanchra pictula (page 63.) Also from Skelmorlie Peak (Te Anau) and McKinnon's Pass.

Melanchra rhodopleura (page 63.) Also from Titahi Bay and Amberley.

Melanchra exquisita (page 63.) Also from Fairlie.

Melanchra octans (page 64.) Also from Takitimo mountains in October. A rare species attached to *Edwardia microphylla*. (C. E. Clarke).

Melanchra maya (page 64.) Also from Arthur's Pass, Mount Cook, Milford Track, and Te Anau District.

Melanchra xanthogramma (page 65). (Plate LIV., fig. 10 larva.)

See special note following description of *Melanchra scutata*.

The egg is about $\frac{3}{4}$ mm. in diameter. It is of the usual noctuid sculpture, with shorter and longer longitudinal ribs alternating. Colour pale bluish-white. Eggs deposited middle of October.

The eggs hatched 13 days later. The newly emerged larva closely resembles that of *M. ochthistis* (Plate LIV., fig. 17), but is darker in colour. The whole of the eggshell is eaten on emergence.

The length of the larva when nearly full-grown is about 1 inch. Cylindrical, tapering towards head, with usual steep hind-slope; general colour dull orange-ochreous more or less suffused with green, markings very indefinite and variable in intensity; an interrupted speckled blackish dorsal line; a broad blackish speckled subdorsal area, with broken irregular black line towards back, having a more or less distinct series of diagonal projections, especially towards anal extremity; segments distinctly paler in middle except on thoracic area; a much paler lateral area finely edged above first with black and then with white and below with orange-ochreous, often very indistinct; undersurface very dull green speckled with blackish.

This larva is very sluggish in habits remaining secreted under rubbish by day and feeding at night. The foodplant is *Muehlenbeckia* and probably many low plants. The larva is full grown early in December.

The pupa is subterranean and the moth appears early in January. It is probable that a second brood results from these moths and that the winter is spent in the pupa state.

MELANCHRA SCUTATA.

(*Melanchra scutata*, Meyr., Trans. N.Z. Inst., lx., 485.)

(Plate LV., fig. 12 ♂; Plate VIII., fig. 12 ♀.)

This species is fairly common in the neighbourhood of Wellington.

The expansion of the wings is about $1\frac{3}{8}$ inches (36 mm.). It may be distinguished from any varieties of *Melanchra insignis* (with which it has long been confused) by the following characters:—In the male the antennal pectinations are distinctly longer (a 4, b 3); the basal dash on the fore-wings usually deep red-brown, or black suffused with red-brown; the marginal portions of the fore-wings pale pinkish-ochreous and the discal portion bright reddish-brown both dentations of the subterminal line reach the termen. The same distinctions apply to the female which, however, has the outer portion of the reniform white and the general colouring of the fore-wings much darker and greyer than the male.

The perfect insect appears in April and May, and is often found as late as June, or July. In fact its apparition in mid-winter is a further aid to its identification. It is attracted by sugar and light.

SPECIAL NOTE.

These three species, *Melanchra xanthogramma*, *M. insignis*, and *M. scutata* are variable, and some of the varieties appear to be of the nature of intermediate forms. All three are, however, good species and the males may be separated with certainty by the length of the antennal pectinations; shortest in *M. xanthogramma* (a 2, b $1\frac{1}{2}$), intermediate in *M. insignis* (a 3, b 2) and longest in *M. scutata* (a 4, b 3). The statement, on page 65, that the pectinations are variable is based on a misapprehension. The male of *M. xanthogramma* is usually, but not invariably, more strongly suffused with pink, and the female usually darker in colour than in either of the other two species. The basal streak is not by any means always absent in *M. xanthogramma*, and varies both in size and intensity. It cannot, therefore, be regarded as a valid distinction, and the differences in the breadth of the fore-wings, and the density and length of the hairs on the eyes are difficult to appreciate. *M. scutata*, by reason of its long antennal pectinations, appearance near the middle of winter, and reddish basal streak, presents the least difficulty in correct determination. The larvae of these three species are probably as variable as the perfect insects.

MELANCHRA DIVES.

(*Melanchra dives*, Philp., Records of Auckland Institute Museum, 1, 1, 1.)

(Plate LV., fig. 5 ♂, 6 ♀.)

This fine species was discovered by Mr. C. E. Clarke at Flagstaff Hill and Waitati, near Dunedin.

The expansion of the wings is about $1\frac{3}{8}$ inches (42-47 mm.) Head, thorax and palpi dark reddish-brown, darker in ♀; a small blunt anterior thoracic crest. Antennae reddish-brown, rather strongly bipectinated in ♂. Abdomen greyish-brown, lateral and apical tufts ferruginous. Legs reddish-brown, tibiae obscurely annulated with ochreous. Fore-wings moderate, costa almost straight, apex obtuse, termen bowed, oblique; dark purplish-brown, darker in ♀; a short black streak from middle of base, absent (?) in ♀ and not always present in ♂; traces of a double pale-centred basal line; first line obscure, thin, irregularly curved, blackish; orbicular moderately large, oblique, broadly oval, margined with ochreous and again obscurely with blackish; claviform normal shape, margined as orbicular; reniform moderately broad, partly filled with ochreous in ♂, margined as orbicular; second line very obscure, waved, pale with dark margin, incurved beneath reniform; subterminal thin, waved, ochreous, suffusedly black-margined before and behind, two blunt teeth below middle; a few minute ochreous spots on apical third of costa; cilia concolorous with wing. Hind-wings greyish-brown: cilia whitish tipped.

Related to *M. insignis* Walk., but a larger and generally darker species. The female seems to be fairly stable in colour and markings, but the male varies a good deal. One example has the fore-wings bright ferruginous, while in another they are suffused with fawn.

The perfect insect appears in October.

Described and figured from specimens in the Clarke collection, Auckland Museum. The above is taken from Mr. Philpott's original description.

Melanchra praesignis (page 66.) Also from Mount Arthur, Jack's Pass (Hanmer), and Flat Top Mountain, Lake Manapouri.

Melanchra mutans (page 66.) Plate VIII., fig. 13, represents the male of this species as originally stated, but the ordinary form of the female is depicted on Plate LV., fig. 13.

MELANCHRA FURTIVA.

(*Melanchra furtiva*, Philp., Trans. N.Z. Inst., lv., 663; lix., 484; Meyr., ix., 484.)

(Plate LV., fig. 4 ♂; Plate VIII., fig. 14 ♀.)

This form, the mountain representative of *Melanchra mutans*, is now generally regarded as a distinct species. It has occurred at Mount Arthur, Mount Cook, and on the mountains around the head of Lake Wakatipu and Lake Te Anau.

The fore-wings of the male are pale pinkish-brown, in place of dull ochreous-brown, or dull reddish-brown in the corresponding sex of *M. mutans*; the antennal ciliations are also stated to be appreciably longer. In the female the ground colour is usually more silvery and much paler than in *M. mutans*, and in both sexes there are no distinct dentations in the subterminal line.

MELANCHRA PETROGRAPTA.

(*Melanchra petrograpta*, Meyr., Trans. N.Z. Inst., ix., 484.)

(Plate LV., fig. 14 ♀.)

A single specimen of this species was taken at Kinloch, Lake Wakatipu.

The expansion of the wings is nearly $1\frac{3}{4}$ inches (42 mm.). The fore-wings are *dark grey, irrorated with black and white*; a small white spot in middle of base; lines white, blackish-edged, wavy; subbasal line curved; first line rather irregular, slightly bent on fold; second line sinuate; subterminal line parallel to termen slightly indented near extremities; median band darker grey speckled with blackish; median shade obscurely blackish, dentate; spots outlined white and then blackish; claviform small wedge shaped, resting on first line; orbicular rather oblique oval; reniform narrow, slightly bent in middle; the cilia are grey narrowly barred with white. The hind-wings are grey; the cilia light grey, slenderly barred with whitish, outer half whitish.

The perfect insect appears in January and is attracted by sugar.

MELANCHRA LATA.

(*Melanchra lata*, Philp., Trans. N.Z. Inst., lviii., 81.)

This species has occurred at Jack's Pass (Hanmer), and Arthur's Pass.

It is very similar in general appearance to some of the varieties of *Melanchra olivea*, but Mr. S. Lindsay, who has taken a long series of *M. lata*, tells me that it can be distinguished by the following characters:—

“*Melanchra lata* has the reniform spot larger and not at an angle to costa; subterminal line straighter and lacking median teeth-like projections; the first line is straight, not so deeply scalloped; the second line similar to first; basal streak blunt-ended, not coming to a fine point as in

M. olivea; male antennae with serrations twice as long as in *M. olivea*; general colour much darker.”

The perfect insect appears in February.

Melanchra olivea (page 67.) Also from Jack's Pass (Hanmer), and Mount Cook.

Melanchra mollis (page 68.) Also from Waimarino, Waipukurau and Tophouse, Nelson.

Melanchra ustistriga (page 68.) Also from Pitt Island (Chathams).

Melanchra paracausta (page 68.) Also from Waiouru and Wairoa (North Island). Generally distributed in the South Island.

Melanchra oliveri (page 69.) Also from Arthur's Pass, Mount Cook and Waiho Gorge.

Melanchra coeleno (page 69. Plate VIII., fig. 20 ♀; Plate LIV., fig. 32 larva.) The egg is about .6 mm. in diameter, with about 35 longitudinal branching ribs. There are numerous distinct transverse ribs between the longitudinal ones. Colour, when first deposited, pale whitish-straw, later becoming bronzy-brown on top with sides white.

The full-grown larva, which is very handsome, is about $1\frac{3}{8}$ inches (35 mm.) in length, rather stout, cylindrical, slightly tapering at each extremity; very bright velvety-green, slightly darker below lateral line; head paler and duller; very slender, slightly wavy, yellow dorsal and subdorsal lines, with several much fainter wavy lines between them; an extremely conspicuous, broad, white lateral line, margined with pink on both sides on segments 2 and 3; on other segments the lateral line is shaded with dull pink below, where it also merges slightly into the green ground colour. Legs ochreous-green; prolegs brilliant green, tipped with dull pinkish-ochreous. Spiracles rather inconspicuous, dull orange-ochreous. The larva is full grown early in January. The foodplant is *Muehlenbeckia*.

In younger larvae all the lines are *white* and rather conspicuous. In the mature larva the broad lateral line may be almost entirely tinged with pale yellow, or pale dull pink.

The pupa is subterranean. It is enclosed in a tough cocoon of silk and earth. The insect passes the winter in this condition.

The moth appears in early spring, and is occasionally quite common at Karori in September and early October, coming freely to light. It varies in the extent of the cloudy chocolate-brown patch on dorsum which is very often almost obsolete. It seems likely that specimens with this marking very prominent are females, and the figure on Plate VIII. should be described as belonging to that sex. *M. coeleno* also occurs at Waipukurau, Blenheim and Lake Te Anau.

Melanchra diatmeta (page 69. Plate LIV., fig. 29 larva.) Length of larva when full-grown about $1\frac{1}{4}$ inches (32 mm.); very stout, cylindrical, slightly tapering at head end; yellowish-green on back above subdorsal

region, darker green below this, and on ventral surface; a dark green dorsal line; a fine, yellow, cross-like mark on subdorsal region of segments 5-11 inclusive, segments 12 and 13 with an angulated line descending towards anal proleg; a broad, ill-defined, white speckled lateral ridge, with very broad region of thick white speckling around. Head yellowish-green. Spiracles very small, pinkish-brown. Legs and prolegs pale pinkish-brown, tipped with dull red.

Foodplant probably *Muehlenbeckia*. Larva full grown in middle of November.

The pupa is enclosed in a tough cocoon of silk and particles of earth about 1 inch below the surface of the ground.

Melanchra decorata (page 70.) Also from Feilding, Wellington, Governor's Bay, Porter's Pass and Takitimo Mountains.

Melanchra infensa (page 70.) (Plate LIV., fig. 20 larva.) The length of the larva immediately prior to last moult is about $1\frac{1}{4}$ inches (30 mm.). Slender, subcylindrical, rather flattened, tapering at each end, orange-ochreous, slightly tinged with greenish posteriorly; a moderate brownish-black dorsal line; two very fine, pale brown, subdorsal lines; a brownish-black lateral line, with thickened spot on each segment beyond thoracic; a clear yellowish line below this. Head bright orange-ochreous. In the full-grown larva the spaces between the principal lines are covered with very fine paler lines giving a chagreened appearance.

The foodplant is *Carex solandri*, and probably other grasses. This larva feeds throughout the winter, growing very slowly, and pupating early in the spring, emergence taking place towards the end of November. It is very inconspicuous when resting on a withered grass stem.

Specimens of this insect from the North Island are darker in colour, with more distinct markings, than those from the South Island. In North Island specimens the general ground colour of the fore-wings is a richer brown, slightly tinged with purplish, or claret colour, and the hind-wings are dark brownish-grey. The original figure and description was taken from a South Island specimen.

This species also occurs at Waiouru, Kaponga, and Waipukurau in the North Island, and at Puhi Puhi (Kai-koura), Mount Earnslaw, and Lake Te Anau in the South Island.

Melanchra omoplaca (page 70.) (Plate LIII., fig. 3 larva.) The egg is about $\frac{3}{4}$ mm. in diameter. Upright, hemispherical, considerably flattened; about 25 longitudinal ribs, each alternate rib not reaching micropyle; numerous transverse ribs between each longitudinal rib. Colour creamy white when first deposited.

The larva, which emerged after eighteen days, is about 1-12th inch in length. Head large, pale brownish-ochreous, other segments well defined, almost uniform in size, whitish-ochreous, with dull brown alimentary canal showing through anteriorly. Legs stout, darker, thickly ringed with black. A single row of

large shining black warts around each thoracic segment, and a double row around each of the other segments, except terminal; each wart emits a stout black bristle. Two pairs of rudimentary abdominal prolegs, and two pairs fully developed; a stout pair of anal prolegs. The eggshell is eaten on emergence.

The length of the full-grown larva is about $1\frac{1}{4}$ inches. Cylindrical, considerably flattened anteriorly and posteriorly; moderately stout, slightly tapering at each end. Head black, shining, with two pale yellowish-brown stripes on each side. General colour deep purplish-brown above, dull greyish-ochreous beneath; a very broad conspicuous pinkish-ochreous lateral line and strong lateral ridge; dorsal line darker, purplish-brown; a fine blackish subdorsal line; beneath this, on anterior portion of segments 4-11 inclusive, there are dull reddish-ochreous blotches, and on segments 4-10 inclusive, two small pale green spots above these; below lateral line near middle of segments 6-10 there are blackish blotches.

The larva is of sluggish habit, feeding on narrow-leaved plantain, and probably other low plants, no doubt remaining concealed during the daytime. It is full-grown in the autumn.

This species also occurs at Waimarino, Ohakune, Waiouru, and Waipukurau in the North Island and is apparently generally distributed throughout the South Island.

Melanchra alcyone (page 70.) (Plate LIV., fig. 34 larva nearly full grown.)

The length of the full-grown larva is about $1\frac{1}{4}$ inches. Head green; body very stout, cylindrical, slightly tapering at each end, segmental divisions strongly marked, hindslope rather gradual; bright green, rather faintly but closely speckled with yellowish-green dots; dorsal line well defined, darker green without speckling; subdorsal line obscure, edged with pale dots; spiracular line very indefinite; spiracles dull pink, each spiracle surrounded by a very suffused paler area; a few extremely minute bristles; prolegs large, tipped with very pale pinkish-brown; a fine pink and white lateral line on anal proleg and segment 13 only.

This larva is of sluggish habit. It feeds on *Muehlenbeckia*, mostly at night, and rests during the daytime on the stems of the foodplant, where it is very inconspicuous. It is full-grown in November.

The pupa is subterranean.

This species has also been taken at Titahi Bay (Wellington), Stephen's Island, Price's Bush, Puhi Puhi, and the Takitimo Mountains.

MELANCHRA SAEVA.

(*Melanchra saeva*, Meyr., Trans. N.Z. Inst., lx., 484.)

(Plate LV., fig. 17 ♂; 18 ♀.)

This is a very obscure, yet quite distinct species, which has so far only been obtained from larvae found at Arthur's Pass at an elevation of about 2,800 feet above the sea level.

The expansion of the wings is fully $1\frac{1}{2}$ inches (39 to 40 mm.). It is very similar to *Melanchra pascoi*, from which it chiefly differs in having the fore-wings distinctly narrower towards termen, and the general colouring less reddish.

The larva, which feeds on *Nothofagus*, is very similar to that of *Melanchra ochthistis* but larger and perhaps

stouter; general colour green, with the whole surface finely speckled with yellow; a fine yellowish line on midback, two fine subdorsal lines, and a fine white lateral line; spiracles pink. Pupation took place at the end of January.

The perfect insects emerged (in captivity) in July and August. It is therefore probable that the moth appears early in the season before the mountains are usually visited by entomologists.

Melanchra lignana (page 71.) Apparently generally distributed throughout the country.

Melanchra stipata (page 71.) The length of the full grown larva (Plate LIV., fig. 28) is about $1\frac{1}{4}$ inches (30 mm.). Rather stout, cylindrical, scarcely tapering at extremities, hindslope not very pronounced; grass green, or very dark green faintly speckled with yellowish-green. Head paler, slightly more bluish, with a few black dots; a very obscure series of paler and more yellowish blotches on lateral region, most evident posteriorly; legs very pale, dull purplish-red; extremities of prolegs dark purplish-red, much paler near middle, bases of prolegs green; a short whitish stripe from centre of anal proleg; spiracles deep, dull red very conspicuous, and sometimes ringed with white; a few very fine dull reddish hairs on each extremity of larva. The foodplant is *Muehlenbeckia*.

The larva is full-grown about the end of October or early in November.

The pupa is enclosed in a rather frail cocoon of earth and silk just below the surface of the ground.

This insect apparently spends the winter as a hibernating imago, the larva feeding up during the early spring months.

Other localities for *M. stipata* are Puhī Puhī (Kai-koura), and Lake Te Anau.

Melanchra merope (page 72.) Also from Pahiatua.

Melanchra dotata (page 72.) Also from Waiouru, very common at Mount Cook; occurs at Lake Te Anau.

Melanchra asterope (page 72.) Also from Jack's Pass (Hanmer), and Arthur's Pass.

MELANCHRA LUDIBUNDA.

(*Melanchra ludibunda*, Philp., Trans. N.Z. Inst., lx., 300.)

(Plate LV., fig. 9 ♀.)

This rather dark-looking species was discovered by Mr. Philpott on the Tableland of Mount Arthur. A specimen has also been taken at Dunedin.

The expansion of the wings is $1\frac{1}{2}$ inches (38 mm.). The fore-wings are reddish-brown, with the median and terminal areas dark blackish-brown, irregularly tinged with reddish; the markings, which are numerous and somewhat confused, are pale reddish- or brownish-ochreous, often edged with black; several very irregular markings on basal third, including a roundish black suffusion near dorsum; orbicular large elliptical and oblique, with grey centre, outlined first in dull ochreous and then in black; claviform very obscure; first line twice sinuate below orbicular, pale reddish-ochreous, outlined in black; reniform cream-coloured, basal portion partially grey with black margin, dorsal portion blackish; an acutely dentate, pale, dark-margined line

from reniform to dorsum; an orange-brown patch beyond reniform followed by an obscure pale dentate line to costa; a wavy pale subterminal line, with two small projections above tornus; a blackish-grey terminal area beyond this; cilia blackish-grey. The hind-wings are dark brown; the cilia are reddish-ochreous, becoming brown towards tornus and dorsum. The head and thorax are blackish-brown, tinged with claret colour, with a tuft of ochreous scales on the tegulae.

The perfect insect appears in December.

Described and figured from the type specimen kindly lent to me by Dr. Miller.

Melanchra asterope (page 72.) Also from Mount Cook, Skelmorlie Peak (Te Anau) and McKinnon's Pass.

Melanchra tartarea (page 72.) Also from Takitimo Mountains.

MELANCHRA BADIA.

(*Melanchra badia*, Philp., Trans. N.Z. Inst., lviii., 80.)

(Plate LV., fig. 11 ♂.)

This very richly-coloured species was discovered by Mr. Philpott, in the Leslie Valley, near Mount Arthur.

The expansion of the wings is $1\frac{1}{2}$ inches (38 mm.). The fore-wings are bright chestnut-brown, bordered with deep greenish-ochreous, broad on costa and termen, narrow on dorsum; orbicular and claviform distinct, small, elliptical, dark purplish-grey, bordered with pale greyish-ochreous; reniform narrow-oblong, produced towards base at lower inner angle, dark purplish-grey, finely bordered with pale grey; inner edge of terminal band very finely margined with dull cream colour; cilia reddish-brown. The hind-wings are deep brownish-black, tinged with purplish; cilia dull ochreous, with a broad darker line. The head and thorax are reddish-brown; the abdomen dark brownish-ochreous.

Nearest to *Melanchra tartarea* but apparently quite distinct.

The perfect insect appears in November.

Described and figured from the unique specimen kindly lent to me by Mr. Philpott.

Melanchra agorastis (page 73.) Also from Waimarino, Jack's Pass (Hanmer), Arthur's Pass, Mount Cook, Waiho Gorge, Nevis, and Lake Te Anau.

Melanchra vitiosa (page 73. Plate LIII., fig. 11 larva.) The length of the larva is about 1 inch. Moderately stout, slightly tapering towards head; posterior portion with steep slope. General colour very pale dull greenish-grey, paler below lateral area. Head yellowish-brown. A very broad conspicuous white lateral line bordered with blackish above, mostly interrupted between segments, except towards head; a series of conspicuous blackish-edged white dots on dorsal and subdorsal portions of each segment. Legs dull green; prolegs dull greenish-grey; segmental divisions finely marked in dull red.

The foodplant is a small-leaved tangled shrub with divaricating branches, very abundant in the Waimarino forest (probably *Nothopanax anomalum*). The larva is of sluggish habit. It was taken at the end of December, but the perfect insect did not appear until the middle of the following August. Only one specimen was reared.

This species has also been taken at Mount Egmont, Pahiatua, and Takitimo Mountains.

Melanchra ochthistis (page 73. Plate LIV., fig. 17, young larva just hatched; 16 full grown larva.) The following is to replace the life-history originally given:—

The egg is about $\frac{3}{4}$ mm. in diameter. Hemispherical, flattened beneath, with about 30 longitudinal ribs radiating from micropyle, some ribs considerably shorter than others, there are numerous much fainter transverse ribs between the longitudinal ones. Colour very pale greenish-white. Deposited in masses of about 50 at end of September.

The young larva (which emerged 12 days later) is about 2 mm. in length. Head very large. Body cylindrical with thoracic segments (especially segment 2) larger than the rest, the terminal segments slightly tapering towards posterior extremity. General colour pale greenish-white, head darker with blackish-brown spots; warts very large, black and conspicuous, each emitting a long black bristle. Prolegs on segments 7 and 8 rudimentary and not used in walking; prolegs on 9 and 10 and anal prolegs long and fairly stout. The eggshell is completely devoured on emergence. The young larva is very active, progression being effected after the manner of a Geometer larva. The known foodplants are *Pennantia corymbosa*, *Muehlenbeckia* and *Rubus australis*.

After second moult the first and second pairs of prolegs are still not used for walking. Larva pale green, paler underneath, with broad, slightly shagreened, darker green lateral line. Later in life, but prior to last moult the larva has a continuous crimson and white lateral line, but in the adult larva this line is confined to the anterior and posterior segments as described below.

The full-grown larva is about $1\frac{1}{2}$ inches in length (30 mm.). General colour rather vivid pale green, darker towards ventral surface; a very pale green dorsal line and similar interrupted subdorsal lines; a conspicuous crimson and white lateral line on segments 2-7 and on segments 11 to 13 terminating on anal proleg; the anterior portion of lateral line sometimes ends over the first ventral proleg, sometimes over the second, and occasionally before the first; spiracles red, almost touching lateral line; dorsal portions of larva very heavily speckled with very pale yellowish-green and below lateral line more lightly speckled; prolegs dull pink. In younger larva the dorsal area is usually much suffused with white.

The pupa is enclosed in a light cocoon near the surface of the earth and the moth emerges about midsummer. It is interesting that in the allied species *M. saeva* and *M. coctilis*, which pass the winter as pupae, a firm cocoon is constructed at a depth of fully 2 inches, possibly much deeper in a state of nature, only some 2 inches of earth being available in the breeding cage, and the cocoons were situated on the bottom of the jar.

This species also occurs at Whangarei, Puhi Puhi (Kaikoura), Mount Cook, and Lake Te Anau.

MELANCHRA COCTILIS.

(*Melanchra coctilis*, Meyr., Trans. N.Z. Inst., lxii., 93.)

(Plate LV., fig. 19 ♂ Plate LIII., fig. 2 larva.)

This rather obscure species was bred from the larva taken at Flora River, Mount Arthur. It has also occurred at Arthur's Pass.

The expansion of the wings is $1\frac{1}{2}$ inches (39 mm.). The head, palpi and thorax are red-brown, partially sprinkled with ochreous-whitish. The fore-wings are rather elongate-triangular, termen crenulate; red-brown sprinkled along costa with ochreous-whitish; subbasal line in disc shortly whitish edged with black; first and second lines hardly paler than ground colour, wavy; stigmata very finely edged with black, orbicular oval, slightly touched with white within margin, open above; claviform hemispherical, resting on first-line; reniform mostly finely edged with white within black margin except beneath; subterminal line consisting of small fine disconnected whitish filaments placed in small suffused dark brown spots; cilia red-brown, two darker shades. Hindwings rather dark grey; cilia light red-brown.

The larva, which feeds on mountain beech (*Nothofagus menziesii*), is about 1 inch in length, moderately stout, with pronounced hindslope; very dark rich green, finely speckled with yellow dots and still more finely with blackish, the latter especially towards ventral surface; a very conspicuous, wavy, serrate, white lateral line extending the whole length of larva, faintly edged with orange-pink near centre of each segment, the orange-pink much wider on segment 12. Above this lateral line the yellow dots are arranged somewhat in the form of dorsal and subdorsal lines. Spiracles white, edged with dull pink. Tips of prolegs also edged with dull pink.

This larva is sluggish in habit and rests amongst the foliage in the form of a loop. It clasps the stem with the anal and two last abdominal prolegs; segments 7, 8 and 9 are held upright from the stem and the rest of the segments curved backwards and sideways, the underside of the head and of segments 2 to 6 being held uppermost and displayed to view. In this position the wavy serrate lateral line gives exactly the effect of the slightly serrate edge of the leaf of the foodplant, and detection of the larva *in situ* is almost impossible. Absolutely distinct from the larva of *Melanchra ochthistis*. Larvae found feeding in January were full-grown early in March, when they pupated in the earth.

The pupa is enclosed in a rather tough silken cocoon about $\frac{1}{2}$ inch below the surface of the earth.

The perfect insect emerged (in captivity) on the 19th of the following September, but in its natural subalpine habitat its appearance in the imago state would probably be considerably later.

MELANCHRA TETRACHROA.

(*Melanchra tetrachroa*, Meyr., Trans. N.Z. Inst., lxii., 92.)

(Plate LV., fig. 20 ♀.)

A single specimen of this very handsome and distinct species was discovered, at sugar, at Waimarino.

The expansion of the wings is $1\frac{3}{8}$ inches (37 mm.). The fore-wings are dull purplish-grey with numerous complex rich

green and black markings, the green partially margined with pale ochreous; a green subcostal streak from base to near apex; a short black basal streak along dorsum from base to about $\frac{1}{4}$, edged with white below; basal line pale, interrupted, broadly edged with black; a rusty reddish blotch between basal and first line; first line green black-edged; claviform large, oval, conical black; orbicular large, oval, flattened on subcostal vein, green, enclosing fine black line; reniform large, kidney-shaped, green; area between and around orbicular and reniform black, except towards costa; second line interrupted, forming series of elongate green marks edged basally first with whitish, then broadly with black; apical patch and subterminal line pale ochreous, broadly bordered with black; *subterminal line straight, oblique, broken below apex and above tornus by rusty-red spots*; a minute rusty-red spot on dorsum inside subterminal line; a terminal series of black crescentic marks preceded by green spots; cilia pale greenish. Hind-wings dark ochreous-grey; cilia ochreous.

The perfect insect was captured on January 6, 1930.

MELANCHRA PELANODES.

(*Melanchra pelanodes*, Meyr., Trans. N.Z. Inst., lxii., 92.)

(Plate LV., fig. 21 ♂.)

Three specimens of this very richly-coloured species have been taken at Waimarino, at sugar.

The expansion of the wings is $1\frac{1}{4}$ inches (36 mm.). The fore-wings are dark purplish-grey, slightly sprinkled with paler grey, with the edges of markings slightly roughened, and interruptedly margined with blackish; basal line irregular; a green blotch between basal and first line; first line oblique, rather obscure; second line wavy, dentate, edged with black towards base; claviform moderate, margined first with black and then with white; orbicular conspicuous, oval, broadly margined with whitish; reniform mostly pinkish-red, with black, green, and whitish lines; subterminal line green and white, outwardly edged with black, with two teeth before tornus; a large irregular shaded black blotch inside subterminal line near tornus; a terminal series of black marks; cilia brownish. Hind-wings dark brownish-grey; cilia brownish-grey, with white tips. The female has the orbicular elliptical, almost wholly white; the subbasal green blotch obscure; the reniform and subterminal line much whiter, and the ground colour less suffused with purple.

The perfect insect appears early in January. Specimens were taken during two successive seasons.

This species is allied to *Melanchra tetrachroa*, but abundantly distinct therefrom.

MELANCHRA CAPTIOSA.

(*Melanchra captiosa*, Philp., Trans. N.Z. Inst., lviii., 80.)

(Plate LV., fig. 3 ♀.)

This obscurely-marked, but quite distinct species, was discovered by Mr. Philpott, on the Mount Arthur Tableland, at an altitude of about 4,000 feet.

The expansion of the wings is $1\frac{3}{8}$ inches (41 mm.). The fore-wings are pale dull greyish-ochreous, with very faint markings; first line very indistinct, *but extremely acutely dentate*; claviform and orbicular clearly outlined in pale brown; reniform elongate trapezoidal, partially outlined in grey; *an extremely acute dentated line from reniform to dorsum*; second line strongly bent outwards opposite reniform, *very acutely dentate, some of the outer tips of the dentations finely marked in blackish*; cloudy patches below apex and at tornus showing traces of a paler subterminal line. The hind-wings are dark grey tinged with reddish, especially towards apex and termen.

This species is best recognised by its pale colouring and very acutely dentate lines of fore-wings.

The perfect insect appears in November.

Described and figured from the unique specimen kindly lent to me by Mr. Philpott.

MELANCHRA CYANOPETRA.

(*Melanchra cyanopetra*, Meyr., Trans. N.Z. Inst., lviii., 313.)

(Plate LV., fig. 29 ♂.)

This species was discovered by Miss Amy Castle, at Waiho Gorge, South Westland.

The expansion of the wings is about $1\frac{3}{8}$ inches (♂ 36 mm., ♀ 40 mm.). The fore-wings are dark bluish-grey, very slightly purplish-tinged. First line posteriorly and second anteriorly edged by fine interrupted wavy black lines, or crescentic marks; median shade narrow, rather indistinct, dark grey; orbicular and reniform of ground colour, partially or hardly edged with dark grey; orbicular round, reniform transverse, without white scales; claviform obsolete; subterminal line whitish without perceptible teeth; cilia grey. Hind-wings and cilia greyish-ochreous, darker towards termen, veins darker.

A very obscure species distinguished by the peculiar bluish-grey tinge of fore-wings and absence of claviform.

Melanchra morosa (page 74.) Also from Puhī Puhī, Porter's Pass, and Mount Cook.

Melanchra levis (page 74.) Also from Arthur's Pass, Waiho Gorge and Lake Te Anau.

Melanchra lithias (page 74.) Also from Jack's Pass, Broken River, Arthur's Pass, Mount Cook, Moeraki, and Flat Top Mountain (Lake Manapouri).

Melanchra homoscia (page 74.) Also from Waipukurau, Kaikoura, and Lake Te Anau.

Melanchra sequens (page 75.) Also from Waimarino, Waiouru, Kaikoura, Jack's Pass (Hanmer), Cave Creek, Mount Cook, and Lake Te Anau.

Melanchra phricias (page 75.) Also from Mount Cook and Lake Te Anau.

Melanchra chryserythra (page 75.) Also from Mount Hutt, above bush line, common; Skelmorlie Peak (Lake Te Anau) and Milford Track.

MELANCHRA OMICRON.

(*Melanchra omicron*, Huds., N.Z. Moths and Butterflies, 22, Pl. V., fig. 42.)

This form was originally described in my first book on N.Z. Moths and Butterflies at above reference, but was afterwards sunk as a synonym of *Aletia inconstans* (page 57.) There is great similarity here, but both Mr. Meyrick and Mr. Stuart Lindsay consider it is quite a distinct species differentiated by the presence of the additional crests on the basal segments of the abdomen which are characteristic of the genus *Melanchra*.

This insect has occurred at Wellington and Broken River.

Sub-family HYPENIDES.

Hypenodes costistrigalis (page 77.) This species is smaller (19 mm.) and usually darker and greyer in colour

than the figure given on Plate X., Fig. 9. Also from Whangarei. Taken abundantly at sugar, in late March, near Howard Point, on eastern side of Wellington Harbour, and at Wainuiomata. Other localities are Blackmillar (Kaikoura), Lake Kaneiri, and Hope Arm, Lake Manapouri.

Hyphenodes anticlina (page 78.) Also from Whangarei and Mount Ruapehu.

Sub-family CATOCALIDES.

Ophiusa melicerte (page 78.) Also from Waitomo, and Karori.

Sub-family PLUSIADES.

Plusia chalcites (page 79.) Mr. A. H. Ahrens informs me that he has bred two specimens of the variety of this insect in which the characteristic golden-white discal spots on the fore-wings are absent. Examples of this variety are also in the Dominion Museum collection.

Dasypodia cymatodes, Guen. (page 81. Plate LXII., fig. 11 ♀.) A figure of this handsome species is now given. It is clearly quite distinct from *Dasypodia selenophora*. In addition to the differences already referred to, the rich yellow colouring of the basal portions of the wings and body on the underside of that species is absent in *D. cymatodes*.

The following captures have been reported since 1926:

One taken by Mr. C. Stalker at Nelson in 1927; two taken by Mr. C. Fraser and Mr. L. W. Tiller respectively, both in Nelson, during March, 1929. A fourth specimen was captured at Taradale, near Napier, in March, 1934, and a fifth, by Mr. C. Baker, in Wellington, during the autumn of 1935. Mr. West also reports other occurrences in the Napier district where he thinks it must now be fairly common.

Sericea spectans (page 81.) Mr. E. A. Grant captured a specimen of this fine insect at Palmerston North, attracted by light. This appears to be the second example so far taken in New Zealand.

Cosmophila flava (page 83.) The male is figured on Plate LV., fig. 1.

Family GEOMETRIDAE.

Now begins with sub-family STERRHIDES (page 132.)

Sub-family HYDRIOMENIDES.

Genus TATOSOMA (page 85.)

The following observation is taken from Mr. C. E. Clarke's valuable paper* on the Lepidoptera of Te Anau-Manapouri Lakes District:—

An interesting and beautiful scene observed by the light of the petrol lamp one night was a flight of *Tatosomas*, many hundreds strong, hovering about the blossoms of an expanse of *Dracophyllums*, their extraordinarily elongated

and sinuous bodies and greenish-shaded wings giving them a most charming and dainty appearance as they rose and fell in the air, gracefully alighting at times on the flowers with vibrant wings and again with aerial evolutions appearing to resemble "falling leaves," their undulations exhibiting a most decorative and unusual effect. This was in February, on the Kepler Mountain, at about 3,000 feet. Three species were abundant:—*T. lestevata* Walk., *timora* Meyr., and *tipulata* Walk. A few *T. apicipallida* Prout, and one of *T. alta* Philp. were taken at the same time.

Tatosoma lestevata (page 85.) (Plate LIV., fig. 4 larva.)

The larva, which feeds on tutu (*Coriaria ruscifolia*), is about $\frac{3}{4}$ inch in length (20 mm.). Rather stout, slightly tapering at each end; second segment with rectangular front overhanging head and projecting forwards. General colour rich velvety green; a very prominent lateral ridge and white lateral line, irregularly margined below with dull pink, extensions of this line over third leg and down anal proleg; slightly darker green dorsal and subdorsal lines; larva paler green on under-surface; warts rather obscure, yellowish; anal flap bifid, sharp pointed, yellowish-orange. The larva is of sluggish habit and very inconspicuous when resting on foodplant. Full-grown towards end of December, the moth emerging about a fortnight later.

The pupa is enclosed in a rather open cocoon, composed of silk and coarse particles of earth, about $\frac{1}{2}$ inch below the surface.

The moth emerges in January and is in evidence until about the middle of February. Stray specimens occasionally taken in the spring, or early summer, have probably hibernated, either as perfect insects, or possibly pupae.

This species has occurred at Whangarei, is common in the Hawke's Bay District, and is found at Picton, Puhī Puhī (Kaikoura), and Lake Te Anau.

Tatosoma tipulata (page 85. Plate LIII., fig. 5 young larva just emerged; fig. 4 full-grown larva.)

The egg is about 1-40th inch in length, oval, considerably flattened on each side and covered with very shallow hexagonal depressions; colour deep ochreous-yellow. It is laid on its side. About two days after being deposited the side becomes strongly concave and the colour changes to reddish-orange. Eggs were obtained early in December.

The length of the newly-emerged larva is under 1-10th inch; it is stout, cylindrical, with the head and segment 2 very large, thence tapering to segment 5, and afterwards becoming slightly stouter; the anal flap is bifid, and the anal prolegs largely extended laterally; general colour bright yellow, slightly brownish on back, especially posteriorly; segmental divisions very distinct, deep yellow; a few very minute black warts.

The young larva does not eat the eggshell on emergence. It stands almost upright on its prolegs, with head and legs retracted, except when actually feeding on the green upper surface of the leaf of *Weinmannia racemosa*.

The length of the full-grown larva is about 1 inch; cylindrical, rather stout, flattened above, of fairly even thickness, but tapering abruptly at posterior extremity; the head is very retractile and usually held ventrally; a very pronounced strong wavy

*Trans. N.Z. Inst., lxiii., 114.

lateral ridge, projecting above head; general colour rich green, paler beneath; lateral ridge purplish-brown dotted with whitish; a broken white lateral line above lateral ridge; head green with hemispheres brownish-ochreous; third leg very large with brown prolongation of lateral ridge thereon; lateral ridge terminating on anal proleg; an indistinct darker line down mid-back; a minute brown dorsal spot at junction of each segment; anal flap pinkish; a very few minute black bristles on posterior segments. A larva found feeding on beech (*Nothofagus*) was pale pinkish-brown, variegated with pale olive-green; dorsal and subdorsal lines olive-green, also a series of olive-green blotches down mid-back; lateral ridge very dark olive-brown, with a broken yellowish-white lateral line above it. Apparently the larva is subject to considerable variation.

This larva is of sluggish habit, mostly resting on edge of leaf, looped laterally, almost in a circle (not vertically as when walking). The peculiar structure, colouring and rest attitude clearly assimilate the larva in general appearance to the edges of the leaves of its foodplant.

The pupa is enclosed in a very frail cocoon of silk and refuse on the surface of the ground. It is slightly less than $\frac{1}{2}$ inch in length, rather slender with the leg and wing-cases very long and the abdominal segments very short; greenish-brown, paler on the wing-cases. Pupation took place early in February and emergence of the imago at the end of the same month. It is therefore almost certain that there are two distinct broods in a season. Other localities for this species are:—Whangarei, Kaponga, Mount Ruapehu, Ohakune, Puhi, Puhi, Mount Cook and the Te Anau-Manapouri District.

Tatosoma agrionata (page 85.) Also from Rotorua, Mount Ruapehu, Hawke's Bay, Clarence Bridge, Puhi Puhi, Tophouse, Mount Peel (Nelson), Dunedin and Stewart Island.

Tatosoma monoviridisata (page 86.) Also from Makarora.

Tatosoma alta (page 86. Plate LIV., fig. 3 larva.)

The length of the larva when almost full-grown is about $\frac{3}{4}$ inch (20 mm.). cylindrical, almost uniform in thickness, second segment slightly overhanging head, prolegs large. General colour bright green, paler and bluer underneath; an extremely variable series of blackish-crimson blotches along mid-back, sometimes almost absent; a very obscure lateral ridge and line; segmental divisions clearly indicated in yellow; legs more or less tinged with crimson; anal flap yellowish, often crimson.

This larva is active in its habits, but extremely inconspicuous amongst its foodplant (*Phyllocladus alpinus*). It is full-grown about the middle of January, pupation taking place towards the end of the month.

The pupa is enclosed in a very loose cocoon of silk and earth particles, about 1 inch below the surface of ground.

The moths emerged, in captivity, from July to October, but under natural conditions, in their subalpine habitat, emergence would probably not have taken place until the spring or early summer.

This larva was discovered at Arthur's Pass (2,800 feet above sea-level) in January, 1935.

Additional localities for *Tatosoma alta* are:—Mount Ruapehu, apparently common, Mount Cook, Waiho Gorge, Mount Kemp, Kepler Mountains, and McKinnon Pass.

Tatosoma apicipallida (page 86.) Also from Jack's Pass (Hanmer), Glade House, Clinton River, Kepler Mountains and Te Anau.

Tatosoma fasciata (page 86.) Also from Mount Cook, Humboldt Range (Lake Wakatipu), and Flat Top Mountain (Manapouri).

Tatosoma timora (page 86.) Length of larva about $\frac{3}{4}$ inch (17 mm.). Cylindrical, slightly flattened, nearly uniform in thickness; bright green, with conspicuous white lateral line, yellow on thoracic segments; a series of deep crimson blotches below lateral line; a stripe of deep crimson on each side of head; a darker green dorsal stripe; segmental divisions finely marked in yellow; legs crimson; underside of larva pale bluish-green. Food-plant miro (*Podocarpus ferrugineus*).

Other localities for *Tatosoma timora* are:—Mount Ruapehu, Horopito, Puhi Puhi, Riccarton, Mount Earnslaw and Paradise (Lake Wakatipu), and Te Anau-Manapouri District.

Tatosoma topia (page 87.) Also from Whangarei, Waimarino, Mount Ruapehu, Puhi Puhi, Riccarton Bush, Mount Cook, and Lake Manapouri.

Microdes epicryptis (page 88.) Mr. S. Lindsay had the good fortune to discover the larva of this interesting insect at Amberley Beach. It was feeding on a species of rush (*Leptocarpus*). When full-grown the larva is about $\frac{1}{2}$ inch in length, pale ochreous, with a series of dark brown V-shaped markings along the midback. Mr. Lindsay states that this larva is most difficult to see when resting on the flower spike of the rush, both its colour and markings being highly protective.

Other localities for *M. epicryptis* are:—Whangarei, Claverley (Conway River), Knife and Steel Harbour, Hope Arm (Lake Manapouri), and Clinton River.

Microdes* quadristrigata (page 88.) Also from Jack's Pass (Hanmer), Cave Creek (Craigieburn) and Te Anau District.

Phrissogonus laticostatus (page 88.) Also from Paekakariki and Clinton River.

Phrissogonus testulatus (page 89.) The egg, which is laid on its side, is about $\frac{1}{2}$ mm. in length, elliptical, considerably flattened, smooth and shining (under power of 20); pale whitish-ochreous when first deposited, becoming dark ochreous in two or three days' time, and dark reddish-ochreous after about 10 days.

The young larva, when first hatched, is about $1\frac{1}{2}$ mm. in length; head large, ochreous-yellow, darker on sides; body rather flattened, fairly stout, of uniform thickness; bright orange-yellow, subdorsal lines a little darker, pos-

*A paper on the modification of the eighth sternite in *Microdes* by Mr. A. Philpott, appeared in the Trans. N.Z. Inst., lviii., 91.

terior extremity and anal prolegs faintly tinged with greenish.

The length of the full-grown larva (Plate LIV., fig. 23) is about $\frac{1}{2}$ inch (12 mm.), cylindrical, moderately stout, slightly tapering at each end; skin transversely wrinkled, especially posterior to fourth segment; general colour pinkish-straw-colour with dark brown markings; head greenish; thoracic segments slightly tinged with green with about 6 slender, parallel, pale pinkish-brown longitudinal lines; a series of heavy dark brown bars on mid-back of segments 5-13 inclusive, forming a broken dorsal line; subdorsal lines finer but confluent with dorsal marking near middle of each segment, except on segments 12-13; a very conspicuous patch of the pale ground colour on posterior half of segments 5-11 inclusive; one or two faint wavy lateral lines; underside of median portion of larva rather dark pinkish-brown, with two transverse series of paler dots on each segment; underside of posterior segments pale green; legs and prolegs pale green, tinged with pink.

Feeds amongst the blossoms of the rangiora (*Brachyglottis repanda*), where its colouring is protective.

The pupa is enclosed in a loose cocoon of silk and particles of earth near the surface of the ground.

Chloroclystis semialbata (page 89.) As already stated the larva of this species is extremely variable in colour. In addition it has the power of actually changing its colour in response to its environment. Larvae obtained on the greenish-white flowers of *Coprosma grandifolia* were pale green, or whitish, but next day, when the blossoms turned dull pink, the larvae had changed into the pinkish variety represented on Plate LIV., fig. 12. These larvae are found in late April and May, when the *Coprosma* is in flower, and possibly give rise to the moths often met with in the late winter. Larvae beaten from the flowers of the kowhai (*Edwardsia microphylla*) in early spring, are orange-yellow, like the petals of the blossoms on which they feed (see Plate LIV., fig. 11). Another foodplant is *Olearia rani*. The emergence of this species from the pupa seems to take place at irregular times all through the year. One individual, feeding on kowhai blossoms in October, did not emerge from the pupa until the following August.

Chloroclystis sandycias (page 90.) Also from Waimarino, Taihape, Tophouse, Puhī Puhī, Governor's Bay, Arthur's Pass, Mount Cook, Paradise (Lake Wakatipu), Dunedin and Takitimo Mountains.

Chloroclystis rivalis (page 90.) The larva (Plate LIV., fig. 5) which was found at Arthur's Pass, feeding on *Hebe buxifolia* in January, is about $\frac{1}{2}$ inch (12 mm.) in length; cylindrical, stout, tapering anteriorly, the thoracic segments forming a snout. Head dark brown. Rest of body ochreous-fawn, paler posteriorly; markings pale chocolate-brown; a fine dorsal line; four broad, parallel, longitudinal stripes on thoracic segments; a large crescentic mark covering back of segment 5; a pair of strong diagonal marks towards sides of segments 6, 7, 8 and 9; a diffused shading on terminal segments; numerous transverse wrinkles; a diffused, dull brown, sublateral line. Underside pale dull greenish-ochreous. Legs brown; prolegs very pale

ochreous-fawn. The larva varies considerably in the distinctness of the markings, and depth of colour. Some very pale forms occur approaching whitish. Feeds amongst the blossoms of the foodplant, joining them together with silk and frass.

Pupation took place towards the end of January, and the moths did not emerge until the following November. In lowland localities around Wellington the larva of this insect is occasionally found feeding on the common *Hebe salicifolia*. Here the larvae were observed in the middle of March, but the perfect insects did not appear until the end of the following December.

This species also occurs at McKinnon Pass.

Chloroclystis plinthina (page 90.) Two fresh specimens taken round Wellington during the first week in March indicate that this is an autumnal species. Previous records point mostly to winter. The palpi are much longer in the female than in the male.

This species has been taken at Whangarei and Puhī Puhī (Kaikoura).

Chloroclystis melochlora (page 91. Plate LIV., fig. 36 larva.) Feeds on native broom (*Carmichaelia*) in January.

Length about $\frac{3}{4}$ inch (21 mm.). Cylindrical, moderately stout, slightly stouter posteriorly and very slightly tapering towards head. Head brownish-cream-colour, dotted with blackish; legs and prolegs brownish-cream-colour; dorsal region dark greyish-green, with obscure blackish longitudinal lines and paler spots; a very broad greyish-cream coloured lateral band; a fine black subdorsal line immediately above this, more or less distinctly edged with yellow above and whitish beneath; ventral surface of larva brownish-olive-green; a few very short bristles.

Varies considerably in depth of colouring, the lateral band being much paler in some individuals than in others.

The pupa is enclosed in a rather tough cocoon of silk and refuse fastened to an object on the surface of the ground.

The moths emerged late in February. There are probably two broods in the season.

Other localities for *C. melochlora* are:—Eketahuna (North Island), Arthur's Pass, Mount Cook, Waiho Gorge and McKinnon Pass.

Chloroclystis muscosata (page 91.) Also from Stephen's Island, Puhī Puhī, Mount Cook, Dunedin and Te Anau District.

CHLOROCLYSTIS TORNOSPILA.

(*Chloroclystis tornospila*, Meyr., Trans. N.Z. Inst., lxii., 94.)

(Plate LVI., fig. 13 ♂.)

A single specimen of this delicate-looking species was found at Waimarino. Mr. C. E. Clarke also reports it from the same locality.

The expansion of the wings is about 1 inch (25 mm.). The fore-wings are pale green, becoming almost white in disc, and clouded with grey on costal area; transverse lines white, margined with blackish, especially near costa; two confluent black spots above tornus; a clear wavy whitish subterminal line. Hind-wings grey, very slightly tinged with green towards termen;

numerous wavy whitish dark-margined transverse lines. All the cilia are pale greenish-ochreous faintly barred with blackish. Antennae with slender fasciculate-ciliated filaments (4). Abdomen with blackish subbasal ring.

Characterized by its pale coloured fragile appearance, and elongate, strongly dilated, fore-wings. Nearest to *C. muscosata*.

The perfect insect appears in January, and may be looked for in subalpine scrub.

Chloroclystis punicea (page 91.) Also from Nelson, Mount Cook, Mount Kemp, Skelmorlie Peak (Te Anau), and McKinnon Pass.

Chloroclystis paralodes (page 92. Plate I., figs. 40, 41 larvae.) The larvae as figured and described are the forms most generally met with. Varieties occur in which the brown dorsal band is much wider and olive-brown in colour, and the dorsal and subdorsal blackish bars much heavier. Others have no dorsal band, but only the blackish bars, which are then very conspicuous. The larva is almost destitute of hairs, and in this respect alone is absolutely distinct from the larva of *Chloroclystis urticae*.

This species also occurs at Whangarei, Waimarino, Paradise, Dunedin and Stewart Island.

CHLOROCLYSTIS URTICAE, n. sp.

(Plate LIV., fig. 1 larva)

This species has occurred at South Karori, and near Sinclair Head, Cook Strait. It will probably be found in most localities where nettle trees (*Urtica ferox*) are abundant.

The expansion of the wings is about $\frac{7}{8}$ inch (21-24 mm.). Extremely similar to *Chloroclystis paralodes*, but generally speaking less brilliant, less green, and often very slightly suffused with grey, giving the insect a dusky appearance. Mr. Prout has very kindly pointed out to me that on the underside of the fore-wings the anterior portion is largely tinged with green (in *paralodes* more or less pink, with no suspicion of green), and that on the upperside of fore-wings the outer margin of the median band (second line) is more perpendicular to costa than in *paralodes*. These, and other small differences indicated by Mr. Prout, could hardly be deemed sufficient for specific separation, but for the manifold differences in the larvae of the two forms referred to below.

The length of the full-grown larva is about $\frac{3}{4}$ inch (17 mm.). Moderately stout, cylindrical, considerably flattened, slightly tapering at each extremity. Head yellowish-green, speckled with pale brown. Body bright green; a prominent dark green lateral line and ridge interruptedly edged with white above; a fine, straight, brownish-green dorsal line; a double, very wavy, brownish-green subdorsal line, the dorsal and subdorsal lines sometimes rather obscure; a lateral series of small whitish dots; the dorsal region of the whole larva is strongly wrinkled transversely; other warts blackish, each emitting a short curved black bristle, the bristles curved forwards anteriorly and backwards posteriorly. Anal flap pinkish-brown, bordered with dull white. Younger larvae may be greenish-white, very faintly mottled with pink on the sides, but the black bristles are always distinctive.

This larva feeds exposed on the young leaves of the tree nettle (*Urtica ferox*) in early spring. It is sluggish in habit and very inconspicuous.

Reference to the description of the larva of *Chloroclystis paralodes* given on page 92, and to the figures of same on Plate I., figs. 40 and 41, will indicate the obvious differences between the two larvae. There is no trace of any black bristles on the larva of *C. paralodes*, but these are especially characteristic of the larva of *C. urticae*.

The pupa is subterranean. It is enclosed in a cocoon, formed of silk and particles of earth, at a depth of about $\frac{3}{4}$ inch below the surface.

The perfect insect appears in November.

Mr. A. V. Chappell's observations on the life history of "*Chloroclystis bilineolata*" probably refer to this insect.*

Chloroclystis lacustris (page 92.) Also from Mount Egmont, Mount Ruapehu, Arthur's Pass, Mount Cook and Clinton River.

Chloroclystis bilineolata (page 93.) Also from Mount Cook and Milford Track. An interesting form of this variable species is figured on Plate LXII., fig. 25. It was bred from larvae found feeding on native broom (*Carmichaelia*), at Governor's Bay, in December. The moths emerged during February and March.

Chloroclystis lunata (page 93.) Also from Mount Ruapehu, Waipukurau, Mount Hector, Puhī Puhī (Kai-koura), and Jack's Pass.

Chloroclystis dryas (page 93.) In most specimens there is a trace of a fine, wavy, whitish subterminal line. In some examples this line is quite conspicuous; the veins are also sometimes dotted with white, especially on hind-wings. Also from Waipukurau, Mount Hector, Lyttelton Hills, and Dunedin.

Chloroclystis acompsa (page 94.) Also from Lyttelton Hills, Mount Cook and Paradise (Lake Wakatipu).

Chloroclystis aristias (page 94. Plate LIV., fig. 2 larva.)

The larva, which feeds on *Aristotelia fruticosa* in January, is about $\frac{1}{2}$ inch (15 mm.) in length. Subcylindrical, moderately stout, slightly tapering at each end, the whole surface finely ridged transversely. Head yellowish-orange-brown. Segments 2, 3 and 4 reddish-orange-brown. Whole of ventral surface dark brown. A series of very conspicuous, oblique, lateral stripes on segments 5, 6, 7, 8 and 9; deep chocolate-brown, more or less margined with ochreous; rest of these segments rich yellowish-orange-brown. Dorsal and lateral portions of segments 10 to extremity ochreous, slightly variegated with orange-brown, but very much paler than rest of larva. Legs and prolegs dull pinkish-brown.

This larva is somewhat variable, but always easily recognised. It is very well protected when resting on the stems of its foodplant.

The pupa, which is stumpy in build, is enclosed in a very frail cocoon amongst moss. In captivity pupation occurred at the end of January, and the perfect insect

*Trans. N.Z. Inst., ix., 557,

emerged early in September, but in a state of nature it would probably not appear until considerably later.

This species has been taken on the Goulard Downs (Nelson).

Chloroclystis furva (page 94.) Also from Flat Top Mountain (Lake Manapouri).

Chloroclystis rubella (page 94.) Also from Mount Hutt, Arthur's Pass, Kepler Mountains and Flat Top Mountain.

Chloroclystis erratica (page 94.) Also from Mount Hutt.

Chloroclystis halianthes (page 95.) Also from Jack's Pass, Arthur's Pass, Waiho Gorge, and Skelmorlie Peak (Te Anau).

Chloroclystis magnimaculata (page 95.) Also from Wellington, Flora River, Mount Arthur, Mount Hutt, Arthur's Pass, Flat Top Mountain, Kepler Mountains, and Milford Track.

Chloroclystis malachita (page 95.) Also from Milford Track.

Chloroclystis lichenodes (page 95.) Also from Lake Rotoiti, Puhī Puhī, Price's Bush, Mount Cook, Waiho Gorge, Longwood Range, and Te Anau District.

CHLOROCLYSTIS RUFIPPELLIS.

(*Chloroclystis rufipellis*, Meyr., Trans. N.Z. Inst., lviii., 313.)

(Plate LVI., fig. 11 ♂.)

This species was discovered at Gollan's Valley, near Wellington.

The expansion of the wings is nearly $\frac{3}{4}$ inch (21 mm.). The fore-wings are rather broad, with the costa strongly arched before the apex and the termen excavated before tornus; *reddish-fawn colour, darkest on terminal area*; the head, thorax and basal patch are reddish-ochreous; there are a few fainter wavy transverse lines towards median band; *the median band is dull reddish-brown*; its inner edge very oblique, outer edge sinuate above middle, with rounded projection, thence sinuate to dorsum beyond middle; a fine paler line margins the outer edge of median band from costa to near middle; terminal third very rich reddish-fawn colour; a fine, wavy, dull white subterminal line; a distinct whitish dot above tornus; the cilia are pale reddish-brown barred with blackish. The hind-wings are greyish-ochreous, with reddish-brown suffusion on dorsal half, and a series of obscure wavy transverse lines on dorsum; a fine, wavy whitish subterminal line; the cilia are pale red, faintly barred with blackish. The abdomen is reddish-fawn, with distinct black band near base.

Principally characterized by its rather small size, rounded fore-wings, and very rich reddish-brown colouring.

The perfect insect appears in September and may be looked for in forest.

Chloroclystis fumipalpata (page 96.) Also from Wai-pukurau, Pukeatua Bush, Porter's Pass, Mount Hutt, Mount Cook, Waiho Gorge, McKinnon Pass, Knife and Steel (Fiord County), and Pitt Island (Chathams).

Chloroclystis sphragitis (page 96.) Also from Puhī Puhī (Kaikoura).

Chloroclystis nereis (page 96.) Also from Mount Dennam, Mount Cook, The Hump, Milford Track and Te Anau District.

Chloroclystis minima, Huds. (page 96.) Acquisition of further material indicates that the great difference in size between this form and *C. nereis*, Meyr., is constant, and must be deemed sufficient for specific separation. It must, however, be renamed *Chloroclystis ida*, the name *minima* being preoccupied in the genus (Nov. Zool., iv., 227, 1897.) The original description is as follows:—

The expansion of the wings is $\frac{3}{8}$ inch (16 mm.). *All the wings are dark-grey, stippled and striped with blackish*. The fore-wings have five rather ill-defined transverse bands, which are more distinct on the costa and termen than near the centre of the wing. The hind-wings are shaded with blackish near the termen, but are otherwise destitute of distinct markings. The cilia of all the wings are grey, barred with black. The head, thorax, and abdomen are dark-grey.

Chloroclystis ida was discovered by J. H. Lewis, at Ida Valley, Central Otago. It has since occurred in the North Island at Waiouru, and Waimarino, National Park. The species may immediately be recognised by its small size, and very dark colouration.

The perfect insect appears from November till January and should be looked for in subalpine localities in both islands.

Chloroclystis humilis (page 97.) Also from Mount Ruapehu, Waimarino (North Island), and Upper Rakaia, 3,500 feet.

CHLOROCLYSTIS MELANOCENTRA.

(*Chloroclystis melanocentra*, Meyr., Trans. Roy. Soc. N.Z., lxiv., 151.)

(Plate LXII., fig. 26 ♂.)

This species was discovered by Mr. Lawford White, on the slopes of Ben Lomond, Lake Wakatipu, above 3,000 feet.

The expansion of the wings is $\frac{3}{4}$ inch (22-23 mm.). Head palpi, thorax grey mixed whitish. Antennae ♂ shortly and evenly ciliated. Fore-wings termen bowed, oblique; grey, striated blackish, somewhat mixed crimson, especially on third fascia and median and subdorsal portions of fifth; discal dot small, blackish; first, median, and second lines indicated by series of black dots; subterminal line wavy, obscurely whitish; a fine blackish terminal line; cilia light grey speckled darker, obscurely darker barred. Hind-wings termen excised beneath apex; pale greyish; striae and lines marked on dorsal third as on fore-wings, and faintly on median third, black dots of second line extending more than half across wing; terminal line and cilia as in fore-wings.

The perfect insect appears at the end of October.

The figure was taken from a specimen kindly lent to me by Mr. S. Lindsay, and the crimson shading was hardly visible. The above is Mr. Meyrick's original description.

This species seems close to *Chloroclystis humilis*, Philp. (page 97).

Eucymatoge arenosa (page 97.) Also occurs at Paekakariki.

Eucymatoge gobiata (page 97.) Larvae of this species were found commonly at Waimarino, early in January, feeding on a small leaved *Coprosma*. Some emerged as moths in the late summer, but others passed the winter as pupae, emerging early in September. This is of

interest as it is clear that by this means the species secures a double chance of survival.

Other localities for this insect are:—Spirits Bay (North Auckland), Whangarei, Feilding, Taihape, Puhi Puhi and Mount Cook.

Eucymatoge anguligera (page 98.) The twelfth line of the description should begin a new paragraph and read as follows:—

The larva, which feeds on *Coprosma robusta* and *C. rotundifolia*,

This species also occurs at Whangarei, Levin, Puhi Puhi, Arthur's Pass and the Te Anau District.

EUCYMATOGE DRYOCYMA.

(*Eucymatoge dryocyma*, Meyr., Trans. Roy. Soc. N.Z., lxvii., 426.)
(Plate LXII., fig. 13 ♀.)

A single specimen of this rather striking species was captured by Mr. Lawford White at Mount Hutt.

The expansion of the wings is about $1\frac{1}{4}$ inches (31 mm.). Very similar to *E. arenosa* but larger, with the costa more rounded towards apex, the markings more distinct, more strongly waved, especially on hind-wings, and more varied alternately with brown and blackish brown; the posterior margin of median band (fourth fascia) is markedly prominent in middle and marked dark blackish-brown; *anguligera* has this margin similarly marked, but in that species the termen of fore-wings and hind-wings is much more rounded and irregular; the subterminal line in both wings is more distinctly whitish than in *E. arenosa*.

The perfect insect appears in April.

Described and figured from the unique specimen in the Canterbury Museum.

Hydriomena siria (page 98.) Also from Waianiwa, and Takitimo Mountains.

Hydriomena triphragma (page 98.) Also from Price's Valley, Banks Peninsula, Dunedin, and Pitt Island (Chatham).

Hydriomena expolita (page 98.) Also from Jack's Pass (Hanmer), Dunedin, and Lake Wakatipu.

Hydriomena purpurifera (page 99. Plate LIII., fig. 23 larva.)

The egg, which is laid on its side, is about 1-50th inch long, oval, with a deep depression on upper side, and numerous rather shallow hexagonal pits; pale whitish-ochreous, becoming dark ochreous two or three days after being deposited.

The young larva, when first hatched, is about 1-16th inch long; bright ochreous-yellow, slightly greenish near middle; the head is brownish; dorsal portion of segment 2 slightly horny and darker; segments 3 and 4 with transverse row of very distinct darker warts, each emitting a rather short, stout, blackish bristle; other segments with two rows of similar warts and bristles. The scales from the mother moth were thickly strewn over the box where the larvae were hatched, and became attached to the bristles, which apparently have a viscous termination. The young larva is fairly active. The eggshell is not eaten on emergence. The natural foodplant is unknown, but the larvae were fed on *Plantago*.

The length of the larva, when nearly full-grown, is about $\frac{3}{4}$ inch; stout, slightly tapering towards each extremity; surface extremely irregular, with numerous bright green festoons, projections, and filaments, the general colour of the central portions of the larva being dark brown, or dark greenish-brown; head

and dorsal surface of segment 2 wholly green, also legs; segments 3 and 4 with raised lateral ridge, and small green tubercles, segments 5 to 10 inclusive with two rows of about ten green tubercles, or short filaments; lateral ridge modified into conspicuous green festoons; remaining segments furnished with longer filaments, especially posteriorly; prolegs close together, light green; the summit of most of the tubercles and filaments is furnished with a stout black bristle, and similar bristles are numerous on the head, thoracic, and posterior segments. Very variable in the extent and depth of brown and green colouring.

This is a remarkable larva, apparently specially adapted for concealment amongst moss. It is extremely sluggish, and feeds and grows very slowly throughout the winter.

The pupa is slightly under $\frac{1}{2}$ inch in length, stout cylindrical, slightly dilated towards extremities of wing-cases; abdominal segments small, with sharp spine at cremaster. Colour black, very slightly tinged with brown. It is enclosed in a frail earthen cocoon close to the surface of the ground.

Other localities for *Hydriomena purpurifera* are:—Horopito, Mount Whakaari (Kaikouras), Runanga, Niagara, Waiho Gorge, and Te Anau District.

Hydriomena rixata (page 99. Plate LIV., fig. 7 larva.)

The egg is about $\frac{3}{4}$ mm. in length; oval, slightly flattened, covered with numerous large but shallow hexagonal depressions; nearly white when first laid, but changing to pale ochreous in two or three days' time. The side of the egg becomes concave as development progresses. The female deposits the eggs in irregular heaps of a dozen or more. Eggs laid end of January, hatching early in February.

The young larva, when first hatched, is slightly over 2 mm. in length, cylindrical, moderately slender, with large head and slightly broader posterior segments; prolegs long; general colour dull pale greyish-ochreous. Head yellowish-brown, segment 1 enlarged; segments 2 and 3 with several parallel longitudinal slightly darker lines; each of remaining segments, except terminal, with conspicuous double transverse band of greyish-black; numerous rather short bristles, apparently viscous at termination, as scales of the mother moth in breeding box became attached. The egg-shell is not eaten on emergence. The freshly-hatched larvae rest standing on their prolegs with the head and anterior segments curled up, similar to the young larvae of *H. deltoidata* (page 102). This habit may be common in *Hydriomena*, the larvae feeding in the autumn and early winter and possibly simulating fungi. Later on the larvae rest standing on prolegs with head and anterior segments bent downwards and forwards.

When almost full-grown the larva is about $\frac{3}{4}$ inch in length; subcylindrical, fairly stout, of uniform thickness, considerably flattened; surface very uneven, ridged and furrowed, with numerous tubercles and pale granulations. General colour deep dull red-brown, much paler and slightly greenish at each extremity; a rather conspicuous wavy blackish lateral line with pale marking beneath; a short thick bristle arises from each tubercle; these are densest and often in pairs on anterior and posterior

portions. The head and legs are pale greenish-white with darker markings; a conspicuous black subventral mark near junction of segments 5, 6, 7 and 8. The full-grown larva is duller in colour than the figure with the markings less distinct.

This larva is of very sluggish habit, hardly ever moving. It feeds on *Plantago*, and probably other low plants, often eating the withered leaves. It is evidently very secretive, and grows very slowly, living through the winter hidden amongst the dead and wet foliage on the surface of the ground. There would thus appear to be little chance of finding this larva in a state of nature.

The pupa is enclosed in a very frail cocoon about $\frac{1}{2}$ inch below the surface of the ground.

The eggs, which formed the basis of the above life history, were deposited by a female belonging to the South Island form.

This species occurs on Pitt Island (Chathams).

Hydriomena similata (page 99.) Also from Whangarei, Waipukurau, Mount Ruapehu, and Puhī Puhī (Kai-koura).

Hydriomena callichlora (page 100. Plate XLVIII., fig. 19, subspecies *harmonica*, Clarke, Trans. N.Z. Inst., lvi., 417.) Mr. Clarke has recently raised the form, described by him as subspecies *harmonica* at the above reference, to full specific rank. (See Trans. N.Z. Inst., lxiv., 12.) In the absence of further examples I consider it still advisable to regard the form *harmonica* as a variety only.

Other localities for *Hydriomena callichlora* are:—Whangarei, Picton, Mount Grey, Jack's Pass, Peel Forest, Mount Cook, Waiho Gorge and Te Anau District.

Hydriomena arida (page 100.) Also from Puhī Puhī, Waiho Gorge and Te Anau District.

Hydriomena hemizona (page 100.) Also from Mount Ruapehu, Arthur's Pass, Mount Cook, Bold Peak (Lake Wakatipu), Macetown and Kepler Mountains.

Hydriomena subrectaria (page 102.) Also from Hen Island, Pukeatua Bush, Kumara and Takitimo Mountains.

Hydriomena prionota (page 102.) Also from Jack's Pass (Hanmer).

HYDRIOMENA (or XANTHORHOE) IOLANTHE,
n. sp.

(Plate LXII., fig. 18 ♀.)

A single specimen of this very distinct species was discovered by Mr. F. S. Oliver, at Lake Harris, beyond the head of Lake Wakatipu, in January, 1918. No further specimens have since been found.

The expansion of the wings is $\frac{3}{4}$ inch (22 mm.). The forewings have the apex rather obtuse and the termen slightly oblique; there is a deep reddish-brown basal patch, followed by a rather indistinct pale transverse line; the sub-basal area is orange-brown, followed by a narrow whitish-ochreous band from $\frac{1}{4}$ of costa to $\frac{1}{3}$ of dorsum; this band is abruptly bent outwards just below costa and contains a fine blackish line; the median band is dull red, slightly purplish tinged; it contains a small black discal dot and two fine wavy blackish lines enclosing an irregular central area; the outer edge of the median band is finely waved, with slight irregular projections below costa, and

a more evident rounded projection in disc; the dorsal third of the median band is much narrower; beyond the median band the ground colour of the wing is pale brownish-ochreous; there are two fine wavy blackish lines immediately outside the median band; a conspicuous yellowish-brown patch on the costa before apex and a blackish-brown patch below this; a very wavy paler subterminal line and a series of minute terminal marks. The hind-wings are dull whitish-ochreous, with numerous pale brownish-ochreous transverse lines and terminal band, some of the lines becoming blackish towards dorsum; there is a series of very minute terminal dots; the cilia of all the wings are dull brownish-ochreous.

The perfect insect appears in January.

Described and figured from a specimen kindly submitted by Mr. Oliver. This specimen is unfortunately minus antennae, rendering the generic position of the insect uncertain. It is, however, such a distinct and interesting form that I am at last constrained to describe it.

Asthenia pulchra (page 103. Plate LIII., fig. 26 larva.) The larva appears to be very variable. The most characteristic form is that now figured. The broad brown dorsal line is sometimes partly, or wholly, replaced by a fine green line. A broad white lateral line is sometimes present, often with brownish-pink blotches beneath it. Other larvae are wholly, or partially, suffused with brownish-pink. The broad brownish stripe on each side of the head is a good general distinctive character.

Euchoeca rubropunctaria (page 104.) As already stated the larva of this insect is very variable both in colour and markings. An enlarged figure of a specimen nearly full-grown is given on Plate LIV., fig. 22; and this may be taken as a fairly representative example. Some larvae are almost wholly dull green, with the usual markings very obscure, whilst others are much darker than the figure. The white-ringed black spots, and deeply incised segmentation are, however, characteristic.

This species also occurs on Pitt Island (Chathams).

Venusia verriculata (page 104.) A remarkable variety of this insect, captured at Karori, is figured on Plate LV., fig. 7.

Venusia charidema (page 105.) Also from Mount Cook, Hunter Mountains, and Te Anau District. The reference to Day's Bay (Wellington Harbour) may be erroneous.

Venusia autocharis (page 105. Plate LIII., fig. 25 larva.)

Length when nearly full-grown about $\frac{3}{4}$ inch (18 mm.). Cylindrical, slender, slightly tapering posteriorly, pale green with dark green markings. Head whitish-green. A fine whitish-green dorsal line, with a much darker green line on each side of it; a broad, whitish-green, subdorsal line; a very conspicuous, dark green, lateral line; a broad whitish-green sublateral line. Segmental divisions marked in pale yellowish-green. A few, rather short, black bristles. Full-grown larvae are slightly paler in colour.

This larva is of sluggish habit. It rests on the leaves of its foodplant *Dracophyllum longifolium*, where it is very inconspicuous. The larvae were full-grown about the end of October, and perfect insects emerged early in December.

The larvae, forming the subject of this life history, were obtained in the beech forest, Day's Bay (Wellington Harbour).

Venusia xanthaspis (page 106. Plate LIII., fig. 13 larva.)

The length of the full-grown larva is about $\frac{1}{2}$ inch. Head pale brown, darker on sides. Body very stout, slightly tapering at each end; segments deeply excised; segments 2-4 greenish, much suffused with dark pinkish-grey, especially on ventral surface; segments 5-9 inclusive very stout, deep green, segment 9 slightly tinged with yellow; segments 10-13 wholly dark pinkish-green, slightly spotted with paler; a wavy white lateral line, more or less edged with dull crimson; a few isolated blackish bristles. General appearance of larva green, with each extremity dark pinkish-grey. The food-plant is *Aristolelia fruticosa*.

One specimen of this interesting larva was taken at Arthur's Pass on 19th January and the perfect insect emerged on 25th February.

Other localities for this species are.—Waimarino, Runanga, Mount Cook, Bold Peak, and Arthur River.

Orthoclydon praefectata (page 106.) Also from Lake Manapouri.

Orthoclydon pseudostinaria (page 107.) Also from Dun Mountain, Mount Arthur and Upper Clinton River.

Orthoclydon chlorias (page 107.) Also from Arthur's Pass and Ben Lomond. Mr. C. E. Clarke states that this beautiful insect is not uncommon on the Te Anau-Milford Track.

Asaphodes stephanitis (page 107.) Also from Aorangi, Otira and Waiho Gorge.

Asaphodes abrogata (page 107.) Also from Mount Cook, Moeraki, Waipori, Hyde, Otautau, Takitimo Mountains.

Asaphodes megaspilata (page 108.) Also from Pitt Island (Chathams).

ASAPHODES AMBLYTERMA.

(*Asaphodes amblyterma*, Meyr., Trans. N.Z. Inst., lxii., 94.)

(Plate LVI., fig. 18 ♂.)

This very distinct little species was discovered by Commander Patterson at Whangarei.

The expansion of the wings is slightly under 1 inch (24 mm.). Smaller in size than the average *A. megaspilata* with the fore-wings grey; basal two-thirds of median band brownish-ochreous; outer third whitish traversed by three wavy blackish lines; a series of confluent blackish spots below apex. Hind-wings pale greyish-ochreous, with darker grey wavy transverse lines.

The perfect insect appears in December.

Asaphodes rufescens (page 108.) Also from Te Anau District.

Asaphodes parora (page 108.) Also from Riccarton, Deans Bush, Mount Cook, and Milford Track.

Paradetis porphyrias (page 109.) Also from Waiho Gorge, Dunedin, Rere Lake, Humboldt Range, Routeburn, Te Anau District and Milford Track.

Xanthorhoe chlamydata (page 109.) Also from Taihape, Feilding, Titahi Bay, Puhī Puhī, Mount Cook, and Clinton River.

Xanthorhoe orophylla (page 110.) Also from Lake Coleridge, Kaikoura Mountains, Mount Cook, Commissioners Creek, Macetown, Takitimo Mountains, and West Plains (Invercargill).

Xanthorhoe semifissata (page 110. Plate LIII., fig. 15 larva.)

The egg, which is laid on its side, is about $\frac{1}{40}$ th inch long, oval, slightly flattened, a little broader at one end, with a large concavity on the upper side. It is covered with rather irregular hexagonal depressions. Colour at first very pale greenish-straw-colour, becoming brownish-straw colour a day or two after deposition. The eggs are deposited separately, in quite an irregular manner.

The larva, when first hatched, is about $\frac{1}{12}$ th inch in length. Elongate, slender, cylindrical, with segments 5-9 very long. Head very large, pale dull brownish-ochreous. Segment 2 also large, especially anterior portion, same colour as head. Rest of body dull grey, slightly tinged with ochreous, with obscure darker subdorsal lines; segments 10-13 very short and stouter than the others, the prolegs being placed very close together. Anal proleg very large. A few short, thick, blackish bristles. Rests standing on prolegs, with remainder of body upright, partly curved round like a corkscrew. Foodplant watercress (*Nasturtium officinale*). When about half-grown the larva is dull olive-green on the upper surface, with numerous rather obscure paler longitudinal lines; a broad whitish lateral line. Underside pale dull reddish-ochreous. A few very short, thick, black bristles. Skin with a few transverse wrinkles. At this time the larva is usually of very sluggish habit, but walks rapidly at times, and is exceedingly sensitive to any vibration. Rests standing on prolegs with anterior segments curled into a volute.

The full-grown larva is nearly an inch in length. Cylindrical, of almost uniform thickness; chocolate-brown above, warm ochreous-brown beneath, several paler ochreous-brown lines on posterior segments. Head dotted; warts paler, and rather conspicuous; a few very short, stout, blackish bristles. Rests on stems of foodplant, usually fully extended, standing on prolegs, either sticking out from branch, or closely appressed thereto.

The pupa is enclosed in a loose cocoon formed of silk and rubbish on or near the surface of the ground.

From a batch of eggs deposited in the middle of February, 1934, there resulted in May, 1934, twelve females and five males. In other cases males have usually proved more numerous than females.

Xanthorhoe rosearia (page 110.) Apparently common and generally distributed throughout the country.

Xanthorhoe bulbulata (page 111.) Also from Awapiri (Marlborough), Ranfurly, Hyde, Waipori, Oreti River and Takitimo Mountains.

Xanthorhoe lucidata (page 112.) Mr. Prout has kindly informed me that *Xanthorhoe practica*, Meyr., is a synonym of this. The insect described on page 111 and figured on Plate XI., fig. 43, must be known in future as *Xanthorhoe lucidata*, Walk. This species also occurs at Whangarei, Waipukurau, Price's Valley, Banks Peninsula, and Governor's Bush (Mt. Cook). In the far North it is found during winter and spring.

Xanthorhoe venipunctata (page 112. Plate LIII., fig. 22 larva.)

The egg, which is laid on its side, is about $\frac{1}{40}$ th inch long, rather broad, oval, slightly flattened, with one end a little trun-

cated; the upper side has a distinct concavity, and the general surface is smooth and polished, covered with fairly large shallow hexagonal depressions; the colour when first deposited is pale whitish-ochreous. The young larva, when about ten days old, is $\frac{1}{4}$ inch in length, subcylindrical, much flattened, of uniform thickness throughout; brownish-ochreous, or greenish-ochreous, with numerous very fine darker brown lines, confluent on the subdorsal region; there are a few isolated short black bristles.

The length of the full-grown larva is about 1 inch; cylindrical, with head small and flattened; rest of body slightly tapering towards head and slightly flattened; segmental divisions indistinct; upper surface dull sandy brown, streaked and dappled with darker; under surface (below lateral line) brownish-ochreous, faintly streaked and dappled with reddish-ochreous; a conspicuous black spot on side of each abdominal segment; two rows of indistinct whitish tubercles around each abdominal segment, and one row around each thoracic segment; head pale whitish-ochreous, with four dappled blackish stripes, and a black mark near base of antenna; a few isolated black bristles, more numerous at each extremity of larva.

This caterpillar is very sluggish in habit, mostly remaining motionless and extended at full length. It is evidently protectively coloured for residence in sandy situations, same as the imago. The observed foodplants are *Muehlenbeckia*, Watercress (*Nasturtium officinale*) and Shepherd's Purse (*Capsella Bursa-pastoris*), so that the larva is evidently somewhat indiscriminate.

The pupa, which is very dark brown in colour, is enclosed in a frail cocoon on the surface of the ground.

The moth occurred sparingly on the sandhills at Paekakariki, in December, eggs being laid on 1st January, the resultant imagines emerging during March. It is probable that the autumnal moths hibernate and are frequently abroad on mild evenings during the winter. The individuals observed at midsummer are evidently the offspring of the hibernated specimens.

This species has also occurred at Whangarei, Waiouru, Waipukurau, Upper Ure River, Puhi Puhi (Kaikoura), and Takitimo Mountains.

Xanthorhoe plumbea (page 113.) Also from Jack's Pass (Hanmer), Arthur's Pass, Mount Cook and Lake Te Anau.

Xanthorhoe farinata (page 113.) Also from Awapiri (Marlborough).

Xanthorhoe camelias (page 114.) Also from Waiho Gorge and Eglinton Valley.

Xanthorhoe chionogramma (page 114.) Also from Jack's Pass (Hanmer), Arthur's Pass, Eglinton Valley, Clinton River and McKinnon Pass.

Xanthorhoe cedrinodes (page 114.) Also from Arthur's Pass, Mount Cook, mountains around Lake Ohau, Takitimo Mountains and Te Anau District.

Xanthorhoe umbrosa (page 115.) Also from Flat Top Mountain.

Xanthorhoe subobscurata (page 115.)

The length of the larva is slightly over 1 inch. Elongate, cylindrical, of almost uniform thickness, with prominent lateral ridge. Rather pale green; segmental divisions finely marked in yellow; a broad white lateral line on lateral ridge, four finer

white lines between this and midback; two very faint whitish lines below the lateral ridge.

Foodplant *Angelica montana*. The larva was found at Arthur's Pass on 20th January, and the perfect insect emerged on 28th February.

This species has also occurred on Skelmorlie Peak (Lake Te Anau).

Xanthorhoe bryopis (page 115.) Additional specimens were obtained on Mount Arthur, at about 4,000 feet, in January, 1932.

Xanthorhoe prasinias (page 116.) Also from Kaimanawa Ranges, Puketitiri (Hawke's Bay), Mount Whakaari (Kaikouras), Jack's Pass, Thompson's Gorge, Bluecliffs, Cave Creek (Craigieburn), Hyde, Waiho Gorge, Takitimo Mountains and Milford Track.

Xanthorhoe limonodes (page 116.) Also from Taihape, Lake Rotoiti, Puhi Puhi, Mount Whakaari, Mount Arthur, Waiho Gorge and Lake Te Anau.

Xanthorhoe beata (page 116.) Also from Mount Egmont, Levin, Runanga, Niagara, Longwood Range, Lake Te Anau, and Orepuki.

Xanthorhoe benedicta (page 117.) Also from Taihape, Waipukurau, Levin, Puhi Puhi, Te Anau, Orepuki and Stewart Island. There are probably two broods of this insect in the season and the perfect insects belonging to the second brood apparently hibernate.

Xanthorhoe adonis (page 117. Plate LIII., fig. 24 larva.)

The egg, which is laid on its side, is about 1-40th inch in length, oval, not flattened, and without concavity when first deposited; there are a few very shallow, large, hexagonal depressions; the colour is very pale green, turning deep ochreous six days after being laid, and later to dull grey.

The length of the larva, when first hatched, is about 1-16th inch; general colour dull ochreous, slightly tinged with green; head very large, brownish-ochreous; a broad, wavy, green lateral line; a very slender indistinct dorsal line, on anterior portion only; a few short stout bristles, most numerous on anal segment; prolegs very large and close together. The larva is very sluggish in habit, mostly standing erect on prolegs, with head and anterior portions rolled up. The egg-shell is not eaten on emergence. Foodplant watercress (*Nasturtium officinale*).

When nearly full-grown the larva is about $\frac{3}{4}$ inch long, stout, subcylindrical, considerably flattened, slightly tapering at each end, with prominent lateral ridge; black, faintly tinged with claret colour; an indistinct series of paler marks on midback, becoming confluent posteriorly, and forming a more conspicuous, wide, pale, dorsal line; lateral ridge dotted with white posteriorly; general surface somewhat roughened, giving larva very dull appearance; a few *very short*, thick bristles; legs pale brownish-yellow; prolegs black, moderately, close together.

This larva is extremely sluggish in habit, resting on stems of foodplant and feeding on the dead portions. In its natural state it evidently lives throughout the winter probably feeding during the milder periods. None of the larvae kept in captivity reached the pupa state.

This species also occurs at Mount Blowhard, Glentui, Cave Creek, Macetown, Greenstone River, and Lake Te Anau.

Xanthorhoe obarata (page 117.) Also from Puhī Puhī, Jack's Pass (Hanmer), Arthur River, Hope Arm (Manapouri), and Kepler Mountains.

Xanthorhoe cymozeucta (page 118.) Also from Arthur's Pass, Temuka, Mount Cook, and Te Anau-Manapouri District.

XANTHORHOE MAORIARIA, n.sp.

(Plate LVI., fig. 22 ♂.)

Three specimens have been taken of this interesting insect; one at Wainuiomata in the North Island, and two at Otira in the South Island.

The expansion of the wings is slightly over 1 inch (26 mm.). The fore-wings are strongly falcate; *creamy-white with brown markings*; a pale basal patch, its outer edge slightly sinuate; a pale brown longitudinal stripe on costa from base to apex, slightly warmer in colour on premedian and subterminal areas; a very conspicuous brown median band, its inner edge with very slight projection near middle, outer edge with strong double projection near middle and other lesser sinuations; a terminal series of slender crescentic marks; cilia dull creamy-white, partially barred and tipped with brown. Hind-wings white with faint brownish basal patch and faint traces of transverse lines on dorsum; termen and cilia as in fore-wings.

In wing outline and shape of median band this species closely resembles *Xanthorhoe cymozeucta* but may be immediately distinguished by the creamy-white fore-wings, without the subterminal band and dull reddish shading characteristic of that species. Mr. Meyrick regards it as a variety of *X. cymozeucta*, but as three identical specimens have been taken, without any trace of intermediate forms, I have decided to treat it as a distinct species in the meantime.

The perfect insect appears in December and January, and frequents forest.

Xanthorhoe clarata (page 118.) Also from Puketitiri (Hawke's Bay), and Pitt Island (Chathams).

XANTHORHOE CITROENA.

(*Xanthorhoe citroena*, Clarke, Trans. Roy. Soc. N.Z. lxiv., 11.)

(Plate LVI., fig. 3 ♂, 4 ♀.)

This very bright-looking species was discovered by Mr. C. E. Clarke at Waiho Gorge, where it is quite common.

The expansion of the wings of the male is 1½ inches (34 mm.), of the female 1¼ inches (31 mm.). Very like *X. clarata* but *smaller*, with paler markings, and *very strong orange-yellow suffusion on both surfaces of fore- and hind-wings*. None of the transverse bands, or lines, are pure white, and are often only faintly edged with blackish-brown. The markings on the underside of *X. citroena* are also much paler than in *X. clarata*.

The perfect insect appears in December and January. It frequents the edges of forest and scrub, and may be met with in open spaces along the riverbed, as far up as the terminal moraine of the Franz Josef Glacier. When on the wing this insect does not suggest the usual appearance of *X. clarata*, and presumably its manner of flight is different I think it is quite a distinct species.

Xanthorhoe declarata (page 119.) Also from Cave Creek (Craigieburn), Commissioner's Creek, Macetown, and Lake Te Anau.

Xanthorhoe cataphracta (page 119.) Also from Mount Cook, Waiho Gorge, Dunedin and Milford Track.

Xanthorhoe stricta (page 119.) Also from Arthur's Pass and Mount Cook.

Xanthorhoe dissimilis (page 119.) Also from Flat Top Mountain (Lake Manapouri).

Xanthorhoe helias (page 120.) Also from Mount Cook, Humboldt Range and Te Anau.

XANTHORHOE OBSCURA.

(*Xanthorhoe obscura*, Philp., Trans. N.Z. Inst., liii., 338, and lix., 484.)

(Plate LVI., fig. 10 ♂.)

This species was discovered by the late Mr. Philpott on the Hump, Waiāu (Southland). It was at first regarded as a variety of *Xanthorhoe helias* (see page 120), but as the result of further investigation Mr. Philpott subsequently raised it to specific rank.

The expansion of the wings is slightly over 1 inch (26.30 mm.). The fore-wings are *dull greyish-brown shading to ochreous along costa*; first and second lines distinct whitish-ochreous, *the second line with a double sinuation on the main projection*. The hind-wings are ochreous *with terminal half dull greyish-brown*. All the cilia are pink.

The perfect insect appears late in February. The males occurred fairly commonly in a damp scrub-filled gully, but only one female was taken. The latter sex is remarkable in having both fore- and hind-wings much narrowed.

Xanthorhoe recta (page 120.) Also from Mount Grey.

Xanthorhoe aegrota (page 120.) Also from Puhī Puhī and Lake Te Anau.

Xanthorhoe exoriens (page 121.) Also from Dunedin and Takitimo Mountains.

Xanthorhoe imperfecta (page 121.) Also from Wairaurahia and Alford Forest (Lake Wanaka).

Xanthorhoe oraria (page 121.) Also from Nevis, Macetown, Greenstone River, Bold Peak (Wakatipu), and Eglinton Valley.

Xanthorhoe sericodes (page 121.) Also from Ruahine Mountains (North Island), 4,000 to 5,000 feet (E. S. West.)

Xanthorhoe nephelias (page 121.) Also from Ben Lomond.

Xanthorhoe occulta (page 122.) A remarkable specimen, supposed to be a female of this species with abbreviated wings, was taken by Mr. Lawford White, on the slopes of Ben Lomond, Lake Wakatipu, October 30, 1932. It was observed clinging to a tussock stem; unable to fly, but could crawl about fairly rapidly with wings fluttering; altitude about 2,500 feet. The normal female of *Xanthorhoe occulta*, of which there are two specimens in my collection and eight in the Dominion Museum collection, has fully developed wings as figured on Plate XIV., fig. 15.

This species also occurs at Jack's Pass (Hanmer), Mount Hutt, Ben Lomond, in the Lake Te Anau District, and at Broad Bay, Niagara, and Greenstone River.

Xanthorhoe stinaria (page 122.) Also from Waiho Gorge, Niagara, Clinton River, and McKinnon Pass.

Notoreas insignis (page 123.) Also from Mount Torlesse (4,000 feet), Queenstown and Takitimo Mountains.

Notoreas orphnaea (page 123.) Also from Old Man Range, Vanguard Peak, Advance Peak, Flat Top Mountain (Lake Manapouri), Hunter Mountains, Kepler Mountains, and McKinnon Pass.

Notoreas villosa (page 123.) Also from Kepler Mountains.

Notoreas anthracias (page 124.) Also from Mount Torlesse (4,000 feet), Mount Cook, Ben Lomond, Longwood Range, Eglinton Valley, and Te Anau District.

Notoreas incompta (page 124.) Also from McKinnon Pass.

Notoreas mechanitis (page 124.) Also from Ruahine Mountains (North Island, E. S. West), Kaikoura Mountains, Macetown, Vanguard Peak, Bold Peak, various mountains Te Anau District, and The Hump.

Notoreas paradelpha (page 124.) Also from Mount Cook, Bold Peak, Eglinton Valley, Milford Track and The Hump.

Notoreas hexaleuca (page 125. Plate LVI., fig. 30 ♀.) The accompanying figure and description have been prepared from a specimen taken by Stella Hudson, at Mount Cook, and kindly identified as this species by Mr. Meyrick. The insect was also found on Skelmorlie Peak, Lake Te Anau, by Mr. C. E. Clarke.

The expansion of the wings is $\frac{5}{8}$ inch (16 mm.). Fore-wings with apex extremely acute, white, very faintly tinged with yellow, with black markings; a black basal patch; a rather broad, almost straight, sub-basal transverse band; inner edge of median band narrow, with blunt projection towards termen; outer edge double with sharp projection towards base below middle almost touching preceding line; subterminal line broad wavy strongly outwards-curved about middle, almost confluent with terminal line at tornus. The hind-wings are white suffused with pale yellow towards termen; a darker edged pale grey basal patch; a strongly curved, double, submedian line connected by bars; a subterminal series of cloudy blackish blotches, and a rather broad terminal band. All the cilia are white, finely and sharply barred with black.

In this species the white colouring obviously preponderates. *Notoreas isoleuca* is a much darker looking insect.

Notoreas ferox (page 126.) Also from Mount Whakaari (Kaikouras), Porter's Pass and Vanguard Peak.

Notoreas vulcanica (page 127.) Also from Puketitiri and Norsewood (Hawke's Bay).

Notoreas omichlias (page 127.) Also from Macetown, Flat Top Mountain (Lake Manapouri), Kepler Mountains, and Te Anau District.

Dasyuris hectori (page 128.) The small pale form of this insect, described at the above reference, and figured on Plate XV., fig. 20, was raised to specific rank

by Mr. Philpott under the name of *Dasyuris austrina*. (Trans. N.Z. Inst., lviii., 359 and lix., 484.) In my opinion its specific separation from *D. hectori* is not warranted, and this view is shared by Mr. Meyrick. Other localities for *Dasyuris hectori* are:—Mount Cook, Kepler Mountains, and McKinnon Pass.

Dasyuris anceps (page 128.) Also from Ruahine Ranges 4,000 to 5,000 feet (North Island, a dark variety E. S. West), Kaikouras, Jack's Pass (Hanmer), Porter's Pass, Mount Cook, Macetown, Vanguard Peak, Advance Peak, Kepler Mountains, Eglinton Valley.

Dasyuris enysii (page 128. Plate LXII., fig. 1.) Also from Porter's Pass. The figure now given was taken from a very fine example, in the Dominion Museum collection, captured at Kaikoura. The original figure, on Plate XV., fig. 46, was copied from an undersized specimen in poor condition.

Dasyuris partheniata (page 129.) According to Mr. A. V. Chappell (Trans. N.Z. Inst., lx., 557) the length of the full-grown larva is about $1\frac{1}{8}$ inches. Very light brown; a narrow paler dorsal region, irregularly edged with black; light blackish-brown dorsal line, edged with black; pale ochreous subdorsal line, also edged with black, becoming creamy-yellow on posterior segments; dark brown lateral line, edged above with black; broad creamy-yellow lateral line; short dark hairs; spiracles pale ochreous, finely ringed with black; sublateral surface pale cinnamon; ventral surface very pale; dark brown and pale grey ventral lines, slightly tinged with black. Head rather small, whitish, marked with brown.

There is considerable variation in depth of colouring. In some specimens the subdorsal line continues ochreous on posterior segments; in others the dark brown lateral line is rather broad; lateral line sometimes very pale yellow; some specimens tinged with grey green.

This larva is sometimes very difficult to detect amongst the blades of its foodplant (*Aciphylla squarrosa*), but effectiveness of coloration depends very largely on the position of the larva. It is fairly active in its habits. During the day it remains amid the foliage of its foodplant, usually well out towards the end of a blade. It eats the limited amount of fleshy tissue, between the prominent tough ridgy veins present on the blades of the foodplant. In order to get at the fleshy tissue the larva is obliged to feed with head twisted sideways. It eats long grooves, often right through the blade, leaving the veins untouched.

The pupa is enclosed in a slight cocoon amongst debris. It is about $\frac{1}{2}$ inch in length; pale yellow, darkening to golden-brown on abdomen, particularly on dorsal surface; wings slightly darker.

The larvae were obtained in May.

Other localities for *Dasyuris partheniata* are Waimarino, Ruahines, and Eglinton Valley.

Dasyuris pluviata (page 129.) Also from Ruahine Mountains.

Dasyuris callicrena (page 130.) Also from Mount Arthur (4,500 feet), Mount Peel (Nelson), Jack's Pass (Hanmer), and Lake Wanaka.

Dasyuris transaurea (page 130.) Also from Mount Peel (Canterbury), Jack's Pass (Hanmer), and Mount Cook.

Dasyuris leucobathra (page 130.) Also from Upper Rakaia (3,500 ft.), and Mount Cook.

DASYURIS MICROPOLIS.

(*Dasyuris micropolis*, Meyr., Trans. N.Z. Inst., ix., 486.)

(Plate LVI., fig. 21 ♀.)

This very small species has occurred fairly commonly on the mountains on the eastern side of Arthur's Pass, at elevations ranging from 4,500 feet to over 5,000 feet above the sea level. A specimen was taken on Mount Rolleston at an altitude of 6,000 feet.

The expansion of the wings of the male is $\frac{5}{8}$ inch (17 mm.); of the female about $\frac{3}{4}$ inch (19 mm.). The fore-wings are blackish-grey, very obscurely speckled with whitish; there are five whitish transverse lines; the sub-basal and first line are slightly outwards-curved, the median line rather broad, the second line more or less obtusely angulated in middle, and the subterminal irregular, usually broken up into spots, sometimes almost obsolete. The hind-wings are dark grey; there is a somewhat obtusely angulated postmedian line and, in the female, an oblique yellow-whitish antemedian band and an indistinct broken sub-terminal line. All the cilia are white, faintly barred with grey.

Distinguished from *Dasyuris leucobathra*, with which it was formerly confused, by its much smaller size, absence of bright yellow colouring on veins of upper surface, and relatively much paler yellowish tinge on under surface generally.* The wing expanse of *D. leucobathra* is not less than $\frac{7}{8}$ inch and may slightly exceed 1 inch, and the description given on page 130 should be amended accordingly.

The perfect insect appears in January. It flies freely, in hot sunshine, on the mountain side.

Lythria perornata, Walk. (page 131.) A specimen of *L. regilla*, Philp. (Trans. N.Z. Inst. lviii., 360.) certified by Mr. Philpott himself as *L. regilla*, Philp., was submitted to Mr. Meyrick, who expressed his decided opinion that it is not specifically distinguishable from the common and variable *L. perornata*, with which it is stated to have been "confused."† No distinctive features are given in the description of *L. regilla*, and I entirely agree that it is not separable from *L. perornata*.

Four larvae of *L. perornata*, almost full-grown, were found on *Pimelia*, growing on the coastal cliffs, near Sinclair Head, Cook Strait, on September 6, 1935. From this circumstance it seems clear that the insect passes the winter in the larval state.

Lythria catapyrrha (page 131.) Also from Mount Cook, Waiho Gorge, Whitestone River and Takitimo Mountains.

Sub-family MONOCTENIADES.

Samana falcatella (page 133.) Also from Whangarei, Tangihua Range.

Samana acutata (page 133.) According to Mr. S. Lindsay (Records of Canterbury Museum, iv., 346) the length of the full-grown larva is about 1 inch (25 mm.; breadth $2\frac{1}{2}$ mm.). Body smooth, spindle-shaped. Colour pale grey, numerous dark grey longitudinal stripes, with minute black dots between these. Ten legs. Foodplant, *Carmichaelia subulata* (prostrate form). Insect feeding at night, inactive during day, when it has an extremely close resemblance to a small dead stem of the foodplant.

The pupa is 10 mm. long, normal; pale yellowish-brown, in slight silken cocoon among dead stems of foodplant.

The larva was found at Birdling's Flat, on January 26, 1930, and the moth emerged March 10, 1930.

This species also occurs at Price's Valley (Banks Peninsula).

Theoxena scissaria (page 133.) This rare species was found by Mr. S. Lindsay (Records of Canterbury Museum, iv., 346) on June 8, 1930, amongst tussock grass (*Poa caespitosa*) by day, above the Horseshoe Slip, at Mount Grey, North Canterbury.

On June 15, 1930, over forty specimens were taken, in the same restricted spot, by Mr. Lawford White. The locality was again visited by Mr. Lindsay on July 5, 1930, but no specimens were then seen. Apparently the species is normally a winter form, and very local in its distribution, but quite common at the proper season.

Adeixis griseata (page 133.) Also from Whangarei, Erua, Ruahines, and Puketitiri (Hawke's Bay). Fairly common in swamps (E. S. West). Stuarts Gully (near mouth of Waimakariri) and Te Anau District.

Dichromodes ida (page 134.) Also from Alexandra.

Dichromodes sphaeriata (page 134.) Also from Awapiri (Marlborough), Waipari, Puhī Puhī, and Jack's Pass (Hanmer).

Dichromodes cynica (page 134.) Mr. S. Lindsay discovered a remarkable geometer larva, probably referable to this species, in June, feeding on lichens, on the exposed volcanic rocks on the Lyttelton Hills, at an elevation of about 1,200 feet. This insect very closely resembled its foodplant, the lichen fronds, in markings and colour. Segments 5 to 10 were much constricted at the joints, which character, combined with the colour pattern, gave the appearance of foliaceous appendages. Owing to the attack of a parasite, the larva died before pupation.

The length of the larva was $\frac{1}{2}$ inch. Blackish-grey, glaucous-grey on sides; large dorsal spots on segments 6 to 9, small dorsal spots on segments 10 to 12, light grey. Body surface covered with minute tubercles and narrow transverse folds.*

This species also occurs at Taitapu.

*Trans. N.Z. Inst., ix., 485, 486.

†Trans. N.Z. Inst., ix., 486.

*Records of Canterbury Museum, iii., 251.

Dichromodes nigra (page 134.) Also from Jack's Pass (Hanmer), and Skelmorlie Peak (Lake Te Anau).

Dichromodes gypsotis (page 135.) Also from Jack's Pass (Hanmer), Mount Grey, Mount Cook, and Takitimo Mountains.

Epirrhanthis hemipteraria (page 135.) Also from Pitt Island (Chathams).

Epirrhanthis ustaria (page 135.) A variety of the larva of this insect, taken at Governor's Bay in December, was almost pale blue in colour, with creamy blotches along midback. Additional locality: Pitt Island (Chathams).

Epirrhanthis alectoraria (page 136.) A figure of the full-grown larva is given on Plate LIV., fig. 9. At Waiho Gorge this larva was observed feeding on native broom (*Carmichaelia*) and exhibited extreme variation. Some individuals were deep grey-green, finely speckled; others had pink, orange-brown, or whitish dorsal markings.

Sub-family SELIDOSEMIDES.

Selidosema pelurgata (page 137.) Also from Whangarei, Runanga, Lake Te Anau, Eglinton River, and Sandhill Point (Preservation Inlet).

Selidosema aristarcha (page 137.) Also from Whangarei.

SELIDOSEMA FLAVA.

(*Selidosema flava*, Warr., Nov. Zool., iii., 406; Philp., Trans. N.Z. Inst., lviii., 360.)

(Plate LV., fig. 23 ♂.)

This very distinct species was originally discovered at Greymouth, probably by Mr. Helms, about 50 years ago. It was re-discovered at Murchison, by Mr. E. S. Gourlay, in 1927. No specimens seem to have been observed in the interval.

The expansion of the wings is slightly over 1½ inches (38 mm.). The fore-wings are pale ochreous with a brown hour-glass-shaped mark on the costa near the middle, reaching a little more than half-way across the wing, and three small brownish patches around the apical patch. The hind-wings are deep ochreous-yellow.

The perfect insect appears in January.

Described and figured from a specimen kindly lent to me by Mr. Philpott.

Selidosema cremnopa (page 138.) In January, 1936, a series of a species of *Selidosema* was reared from larvae taken on native broom, at Governor's Bay, the previous December. These larvae appeared to closely resemble the larva of *S. scariphota*. The resultant series exhibited some variation, but appeared to be very closely allied to *S. scariphota*. A pair was submitted to Mr. E. Meyrick, who identified the insect as *S. cremnopa*, Meyr. Mr. Prout had previously regarded *S. cremnopa* as identical with the true *S. melinata*, Feld. See above reference. I am at present unable to assign any precise characters whereby we can clearly separate the three species, two of which have certainly very similar larvae feeding on *Carmichaelia*. It is

extremely desirable that collectors should endeavour to rear as many specimens as possible from these broom-feeding larvae, which may be identified from the figure given on Plate II., fig. 19, so that the real status of the three forms may be finally cleared up. A figure of the female of *S. melinata*, Feld., as determined by the late Mr. Philpott, is given on Plate LVI., fig. 31.

SELIDOSEMA COLPOGRAMMA.

(*Selidosema colpogramma*, Meyr., Trans. Roy. Soc. N.Z., lxvi., 281.)

(Plate LV., fig. 31 ♂, 32 ♀; Plate LIII., fig. 14 larva.)

This interesting species has occurred at Arthur's Pass.

The expansion of the wings is about 1½ inches (34 mm.). General colour pale ochreous-brown, rather faintly clouded with greyish-black on upper portion of disc and much more darkly clouded on terminal area; first line outwards-curved, white, broadly margined with blackish; a strongly angulated blackish line in middle of median band, with discal spot; second line fine, black, edged with white towards termen, jagged near costa, thence bowed towards termen; subterminal line white, jagged, interrupted in middle; apical patch paler; a terminal series of black dots; cilia ochreous, barred with blackish. Hind-wings pale ochreous, finely speckled with pale grey, especially towards termen; a distinct dark grey discal spot; a subterminal series of confluent dark grey spots, and a terminal series of black dots; cilia ochreous, barred with blackish. The female is paler in colour than the male.

This species bears a strong resemblance to some of the varieties of *S. productata*, but the antennal pectinations are slightly shorter and the dark grey subterminal spots on hind-wings are distinctive. The bred series exhibits very little variation.

The length of the full-grown larva is about 1 inch. Cylindrical, moderately stout, with segments well defined. Extremely variable in colour, but generally speaking yellowish-brown, variegated with blackish-brown; an irregular series of yellowish-white blotches on sides, and a narrower series on back, more or less margined with the darker colour. These blotches are much less distinct on the anterior and posterior portions of the larva. The whole effect is extraordinarily protective when the larva is resting on its foodplant, mountain tauhinu (*Cassinia vauvilliersii*). Darker larvae resemble mature, or withering shoots, paler ones the younger shoots. The larva usually rests quietly amongst the foliage, where it is practically invisible. Larvae taken towards the end of January emerged late in February and early in March.

The perfect insect evidently appears from January till March and may be looked for in subalpine localities, at an elevation of about 3,000 feet. I am indebted to Mr. S. Lindsay for information which enabled me to obtain a considerable number of the larvae of this insect at Arthur's Pass, and from these I succeeded in rearing a good series of the perfect insect.

Selidosema fascialata (page 139.) Also from Price's Bush and Blackmillar (Kaikoura).

SELIDOSEMA FLUMINEA.

(Selidosema fluminea, Philp., Trans. N.Z. Inst., lvi., 389.)

(Plate XLVIII., fig. 26 ♂.)

This species was discovered by Mr. Philpott at Flora River on the track to the Tableland of Mount Arthur, at an elevation of about 3,250 feet.

The expansion of the wings is about 1½ inches (34-38 mm.). The fore-wings are dark brownish-black, olive tinted and strigulated with ochreous; first line from ¼ costa to ½ dorsum, prominent, curved or obtusely angulated at middle, white; posterior to the lower ½ of this line is a large ochreous patch, sometimes extending across the second line; second line forming a broad hardly-curved white band, more or less tinted, except on inner edge, with ochreous, and with some brownish-black strigulation, inner edge very irregular, outer edge entire; subterminal line thin, irregularly dentate, more or less interrupted at middle, white; a series of linear black dots round termen; cilia ochreous mixed with brownish-black. Hind-wings whitish-ochreous faintly sprinkled with brownish-black and with a brownish discal dot; an interrupted blackish line round termen; cilia pale ochreous.

Structurally separated from *S. leucclaea* Meyr. by the much longer antennal pectinations, which are not quite so long as those of *S. productata* Walk.

Mr. Prout considers this a good species and, after an inspection of specimens kindly submitted by Messrs. Gourlay and Lindsay, I incline to the same opinion. The form seems to be a constant one, and is fairly represented by the figure cited above.

The perfect insect appears in January and frequents the flowers of *Olearia* and *Hoheria glabrata*.

Selidosema modica (page 140. Plate LVI., fig. 1 ♂; 2 ♀). Figures of both sexes are now given. Although dull coloured and often obscurely marked, the acquisition of further material has proved that this is quite a distinct species. So far the insect has only been found in scrubby forest on the Lyttelton Hills but Mr. S. Lindsay reports a larger form from Jack's Pass (Hanmer).

The expansion of the wings of the male is about 1¼ inches (30-32 mm.). The fore-wings are triangular with the costa slightly arched, apex rectangular, termen rounded, more oblique on lower half; dull blackish-brown; first line obscure; a faint blackish discal dot; second line from about ⅓ of costa to about ⅔ of dorsum, upper half straight, lower half incurved whitish; a broad paler brown band follows this; a subterminal series of white dots preceded and followed by black ones on veins; cilia brown mixed with grey. *Hind-wings pale grey densely sprinkled with darker grey*; a dark discal dot and an irregular series of dots on termen; cilia pale grey.

The female has the wings considerably abbreviated, but cannot be regarded as semiapterous, although in Mr. Chappell's experience she was unable to fly.

The expansion of the wings of the female is slightly over 1 inch (26 mm.). The fore-wings are rather narrow, with the apex acute and termen slightly bowed; brown, slightly paler on lower part of disc; first line from about ¼ of costa to about ¼ of dorsum, excurved brownish-ochreous, darker margined; second line from beyond ½ of costa to nearly ⅔ of dorsum, excurved, slightly sinuate near costa and dorsum; a broad, paler brown, shaded band follows this; veins marked with dark brown on terminal area and a series of obscure pale subterminal dots; cilia brown. Hind-wings as in male.

The following items regarding the preparatory stages of this insect are taken from observations made by Mr. A. V. Chappell* :—

The egg is elliptical; olive-green to pale cinnamon, becoming pinkish before hatching.

The full-grown larva is about 1½ inches in length; stone grey mottled with lighter and darker shades; brownish on posterior margins of segments 5-9; dorsal line very pale grey, faintly tinged with pinkish-white on segments 2-5 and with pinkish on segments 10 and 11; on segments 5-11 the dorsal line widens into a series of diamonds, each one from segments 5 to 9 marked with black; a dorsal series of small black spots; a dirty white dorsal patch on segment 12; very fine pale subdorsal and lateral lines; hairs very short and fine; head small, dark grey, paler in front, and marked with darker colour; spiracles white, finely ringed with black; a lateral series of small dark spots; skin very puckered on lateral surface; ventral surface, pale cinnamon marked with grey and black, two series of small black spots. The larvae vary; some specimens are light brown and some biscuit brown; in these brown forms the dorsal line is usually white and unbroken, and a black lateral line, fading beyond the anterior segments is often present. The natural foodplant is *Hebe leiophylla*, but in captivity the larva will eat other species of *Hebe*.

The pupa is pale golden-brown to dark brown, the female pupa much stouter abdominally than the male. The cocoon is slight, spun amid sand and debris.

The figure of the female of this species was made from a bred specimen kindly lent to me by Mr. Chappell.

Selidosema lactiflua (page 140.) Also from Arthur's Pass.

Selidosema terrena (page 140.) Also from Arthur's Pass and Flat Top Mountain (Lake Manapouri).

Selidosema leucclaea (page 141.) Also from Whangarei, Nihotapu, Pahiatua, Puhī Puhī, Motunau, Mount Cook, and Te Anau.

SELIDOSEMA INSIGNITA.

(Selidosema insignita, Philp., Records Auckland Institute Museum, I., 1, 2.)

(Plate LV., fig. 15 ♂.)

This species was discovered by Mr. C. E. Clarke at Kaco, North Auckland.

The expansion of the wings is nearly 1¼ inches (32 mm.). Head and palpi brown. Thorax greyish-brown. Antennae brown, in ♂ moderately bipectinated, pectinations gradually decreasing in length apically, last twelve or thirteen joints simple. Abdomen greyish-ochreous, sprinkled with fuscous. Legs ochreous, mixed with fuscous, anterior pair blackish, all tarsi annulated with ochreous. Fore-wings elongate triangular, costa moderately arched, apex blunt, termen bowed, oblique; whitish ochreous; basal ⅓ fuscous brown; first line indicated by ochreous outwards-curved fascia on costa at ¼; outer edge of median band (margin of dark area) broadly and strongly projecting at middle, margined with white; a broad brownish terminal area including obscure white waved subterminal line; cilia (damaged) apparently brown mixed with ochreous. Hind-wings pale ochreous sparsely sprinkled with brown; an interrupted brown line round termen; cilia ochreous.

The shape of the outer margin of the median band differs from all other New Zealand members of the genus.

*Trans. N.Z. Inst., lx., 259.

Described and figured from the unique specimen in the Auckland Museum.

The above is taken from Mr. Philpott's original description.

SELIDOSEMA PERGRATA.

(*Selidosema pergrata*, Philp., Records of Auckland Institute Museum, I., 1, 2.)

(Plate LV., fig. 16 ♂.)

This species, which is closely related to the preceding, was discovered by Mr. C. E. Clarke at Sandymount (Otago).

The expansion of the wings is nearly $1\frac{1}{4}$ inches (32 mm.). Head ochreous brown. Palpi brown. Antennae brown, in ♂ moderately bipectinated, pectinations abruptly shortened towards apex, last ten joints simple. Thorax and abdomen brownish-ochreous. Legs ochreous, anterior pair fuscous; tibiae and tarsi annulated with ochreous. Fore-wings elongate triangular, costa hardly arched, apex obtuse, termen little bowed, oblique; brownish-ochreous, densely strigulated with fuscous; first line straight, thin, whitish, from $\frac{1}{4}$ of costa to $\frac{1}{3}$ of dorsum; second line thin, whitish, from $\frac{2}{3}$ of costa to $\frac{2}{3}$ of dorsum, slightly indented on upper half and deeply incurved on lower $\frac{1}{2}$; these two lines margin the median band, which is olive brown densely strigulated with ochreous; subterminal line whitish, wavy, interrupted, anteriorly suffusedly margined with olive brown; a suffused olive brown patch beneath apex; cilia ochreous with median dark line. Hind-wings ochreous, strigulated with fuscous, especially towards termen; cilia ochreous mixed with fuscous.

The perfect insect appears in February.

Described and figured from the unique specimen in the Auckland Museum.

The above is taken from Mr. Philpott's original description.

Selidosema monacha (page 141.) The full-grown larva of this species is figured on Plate LIII., fig. 27.

Other localities for this species are:—Waimarino, Arthur's Pass, Mount Cook, Humboldt Range, Eglinton Valley, and Te Anau.

Selidosema ochrea (page 142.) Also from Lyttelton Hills, Puhī Puhī, and Black Hill (Rakaia River).

Selidosema suavis (page 142.) Larva found feeding on young kahikatea (*Podocarpus dacrydioides*) or matai (*P. spicatus*).

Selidosema prototoxa (page 142. Plate LIII., fig. 6 larva.)

The length of the full-grown larva is about 1 inch. Cylindrical, of fairly even thickness, with segments well defined. General colour deep greyish-ochreous, slightly suffused with reddish-brown on lateral ridge, which is prominent, but somewhat irregular. The whole larva is covered with very numerous, slender, broken, greyish-white marks which give it a very fine dappled appearance; these marks are denser and whiter on and below the lateral ridge. Spiracles white edged with black. Legs ochreous-brown, dappled with greyish-white near base.

The foodplant is *Edwardsia microphylla* (formerly known as *Sophora tetraptera*). This larva is sluggish in habit. It is rarely met with. Specimens were found at Pohangina on 5th February and the moths emerged on 14th March following.

There is considerable variation in the extent of the white markings on the fore-wings of both sexes in this species, and some female specimens have the ground colour much darker than others. Two very fine examples (♂ and ♀), in the Dominion Museum collection, taken by Mr. H. Hamilton, on Hen Island, are larger and of a warmer brown colour than is usual in this species. There is, however, no doubt as to their specific identity. Also from Nelson and Price's Bush (South Island.)

Selidosema lupinata (page 143.) Also from Maungaturoto, Morere, Mount Grey, Queenstown, Otautau, and Te Anau. Mr. Lindsay informs me that the larva feeds on manuka (*Leptospermum*).

Selidosema rudiata (page 143.) The young larva when just hatched is about $\frac{1}{8}$ inch in length. Head large pale ochreous; body slender of uniform thickness, pale greenish-white with two broad, dark brown subdorsal lines; prolegs very close together; a few very minute short stumpy bristles. Very active. The eggshell is not eaten on emergence.

This species is generally distributed throughout the country.

Selidosema fenerata (page 144.) Miro (*Podocarpus ferrugineus*) is another foodplant for this species. The larva found feeding on this tree, and actually reared was yellowish-green, with fewer and much less distinct markings than any previously observed. The characteristic rusty-brown mark on side of head was, however, present. Both males and females of this species hibernate.

Selidosema argentaria (page 144.) Also from Puhī Puhī.

SELIDOSEMA ADUSTA.

(*Selidosema adusta*, Philp., Trans. N.Z. Inst., lxi., 435.)

(Plate LV., fig. 8 ♂.)

This rather dull-looking insect was discovered by Mr. Philpott at Governor's Bush, near Mount Cook, where it is stated to be common.

The expansion of the wings is about $1\frac{3}{8}$ inches (29-39 mm.). Very like *S. fenerata* but with the fore-wings rather dark rusty-grey. The hind-wings are pale greyish-ochreous, and have the tornus rounded, as in the closely allied *S. argentaria*; the projection on termen of hind-wings is, however, less prominent than in *S. argentaria*. The three species, although somewhat similar insects, may be easily separated by the characters specially referred to.

The perfect insect appears in December.

Selidosema panagrata (page 144.) The larva of this common species also feeds on tutu (*Coriaria ruscifolia*) and on *Pennantia corymbosa*. Some of the young larvae are green with fine wavy yellowish-white subdorsal and lateral lines, and a row of very small black dots on each side of mid-back.

Selidosema dejectaria (page 145.) Other foodplants are *Phyllocladus alpinus* and *Cassinia vauwilliersi*.

Hybernia indocilis (page 147.)

The length of the full-grown larva is about $\frac{3}{8}$ inch. Cylindrical, slightly flattened, and a little dilated before posterior

extremity. Colour pale leaden-grey, very finely speckled and streaked with blackish; a series of indistinct rusty patches on sides posteriorly; two small rusty warts on back of segment 12; intersegmental regions transversely wrinkled; a slight lateral ridge. Another larva clearly the same species, is more suffused with rusty yellow, with a distinct, but broken, black lateral line on central segments.

This larva was found in the middle of November, feeding on " Wild Irishman " (*Discaria toumatou*), growing on the banks of the Clarence River near the sea. According to Mr. Lawford White it also feeds on lupin.

The perfect insect, a female, emerged in the middle of December. The living female has the abdomen much distended and exactly the shape of the abdomen of a spider, the grey colouring completing the resemblance which is clearly protective.

Other localities are:—Napier (North Island), every winter (E. S. West), Awapiri, Clarence Bridge and Broken River.

Azelina variabilis (page 148.) Also from Puhī Puhī.

Azelina gallaria (page 149.) Also from Mount Ruapehu, New Plymouth, Morere, Mount Arthur, Makarora, Lake Manapouri, Lake Te Anau, Bluff and Sandhill Point.

Azelina nelsonaria (page 150. Plate LIII., fig. 12 full-grown larva.)

The egg is oval, flattened at one end; pale sea green, covered with numerous very slight hexagonal depressions. The eggs are deposited loosely in two and threes and are not fixed down. In many cases, on each side of the long axis of the egg, there is a very large oval depression. As development progresses the egg becomes yellowish, with numerous irregular orange-brown markings.

The length of the full-grown larva is about $1\frac{1}{2}$ inches; it is elongate, slender, cylindrical, with the head and thoracic segments slightly flattened; general colour dorsally dull greyish-brown, finely striped transversely with lighter and darker; ventrally dull pinkish-brown also dotted and striped with lighter and darker; top of head blackish-brown; a distinct white-edged dorsal band from antennae to segment 5 and a darker ventral stripe in thoracic region; two distinct black spots on back of segment 5, also on sides of segments 9 and 10 and at base of ventral proleg; segments 11, 12 and 13 very short, other abdominal segments elongate; a distinct pinkish-white lateral ridge on segments 5 to 10 inclusive; there are numerous small warts and very short bristles. The general colouring and markings are very indefinite and difficult to draw and describe.

This larva is of sluggish habit, resting fully extended in a stick-like position. The foodplant is *Polypodium diversifolium* and probably other ferns.

Other localities for this species are:—Whangarei, Waitakerei, Arthur's Pass, Manapouri, Te Anau, and Knife and Steel (Fiord County).

Declana leptomera (page 150.) Also from Pitt Island (Chathams), Puhī Puhī, Dunedin, Takitimo Mountains, and Lake Te Anau.

Declana niveata (page 151.) Also from Arthur's Pass, Mount Cook, Waiho Gorge, Alexandra, and Lake Te Anau.

Declana griseta (page 151. Plate LIV., fig. 26 larva.) The larva, which feeds on the native mistletoe (*Elytranthe*

colensoi), is slightly over 1 inch (30 mm.) in length; cylindrical, posterior segments enlarged; deep chocolate-brown, usually faintly striped with darker brown, and speckled with paler dots; general surface like bark. Thoracic segments swollen, irregularly projecting on sides and upwards, but not shield-like as in *Declana atronivea*; a pointed tubercle on segment 3; two large brown tubercles on back of segment 6, and two smaller tubercles on ventral portion of segment 7; irregular projections on back of segments 12 and 13; all the tubercles exhibit some variation, and are usually paler in colour than the rest of the larva. The proleg on segment 10 is rudimentary, and in the form of a bud-like tubercle. The fleshy filaments on sides of segments 12 and 13 combine, in certain positions assumed by the larva, and form a continuous flap, or flange, which is closely appressed to resting object. This larva changes greatly in appearance according to position. The figure shows a specimen just starting to walk. When fully at rest the head is retracted and, together with thoracic segments, forms an irregular truncate knob. At such times the resemblance to a twig is practically perfect. Larva found during December and January.

As above indicated this larva is extremely variable. The characteristic tubercles vary in size, shape, and colour, and occasionally the body itself is mottled with dull white, as though covered with mould or lichen. It is in fact an excellent example of the extreme variability so often displayed by procryptic adaptations. (See appendix.)

The pupa is enclosed in a rather compact cocoon formed of moss, dead leaves, etc., on the surface of the ground. The moths emerged in February.

Additional localities for this species are:—Tophouse, Lake Rotoiti, Mount Hutt, Castle Hill, Cave Creek (Craigieburn); Arthur's Pass, Waiho Gorge, Ben Lomond, and Takitimo Mountains.

Declana floccosa (page 151.) Three figures of the larva of this very common, but interesting, species are now given. Plate LIII., fig. 31, represents the young larva just hatched; fig. 32 a larva about half grown, and fig. 33 the usual form of the full-grown larva. It will be seen that the characteristic fleshy filaments on the sides are not developed until towards the end of the larva's life.

As already stated this larva is very variable. The following is a brief description of a very remarkable specimen, found at Makara in February, 1928, feeding on *Myrtus bullata*, a new foodplant for the species:—General colour very pale bluish-white, finely dappled with pale green at segmental divisions; a pair of slender brownish-black marks on sides of mid-back at each segmental joint, and a broken lateral line of same colour. All the markings are small, and the prevailing colour is bluish-white, like a white lichen. Larvae more or less dappled with bluish-white are comparatively common, but I have never before seen a larva almost wholly white like this one. Other foodplants are—Pukatea (*Laurelia novaezealandiae*), Lawyer

(*Rubus australis*), Miro (*Podocarpus ferrugineus*), Matai (*P. spicatus*), and Porokaiwhiri (*Hedycarya arborea*).

DECLANA TOREUTA

(*Declana toreuta*, Meyr., Trans. N.Z. Inst., lx., 486.)

(Plate LV., fig. 24 ♀.)

Two specimens of this interesting species were reared from larvae found by W. H. Burrow, at Arthur's Pass in January.

The expansion of the wings is slightly over $1\frac{1}{4}$ inches (34 mm.). The fore-wings are elongate-triangular, costa rather sinuate, termen rather obliquely rounded, waved, more strongly on vein 6; grey, with strong raised transverse greyish-black strigulae, partly tinged with rust-red; a white basal patch, edge strongly convex, extending to $\frac{1}{4}$ of disc, a small linear black mark within it in middle; second line well-marked, slender, dark brownish-black, from $\frac{3}{4}$ of costa to dorsum before tornus, with strong acute indentation above middle and stronger one on fold, preceded by slight whitish shade, especially on upper third and widening towards costa; a terminal area of white suffusion, with some fine blackish-brown strigulation; cilia whitish mixed rusty brown with darker lines, especially a dark basal line, and finely barred with white. Hind-wings and cilia uniform white.

Probably variable.

The length of the full-grown larva is about $\frac{1}{2}$ inch. Stout, tapering gradually towards head, suddenly posteriorly to segment 11; much flattened beneath; two small humps on back of segment 6, and, larger humps on back of segment 12. Colour pale brownish-buff, with darker subdorsal lines and very short unbranched filaments on lateral line; usual extra pair of prolegs on segment 9. Food-plant possibly *Olearia*.

The perfect insect probably appears in the early spring, the moths having emerged (in captivity) early in August.

In view of the special characters exhibited by the larva it is certain that this species is quite distinct from any of the numerous varieties of *Declana floccosa*.

Declana feredayi (page 152.) Also from Whangarei, Lake Rotoiti, Mount Arthur, Jack's Pass (Hanmer), Cave Creek, Arthur's Pass, Humboldt Range and Lake Te Anau.

Declana hermione (page 152.) Also from Ohakune, Jack's Pass, Mount Cook, Humboldt Range, Dunedin, and Te Anau.

Declana junctilinea (page 152.) Also from Whangarei, Onerahi, Mount Ruapehu, Puhī Puhī Peaks, Porter's Pass, Arthur's Pass, Mount Cook, Waiho Gorge, and Te Anau.

Declana glacialis (page 153.) Also from Jack's Pass (Hanmer), and Kepler Mountains.

Declana atronivea (page 153.) Immediately after third moult the larva rests closely appressed to surface of leaf, prolegs extended and clasping, but rest of body coiled up. The resemblance at this stage is obviously extremely close to a brown bird dropping and under ordinary circumstances the insect would be mistaken for such.

On January 16, 1936, two larvae of *Declana atronivea*, nearly full-grown, were beaten from a small lancewood tree (*Pseudopanax crassifolium*). These larvae were placed in a box with a leaf of the lancewood and were observed to feed freely on the same.

A figure of a full-grown larva of this insect is given on Plate LIV., fig. 8.

Other localities for this species are:—Hen Island, Rotorua, Mount Ruapehu, Waikaremoana, Ruahines, and Eketahuna.

Declana egregia (page 154.) Also from Arthur's Pass, Mount Cook, Gore Bay and Lake Te Anau.

Family PYRALIDAE.*

Sub-family PHYCITIDES.

Genus.—SALEBRIA Zell.

Face smooth. Antennae in male ciliated, with situation above base filled with dense projecting scales. Labial palpi moderately long, ascending with tolerably appressed scales, terminal joint short, hardly pointed. Maxillary palpi in male terminating in a long pencil of hairs, female moderate filiform. Fore-wings with veins 4 and 5 approximated. Hind-wings cell not reaching middle, 4 and 5 stalked, 7 closely approximated or anastomosing with 8 to middle.

A very large and universally distributed genus. Imago with fore-wings elongate, more or less dilated posteriorly, costa slightly or gently arched.

Represented in New Zealand by one species apparently artificially introduced from Australia.

SALEBRIA SUBLIGNALIS.

(*Epicrocis sublignalis*, Walk., Brit. Mus. Cat. xxvii., 41; *Salebria oculiferella*, Meyr., Proc. Linn. Soc. N.S.W., 1879, 222.)

(Plate LVI., fig. 19 ♂.)

First detected in New Zealand by Mr. C. E. Clarke, who captured a specimen at Lake Rotomahana, in February, 1915. This specimen is still in the Clarke collection now at the Auckland Museum. A second specimen was taken by Commander Patterson, at Whangarei, in March, 1930. The insect is a native of Eastern Australia, where it is stated to be common and, according to Dr. A. Jefferis Turner, is also found in Tasmania and Lord Howe Island. Dr. Turner further suggests that it may have been imported into New Zealand in fodder.†

The expansion of the wings is 1 inch (25 mm.). The maxillary palpi have an apical bunch of long radiating hair-scales. The fore-wings are very pale yellowish-brown clouded with white on costa and dorsum; a dark brownish-grey shading at apex and along middle of dorsum; there is an irregular narrow area of orange-brown between the marginal colouring and the disc; the cilia are brownish-grey. The hind-wings are pale brownish-ochreous, very faintly tinged with purplish-brown around apex.

The perfect insect may be looked for in the late summer and autumn.

*For accounts of Genitalia see Trans. N.Z. Inst., lx., 473, Thyrididae, Pyralides, Galleriades, Phycitides, and 491 Crambides.

†Trans. N.Z. Inst., lxii., 26.

Sporophylla oenospora (page 156.) Also from Birdling's Flat, Porter River, Oreti River and Takitimo Mountains.

Crocodypora cinigerella (page 156.) Also from Paekakariki, Puhī Puhī, Awapiri Station (Marlborough), Bottle Lake and Birdling's Flat.

Plodia interpunctella (page 156.) Also from Christchurch.

Ephestia kuehniella (page 156.) Also from Wellington.

EPHESTIA ELUTELLA.

(*Ephestia elutella*, Hübn., Meyrick, Revised Handbook, British Lepidoptera, 388.)

Mr. Philpott reported the capture of a specimen of this well-known domestic insect by Dr. Turner at Christchurch.*

The expansion of the wings is about $\frac{5}{8}$ inch (14-20 mm.). The fore-wings of the male are less elongate, costal fold clothed with dense hair-scales and enclosing flocculent scales; grey, sprinkled with whitish and mixed with dark blackish-brown, towards dorsum also often rusty-reddish; lines pale, dark-edged, first straight, rather oblique, second almost straight; two darker transversely placed discal dots. Hind-wings pale brownish-black, anteriorly thinly scaled, male with median and subdorsal whitish-ochreous basal hair-tufts.

The larva is brown-whitish; dots brown; head and plate of segment 2 reddish-brown. Feeds on biscuit, chocolate, figs, etc.

Distribution:—England, Europe, Central Asia, North Africa, America, Australia.†

HOMOEOSOMA FARINARIA.

(*Homocosoma farinaria*, Turn., Proc. Roy. Soc. Q. 1903, 128; *Homoeosoma vagella*, Meyr., Proc. Linn. Soc. N.S.W., 1878, 214; Trans. N.Z. Inst., xlv., 32; Butterflies and Moths of N.Z., 157, Pl. XX., 11.)

(Plate XX., fig. 11 ♀.)

This insect should now be known as *Homoeosoma farinaria*. In 1903 Dr. A. Jefferis Turner named this species *Homoeosoma farinaria* and in his opinion it is not identical with *H. vagella*, Z. Dr. Turner states that, although originally described from Tasmania, it occurs also in Queensland and New South Wales. In New Zealand the species has been taken in both islands, and records extend from Invercargill in the South to Cambridge in the North. It is seldom found by day, but may be a visitor to lighted windows from early November to the beginning of May. Specimens were bred at the Cawthron Institute from larvae found feeding on ragwort (*Senecio jacobaeae*) at Cambridge, North Island.‡

HOMOEOSOMA ANASPILA.

(*Homoeosoma anaspila*, Meyr., Trans. Ent. Soc. Lond., 1901, 566; *H. vittalella*, Hamps., Mon. Phyc. ii., 235, Pl. XLIX., 8.)

(Plate LVI., fig. 34 ♀.)

This obscure, but very rare insect was discovered by Mr. E. Meyrick, at Waipukurau, in the early "eighties."

*Trans. N.Z. Inst., lviii., 361.

†Revised Handbook of British Lepidoptera, 388.

‡Philpott, Trans. N.Z. Inst., lix., 485.

Specimens were also found by Fereday at Christchurch and, much more recently, by Commander Patterson, at Whangarei.

The expansion of the wings is about $\frac{3}{4}$ inch (16-21 mm.). The fore-wings are very narrow, slightly dilated towards apex, with veins 4 and 5 stalked; white, more or less speckled with brownish-grey; first-line obscure angulated in middle; a faint longitudinal yellowish-brown streak in disc below middle; the cilia are pale grey speckled with white. The hind-wings are pale brown, darker towards apex; the cilia are white with faint sub-basal line.

The perfect insect appears in March.

Mr. Meyrick now considers that this is a good species and distinct from *H. vagella*, Z., which is not known from any locality outside Australia.

H. anaspila also occurs in the Kermadec Islands.

HOMOEOSOMA ISCHNOMORPHA.

(*Homoeosoma ischnomorpha*, Meyr., Trans. N.Z. Inst., lxii., 94.)

(Plate LVI., fig. 14 ♂.)

This species was discovered by Commander Patterson at Whangarei.

The expansion of the wings is slightly over 1 inch (27 mm.). The fore-wings are very narrow, gradually dilated, with termen oblique; vein 5 absent; dark grey, speckled with white and irregularly sprinkled with black; an indistinct blackish mark on costa at about $\frac{1}{3}$, and traces of rather oblique first line; two indistinct blackish dots on angles of cell, and two short blackish marks on costa before apex; a marginal series of small cloudy blackish spots round apical part of costa and termen; the cilia are grey speckled with white. The hind-wings are whitish-grey, the cilia whitish.

The perfect insect appears in December.

Delogenes limodoxa (page 157.) Mr. S. Lindsay took a male specimen of this species at Bottle Lake, near Christchurch, with the median area of the fore-wings from first to second lines wholly very dark brownish-black. (Records of Canterbury Museum, iv., 346.) Also occurs at Puhī Puhī, Bottle Lake, Lake Pukaki, Mount Cook, mountains around Lake Ohau, Mount Earnslaw, and Takitimo Mountains.

Sub-family CRAMBIDES.

Orocrambus melampetrus (page 158.) Also from Mount Torlesse, mountains around Lake Ohau, Mount Cook, Alma Hut (5,600 ft., Franz Josef Glacier), Skel-morlie Peak (Lake Te Anau), and McKinnon Pass.

OROCRAMBUS CLARKEI.

(*Orocrambus clarkei*, Philp., Records of Auckland Institute Museum, I., 1, 3.)

(Plate LVI., fig. 6 ♂.)

This species was discovered by Mr. C. E. Clarke, on Mount Moltke, Franz Josef, at an elevation of over 4,000 feet above sea-level.

The expansion of the wings is about $\frac{3}{4}$ inch (20 mm.). Head, antennae and palpi brownish-black, crown and upper surface of palpi more or less ochreous. Thorax tawny. Abdomen brownish-black, anal tuft greyish. Legs brownish-black, somewhat mixed with ochreous. Fore-wings sub-oblong; costa slightly arched,

apex triangular, termen bowed, hardly oblique; brownish-black, densely but irregularly strewn with white scales; cilia greyish-fuscous, with darker basal line. Hind-wings white; a broad suffused irregular band of fuscous round termen and dorsum; cilia greyish-fuscous tipped with white and with a dark basal line.

Nearest to *O. melampetrus* Meyr., but a smaller and paler species.

The perfect insect appears in January.

Described and figured from specimen in the Auckland Museum. The above is taken from Mr. Philpott's original description.

Orocrambus mylites (page 158.) Also from mountains around Lake Ohau.

Orocrambus catacaustus (page 159.) Also from Kepler Mountains.

Orocrambus pervius (page 159.) Also from Flat Top Mountain (Manapouri).

Orocrambus caesius (page 159.) Also from Mount Cook.

Orocrambus tritonellus (page 160.) Also from Mount Peel (Canterbury), Mount Oxford and Obelisk.

Orocrambus machaeristes (page 160.) Also from Ben Lomond (Lake Wakatipu), and Skelmorlie Peak (Te Anau).

Orocrambus cultus (page 160.) (*Orocrambus cultus*, Philp., Trans. N.Z. Inst., xlix., 242.) The reference should read as above.

Crambus corruptus (page 161.) Also from Freehold Range (Lake Ohau), Mount Cook, Oreti River, and Taki-timo Mountains.

Crambus heliotes (page 161.) Also from Taihape, Tokaanu, Tophouse (Nelson), Runanga and Lake Te Anau.

Crambus antimorus (page 161.) Also from Lake Ohau.

Crambus saristes (page 162.) Also from Mararoa River and Lake Te Anau.

Crambus apselias (page 162.) Also from Mount Cook, and Hope Arm (Lake Manapouri).

Crambus angustipennis (page 163.) Also from Kaikoura, Oreti River and Waiho Gorge. A figure of the male is given on Plate LXII, fig. 9.

Crambus ephorus (page 163.) Many taken at Arthur's Pass.

Crambus corylanus (page 163.) Also from Craigieburn.

Crambus dicrenellus (page 164.) Also from Mount Cook.

Crambus diplorrhous (page 164.) Also from Mount Torlesse.

Crambus oppositus (page 164.) Also from Flat Top Mountain (Lake Manapouri).

Crambus haplotomus (page 165.) Also from Birdling's Flat.

Crambus enchophorus (page 165.) Also from Puhī Puhī (Kaikoura) and Berwick.

Crambus callirrhous (page 165.) Also from Puhī Puhī, Birdling's Flat, Mount Grey, Clarence Bridge and Mount Cook.

Crambus scitulus (page 165.) Also from Mount Whakaari (Kaikouras).

Crambus simplex (page 166.) Also from Whangarei, Tophouse (Nelson), Mount Cook, Waiho River and Taki-timo Mountains.

Crambus siriellus (page 166.) Also from Whangarei, Macetown, Lake Te Anau and Invercargill.

Crambus obstructus (page 167.) Also from Jack's Pass (Hanmer), Waimakariri River, Oreti River, Mount Cook and Mararoa River.

CRAMBUS LECTUS.

(*Crambus lectus*, Philp., Trans. N.Z. Inst., lx., 301.)

(Plate LVI, fig. 17 ♀.)

This species was discovered by Mr. Philpott on the shores of Lake Tekapo. It has also occurred at Jack's Pass.

The expansion of the wings is 1 inch (26-27 mm.). The fore-wings, which have the apex extremely acute and the termen very oblique in the female, are very pale brassy-ochreous; the costa is narrowly edged with white near base; there is a broad longitudinal white streak from base to termen, slightly above the middle of the wing, its edges shaded with brownish, especially towards dorsum; there are three distinct brownish streaks above the central stripe, with white interspaces, and several similar, but much less distinct streaks below the central stripe; the dorsum is rather narrowly edged with white. The hind-wings are brownish-ochreous. All the cilia are white. The head is white; the outer sides of the labial palpi brown. The thorax white, with pale brassy-yellow tegulae. The abdomen whitish-ochreous.

Apparently chiefly characterized by its very acutely pointed fore-wings and oblique termen (in the female) combined with its relatively small size, and brownish hind-wings.

The perfect insect appears in December.

Described and figured from a specimen in rather poor condition kindly lent to me by Dr. Miller.

Crambus vittellus (page 167.) A rather small form of this species is often extremely abundant amongst tussock-grass, *Cassinia*, and other scrubby vegetation on the coastal hills around Wellington during March. There is, however, no reason to regard it as other than a local autumnal variety of this very common insect.

Crambus tuhualis (page 168.) Also from Kaikoura Mountains and Waiho Gorge.

Crambus vulgaris (page 168.) Also from Pitt Island (Chatham), Awapiri (Marlborough), Mount Cook and Lake Te Anau.

CRAMBUS ORNATUS.

(*Crambus ornatus*, Philp., Trans. N.Z. Inst., lviii., 82.)

(Plate LVI, fig. 28 ♂.)

This very striking and neatly-marked little species was discovered by Mr. Philpott, at Golden Downs near Nelson.

The expansion of the wings is slightly over $\frac{3}{4}$ inch (20 mm.). The fore-wings have the costa slightly arched and the termen obliquely rounded; white on costal area, pale brown on dorsal area; a small, oblique, brown mark on costa near base; a bright brown sub-basal band, on costal half sprinkled with white, followed by a broader band before $\frac{1}{2}$; three chocolate-brown marks on costa, one large near middle, one minute beyond this, and one of intermediate size before apex; a ring-shaped mark, with central dot, below the largest costal mark; a chocolate patch sprinkled with white on inner edge of subterminal line; a very conspicuous, extremely jagged, broad, clear white, subterminal line, from about $\frac{2}{3}$ of costa to tornus; terminal area white at apex, shaded into chocolate-brown at tornus; cilia dark brown irregularly barred with white. The hind-wings and cilia are pale ochreous.

The combination of certain characters displayed by *Crambus tuhualis* and *C. cyclopicus*, with the remarkable subterminal line superadded, is very distinctive and interesting.

The perfect insect appears in January.

Described and figured from the unique specimen kindly lent to me by Mr. Philpott.

Crambus harpophorus (page 169.) Also from Waiho Gorge and Anderson's Bay (Dunedin).

Crambus oncobolus (page 169.) Also from Broken River.

Crambus xanthogrammus (page 170.) A pupa of this species was found by Mr. S. Lindsay, at Birdling's Flat, in February. The pupa was taken amongst the roots of the cushion plant *Raoulia lutescens*, and a number of silken galleries amongst the same roots were probably the work of the larva of this species.* Other localities for this species are:—Mount Grey, Clarence Bridge, Kaikoura, Waiho Gorge, Makarora, Worsley River (Hope Arm, Lake Manapouri), and Lake Te Anau.

CRAMBUS MALACELLUS.

(*Crambus malacellus*, Dup., Hist. Nat. Lepid., 270, 5, 61.)

(Plate LVI., fig. 29 ♂.)

This very striking species was first detected in New Zealand by Mr. C. E. Clarke, who captured a specimen at Whangarei, in 1927. By the year 1931 he reported it had become plentiful, and in 1932 he states it was very abundant at Lake Takapuna, near Auckland.†

The expansion of the wings is $\frac{3}{4}$ inch (20 mm.). The head and thorax are white with the outer portion of palpi and whole of tegulae blackish-brown. The fore-wings have the apex strongly falcate; dark blackish-brown; a broad, very sharply defined, elliptical snow-white stripe from the base to beyond $\frac{2}{3}$; six small white marks on costa near apex joining the end of the ellipse; several fine black bars on termen and a shaded snow-white streak along dorsum. The hind-wings are dull white, clouded with pale brownish-grey around apex.

Quite unlike any of our native *Crambi*.

The perfect insect appears in January. It is evidently now well established in the Auckland Province. Dr. Turner gives its distribution elsewhere as Europe, India, Africa,

*Records of Canterbury Museum, iii., 251.

†Trans. Roy. Soc. N.Z., lxiv., 12,

Ceylon, Borneo, and the East Coast of Australia as far as Sydney.*

Argyria pentadactyla (page 170. Plate LXII., fig. 15 ♀.) As indicated in Mr. Meyrick's original description (Trans. N.Z. Inst., xv., 31) the male insect varies considerably in the distinctness of the markings, as well as in the ground colour of the fore-wings, which ranges from pale bluish-grey to pale greyish-ochreous. The female seems to be very rarely observed and, with the exception of two specimens in my own collection, taken at Lyall Bay, near Wellington, in March, I have not seen any. Expansion of wings of female nearly $1\frac{1}{4}$ inches (30 mm.) Fore-wings pale brownish-ochreous with black markings; a cloudy shading along dorsum; a short, thick, slightly oblique bar on dorsum before $\frac{1}{2}$; an oblong discal dot connected with this by a fine black line; a curved, dentate, transverse line from about $\frac{2}{3}$ of costa to $\frac{2}{3}$ of dorsum, joined to discal spot by a fine longitudinal line; a few minute black dots, most numerous in median area; veins strongly marked on terminal area. A second female specimen has the fore-wings wholly suffused with very dark greyish-brown, but the above described markings can be seen through the suffusion.

This insect also occurs in South Eastern Australia and Tasmania. It is probably an indigenous New Zealand species; it has no near ally in Australia.†

Genus.—KUPEA, Philp.

Head with prominent frontal cone. Labial palpi long smooth slightly drooping. Antennae in male serrate both anteriorly and posteriorly, shortly ciliate. Fore-wings with two veins (5 and 9) absent, 7 and 8 stalked. Hind-wings with vein 5 absent, transverse vein obsolete, 8 anastomosing with 7.

Allied to *Ptocostola*.

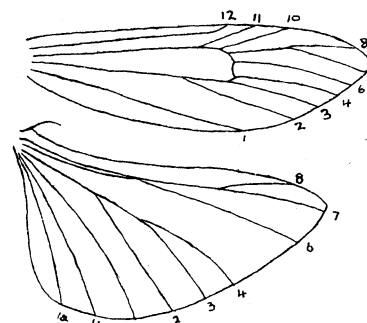
Represented by a single endemic species.

KUPEA ELECTILIS.

(*Kupea electilis*, Philp., Records Canterbury Museum, iii., 247.)

(Plate LVI., fig. 37 ♀.)

This neatly marked insect was discovered by Mr. S. Lindsay at Birdling's Flat (near Christchurch).



Neuration of *Kupea electilis*.

The expansion of the wings is about $\frac{3}{4}$ inch (20-23 mm.). The fore-wings are elongate narrow, with the apex acute, and the termen rather oblique; brassy-ochreous, the discal and ter-

*Trans. N.Z. Inst., lxii., 26.

†Trans. N.Z. Inst., xlv., 35.

minal areas more or less suffused with grey; a brownish-black mark in disc from base to $\frac{1}{4}$, followed by an oblique white bar; a much larger patch beyond this, containing two incomplete oval white blotches and one well defined round white spot; a very broad curved whitish subterminal band; the cilia are brownish-ochreous, with darker basal line. The hind-wings and cilia are pale brownish-ochreous.

The perfect insect appears in March. I am much indebted to Mr. Lindsay for specimens of this interesting species.

Genus.—TAWHITIA, Philp.

Palpi, legs (except tibiae and tarsi) and thorax beneath densely haired, less so in ♀. Terminal segment of palpi concealed. Antennae stout, filiform, pubescent. Maxillary palpi concealed in tuft of long hair. Forewings with 8 and 9 stalked, 7 and 8 closely approximated at origin. Hind-wings with cell open (upper $\frac{3}{4}$, frequently more, of the transverse vein being absent), 4 and 5 connate or closely approximated, 6 out of 7, 7 and 8 anastomosing from (sometimes before) origin of 6 halfway to apex, basal portion of 7 lying close beneath 8. (Plate D, fig. 22, 23 Neuration of *Tawhitia glaucophanes*; fig. 24 head of ditto).

This genus was erected by Mr. Philpott for the reception of *T. glaucophanes*, Meyr., and *T. leonina*, Philp. It is chiefly characterized by the open cell in the hind-wings, the transverse vein being represented by a vestige only. In *Tauroscopa*, as now restricted, the transverse vein is complete and cell closed in consequence.

Tawhitia glaucophanes (page 171.) Also from Commissioners Creek, Mount Earnslaw, and Skelmorlie Peak (Te Anau).

TAWHITIA LEONINA.

(*Tawhitia leonina*, Philp., Trans. N.Z. Inst., lxii., 28.)

(Plate LXI., fig. 15 ♂.)

This species was discovered by Mr. Alfred Philpott on the Takatimo Mountains, Southland, at an elevation of about 4,000 feet.

The expansion of the wings is slightly over 1 inch (24-28 mm.). The fore-wings oblong, apex rounded, termen bowed, not oblique; very dull yellowish-brown, first line indicated by blackish posterior margin, slightly outwards curved, sharply indented below costa and broadly so beneath middle; second line faintly indicated, broadly excurved, serrated; an obscure but fairly large second discal spot usually present; cilia concolourous with wing. Hind-wings greyish-brown; cilia greyish-brown with tips whitish and a dark basal line.

Differs from *T. glaucophanes* Meyr. in colour and lacking the brassy-green sheen usually characteristic of that species. Mr. Philpott states that this character is supported by differences in the male genitalia. Occasionally a specimen of *glaucophanes* may vary towards the colour-character of *leonina*, but in the latter there seems to be practically no variation.

The perfect insect appears in January.

Tauroscopa trapezitis (page 171.) Also from Bold Peak and Flat Top Mountain (Manapouri).

Tauroscopa gorgopis (page 171.) Also from Freehold Range (Lake Ohau, 4,500 ft.), Mount Cook, Commissioners Creek, Macetown and Ben Lomond.

TAUROSCOPA HOWESI.

(*Tauroscopa howesi*, Philp., Trans. N.Z. Inst., lviii., 361.)

(Plate LXII., fig. 21 ♂.)

This species was discovered by Mr. G. Howes on the Old Man Range (Central Otago).

The expansion of the wings is nearly $\frac{1}{2}$ inch (21 mm.) Very like *Tauroscopa gorgopis*, but smaller and much darker in colour. The wings are relatively broader, and the apex of the fore-wings rounder; the second line has fine dentations, but the larger outwards curve towards termen is not apparent.

The perfect insect appears in February.

Described and figured from a specimen given to me by Mr. Augustus Hamilton.

Mr. Philpott was probably right in raising this form to specific rank.

TAUROSCOPA NEBULOSA.

(*Tauroscopa nebulosa*, Philp., Records of Auckland Institute Museum, I., 1, 3.)

(Plate LVI., fig. 5 ♂.)

This fine species was discovered by Mr. C. E. Clarke on Minaret Peak, Lake Wanaka.

The expansion of the wings is about 1 inch (24-25 mm.) Head and palpi tawny black, in ♀ head ochreous and palpi ochreous internally. Antennae sooty black. Thorax tawny black; in ♀ sprinkled with whitish. Abdomen black, laterally and apically mixed with whitish-ochreous. Legs black, more or less mixed with ochreous. Forewings oblong, costa slightly arched basally; apex subrectangular, termen rounded, hardly oblique; brownish-black; densely but irregularly strewn with white; slightly ochreous-tinted towards apical half of costa; first line represented by clear black marks on costa and middle of wing; cilia greyish-fuscous with dark basal line. Hind-wings greyish-fuscous, paler towards base; cilia whitish-grey with prominent fuscous basal line.

Perhaps nearest *T. gorgopis* Meyr., but narrower-winged and differing in the presence of the white irroration and obsolescence of the usual lines.

The perfect insect appears in December.

Described and figured from specimen in the Auckland Museum. The above is taken from Mr. Philpott's original description.

Talis leucophthalma (page 172.) Specimens from Birdling's Flat (Waiiau) have the fore-wings darker. Also from Claverley (Conway River).

Diptychophora microdora (page 173.) Also from Arthur's Pass and Lakes Manapouri and Te Anau.

Diptychophora interrupta (page 173.) Also from Whangarei, Mount Cook, Waiho Gorge, Dunedin and Lakes Manapouri and Te Anau.

Diptychophora planetopa (page 174.) Also from Arthur's Pass and Lakes Manapouri and Te Anau.

Diptychophora metallifera (page 174.) Now found very sparingly at Wainuiomata, and rarely seen at Wilton's Bush, where it was abundant 40 years ago.

Diptychophora holanthes (page 175.) Also from Waimarino, Tophouse, Jack's Pass (Hanmer) and Waiho Gorge.

Diptychophora harmonica (page 175.) Also from Lakes Manapouri and Te Anau, Milford Track, Longwood Range and Kaitawa.

Diptychophora bipunctella (page 175. Plate LVI., fig. 32 ♂.)

A figure of the genuine *Diptychophora bipunctella*, taken from an example captured at Pohangina, on December 4, 1929, is now supplied. Other specimens have occurred in the Upper Wainuiomata Valley near Wellington. It is a rare and local species. The illustration on Plate LII., fig. 30, does not represent *D. bipunctella* but was taken from a rather aberrant specimen of the closely allied *D. harmonica*. The following is an amended description:—

The expansion of the wings is nearly $\frac{3}{8}$ inch (15 mm.). The fore-wings are triangular, termen oblique, brownish-cream-colour, with pale grey, but very distinct markings; first-line double, from about $\frac{1}{4}$ of costa to $\frac{1}{3}$ of dorsum, strongly outwards bowed beneath costa; 2nd line also double, slightly waved, from about $\frac{3}{4}$ of costa to $\frac{3}{4}$ of dorsum, strongly bowed outwards immediately below costa; discal dot small, clear white, outlined in grey; a fine blackish-grey terminal line, and three clear black dots on termen above tornus; no costal marking between origin of second line and apex; cilia white, narrowly silvery-metallic at base. The hind-wings are very pale brownish-white, almost pure white towards base, a fine grey terminal line; cilia clear white with faint greyish sub-basal line.

This species is very similar to *Diptychophora harmonica*, but immediately distinguishable by the characters italicised in the foregoing description. It is very satisfactory that the status of this long outstanding species has now been cleared up.

The perfect insect appears in December and is found in forest.

Diptychophora helioctypa (page 175.) Also from Mount Cook, Lakes Manapouri and Te Anau and Milford Track.

Diptychophora epiphaea (page 176.) This species flies with rapid zigzag flight in mossy glades in subalpine forest. The flight takes place during the late afternoon, when broken sunshine penetrates between the dwarf beeches, *Phyllocladus*, etc. Also occurs at Mount Cook, Lakes Manapouri and Te Anau and Milford Track.

Diptychophora parorma (page 176.) Also from Whangarei.

Diptychophora elaina (page 176.) Also from Eglington Valley.

Sub-family PYRAUSTIDES.

Nymphula nitens (page 177.) Also from Waipukurau and Waiho Gorge. Mr. C. E. Clarke states that although usually sparingly distributed, this species was found in the greatest profusion around a lagoon at Te Anau, and good varieties taken. Dr. J. Seafie Armstrong also reports it as common around Lake Taupo.

Musotima aduncalis (page 177.) Also from Whangarei, Puhī Puhī, and Hope Arm (Lake Manapouri).

Diasemia grammalis (page 178.) Also from Takitimo Mountains.

Sceliodes cordalis (page 178.) Also from Kapiti Island, Awatere River, Blackmillar (Kaikoura) and Cashmere (South Island).

Proternia philocapna (page 179.) Also from Puhī Puhī (Kaikoura) and Upper Ure River.

Hymenia fascialis (page 179.) Also from Whangarei and Stillwater (Greymouth).

Nesarcha hybrealis (page 179. Plate LIV., fig. 19 larva.) The length of the full-grown larva is fully $\frac{3}{4}$ inch; very stout, slightly tapering towards head, more tapering posteriorly; head yellowish-green; body bright pale green and very glassy-looking; warts highly polished, black, each emitting a stout reddish bristle; dorsal vessel dark green.

The foodplant is *Passiflora tetrandra*. The larva lives between joined leaves and feeds on parenchyma of leaf, leaving fibrous portion untouched.

The pupa is enclosed between the leaves inhabited by the larva prior to pupation.

This species occurs on Pitt Island (Chathams).

Genus.—HELLULA.

Labial palpi obliquely ascending, second joint with dense rough scales beneath, terminal joint rather short, with acute triangular tuft of scales at apex beneath. Maxillary palpi filiform, porrect. Neuration normal.

One species has reached New Zealand.

HELLULA UNDALIS.

(*Hellula undalis*, *Fab.*, Meyrick, Royal Soc. N.Z. lxiv., 152.)
(Plate LXI., fig. 9 ♂.)

A single specimen of this species was taken by Mr. Lawford White, flying in the daytime amongst rushes on bank of New River about eight miles south of Greymouth, and about three miles inland from the sea, on August 31, 1932.

The expansion of the wings is about $\frac{3}{4}$ inch (20 mm.) The fore-wings are elongate-triangular with the costa almost straight and termen very oblique; pale yellowish-brown, terminal area very pale brown; a faint, very acutely angulated, whitish transverse line from about $\frac{1}{4}$ of costa to middle of dorsum; a broad, very sinuous, dark-edged transverse line from costa before middle to middle of dorsum; a cloudy dark brown blotch in disc towards apex, its edges well-defined towards termen; a somewhat crescentic black spot on upper edge of this; two crescentic darker brown marks on costa before apex; a faint subterminal shade, and a row of confluent terminal dots; cilia pale brownish-ochreous. Hind-wings and cilia very pale brown; indications of a terminal series of confluent dots.

Described and figured from the unique New Zealand specimen which is in rather poor condition.

Mr. Meyrick states: "I have not seen any previous record of this species from New Zealand, but it is common through a large part of the world, including Australia and some of the Pacific Islands; the larva is a garden pest, feeding on cabbage and turnip; it is therefore no doubt some-

times accidentally imported by man, but probably also migrates freely."

Mecyna maoralis (page 180.) For some years past this insect has been extremely abundant at Paekakariki, Paraparaumu, Waikanae, and other localities where lupin has been extensively planted on coastal sandhills. The larvae feed on the lupin and are often present in prodigious numbers, the plants being sometimes completely destroyed by them. It is probable that the very conspicuously coloured larva is distasteful to birds.

This species also occurs at Whangarei. Common around Lake Taupo, Taihape, Wellington, Awapiri (Marlborough), Mount Cook, and also commonly at Hope Arm (Lake Manapouri) and Clinton River.

Mecyna diaclealis (page 180.) Also from Whangarei.

Mecyna notata (page 181.) Also from Mount Ruapehu (North Island.)

Mecyna adversa (page 181.) Also from Longwood Range.

Mecyna flavidalis (page 181. Plate LIV., fig. 31 larva.) The larva, which feeds on *Muehlenbeckia* in October, is slightly over $\frac{1}{2}$ inch in length (14 mm.). Stout, cylindrical with segments deeply excised; pale green, glassy-looking, surface very uneven. Head and segment 2 pale ochreous; head with minute black dots on crown and cluster on each side; segment 2 with one moderate and one very small black dot on side; two very conspicuous white subdorsal lines, each margined with darker green towards midback; a transverse groove across the middle of each segment on midback; a few very slender brownish bristles. The larva is sluggish in habit, living and feeding hidden in a folded leaf joined by silken threads.

The pupa is enclosed in the folded leaf.

Mecyna marmorata (page 181.) A figure of a full-grown larva is now given on Plate LIV., fig. 33. Its length when fully stretched out is about $\frac{2}{3}$ inch. The blotch on each side of head is almost black, and a similar, but rather smaller, blotch is present on each side of segment 2. The larva may be distinguished by these markings.

Proteroeca comastis (page 182.) Also from Mount Cook, Mararoa River and Longwood Range. Rare.

Heliothela erebopis (page 182.) Also from Mount Ruapehu, Waimarino 2,800 feet (North Island), Arthur's Pass, Mount Cook, Macetown, and McKinnon Pass.

Scoparia subita (page 159.) (*Orocrambus subitus*, Philp., Trans. N.Z. Inst., xlv., 116.) (Plate XIX., fig. 3 ♂, 4 ♀.) As pointed out by Mr. Meyrick this species should be referred to *Scoparia*.

This insect occurs on Flat Top Mountain (Manapouri.)

SCOPARIA USTIRAMIS.

(*Scoparia ustiramis*, Meyr., Trans. N.Z. Inst., lxii., 95.)

(Plate LVI., fig. 33 ♂.)

This very distinctly marked species was discovered by Commander Patterson at Whangarei.

The expansion of the wings is about $\frac{5}{8}$ inch (16 mm.). The head and thorax are grey mixed with white. Palpi dark grey, apical edge white. The fore-wings are elongate-triangular, termen slightly rounded, oblique; grey, the costal and dorsal thirds suffusedly speckled with white; an irregular speckled black streak beneath cell from base to about $\frac{2}{3}$; a slender black streak in cell from middle terminating in a white dot on angle of cell, and five rather irregular black lines on veins to termen, black dots on ends of terminal veins; the cilia are whitish-grey with a light grey sub-basal line. The hind-wings are light grey; cilia pale grey with a darker sub-basal shade.

Allied to *Scoparia subita*.

The perfect insect appears in January.

Scoparia thyridias (page 183.) Also from Mount Ruapehu, Arthur's Pass, Mount Cook and Milford Track.

Scoparia meliturga (page 183.) Also from Whangarei, Picton and Puhī Puhī (South Island.)

Scoparia chlamydata (page 184.) Also from Puhī Puhī, Lyttelton Hills and Milford Track.

Scoparia minusculalis (page 184.) Also from Whangarei, Puhī Puhī, Mount Cook, and Milford Track.

Scoparia dinodes (page 185.) Also from Whangarei, Puhī Puhī, Mount Cook, Waiho Gorge and Milford Track.

Scoparia parmifera (page 186.) Also from Waitati, Mount Cook, Mount Earnslaw, Te Anau-Manapouri District, Milford Track, and Eglinton Valley.

Scoparia acharis (page 186.) Also from Whangarei, Lyttelton Hills and Te Anau-Manapouri District.

Scoparia animosa (page 186.) Also from Pukeatua Bush and Te Anau-Manapouri District.

Scoparia molifera (page 187.) Also from Puhī Puhī and Blackmillar (Kaikoura), (South Island.)

Scoparia cymatias (page 187.) Also from Tophouse, Pukeatua, Mount Arthur, Mount Cook, Bluecliff, and Te Anau-Manapouri District.

Scoparia microphthalma (page 187.) Also from Pukeatua Bush, Puhī Puhī, and Mount Cook.

Scoparia hemicycla (page 187.) Also from Milford Track.

Scoparia ergatis (page 188.) Also from Mount Whakaari (Kaikouras), Mount Cook, and Milford Track.

Scoparia autochroa (page 188.) Also from Te Anau-Manapouri District.

Scoparia critica (page 189.) Also from Paraparaumu (North Island) and Milford Track.

Scoparia characta (page 189.) Also from Mount Cook and Milford Track.

Scoparia ustimacula (page 189.) Also from Whangarei and Milford Track.

Scoparia pongalis (page 189.) Also from Bealey-Waimakariri Confluence.

Scoparia melanaegis (page 190.) Also from Mount Cook, Waiho Gorge, McKinnon Pass, Te Anau-Manapouri District and Bluff.

Scoparia trapezophora (page 190.) Also from Jack's Pass, Arthur's Pass, the mountains around Lake Ohau, and Skelmorlie Peak (Te Anau).

Scoparia torodes (page 190 and 191.) *Scoparia torodes*, Meyr., Trans. Ent. Soc. Lond., 1901, 568; *Scoparia galactalis*, Huds., Ent. Mo. Mag. 1913, 250. (Plate XXI., fig. 46 ♂.) The species described by me as *Scoparia galactalis* has proved to be identical with *Scoparia torodes*, Meyr., which has priority.

Also from Hen Island, Arthur's Pass, Mount Cook and Milford Track.

Scoparia triscelis (page 191.) Also from Mount Ruapehu, Arthur's Pass, Dunedin, and Milford Track.

Scoparia periphanes (page 191.) Also from Jack's Pass (Hanmer) and Milford Track.

Scoparia colpota (page 191.) Also from Whangarei, Puhī Puhī and Milford Track.

Scoparia choristis (page 191.) Has the second line of fore-wings much straighter than *S. colpota*. Also occurs at Pieton, Tophouse, Claverley (Conway River), Cave Creek (Craigieburn), Arthur's Pass and Dunedin.

SCOPARIA QUAESTORIA.

(*Scoparia quaestoria*, Meyr., Trans. N.Z. Inst., ix. 487.)

(Plate LVI., fig. 7 ♀.)

This species was discovered by Mr. C. E. Clarke at Waitati, near Dunedin.

The expansion of the wings is almost 1 inch (22-25 mm.). The fore-wings are reddish-ochreous-brown; the markings are whitish, bordered with slightly darker brown; the first line is strongly outwards-curved above middle; the orbicular very conspicuous, oval, its longer diameter longitudinal; the reniform hook-shaped, its lower portion much broader than the upper; the second line is sinuate, strongly bent inwards below reniform, thence slightly outwards to before dorsum; there is a wavy black terminal line; the cilia are reddish-ochreous-brown. The hind-wings are pale ochreous, a strong dusky grey terminal band, a narrower subterminal band and conspicuous lunule; the cilia are white.

Allied to *Scoparia phalerias*, and long believed to be the male of that insect.

The perfect insect appears in November and December.

Scoparia phalerias (page 192.) A freshly-emerged specimen of this rare insect was taken at Wilton's Bush, near Wellington, on February 7, 1929. This individual probably belonged to a second brood as the usual time of appearance for the species is November or December. Also from Paraparaumu, Jack's Pass (Hanmer), Claverley (Conway River), and Milford Track.

Scoparia cataxesta (page 193.) Also from Waipukurau, Orongorongo, Blenheim, Puhī Puhī River bed, Mount Cook, and Te Anau-Manapouri District. The larva feeds on cushion plants.

Scoparia asaleuta (page 193.) Also from Mount Cook, Waiho River bed (where very common in the middle of January), Hope Arm and Makarora.

Scoparia tetracycla (page 193.) Also from Wellington (North Island), Mount Cook and Lake Ohau.

Scoparia gyrotoma (page 193.) *Scoparia repercuta*, Philp., Trans. N.Z. Inst., ix., 301. (Plate LVI., fig. 27 ♀.)

As the result of the capture of specimens, in good condition, by Messrs. Philpott and Lindsay, and named by Mr. Philpott as above, the ground colour should be described as pale pinkish-ochreous, heavily sprinkled with black and very deep dull green scales, except near the transverse lines; the markings are black and are correctly described, except that the reniform is somewhat rhomboidal, and only imperfectly divided in the middle. The amended figure should stand in place of that given on Plate XXI., fig. 18.

Scoparia indistinctalis (page 193.) Also from Whangarei and Puhī Puhī Peaks.

Scoparia bisinualis (page 194.) Also from Whangarei, Nihotapu and Puhī Puhī.

SCOPARIA CHALICODES.

(*Scoparia chalicodes*, Meyr., Trans. N.Z. Inst. xvii., 98; *Scoparia ciserodes*, Meyr., ib. lii., 30.)

(Plate LXII., fig. 14 ♀.)

This very pale-coloured fragile-looking little species has occurred at Wanganui, Napier, Wellington, Tapawera (Nelson), Christchurch, Birdling's Flat, Little River and Mount Hutt.

The expansion of the wings is about $\frac{3}{4}$ inch (19 mm.). The fore-wings are very elongate-triangular with the termen very obliquely rounded; white, very finely sprinkled with pale brown scales, and with very slender longitudinal blackish markings; a short streak from middle at base; first line indicated by two or three very obscure short streaks; a rather wavy streak in disc terminating in a very indefinite reniform spot; one or two stronger streaks inwards from termen above middle; cilia whitish-grey with darker line. Hindwings and cilia greyish-ochreous.

Variable in size and in the number and distinctness of the longitudinal markings.

The perfect insect appears from November till March.

The above description must be substituted for that on page 194 which refers to *Scoparia limatula*.

SCOPARIA LIMATULA.

(*Scoparia limatula*, Philp., Trans. N.Z. Inst., lxi., 436; *Scoparia chalicodes*, Huds., B. & M. of N.Z. 194.)

(Plate XXII., fig. 13 ♀.)

This species has occurred at Whangarei, Mount Cook, Ben Lomond (Lake Wakatipu), and Invercargill.

The expansion of the wings is about 1 inch (24-26 mm.). The fore-wings are elongate-triangular; pale bluish-white, with numerous very slender, interrupted, black longitudinal streaks, a more prominent streak, or streaks, often present near termen below apex; there is a very faint whitish second line, excurved below costa thence incurved to dorsum at about $\frac{3}{4}$, and a series of blackish terminal dots; cilia grey. The hind-wings and cilia are brassy-ochreous.

The perfect insect appears in January and February.

A specimen of this species stood for many years in the Fereday collection, under the name of *Scoparia chalicodes*, and was so described in my earlier work.

SCOPARIA AUTUMNA.

(*Scoparia autumnna*, Philp., Trans. N.Z. Inst., lviii., 83.)

(Plate LVI., fig. 35 ♀.)

This species was discovered by Mr. Philpott at Nelson.

The expansion of the wings is $1\frac{1}{2}$ inches (25-27 mm.). The fore-wings are pale bluish-grey, sprinkled with white around the veins and margins, with the terminal portions of the veins interruptedly marked in black; there is a fine longitudinal black streak from the base to near middle, and a much thicker broken streak above this from $\frac{1}{4}$ to $\frac{3}{8}$, irregularly indented towards costa. The hind-wings are greyish-ochreous, slightly darker on apex and termen.

The perfect insect appears in April and May.

Described and figured from one of Mr. Philpott's specimens.

Scoparia psammittis (page 194.) Also from Puhī Puhī, Mount Cook, and mountains around Lakes Manapouri and Te Anau.

Scoparia leptalea (page 194.) Also from Whangarei, Nihotapu, Lake Wakatipu, and Te Anau-Manapouri District.

Scoparia feredayi (page 195.) Also from Whangarei, Puhī Puhī, Mount Cook and Milford Track.

Scoparia acompa (page 195.) Also from Waitati, Waiho Gorge, McKinnon Pass and Te Anau-Manapouri District.

Scoparia cyptastis (page 195.) Also from Mount Ruapehu (North Island), Mount Cook, and Te Anau-Manapouri District.

Scoparia illota (page 196.) According to Mr. A. V. Chappell the length of the full-grown larva is about $\frac{5}{8}$ inch. Pale brown with tinges of grey and pink; very fine indistinct dorsal line; dorsal lateral and sublateral series of large, slightly raised, dark brown spots; numerous fine hairs; head dark golden-brown; second segment slightly paler, edged with dark brown, horny dorsal plate; ventral surface slighter paler than upper surface, a few small brown spots on some of the segments.

Some specimens have a slight but distinct purplish tinge which is more noticeable when the larva is contracted.

The foodplant is *Cyclophorus (Polypodium) serpens*. The larva mines the leaves of the foodplant, eating large galleries; enters leaf through a small hole in the under-surface; often fastens two or three leaves together and feeds in the shelter thus formed, in such cases it eats the under epidermis as well as the spongy tissue of the leaf. There is usually a silken gallery leading from leaf, or leaves, upon which the larva is feeding into the moss and lichens which clothe the rock faces on which the foodplant grows; the larva retreats along this gallery and spends the day in small shelter galleries constructed in the moss. It is nocturnal in habit.

The pupa is very shiny; thoracic portions dark brown, abdominal portions yellow-brown. It is enclosed in a slight cocoon, usually spun amongst debris of foodplant and moss

on rock-face; sometimes spun between two or three of the leaves upon which the caterpillar has been feeding.*

Other localities for this species are Puhī Puhī and Lake Te Anau.

Scoparia crypsinoa (page 196.) Also from Mount Cook.

Scoparia axena (page 196.) Also from Mount Arthur, Mount Cook, and Flat Top Mountain (Manapouri).

Scoparia exilis (page 197.) Also from Te Anau-Manapouri District.

SCOPARIA TURNERI.

(*Scoparia turneri*, Philp., Trans. N.Z. Inst., lviii., 362.)

This species was discovered by Dr. A. J. Turner at Arthur's Pass.

The expansion of the wings is about $\frac{3}{4}$ inch (18-21 mm.). Very like *Scoparia exilis* but distinguished from that species by the straight oblique second line of fore-wings. In *S. exilis* the black terminal dots are suffused, and there is a distinct blackish projection inwards from termen a little above middle. In *S. turneri* the terminal dots are well defined and even throughout. The only available specimen of *S. turneri* is a poor one, but the above distinctions appear valid when compared with a long series of *S. exilis* which is not subject to any variation.

The perfect insect appears in February.

Scoparia steropaea (page 197.) Fresh specimens of this species are met with as late as March 22, which would appear to indicate a second brood in the season. Other localities are:—Whangarei, Jack's Pass (Hanmer), Mount Cook and Milford Track.

Scoparia elaphra (page 197.) Also from Te Anau-Manapouri District.

Scoparia paltomacha (page 197.) Also from Mount Cook and mountains around Te Anau and Manapouri.

Scoparia deltophora (page 197.) Also from Mount Cook.

Scoparia panopla (page 198.) Also from Mount Torlesse and Kepler Mountains.

Scoparia clavata (page 198.) Also from Flat Top Mountain (Manapouri).

Scoparia trivirgata (page 198.) Generally distributed in both islands, but commonest in mountainous regions.

SCOPARIA CONTEXTA.

(*Scoparia contexta*, Philp., Trans. N.Z. Inst., lxii., 28.)

(Plate LVI., fig. 24 ♂.)

This species was discovered by Mr. C. E. Clarke on Mount Moltke, Franz Josef Glacier, at an elevation of from 4,000 ft. to 5,000 ft.

The expansion of the wings is about $1\frac{1}{4}$ inches (29-32 mm.). Head, palpi and thorax bluish-grey. Antennae greyish-fuscous, pubescent. Abdomen whitish-grey. Legs fuscous, mixed with whitish, tarsi annulated with whitish. Fore-wings elongate-triangular, costa subsinuate, apex rounded, termen bowed, oblique;

*Trans. N.Z. Inst., lx., 262.

bluish-white; markings dull fuscous; first line irregular, hardly oblique; orbicular elongate-ovate, pale centred; claviform not indicated; reniform large, irregularly quadrangular, pale-marked interiorly; second line deeply and angularly indented below costa; an obscure blotch opposite indentation of second line; a line round termen, tending to break up into spots; cilia fuscous-grey. Hind-wings ochreous-grey, tinged with fuscous round termen; cilia ochreous-whitish.

Belongs to the *petrina* group, but is distinguished from its allies by the bluish-white ground colour.

The species is evidently close to the common and very variable *Scoparia petrina*. Above is copied from Mr. Philpott's original description.

The perfect insect appears in January.

Scoparia petrina (page 199.) A specimen of *Scoparia legionaria*, Philp., Trans. N.Z. Inst., lviii., 362, has been examined by Mr. Meyrick, who states that he sees no reason at all for separating it from *Scoparia petrina*. I entirely agree with this.

S. petrina also occurs at Jack's Pass (Hanmer), Puhi Puhi and Arthur's Pass.

Scoparia halopis (page 199.) Also from Mount Cook.

Scoparia cyameuta (page 199.) Also from Mount Cook, Macetown and Te Anau-Manapouri District.

Scoparia falsa (page 200.) Also from Craigieburn and Arthur's Pass.

Scoparia astragalota (page 200.) Also from Waiho Gorge.

Scoparia rotuella (page 200.) Also from Mount Ruapehu, Waipukurau, Awapiri, Waiho Gorge and Te Anau-Manapouri District.

Scoparia scripta (page 200.) Also from Otira and Arthur's Pass.

Scoparia ejuncida (page 201.) Also from Jack's Pass, Cooper's Creek and Eglinton Valley.

Scoparia niphospora (page 201.) Also from Mount Cook, Dunedin, and mountains around Te Anau and Manapouri.

Scoparia aphaeles (page 201.) Plate LXII., fig. 20 ♂.) This species, which was discovered by Mr. Meyrick at Arthur's Pass, in January, 1883, has apparently not been found since. On the evening of January 16, 1934, I captured a *Scoparia* on Hebe blossoms, at Arthur's Pass, about 2,800 feet above sea-level, which is almost certainly an example of this very rare insect and the figure now given was taken from this specimen. The white tip and white basal joint of labial palpi, almost uniform pale brown fore-wings without definite markings, and pale brassy-ochreous hind-wings, appear very distinctive characters.

Scoparia aspidota (page 201.) Generally distributed throughout the country.

Scoparia sideraspis (page 202.) Mr. S. Lindsay has observed that, when resting on steep clay banks, this species has a remarkable habit of rolling down the slope,

like a small fragment of gravel, which it closely resembles. Quite a number of specimens were seen to perform the same trick, and the habit must be regarded as an instinctive act specially acquired for protective purposes.

New localities:—Craigieburn (Christchurch - West Coast Road), Mount Torlesse and Ben Lomond (Lake Wakatipu).

Scoparia nomeutis (page 202.) Also from Mount Cook, Dunedin, Eglinton Valley, McKinnon Pass and mountains around Te Anau and Manapouri.

Scoparia caliginosa (page 202.) Also from Craigieburn on swampy ground.

Scoparia organaea (page 202.) Also from Milford Track.

Scoparia epicremna (page 203.) Also from terminal moraine, Franz Josef Glacier.

Scoparia luminatrix (page 203.) Also from Whangarei and Waimarino (North Island), Milford Track, Te Anau-Manapouri District and Longwood Range.

Scoparia legnota (page 203.) Also from Waiho Gorge and Milford Track.

Scoparia octophora (page 203.) Also from Whangarei, Waimarino, Tophouse, Puhi Puhi, Stillwater, Mount Cook, Dunedin, and Te Anau-Manapouri District.

Scoparia chalara (page 204.) Also from Waiho Gorge, Dunedin, Te Anau-Manapouri District and McKinnon Pass.

Scoparia fumata (page 204.) Also from Te Anau-Manapouri District.

SCOPARIA SINUATA.

(*Scoparia sinuata*, Philp., Trans. N.Z. Inst., lxi., 436.)

(Plate LVI., fig. 26 ♀.)

This species has occurred at Lake Taupo (?) and in the Mount Cook District.

The expansion of the wings is nearly $\frac{3}{4}$ inch (17 mm.). The fore-wings are rather short, costa almost straight, apex almost rectangular, termen nearly straight, little oblique; pale brown mixed with blackish along costa basally; 1st line white, slightly outwards curved, indented at middle, posteriorly margined with black; 2nd line white, parallel to termen, slightly sinuate beneath costa, incurved above dorsum; an obscure subterminal series of white marks, remote from 2nd line; orbicular and claviform hardly indicated; reniform obscurely X-shaped, black, lower fork filled with whitish; cilia brown with darker basal line. Hind-wings very pale ochreous clouded with brown towards apex; cilia ochreous-white with a dark basal line round apex.

The shape of the second line is somewhat similar to that of *S. chalara* Meyr., but *sinuata* is much smaller and less ochreous in colour.

The perfect insect appears in February.

The above is taken from Mr. Philpott's original description. The figure was copied from a specimen believed to have been taken by Mr. C. E. Clarke at Taupo many years ago.

SCOPARIA FAMULARIS.

(*Scoparia famularis*, Philp., Records of Auckland Institute Museum, I., 1, 3.)

(Plate LVI., fig. 25 ♀.)

This very distinctly-marked species was discovered by Mr. C. E. Clarke, on the Kepler Mountains, Lake Te Anau, at an elevation of 3,000 feet.

The expansion of the wings is nearly $\frac{3}{4}$ inch (21 mm.). Head yellow, mixed with fuscous and whitish. Palpi fuscous, whitish above and beneath. Maxillary palpi ochreous. Antennae fuscous black. Thorax fuscous mixed with ochreous and whitish. Legs fuscous mixed with whitish, tarsi annulated with whitish. Fore-wings moderate, costa subsinuate, apex rectangular, termen straight, slightly oblique; fuscous, densely irrorated with yellow and with some white scales; a small roundish white patch on dorsum near base; first line slightly curved, outwardly oblique, broad, white; orbicular dark, obscure, followed by whitish patch; claviform large, dark, oval, preceded and followed by some whitish suffusion; reniform indicated by obscure dark patch, followed by whitish area; second line strong, white, subsinuate on upper third, thence incurved to dorsum; a white suffused subterminal line, indented at middle, not touching second line; cilia whitish-ochreous with fuscous basal line. Hind-wings greyish-ochreous; broadly fuscous-tinged round termen; cilia ochreous with an obscure thin fuscous basal line.

Near *S. nomeutis* Meyr., but with prominent broad lines; the second line is also quite different in shape in *famularis*.

The perfect insect appears in January.

Described and figured from the unique specimen in the Auckland Museum. The above is taken from Mr. Philpott's original description.

SCOPARIA PARCA.

(*Scoparia parca*, Philp., Trans. N.Z. Inst., lviii., 362.)

(Plate LVI., fig. 15 ♂.)

This very sombre-looking species was discovered by Messrs. S. Lindsay and W. Heighway, at Mount Grey and Hoon Hay, Canterbury. It also occurs at Jack's Pass (Hanmer.)

The expansion of the wings is $\frac{3}{4}$ inch (19-24 mm.). The fore-wings, which have the termen slightly sinuate and oblique, are slatey-grey, paler beyond the second line; first line, orbicular, and claviform very obscure or obsolete; reniform blackish, with lower portion white centred; second line from about $\frac{2}{3}$ of costa to $\frac{1}{3}$ of dorsum indented below costa, thence bowed outwards and then strongly inwards, becoming straight immediately above dorsum, whitish; terminal area distinctly paler; veins obscurely marked in black, with a series of faint terminal dots. The hind-wings and cilia are pale greyish-ochreous.

Although dull and obscure in appearance this is quite a distinct species.

The perfect insect appears in November.

SCOPARIA OCULATA.

(*Scoparia oculata*, Philp., Trans. N.Z. Inst., lviii., 82.)

(Plate LVI., fig. 16 ♂.)

This very obscure species was discovered by Mr. Philpott at Tisbury near Invercargill. It has also occurred at Jack's Pass (Hanmer), Nelson and Freestone Hill (Lake Manapouri).

The expansion of the wings is barely $\frac{3}{4}$ inch (19-22 mm.). It differs from *Scoparia parca* in the following respects:—The fore-wings are slightly narrower without sinuation in termen, slatey-grey strongly tinged with purple; all the markings are usually absent, except the reniform which is blackish, with the lower half white centred; there is no paler terminal area.

The perfect insect appears from November till April.

SCOPARIA TUICANA.

(*Scoparia tuicana*, Clarke, Trans. N.Z. Inst., lvi., 418.)

(Plate LVI., fig. 9 ♀.)

This very distinct little species was discovered by Mr. C. E. Clarke, on the Waitati Hills, and on Mount Maungatua, at an altitude of 2,000 feet.

The expansion of the wings is slightly over $\frac{1}{2}$ inch (14 mm.). The fore-wings are rather broad with the apex rounded and the termen moderately oblique; creamy-white with blackish-brown markings; a large blotch on dorsum near base, hardly reaching costa; a broad irregular-oblique band from about $\frac{1}{3}$ of costa to middle of dorsum, this band contains two darker spots, representing the orbicular and claviform stigmata, and is almost interrupted between these spots and between the claviform and a patch on dorsum; a more or less quadrate black spot on costa beyond middle; a very broad blackish-brown terminal band containing traces of a whitish subterminal line; a few scattered brown scales are situated on the white area near base and on costa before terminal band; the cilia are blackish-brown. The hind-wings and cilia are brown.

The perfect insect appears in November.

Described and figured from a specimen kindly lent to me by Mr. S. Lindsay.

SCOPARIA PALLIDULA.

(*Scoparia pallidula*, Philp., Trans. N.Z. Inst., lviii., 363.)

(Plate LVI., fig. 12 ♀.)

This small and very pale coloured species was found in some numbers, by Messrs. Lindsay and Heighway, at Mount Grey, Canterbury. It also occurs at Wellington, Puhī Puhī and Mount Peel.

The expansion of the wings is $\frac{3}{4}$ inch (18 mm.). The fore-wings, which have the termen almost straight, are pale whitish-grey, with the veins marked in darker grey; the reniform is obscurely X-shaped, with the lower fork filled with whitish; there is a series of faint terminal dots, largest near the middle. The hind-wings and all the cilia are very pale whitish-ochreous.

Although most inconspicuous this is probably quite a distinct species.

The perfect insect appears in December and January.

Described and figured from a specimen kindly lent by Mr. Philpott.

Scoparia asterisca (page 204.) Also from Whangarei, Puhī Puhī, Mount Cook, and Te Anau-Manapouri District.

Scoparia leucogramma (page 204.) Also from Mount Grey, Dunedin, and Te Anau-Manapouri District.

Genus.—GLAUCCOCHARIS, Meyr.

Head shortly rough-scaled; tongue developed. Antennae $\frac{3}{4}$. Labial palpi moderate, porrect, expanded triangularly with rough scales, terminal joint concealed. Maxillary palpi moderate, porrect, roughly expanded towards apex. Fore-wings with vein 2 remote, 3-5 approximated, 8 and 9 stalked, 10 separate, 11 from

middle, curved and closely approximated for a short distance to 12. Hind-wings 1, without cubital pecten; veins 4 and 5 connate, 7 out of 6 near origin, anastomosing with 8 to $\frac{1}{3}$.

Differs from *Scoparia* by structure of vein 11, a character probably reminiscent of *Crambides* to early forms of which (as *Diptychophora*), there is some approximation in form of wing. Represented by a single, very recently discovered (1936) species.

GLAUCHARIS STELLA.

(*Glauccharis stella*, Meyr., Trans. Roy. Soc. N.Z., lxvii., 426.)
(Plate LXII., fig. 10 ♀.)

This interesting little species was discovered by Stella Gibbs, on the ranges to the east of the Orongorongo River, at an altitude of about 2,500 feet above sea-level.

The expansion of the wings is slightly over $\frac{1}{2}$ inch (13 mm.). The fore-wings are oblong with the costa almost straight and termen oblique; rather dull bluish-grey; markings distinct blackish-grey, more or less sprinkled with deep yellow scales; basal line thick, outwardly oblique, with projection in disc; first line from about $\frac{1}{3}$ costa to middle of dorsum, dentate, sharply outwards curved below costa, thence inwards, and outwards before reaching dorsum; orbicular and claviform obsolete, reniform obscure, grey, heavily sprinkled with deep yellow scales; second line rather indefinite, from about $\frac{2}{3}$ costa to about $\frac{2}{3}$ dorsum dentate, outwards curved below costa, thence fairly straight to dorsum; subterminal line irregular, obscure, very slightly sprinkled with deep yellow scales; an irregular grey terminal line; cilia dark grey. Hind-wings grey; cilia grey with darker basal line. Head and thorax dull bluish-grey; abdomen grey.

The perfect insect appears in October. It is highly protected when resting with closed wings on rocks on the mountain side.

Mr. Meyrick remarks as follows:—This species, of which the larva is probably a moss feeder, would be very difficult to see on a tree-trunk in deep shade. It is shorter-winged than any *Scoparia*, the entire absence of white scales and the dark blue-grey colouring gives it a peculiar appearance, whilst the first and second lines are more contorted, and more closely approximated on dorsum than in any species of *Scoparia*; altogether it is a curious form of much phylogenetic interest.

Clepsicosma iridia (page 204.) Also from Gollan's Valley (Wellington.)

Sub-family PYRALIDES.

Diploseustis perieralis (page 205.) Also from Whangarei, Nihotapu, Ruapehu, Otaki, and Lake Te Anau.

Genus.—AGLOSSA, Latr.

Tongue obsolete. Antennae in male finely bipectinated. Labial palpi porrected or subascending, second joint with dense projecting scales beneath, terminal exposed. Maxillary palpi with apex loosely scaled. Fore-wings with veins 4 and 5 connate or stalked. Hind-wings with veins 4 and 5 stalked, 7 shortly approximated to 8.

A genus of very few species, now so widely spread by human agency that their origin is uncertain.*

*Meyrick: Revised Handbook of British Lepidoptera, 446.

AGLOSSA CUPREALIS.

(*Aglossa cuprealis*, Hübn. Meyrick, Revised Handbook of British Lepidoptera, 446.)

(Plate LVI., fig. 36 ♂.)

This very widespread species was first detected in New Zealand, by Mr. Arthur Richardson, at Papakura in 1926. In 1932 Mr. C. E. Clarke reported that it had become remarkably plentiful at Lake Takapuna, Castor Bay and other localities around Auckland.*

The expansion of the wings is $\frac{3}{4}$ inch (22 mm.). The fore-wings are pale brownish-ochreous irregularly sprinkled with blackish-brown, except near middle and on transverse lines; a series of darker marks on costa; lines serrate; first line broad oblique; second line also broad, strongly excurved in disc; a series of obscure subterminal dots; cilia greyish-ochreous. Hind-wings and cilia pale ochreous; terminal line and one in cilia blackish-brown. In some specimens the fore-wings are tinged with reddish.

The larva is bronzy-blackish; head and plate of segment 2 deep brown-red. It feeds in silken galleries amongst chaff, maize, etc.

The perfect insect appears in January. The distribution elsewhere is as follows:—England to York, Roxburgh local; Central and Southern Europe to Central Asia, North Africa, North and South America, Australia.†

Genus.—GAUNA.

Labial palpi ascending, second joint smooth, terminal joint in male rough-haired above. Maxillary palpi filiform. Fore-wings with veins 4 and 5 separate, 7 and 8 out of 9. Hind-wings with veins 4 and 5 separate, 7 anastomosing with 8.

GAUNA AEGALIS.

(*Pyralis aegusalis*, Walk., Brit. Mus. Cat. xix., 1859, 992; *Gauna aegalis*, Turn., Proc. Roy. Soc. Qland., xviii., 1904, 185.)

(Plate LVI., fig. 20 ♀.)

This pretty species was first observed in New Zealand by Mr. Arthur Richardson, at Papakura, in 1926. Since then it has increased in numbers and Mr. Clarke reported that in 1932, it was remarkably plentiful at Lake Takapuna, Castor Bay, and other localities near Auckland.‡ Mr. E. S. West has also taken it at Napier.

The expansion of the wings is slightly over 1 inch (24-30 mm.). The fore-wings are triangular, narrow at base with costa strongly arched before apex and termen slightly sinuate; pinkish-brown, darker and more claret-coloured on terminal area; first line ochreous inwardly oblique; second also ochreous, slightly wavy on upper $\frac{2}{3}$, thence sharply bent outwards towards dorsum; terminal area paler near tornus. Hind-wings greyish-brown; a paler area between first and second lines, which are pale ochreous; terminal area deep brownish-claret colour. All the cilia are pinkish-brown.

The perfect insect appears from September till January.

Dr. Turner gives the Australasian distribution as from Brisbane to Tasmania. He states that the larva feeds on woody galls on various species of *Acacia*.**

*Trans. Roy. Soc. N.Z., lxiv., 13.

†Meyrick: Revised Handbook of British Lepidoptera, 446.

‡Trans. Roy. Soc. N.Z., lxiv., 13.

**Trans. N.Z. Inst., lxii., 30.

Family **THYRIDIDAE.**

Morova subfasciata (page 206.) Also from Rangitaua, Pohangina, Levin, Puhī Puhī, Hokitika and Te Anau-Manapouri District.

An interesting account of the Hymenoptera and other stray insects, which inhabit the "galls" formed by the larva of this species, is given by Mr. E. S. Gourelay in the Transactions of the N.Z. Institute, Vol. LIX., page 368.

Family **PTEROPHORIDAE.***

Platyptilia falcatalis (page 207. Plate LIV., fig. 18 larva.) The larva, which feeds in the opening leaf and flower buds of *Hebe salicifolia*, is about $\frac{1}{2}$ inch in length, fairly stout, slightly tapering at each end, with segments well defined; head small, greenish, mottled with brown; segment 2 with obscure ochreous dorsal plate; rest of body yellowish-green, darker on sides and under-surface; a broad, slightly irregular, deep red dorsal line from segment 3 to anal extremity; several slightly darker green subdorsal lines; warts minute, emitting short slender blackish bristles. Full-grown larvae occur at the end of October, and at the end of February, there being most likely two complete broods in the season.

The length of the pupa is slightly under $\frac{1}{2}$ inch (11 mm.). In form it is very like the pupa of *P. aeolodes*; the dorsal appendages are slightly shorter and flatter, with a small spine projecting from the extremity of each; general colour rather dull reddish-brown, a little paler on ventral surface, and faintly mottled with darker brown; an obscure paler lateral line; abdomen with four rows of conspicuous whitish warts. The pupa is suspended by the tail, with the ventral surface appressed to supporting object.

The perfect insect probably hibernates.

Other localities for this species are:—Nihotapu, Lake Taupo, Kapiti Island, Puhī Puhī, Mount Cook, and Te Anau-Manapouri District.

The form described by Philpott as *Platyptilia ferruginea* was renamed by him, in 1928, *P. indubitata*.† The absence of scale tufts he refers to may be due to the effects of abrasion.

Platyptilia aeolodes (page 207. Plate LIII., fig. 35 larva; fig. 36 pupa.) The figures now given of the larva and pupa of this species were taken from a single individual which was somewhat vividly coloured. Two others taken at the same time (in the middle of March) were much suffused with pale green and the characteristic markings were less apparent. It is therefore clear that both larva and pupa are subject to considerable variation in colour and in intensity of markings. All three larvae were full-grown when captured, and the alleged foodplant (*Juncus tenuis*), which is open to some doubt, could not be verified.

*For accounts of Genitalia see Trans. N.Z. Inst., lix., 645.

†Trans. N.Z. Inst., lix., 485.

This species seems very generally distributed throughout the country.

Platyptilia heliastis (page 208.) Also from Arthur's Pass, Flat Top Mountain (Manapouri) and McKinnon Pass.

Platyptilia deprivatalis (page 208.) Also from Ohakune (North Island) and Mount Cook.

Platyptilia campsiptera (page 208.) Also from McKinnon Pass. Rare.

Alucita monospilalis (page 209.) As the result of breeding experiments carried out by Mr. A. V. Chappell,* it is now proved that *Alucita lycosema* is only a variety of *A. monospilalis*.

Mr. Clarke states that *A. monospilalis* is extremely abundant in the Te Anau-Manapouri District. It is also very common at Waiho Gorge.

Alucita furcatalis (page 210. Plate LIII., fig. 7 larva; 8 pupa.) The length of the larva when full-grown is about $\frac{3}{8}$ inch. Very stout, rapidly tapering posteriorly; segments well defined. General colour rather pale green, darker on the back; the edges of the darker dorsal band edged with whitish. Head pale brown on the sides. Each segment furnished with a row of long, very stout, blackish-brown bristles and tufts of short whitish hairs near ventral surface. Sluggish in habit, resting on the upper surface of the leaves of its foodplant, *Pittosporum eugenoides*, which it eats right through from the upper surface.

The pupa is about 5-16 inch long, stout, rapidly tapering towards extremity. Colour uniform grass green; integument polished, slightly and irregularly striated, with a row of impressions on each side of abdominal segments; limbs very faintly sculptured; *no hairs or bristles*. It is attached to support by the whole of ventral surface, which appears somewhat flattened, the union being effected by an extensive thin pad of silk prepared by the larva.

The larva was discovered by Stella Hudson on 19th October and the perfect insect emerged on 13th November. As the moth is frequently met with as late as March, it is practically certain that there are two broods in a season. Whilst the larvae and pupae of *A. monospilalis* and *A. lycosema* are practically identical, the preparatory stages of this species exhibit striking differences, thus establishing beyond all doubt the distinctness of the species. Also from Whetukura, Hawke's Bay. Mr. Clarke states that *A. furcatalis* is common in the Te Anau-Manapouri District.

Alucita innotatalis (page 210.) Also from Waimarino, Kaitawa, Clarence Bridge, Kaikoura, Takitimo Mountains, Rere Lake (Wakatipu) and Knife and Steel.

Stenoptilia celidota (page 209.) Mr. Meyrick has kindly pointed out to me that the plume moth figured on Plate XXIII., fig. 3, does not represent *S. celidota* but apparently a new species of *Platyptilia* now described below. The true *celidota* has no scale tufts in the dorsal cilia of third segment of hind-wings, and is therefore cor-

*Trans. Roy. Soc. N.Z., lxx., 154.

rectly referred to *Stenoptilia*. It may be recognised by the *oblique blackish spot before cleft on fore-wings*. This mark is truly oblique, that is to say, its upper extremity is *much* further from the base of the wing than the lower extremity is.

PLATYPTILIA HOKOWHITALIS, n. sp.

(Plate XXIII., fig. 3 ♂.)

A single specimen of this insect was captured, on November 10th, 1889, in the old Hokowhitu Bush at Palmerston North. This forest is now non-existent and its site occupied by a portion of the town.

The expansion of the wings is $\frac{3}{4}$ inch (19 mm.). The fore-wings are pale brownish-ochreous; a series of rather faint darker marks on costa from base to near origin of cleft; a conspicuous black mark at base of cleft, almost at right angles with costa, its *upper extremity being very slightly nearer base of wing* than the lower extremity; cilia brownish-ochreous with slight blackish scale tufts on inner sides of cleft near termen, and strong tufts on dorsum. Hind-wings and cilia paler and slightly greyer than fore-wings; the blackish scale tufts on dorsum of third plume quite evident.

Apparently an extremely rare species, now possibly extinct.

Stenoptilia epotis (page 210.) Also from Porter's Pass and Arthur's Pass.

Stenoptilia charadrias (page 211.) Also from Arthur's Pass, Waiho Gorge, Mount Cook, and Skelmorlie Peak (Te Anau). Possibly the same species as *S. vigens*, which name has priority.

Stenoptilia vigens (page 211.) Also from Arthur's Pass, Waiho Gorge, and McKinnon Pass. Rare.

Stenoptilia orites (page 211.) Also from Jack's Pass (Hanmer), Takitimo Mountains and McKinnon Pass. Rare.

Stenoptilia zophodactyla (page 211.) Also from Waiouru, Bottle Lake (Christchurch), Arthur's Pass and Hope Arm (Lake Manapouri).

Family PSYCHIDAE.

Orophora unicolor (page 214.) Forty-four cases containing pupae of this rare species were collected by Mr. Lawford White at Waiiau, North Canterbury, in November, 1929. The cases were attached to Wild Irishman bushes (*Discaria toumatou*), a few being also found on Cassinias.

Over one hundred old empty cases were observed. Three cases had larvae in them, but these would not feed on tussock grass, probably due to being near pupation.

On March 4, 1930, the first male insect emerged, and from then on approximately forty males emerged. No females were found in any of the remaining cases; several of these contained dead larvae and pupae, but no parasites emerged.

One male was seen in the act of emerging; the pupa wriggled out of the larva case until the wing covers were free. A heaving motion then commenced in the thorax, resulting in the splitting of the plates over the eyes, legs, and antennae. The moth gradually emerged by grasping the severed plate and drawing itself up and out, and then climbed on to the outside of the larva case. When withdrawing the abdomen from the pupa case, some creamy fluid was ejected from the body. The time taken for emergence was five minutes, and to expand the wings three minutes. Some of the males were very active in the breeding cage, while others never moved from the larva case. (Records of Canterbury Museum, IV., 347.)

Mr. S. Lindsay found a case belonging to this species at Jack's Pass near Hanmer, and Mr. C. E. Clarke states that they occur occasionally in the Te Anau-Manapouri District.

Family COSSIDAE.

Xyleutes boisduvali, H. S., Rothschild, Novit. Zool. 1896, 232. According to Mr. Philpott a female specimen of this huge species, probably the heaviest moth in the world, was taken at Spring Grove, Nelson, in February, 1925. It had emerged from one of the Australian hardwood poles used by the Telegraph Department. Several of the smaller species, *X. eucalypti*, Boisd., have been reported from various parts of the Dominion during the last few years.*

Xyleutes boisduvali. Expanse of wings of male about $5\frac{1}{2}$ inches; of female $8\frac{1}{2}$ inches. Fore-wings pale grey densely speckled with darker grey. Hind-wings chocolate-brown. Abdomen chocolate-brown, grey on midback and towards anal extremity.

Family TORTRICIDAE.†

Subfamily TORTRICIDES.

Proselena niphostrota (page 219.) Also from Peel Forest and Te Anau.

Proselena antiqvana (page 219.) According to Mr. E. S. Gourlay the larva of this insect feeds on ngaio (*Myoporum laetum*). Two female varieties of this species are figured on Plate LVII., figs. 24 and 25. Both sexes are apparently very variable and the markings often very indefinite. Also from Claverley (Conway River).

Pyrgotis pyramidias (page 219.) Also from Day's Bay (Wellington), Waitati (Dunedin), Longwood Range, Makarora, Flat Top Mountain (Manapouri), and Bluff.

A fine variety of this species, from Arthur's Pass, is figured on Plate LVII., fig. 16.

Pyrgotis eudorana (page 219.) Also from Pohangina, Puhi Puhi and Claverley (Conway River, South Island).

Pyrgotis consentiens (page 219.) Also from Flat Top Mountain (Manapouri).

*Trans. N.Z. Inst., lvii., 708.

†For accounts of Genitalia see Trans. N.Z. Inst., lix., 443, Tortricides, and 469, Eucosmides.

PYRGOTIS MODESTA.

(*Pyrgotis modesta*, Philp., Records of Auckland Institute Museum, I, 1, 4.)

(Plate LVII., fig. 4 ♂.)

A single specimen of this very obscure-looking species was taken by Mr. C. E. Clarke at Waiho Gorge, Westland.

The expansion of the wings is about $\frac{1}{2}$ inch (13 mm.). Head and palpi brown. Antennae fuscous-brown, ciliations in ♂ 2. Thorax and abdomen bronzy-brown. Legs ochreous irrorated with fuscous, anterior pair wholly fuscous. Forewings elongate, costa strongly arched, apex rounded, termen nearly straight, oblique, rounded beneath; bronzy-brown; slightly reddish-tinged in disc; an indistinct dark fuscous shade round termen; cilia greyish-fuscous with fuscous basal line. Hindwings fuscous; cilia greyish-fuscous with dark basal line.

Nearest *P. consentiens* Philp., but a duller species with longer antennal pectinations.

The perfect insect appears in January.

Described and figured from the unique specimen in the Auckland Museum. The above is taken from Mr. Philpott's original description.

PYRGOTIS HUMILIS.

(*Pyrgotis humilis*, Philp., Records of Auckland Institute Museum, I, 1, 4.)

This is another extremely obscure form, represented by a single specimen, captured by Mr. C. E. Clarke, on Mount Maungatua, Otago.

The expansion of the wings is about $\frac{1}{2}$ inch (12 mm.). Head and thorax brown mixed with ochreous. Palpi ochreous. Antennae ochreous annulated with black, ciliations in ♂ $1\frac{1}{2}$. Abdomen bronzy fuscous. Legs fuscous mixed with ochreous. Fore-wings elongate, costa strongly arched, apex rounded, termen subsinuate, oblique; bright ochreous; suffusedly purplish fuscous towards termen; cilia ochreous mixed with fuscous. Hind-wings fuscous; cilia fuscous tipped with ochreous and with a darker basal line.

Nearest to the preceding, but easily separated by the antennal characters.

The perfect insect appears in December.

Described from a single specimen, in poor condition, in the Clarke collection, Auckland Museum. The above is a copy of Mr. Philpott's original description.

Catamacta rureana (page 220.) Also from Whangarei and Mount Cook.

Catamacta lotinana (page 220.) Also from Lumsden and Ben Lomond (Lake Wakatipu).

Capua cyclobathra (page 222.) Also from Te Anau.

Capua alopecana (page 230. Plate LIII., fig. 30 larva.) Now referred to the genus *Capua*, veins 7 and 8 in forewings are distinctly stalked, the stalk in some specimens being very short (Meyrick).*

The length of the full-grown larva is about 7-16 inch. Rather stout, cylindrical, tapering at each end, especially posteriorly. Head small, bright reddish-brown, shining, without markings; segment 2 red-brown, black on sides and posteriorly, with central suture, anterior edge white; rest of body amber-brown, segments 3, 4 and 5 rather darker, central portions, except last segment, broadly dusky red, sides and segmental divisions marked in blackish; warts very large paler than rest of larva, each emitting a short ochreous-brown bristle. Colouring apparently variable.

*Trans. N.Z. Inst., lxii., 95.

This larva is of active habit, feeding between joined leaves of *Phyllocladus alpinus*, the pupa being found in the same situation. Larvae taken at Waimarino in January emerged as perfect insects a month later.

This species is evidently common in the subalpine scrub on the central plateau of the North Island (National Park); also in the South Island at Mount Cook and Arthur's Pass, and possibly wherever its foodplant is found. The fore-wings in the bred specimens from Waimarino are considerably darker and duller in colour than in the specimen represented on Plate XLV., fig. 11. Commander Patterson reports *C. alopecana* from Whangarei.

CAPUA VARIEGATA.

(*Capua variegata*, Philp., Records of Auckland Museum, I, 1, 4.)

(Plate LVII., fig. 3 ♂.)

Single specimens of this pretty insect were captured by Mr. C. E. Clarke at Wairakei and Whangarei.

The expansion of the wings is about $\frac{5}{8}$ inch (14-15 mm.). Head, palpi and thorax grey mixed with brown. Antennae ochreous, annulated with black, ciliations in ♂ $\frac{1}{2}$. Abdomen ochreous-grey. Legs ochreous, anterior pair fuscous annulated with ochreous. Fore-wings elongate triangular, costa moderately arched, termen subsinuate, oblique; white; markings purplish-brown mixed with ferruginous and ochreous; basal fascia running from 1-6 costa to $\frac{1}{2}$ dorsum; its outer margin very irregular; a moderately broad fascia from $\frac{1}{3}$ costa to before dorsum, interrupted above and below middle; a very broad fascia on apical third, its outer margin separated from termen by narrow strip of white; near its anterior margin is a blackish spot followed by a dot of white; space between basal and terminal fasciae crossed by several interrupted strigulae, usually forming dark spots on costa and dorsum; cilia grey, tips paler. Hind-wings greyish-fuscous; cilia fuscous-grey with obscure dark basal line.

Approaches *C. plagiata* Walk., but has not the pronouncedly sinuate termen of the fore-wing of that species, and the antennal pectinations are shorter.

The perfect insect appears in December and January.

Described and figured from a specimen in the Auckland Museum. The above is mainly taken from Mr. Philpott's original description. This form is probably only an unusual variety of the common and extremely variable *Capua plagiata*.

Capua plinthoglypta (page 223.) Also from Whangarei and Arthur River.

Capua arcuata (page 223.) Also from Riccarton Bush.

Capua intractana (page 223.) Also from Whangarei, Karori, Howard Point (Wellington Harbour), and Christchurch.

Eurythecta robusta (page 224.) Also from Birdling's Flat. (Common).

Eurythecta zelaea (page 224.) Also from Alexandra, Gore and Paradise (Lake Wakatipu).

Eurythecta paraloxa (page 225.) Also from New River (Invercargill).

Eurythecta eremana (page 225.) Also from Mount Grey, Horseshoe Lake, Mount Cook, Takitimo Mountains and Te Anau.

Eurythecta curva (page 225.) One on Flat Top Mountain (Te Anau).

EURYTHECTA PHAEOXYLA.

(*Eurythecta phaeoxylla*, Meyr., Trans. Roy. Soc. N.Z., lxvii., 427.)
(Plate LVI., fig. 8 ♂.)

This neat-looking little species was discovered by Mr. S. Lindsay on Mount Torlesse, at an altitude of about 4,000 feet.

The expansion of the wings is slightly over $\frac{1}{2}$ inch (14 mm.). The fore-wings are elongate, sub-oblong with costa strongly arched at base and termen hardly oblique, grey, heavily speckled with pale ochreous, especially on dorsal area near middle; a slender obscure transverse line at about $\frac{1}{4}$; a very oblique yellowish-brown transverse line from before middle of costa to near tornus, inner edge straight, outer edge irregular; cilia rather bright brownish-ochreous. Hind-wings dark brown; cilia pale brownish-ochreous with darker basal line.

The perfect insect appears early in February. Mr. Lindsay states it was common on a restricted area of swampy ground, at the lower edge of a shingle fan, above Porter's Pass.

EURYTHECTA LEUCOTHRINCA.

(*Eurythecta leucothrinca*, Meyr., Records of Canterbury Museum, III., 367.)

(Plate LVII., fig. 18 ♂.)

This very interesting species was discovered by Mr. S. Lindsay at Black Hill, Rakaia Riverbed.

The expansion of the wings is nearly $\frac{5}{8}$ inch (15 mm.). *Antennae* with very long whorled ciliations (4). Fore-wings rather elongate, costa slightly arched, with moderate fold from base to $\frac{1}{2}$, apex obtuse-pointed, termen almost straight, very oblique; vein 7 present; light greyish-ochreous suffusedly mixed with white; a broad white costal streak from base to apex, its costal edge clouded with grey near apex, lower edge straight; dorsal and terminal areas narrowly clouded with white; cilia white, with grey median shade. Hind-wings brownish-grey, cilia whitish.

Very distinct; the costal fold and highly developed antennal ciliations are peculiar structural characters, but the species is a true *Eurythecta* (Meyrick).

The perfect insect appears in April.

Described and figured from the type specimen in the Canterbury Museum.

Ascerodes prochlora (page 225.) Also from Mount Cook, Flat Top Mountain (Manapouri), and Kepler Mountains.

Tortrix pictoriana (page 226.) Also from Tophouse, Jack's Pass (Hanmer) and Te Anau.

Tortrix leucaniana (page 226.) Also from Te Anau.

Tortrix melanosperma (page 227.) Also from Te Anau.

Tortrix orthropis (page 228.) The length of the full-grown larva is about $\frac{1}{2}$ inch; moderately stout of almost uniform thickness; orange ochreous, with dusky subdorsal lines; segments deeply excised; head bright brown, darker anteriorly; segment 2 with horny brownish dorsal plate, darker on each side; legs small; prolegs rather elongate; anal flap ochreous-brown and horny. The single

larva was beaten from *Coprosma rotundifolia* in the middle of December and the moth emerged on 7th January.

TORTRIX INDOMITA.

(*Tortrix indomita*, Philp., Records of Auckland Institute Museum, I., 1, 6.)

(Plate LVII., fig. 1 ♂.)

Specimens of this insect were captured by Mr. C. E. Clarke at Waitati and Woodhaugh near Dunedin. It also occurs at Te Anau.

The expansion of the wings is about $\frac{3}{4}$ inch (19 mm.). Head, palpi and thorax dull ochreous, sprinkled with fuscous. Antennae ochreous annulated with fuscous, ciliations in ♂ 2. Abdomen ochreous mixed with brown. Legs ochreous mixed with brown, anterior pair infuscated, tarsi narrowly annulated with ochreous. Fore-wings with moderate costal fold, costa rather strongly arched, apex rectangular, termen subsinuate, slightly oblique; dull ochreous, sprinkled and strigulated, especially towards termen, with brown; costal fold mixed with brown; a dark brown patch on costa, commencing before $\frac{1}{3}$ and extending nearly to apex, its anterior margin running obliquely to middle of wing, thence almost straight to costa before apex; beneath this patch, at about half its length, and touching it, is an obscure and irregular brown blotch; an interrupted brown line round termen; cilia whitish ochreous. Hind-wings ochreous, densely mottled with brown, especially towards termen; cilia whitish-ochreous with dark basal line.

The type of marking approaches that of *T. orthropis* Meyr. and *T. conditana* Walk., but the differences between the three are marked.

The perfect insect appears in December.

Described and figured from the type specimen in the Auckland Museum. The above is taken from Mr. Philpott's original description. This form is probably merely a variety of *Tortrix orthropis*.

Tortrix postvittana (page 228.) The larva is about $\frac{1}{2}$ inch in length (11 mm.) Moderately stout, slightly attenuated at each end; segments well defined, with strong transverse wrinkles; warts small, emitting rather long slender bristles. General colour pale green; head small, highly polished, greenish-ochreous, with bright brown spot on each side; segment 2 with greenish-ochreous horny semicircular plate. It feeds on the terminal shoots of *Haloragis erecta* which it twists and fastens together with silk. The pupa is enclosed in the twisted leaves. Larva found in November. There are probably several broods in the season.

This species also occurs at Whangarei, Waipukurau, Kaitawa (Wellington), and Awapiri (Marlborough).

Tortrix torogramma (page 228.) Also from Whangarei.

Tortrix orthocopa (page 229.) Also from Whangarei.

TORTRIX CLARKEI.

(*Tortrix clarkei*, Philp., Records of Auckland Institute Museum, I., 1, 5.)

(Plate LVII., fig. 2 ♀.)

This very striking species was discovered by Mr. C. E. Clarke at Waimarino.

The expansion of the wings is about 1 inch (20-25 mm.). Head and thorax purplish-grey, in ♀ ferruginous-tinged. Palpi rather long, purplish-grey. Antennae ochreous annulated with blackish, ciliations in ♂ $\frac{3}{4}$. Abdomen ochreous. Legs ochreous, anterior pair reddish-brown. Fore-wings with costa moderately arched, subsinuate, apex pointed, termen markedly sinuate, hardly oblique; pale purplish-fawn colour; markings dark reddish-brown on margins, passing into dark purplish-grey within and being narrowly margined with ochreous; a basal patch from $\frac{1}{8}$ of costa, thence broadly and triangularly projecting to fold, after which it runs very obliquely to dorsum at $\frac{3}{4}$, where it coalesces with inner margin of median fascia; a broad fascia from before middle of costa to tornus, its anterior margin sinuate beneath costa and its posterior margin straight; a fascia beyond middle represented by straight anterior margin only; cilia ochreous, ferruginous-tinged. Hind-wings greyish-white, obscurely mottled with brown; cilia greyish-white faintly tinged with purplish.

Nearest to *T. orthocopa* Meyr., but at once distinguished by the form of basal patch.

The perfect insect appears in January.

Described and figured from specimens in the Auckland Museum. The above is taken from Mr. Philpott's original description.

Tortrix tigris (page 229.) The remarkable striped pattern and colouring of the fore-wings of this rare species exactly imitates in general appearance the outer foliage of the dead tree fern fronds and the moth, is always found amongst these. This insect also occurs at Wayby Gorge and Te Anau.

Tortrix conditana (page 229.) Also from Whangarei, Mount Cook and Te Anau.

Tortrix spatiosa (page 229.) Also from Waimarino, Arthur's Pass, Dunedin and West Plains (Invercargill).

Tortrix flavescens (page 231.) Also from Whangarei, Pohangina, Puhi Puhi, Mount Cook, Te Anau and Milford Track.

Tortrix fastigata (page 231.) Also from Arthur's Pass.

Tortrix fervida (page 231.) Also from Day's Bay and Gollan's Valley (near Wellington).

Tortrix sphenias (page 231.) Also from Kepler Mountains, Arthur River, Eglinton Valley and Knife and Steel (Fiord County).

Tortrix molybditis (page 231.) Also from Claverley (Conway River), Arthur's Pass, Mount Cook, Te Anau and Knife and Steel (Fiord County).

Tortrix zestodes (page 232.) Also from Arthur's Pass.

Tortrix scruposa (page 232.) *Tortrix maculosa*, Philp., Trans., N.Z. Inst., lviii., 84, is a synonym of this. Occurs also at Whangarei, Aorere River and Quartz Ranges.

Tortrix inusitata (page 232.) Also from Riccarton Bush and Te Anau. (Rare).

TORTRIX ASCOMORPHA.

(*Tortrix ascomorpha*, Meyr., Trans. Roy. Soc. N.Z., lxiv., 153.)
(Plate LVII., fig. 19 ♀.)

This fine species was discovered by Mr. S. Lindsay at Arthur's Pass.

The expansion of the wings is slightly under 1 inch (23-24 mm.). The fore-wings are rather broad with marked sinuation below apex; *ochreous-yellow*, speckled with darker yellow on basal half; a brownish basal patch with very strong angulation on its outer margin, more or less edged with blackish; a *very large irregular brownish-grey central patch*, narrowly touching costa near middle as a definite black mark, thence with two projections towards apex, outer edge of patch nearly parallel to termen, lower edge just touching dorsum as a black streak, central portion of patch yellow; a small brownish-grey subapical patch. Hind-wings pale yellowish-white, faintly dappled with greyish-brown towards dorsum. All the cilia are yellowish-ochreous.

The perfect insect appears in December.

Described and figured from a specimen in the Canterbury Museum.

Mr. Meyrick states that this species is allied to *Tortrix charactana* and *scruposa*, but very distinct. It is remarkable that this fine and noticeable species should now be discovered (1933) in a locality so much visited by entomologists during the past fifty years.

TORTRIX ENCAUSTA.

(*Tortrix encausta*, Philp., Records of Auckland Institute Museum, I., 1, 6.)

♂. 11-12 mm. Head, palpi and thorax dark reddish-brown. Antennae ochreous annulated with dark brown, ciliations in ♂ 3. Abdomen dark brown. Legs ochreous, mixed with brown. Fore-wings with costa strongly arched, moderate costal fold, apex subobtusate, termen subsinuate, rather oblique; purplish mixed with ochreous; basal patch extensive, outer margin almost straight, ochreous; a broad nearly straight slightly outwardly oblique median fascia; apical third of wing dark reddish-brown, enclosing a roundish spot of purplish before apex and some ochreous towards tornus; fringes brownish mixed with ochreous. Hind-wings dark fuscous tinged with purplish; fringes dark fuscous with darker basal line.

Not nearly related to any other *Tortrix*.

Kaeo, in January. Two males taken by Mr. C. E. Clarke. Holotype (♂) and paratype in coll. Auckland Museum.

The above is copied from Mr. Philpott's original description. The type specimen is in poor condition, and no useful figure can be made from it. The wing markings, so far as they can be seen, resemble *Epichorista triorthota*.

Ctenopseustis obliquana (page 234.) On Plate LIII., figs. 19, 20 and 21 I have figured three very distinct varieties of larvae which all resulted in specimens of this very variable insect. An additional foodplant is *Pittosporum tenuifolium*.

Ctenopseustis fraterna, Philp., Records Auckland Institute Museum, I., 1, 7. This is without doubt identical with that form of *C. obliquana* depicted on Plate XXV., fig. 3. In a long series of *C. obliquana* every gradation can be found between this form, and many others which constitute that extremely variable species. There is really no ground for according to it specific rank.

Gelophaula trisulca (page 235). Also from Mount Cook and McKinnon Pass.

Gelophaula aenea (page 235.) A figure of the male of this species is given on Plate LXII., fig. 8. It was made from a rather poor specimen, originally belonging to the Fereday collection, but now in the Canterbury Museum. This specimen was captured by Mr. J. D. Enys at Castle Hill in 1878. *Gelophaula aenea* is apparently best distinguished by its bright golden-brown hind-wings, with very pale coloured costal area.

Gelophaula siraea (page 236.) Also from Mount Cook.

Gelophaula lychnophanes (page 236.) Also from Jack's Pass (Hanmer).

GELOPHAULA VANA.

(*Gelophaula vana*, Philp., Trans. N.Z. Inst., lix., 487.)

This species was discovered by Mr. Philpott on the Hunter Mountains, at an elevation of about 4,000 feet above sea level, where it is abundant.

The expansion of the wings is slightly over 1 inch (δ 26-29 mm., ♀ 29-32 mm.) Extremely similar to *G. siraea*, but a larger and less bright insect. The yellow median stripe of the fore-wings is not so bright as in *siraea* and tends to be more suffused, not infrequently occupying nearly all the lower half of the wing. The cilia of the hind-wings are usually yellowish-tinged, not white as in *siraea*. In the female the fore-wings are pale yellow sprinkled with blackish-brown, the venation clearly marked in a paler tint. The hind-wings are white dusted with grey except near apex.

The perfect insect appears in December and January.

The above is taken from Mr. Philpott's original description.

GELOPHAULA ARIDELLA.

(*Gelophaula aridella*, Clarke, Trans. Roy. Soc. N.Z. lxiv., 13.)
(Plate LVI., fig. 23 δ .)

This species was discovered by Mr. C. E. Clarke on Flat Top Mountain (Lake Manapouri).

The expansion of the wings is $\frac{5}{8}$ inch (16 mm.). The fore-wings are rather dark grey clouded with blackish-grey along costa; cilia grey. The hind-wings are grey, darker along apex and termen; cilia paler grey.

A very obscure species, apparently only differing from *Gelophaula palliata*, Philp., in its smaller size and almost unicolourous hind-wings.

Described and figured from the type specimen in the Auckland Museum.

GELOPHAULA PRAECIPITALIS.

(*Gelophaula praecipitalis*, Meyr., Trans. Roy. Soc. N.Z.,
lxiv., 152.)
(Plate LXI., fig. 16 δ .)

This species was found by Mr. Lawford White on Mount Peel, at an elevation of 4,000 feet. Mr. F. G. Gibbs took a specimen on Mount Richmond, at the same elevation, in 1906, but it was never described.

The expansion of the wings is about 1 inch (24-25 mm.). The fore-wings are oblong, with apex and tornus rounded; termen rather oblique; warm brown, clouded with ochreous and rusty red towards disc and fold. Hind-wings dull orange; a deep choco-

late-brown shaded patch on apex covering about $\frac{1}{3}$ of the wing. Head and body deep brownish-black.

Less stoutly built than most members of the genus. The only available specimens are in rather poor condition; a fresh specimen would probably have a much more brilliant appearance.

The perfect insect appears in January and flies rapidly over shingle fans on mountain slopes.

Epichorista hemionana (page 236.) Also from Te Anau and Invercargill.

Epichorista elephantina (page 237. Plate L., fig. 16 δ ; Plate LVII., fig. 23 ♀ .) The expansion of the wings of the female is $\frac{7}{8}$ inch. The fore-wings are more pointed than in the male, the costa more arched, the termen more oblique (thus with smaller size showing some tendency to reduction). The hind-wings are rather dark grey.

Apparently a rare insect which, so far, has only occurred at Arthur's Pass.

Epichorista persecta (page 237.) Also from Jack's Pass (Hanmer), Arthur's Pass and Takitimo Mountains.

Epichorista siriana (page 237.) Also from Pohangina.

Epichorista aspistana (page 237.) Also from Cave Creek (Craigieburn) and Mount Cook.

Epichorista zatrophana (page 238.) Also from Puhi Puhi, Jack's Pass and many from Arthur's Pass.

EPICHORISTA SPECIOSA.

(*Epichorista speciosa*, Philp., Trans. N.Z. Inst., lviii., 83.)
(Plate LVII., fig. 17 δ .)

This very handsome species was discovered by Mr. S. Lindsay, at Arthur's Pass.

The expansion of the wings is 9-16 inch (14 mm.). The fore-wings are bright reddish-brown, with clear white, blackish-brown, and pale bluish-grey markings; an oblique, partially interrupted, white transverse band from $\frac{1}{3}$ of costa to before middle of dorsum; a brownish-black band following this, much interrupted by reddish-brown suffusion, and hardly reaching dorsum; a second irregular white band, suffused with bluish-grey near dorsum; a very conspicuous rectangular brownish-black patch on costa beyond middle; a large white patch near apex, partly traversed by several small reddish-brown marks; a brownish-black blotch below apex; a terminal band of bluish-grey, and several bluish-grey marks near tornus; cilia reddish-ochreous. The hind-wings are brown, densely speckled with darker brown; the cilia are also brown.

The perfect insect appears in February.

Described and figured from the type specimen kindly lent to me by Mr. Lindsay.

Epichorista emphanes (page 238.) Apart from genitalic characters there appears to be no means of distinguishing the forms described as *Epichorista abdita*, Philp., Trans. N.Z. Inst., lv., 664, and lix., 487, and *E. fraudulentata*, Philp., Trans. N.Z. Inst., lviii., 363 and lix., 487, from the very common and extremely variable *E. emphanes*. Both forms occur in the same localities as *E. emphanes*.

The larva of *Epichorista emphanes*, which feeds on *Nothofagus menziesi*, is about $\frac{1}{2}$ inch in length; dull reddish-brown above, yellowish beneath; a broad yellow lateral

line and ridge; head bright reddish-brown; segment 2 with very pronounced dark brown horny dorsal plate; segments 3 and 4 with six yellow dots; rest of segments with eight yellow dots, except terminal segment which has no dots. The larva is very active, fastening the leaves together with silk and living between them. The pupa is enclosed between two joined leaves. The larvae were captured on 20th January and the moths emerged on 10th February. Other localities for this species are: Tophouse extremely abundant, Lake Ohau, Mount Cook, Rere Lake, Paradise, Makaroro, and Lake Te Anau.

EPICHORISTA LINDSAYI.

(*Epichorista lindsayi*, Philp., Records of Canterbury Museum, III., 3, 181.)

(Plate LVII., fig. 26 ♂.)

This species, which was discovered by Mr. S. Lindsay, has occurred at Little River, Price's Bush and Kaituna.

The expansion of the wings is $\frac{5}{8}$ inch (16 mm.). The forewings and cilia are pale ochreous-brown, with a distinct black dot in disc beyond middle, and a few irregularly scattered blackish dots, densest on the terminal half. The hind-wings and cilia are grey.

The larger size and numerous minute black dots serve to distinguish this species from both *Epichorista siriana* and *Eurythecta eremana*, apart from the difference in neural structure, which further distinguishes the latter.

The perfect insect appears in January.

Described and figured from a specimen kindly given to me by Mr. Lindsay.

Epichorista crypsidora (page 239.) Also from West Lake (Manapouri).

EPICHORISTA MIMICA.

(*Epichorista mimica*, Philp., Records of Auckland Institute Museum, I., 1, 5.)

(Plate LVII., fig. 5 ♂.)

This neatly-marked species was discovered by Mr. C. E. Clarke at Mount Ida.

The expansion of the wings is about $\frac{1}{2}$ inch (14-15 mm.). Head, palpi and thorax grey mixed with brown. Antennae grey annulated with black, ciliations in ♂ $1\frac{1}{2}$. Abdomen grey mixed with whitish ochreous. Legs ochreous, anterior pair infuscated, tarsi annulated with ochreous. Fore-wings elongate, suboblong, costa arched basally, thence almost straight, apex rounded, termen bowed, oblique; white, densely irrorated with pale fuscous and ochreous; markings blackish-fuscous mixed with ferruginous; basal patch, including three interrupted fasciae, marked by spots on costa, outer margin indented on fold, where it is strongly marked in blackish; a broad irregular fascia from middle of costa, becoming obscure below middle and not reaching dorsum; four spots on costa between median fascia and apex, giving rise to obscure fasciae which coalesce in disc; cilia grey, basally brownish. Hind-wings greyish-fuscous, paler towards costa; cilia whitish-grey with fuscous basal line.

Not superficially near any other *Epichorista*; the species might be taken at a first glance for a pale specimen of *Spilonota ejectana* Walk. Two males were taken by Mr. Clarke. One of these is very indefinitely marked, the fasciae being reduced to a series of dots.

The perfect insect appears in February.

Described and figured from the type specimen in the Auckland Museum. The above is taken from Mr. Philpott's original description.

Harmologa oblongana (page 239. Plate LIII., fig. 9 larva.)

The length of the full-grown larva is about $\frac{5}{8}$ inch. Flattened, slightly tapering towards head, abruptly tapering posteriorly. Head black, with broad whitish patches on each side; segment 2 also black, horny, polished, with central and two subdorsal white bars. Dorsal portion of rest of larva, except terminal segment, brownish-black often tinged with red, or purplish; a very broad creamy-white lateral line, with wavy edges, conspicuous from above; a fine paler dorsal line; tubercles pale brownish-straw colour and very conspicuous; terminal segment paler brown, very irregularly and finely marked with darker brown. A few fine bristles.

This larva is very variable, some specimens being much paler in colour than others, but general type of marking easily recognisable. The larvae were beaten from a tangled mass of *Convolvulus* and *Muehlenbeckia* on the sea coast, near Sinclair Head, late in November and the perfect insects appeared in December.

This species also occurs at Mount Ruapehu, Mount Holdsworth (North Island), Puhi Puhi (Kaikoura), Mount Cook and Takitimo Mountains.

Harmologa amplexana (page 239.) Also from Taihape, Clarence Bridge, Puhi Puhi and Te Anau.

Harmologa scoliastis (page 240.) Also from Pohangina (North Island), Price's Bush, Puhi Puhi, Jack's Pass (Hanmer), and Te Anau. Mr. Gourlay states that the larva of this insect sometimes inhabits the swellings in the stems of *Muehlenbeckia* made by the larva of *Morova subfasciata*.*

Harmologa festiva (page 240.) Also from The Hump and Flat Top Mountain (Manapouri).

Harmologa sanguinea (page 240.) Also from Mount Maungatua and Flat Top Mountain (Manapouri).

Harmologa columella (page 241. Plate LIII., fig. 37 larva.)

The length of the larva is about $\frac{5}{8}$ inch. Flattened, rather broad, tapering at each end, especially posteriorly; dark green with broad, much paler, subdorsal lines. Head very dull brownish-ochreous, with obscure blackish stripe on each side and darker median patch at base. A few fine short bristles.

This larva is very active when disturbed. It feeds in spun up flowering shoots of mountain tauhinu (*Cassinia vauvilliersii*). Larvae taken towards the end of January emerged as moths during February.

Harmologa reticularis (page 241.) Also from Ben Lomond (Lake Wakatipu).

Ecclitica hemiclista (page 242.) Also from Cave Creek (Craigieburn).

Ecclitica incendiaria (page 242.) Also from Waimarino, Wainuiomata and Mount Arthur (South Island).

*Trans. N.Z. Inst., lix., 368.

Cnephasia jactatana (page 242.) There are clearly at least two distinct broods of this insect during the season. Fresh specimens have been observed late in March.

Cnephasia petrias (page 243.) Also from Takitimo Mountains.

Cnephasia imbriferana (page 243.) Also from Clarence Bridge, Puhī Puhī, Price's Bush and Takitimo Mountains.

Cnephasia microbathra (page 244.) Also from Waimarino (North Island), Flora River (Mount Arthur), Te Anau and Sandhill Point.

CNEPHASIA OCHNOSEMA.

(*Cnephasia ochnosema*, Meyr., Trans. Roy. Soc. N.Z., lxi., 281.)

(Plate LXI., fig. 7 ♂.)

This interesting species was discovered by Mr. S. Lindsay at Jack's Pass (Hanmer) in 1935. It has also occurred on Mount Torlesse and Mount Peel (Canterbury).

The expansion of the wings is about $\frac{5}{8}$ inch (15 mm.). The antennae have long cilia arranged in whorls around each joint. The fore-wings are elongate-triangular with the apex acute and the termen straight and very oblique; vein 7 to termen; pale blackish-grey with darker markings; a fine doubly-curved transverse line from about $\frac{1}{3}$ of costa to $\frac{1}{4}$ of dorsum; a straight, very oblique transverse line from nearly $\frac{1}{3}$ of costa to $\frac{1}{2}$ of dorsum; several indistinct bars on costa follow this; a transverse line from $\frac{2}{3}$ of costa to tornus forming a loop below middle, enclosing a darker area; two indistinct bars on costa before apex; cilia pale blackish-grey. Hind-wings very pale blackish-grey, darker towards termen with very indistinct darker mottling.

The perfect insect appears in April.

Sub-family EUCOSMIDES. [274]

Hendecasticha aethaliana (page 245.) Also from Waimarino, Mount Grey and Takatimo Mountains.

Spilonota charopa (page 245.) A figure of this species is now given on Plate LXI., fig. 11.

Spilonota dolopaea (page 245.) Also from Whangarei, Puhī Puhī and Peel Forest.

Spilonota parthenia (page 245.) Also from Whangarei and Eglinton Valley.

Spilonota zopherana (page 246.) The larva, which feeds on Manuka (*Leptospermum*) is slightly over $\frac{1}{4}$ inch (8 mm.) in length. Cylindrical, stout, rapidly tapering towards posterior extremity; head and plate of segment 2 bright shining ochreous; rest of body ochreous with three rows of rather irregular crimson spots on dorsal area. Found early in December. Pupa enclosed in a rather thin silken cocoon. This insect passes the winter in the pupa state.

Spilonota emplasta (page 246.) The figure on Plate XXVII., fig. 27 represents a variety of *S. zopherana* only. The true *S. emplasta* is depicted on Plate LXI., fig. 10 of the present work. The following description should be substituted for that given on page 246.

The expansion of the wings is $\frac{1}{2}$ inch (13 mm.). The fore-wings are shining white; several dark brown strigulae

on costa near base; a very large, irregular, shining chocolate-brown patch on costa near middle, almost reaching apex; several fine strigulae beyond this; a smaller brown patch on dorsum at about $\frac{1}{3}$; many faint pale brown marks, especially towards dorsum and termen; cilia brownish-grey with a broken white basal line and blackish-brown spot at apex. Hind-wings and cilia pale brownish-grey, darker towards apex; veins 3 and 4 coincident.

Additional localities for this species are Puhī Puhī (Kaikoura) and Lake Rotoroa (Nelson).

Spilonota chaophila (page 246.) Fresh specimens taken during second week in February, evidently belonging to a second brood as main brood appears in October. The foodplant is possibly *Freyinetia*. This species has also occurred at Clarence Bridge, Puhī Puhī and Governor's Bay in the South Island.

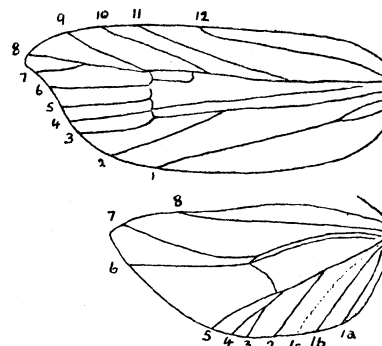
Spilonota macropetana (page 247.) Also from Whangarei and Otaki.

Genus.—ACROCLITA, Led.

Antennae in ♂ ciliated. Palpi moderate, porrected. Thorax smooth. Fore-wings with veins 7 and 8 stalked. Hind-wings with veins 3 and 4 stalked, 5 approximated to 4, 6 and 7 closely approximated towards base.

Comprises about 75 species, nearly all Indo-Malayan and Australian, with a few stragglers.

Represented in New Zealand by one species only. The genus should follow immediately after *Spilonota*.



Neuration of *Acroclita discariana*.

ACROCLITA DISCARIANA.

(*Acroclita discariana*, Philp., Records Canterbury Museum III., 248.)

(Plate LVII., fig. 12 ♂, 11 ♀.)

This very distinct species was discovered by Mr. S. Lindsay at Porter River, Canterbury. Subsequently he also took it at Jack's Pass (Hanmer) and Amberley Beach.

The expansion of the wings is about $\frac{5}{8}$ inch (♂ 15 mm., ♀ 16 mm.). The fore-wings are oblong with the termen slightly oblique and incurved below apex; grey, very finely speckled with deep brown, and with many small deep brown markings; a confused series of fine broken wavy transverse lines on basal third, indistinct in female; a rather large irregular discal mark before middle and a V-shaped discal mark beyond middle; a transverse series of confluent dots beyond this, indistinct in female; a sub-terminal golden-brown line, branching at apex; many short transverse bars on costa; the female has the discal markings larger, and many of the smaller markings present in the male are absent

or indistinct, in the female; the cilia are greyish-brown. The hind-wings are brown, paler in the female, the cilia are brownish-ochreous.

The perfect insect appears in November. Bred from larvae found on *Discaria toumatou*. Mr. Lindsay states that both larvae and pupae were in a thick felt-like web in the axils of the stems of the foodplant.

Genus.—ACHARNEODES, Meyr.

Palpi moderate, subascending; second joint expanded with dense scales towards apex; terminal joint minute. Thorax without crest. Fore-wings in ♂ with or without costal fold; 3-5 not approximated towards termen. Hind-wings in ♂ with more or less developed subdorsal hair-pencil in groove or dorsal fold; 3 and 4 connate, 5 closely approximated at base, 6 and 7 closely approximated towards base.

Differs from *Eucosma* in having veins 3 and 4 of hind-wings connate. Contains 6 species.*

Eucosma querula (page 247.) This species should now be known as *Acharneodes querula*, Meyr.

Other localities:—Whangarei and Puhī Puhī.

The three emendations in nomenclature and classification which follow are the result of correspondence between the late Mr. Philpott and Mr. E. Meyrick. (See Trans. N.Z. Inst., lxii., 30).

EUCOSMA MOCHLOPHORANA.

(Plate XXVII., fig. 6 ♂; 7 ♀.)

Exoria mochlophorana Meyr., Trans. N.Z. Inst., xv., 65; *Butterflies and Moths of N.Z.*, 247; *Epiblema aphrias* Meyr., Trans. Ent. Soc. Lond. (1901), 578; *Eucosma mochlophorana* Meyr., Trans. N.Z. Inst., xliii., 88; *Eucosma aphrias* Meyr., Trans. N.Z. Inst., xliii., 88; *Butterflies and Moths of N.Z.*, 247; *Eurythecta trimaculata*, Philp., Trans. N.Z. Inst., xlvii., 198; *Butterflies and Moths of N.Z.*, 224, Pl. XXVII., figs. 6 and 7; *Raumatia trimaculata* Philp., Trans. N.Z. Inst., lix., 488.

It will be seen from above that the insect described on page 224 and figured on Plate XXVII., figs. 6 and 7 as *Eurythecta trimaculata*, Philp., is really *Eucosma mochlophorana*, Meyr., and should be known under that name in future.

Additional localities:—Horseshoe Lake and Queens-town.

EUCOSMA FUGITIVANA.

(Plate XLV., fig. 8 ♀.)

Protithona fugitivana Meyr., Trans. N.Z. Inst., xv., 62; *Eucosma fugitivana* Meyr., Trans. N.Z. Inst., xliii., 88; *Butterflies and Moths of N.Z.*, 247; *Eurythecta varia* Philp., Trans. N.Z. Inst., xlvi., 421; *Butterflies and Moths of N.Z.*, 224, Pl. XLV., 8; *Raumatia varia* Philp., Trans. N.Z. Inst., lix., 488.

It will be seen from above that the insect described on page 224 and figured on Plate XLV., fig. 8, as *Eurythecta*

varia, Philp., is really *Eucosma fugitivana*, Meyr., and should be known under that name in future.

EUCOSMA POTAMIAS.

(Plate XXVI., fig. 11 ♂; 12 ♀.)

Eurythecta potamias Meyr., Trans. N.Z. Inst., xli., 11; *Butterflies and Moths of N.Z.*, 224, Pl. XXVI., figs. 11, 12; *Raumatia potamias* Philp., Trans. N.Z. Inst., lix., 488.

This species is now transferred to the genus *Eucosma* and must be known as *Eucosma potamias* in future. Also occurs at New River (Invercargill).

Crociosema plebeiana (page 248.) Also from Christchurch and Te Anau.

Bactra noteraula (page 248.) Also from Whangarei, Paekakariki, Wellington, Christchurch and Te Anau. Generally found amongst native grasses near the sea coast.

Bactra optanias (page 248.) One of the darker forms of this variable species is figured on Plate LVII., fig. 9. Also from Whangarei and Bold Peak (Lake Wakatipu.)

Argyroploce chlorosaris (page 249.) A female example of this species is figured on Plate LVII., fig. 10. Also from Onehunga.

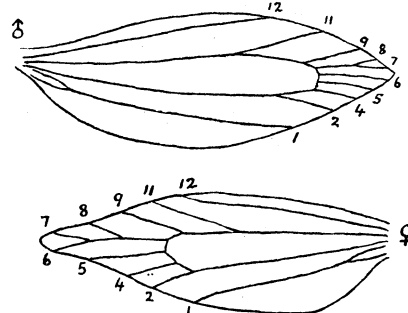
Laspeyresia pomonella (page 249.) Also from Dunedin.

Family TINEIDAE.

Sub-family GELECHIADES.*

Genus.—KIWAIA, Philp.

Head smooth; ocelli posterior; tongue developed. Antennae 1, ♂ filiform, simple, scape elongate, without pecten. Labial palpi moderate, curved, ascending, second joint thickened with rough scales beneath, terminal joint as long as second, moderate, pointed. Maxillary palpi obsolete. Posterior tibiae with appressed scales, middle spurs at $\frac{2}{3}$, tarsi strong, minutely spinose beneath. Fore-wings with vein 1b short furcate, 2 from angle, 3 absent, 7 to costa, 10 absent, 11 from $\frac{2}{3}$, ♂ 6 separate, 7 and 8 stalked, ♀ 7 and 8 out of 6 towards apex. Hind-wings in both sexes reduced to a short flap, neuration obsolescent.



Neuration of fore-wing of male and female *Kiwaia jeanae*.

Specimens and slides showing neuration of both sexes were sent, enabling me to draw up a complete generic description: Mr. Philpott left his imperfect, through limited material. (Meyrick).

*Meyrick, Annals South African Museum, xxiii., 327.

*For account of Genitalia see Trans. N.Z. Inst., lviii., 348.

KIWAIA JEANAE.

(Kiwaia jeanae, Philp., Records of Canterbury Museum III., 249.)

(Plate LVIII., fig. 9 ♂, 10 ♀.)

This most remarkable little insect was discovered by Mrs. Jean Lindsay at Birdling's Flat, Canterbury. It has since occurred at Amberley Beach.

The expansion of the wings is nearly $\frac{3}{8}$ inch (8 mm.). The head is shining creamy-white; thorax grey, and abdomen greyish-ochreous. The legs are grey-whitish, more or less barred with black. The fore-wings are lanceolate, pale whitish-ochreous; in the male densely speckled with dark grey, except on a curved transverse band at about $\frac{3}{4}$, a white-edged black discal spot precedes this; the fore-wings of the female have a small blackish mark near base, a large blotch before middle, and cloudy spots at $\frac{2}{3}$ and near apex; the cilia are greyish-ochreous. The hind-wings are greatly reduced in both sexes; in the male they are clothed with numerous long fine hair-like ochreous scales radiating in all directions, and so dense that they considerably obscure the insect's body. The hind-wings of the female are extremely narrow, about one-third the length of fore-wings, sparsely clothed with moderately long ochreous hairs.

The perfect insect was found in a shingly spot, running rapidly amongst cushion plants. The remarkable hairs on the hind-wings of the male probably emit a scent agreeable to the female.

APATETRIS NIVEA.

(Apatetris nivea, Philp., Records Auckland Institute Museum, I., 1, 7.)

(Plate LVIII., fig. 1 ♂.)

This very neat-looking little insect was discovered by Mr. C. E. Clarke near Auckland.

The expansion of the wings is about $\frac{7}{16}$ inch (11 mm.). Head, palpi and thorax white sprinkled with blackish-fuscous. Antennae white annulated with dark fuscous. Abdomen ochreous-grey. Legs whitish sprinkled with dark fuscous. Fore-wings narrow, parallel-sided, costa moderately arched, apex broadly rounded; snow white, densely sprinkled with blackish-fuscous scales; a prominent blackish-fuscous spot beneath fold at $\frac{1}{3}$; cilia concolorous with wing. Hind-wings grey; cilia ochreous-grey.

The perfect insect appears in January.

Described and figured from a specimen in the Auckland Museum. The above is taken from Mr. Philpott's original description. This form may prove to be a very pale form of *A. melanombra*, which is subject to considerable variation. *Gelechia sparsa*, at one time ranked by Philpott as distinct, is an intermediate form.

Megacraspedus calamogona (page 252.) Also from Whangarei, Erua, Black Hill, Oreti River and Takitimo Mountains.

Aristotelia paradema (page 253.) Also from Whangarei, Wellington, Jack's Pass (Hanmer), and near Takitimo Mountains (one only).

Epithectis zophochalca (page 253.) Also from Birdling's Flat, flying over *Carmichaelia* in November. (Lawford White).

EPITHECTIS ? TRANSVERSELLA, n.sp.

(Plate LXII., fig. 23 ♀.)

A single specimen of this very striking little species was discovered by Mr. C. E. Clarke in the Auckland Domain.

The expansion of the wings is nearly $\frac{3}{8}$ inch (9 mm.). The fore-wings are rather elongate, with the apex and tornus rounded; black, sparsely sprinkled with dull bronzy-grey scales; a very conspicuous, rather narrow, oblique, snow-white band from $\frac{2}{3}$ costa to before tornus; cilia grey. Hind-wings with apex extremely pointed and termen suddenly bowed, dark blackish-grey; cilia dark grey. Head, thorax and abdomen black.

It has not been possible to examine the neuration of the unique specimen in the Auckland Museum, hence the species may not be correctly assigned to *Epithectis*.

The perfect insect appears in March.

Stomopteryx subsecivella, Zell. (page 253.) *Stomopteryx columbina*, Philp., Trans. N.Z. Inst., lviii., 364, is stated to be distinguished by genitalic differences, and by a smaller white spot on costa at $\frac{3}{4}$. This insect was wrongly identified by Philpott as *S. simplicella*, Walk. See Plate LI., fig. 21, and footnote to explanation opposite.

THIOTRICHA LINDSAYI.

(Thiotricha lindsayi, Philp., Trans. N.Z. Inst., lviii., 84.)

This dull-looking species was discovered by Mr. S. Lindsay at Glentui. It has also occurred at Arthur's Pass.

The expansion of the wings is $\frac{1}{2}$ inch (15 mm.) The fore-wings are narrow with the costa almost straight and the termen very oblique; blackish-grey, slightly tinged with purple. The hind-wings and cilia are grey.

The perfect insect appears in February.

Described from a specimen kindly supplied by Mr. Philpott.

Thiotricha tetraphala (page 254. Plate LIV., fig. 15 larva in case made of leaves of *Myrtus obcordata*; fig. 13 ditto withdrawn from case; fig. 14 case made of leaves of *Nothofagus menziesii*.)

Larvae feeding on *Myrtus obcordata* at Taihape early in January, construct their cases of rolled and flat leaves (see Plate LIV., fig. 15.) The posterior portion of the case is tubular and made of rolled leaves, but the anterior portion is much broader, and constructed of flat leaves joined together with silk.

The full-grown larva (Plate LIV., fig. 13) is about $\frac{1}{4}$ inch in length, moderately stout, of fairly even thickness, slightly tapering towards posterior extremity; head reddish-brown; segment 2 with strong, dull brown, dorsal plate; rest of body dull greenish-ochreous, pinkish-tinged; a black anterior dorsal shade, indicating alimentary canal; five or six post thoracic segments broadly edged with dull pinkish-ochreous posteriorly; legs well developed greenish-ochreous; abdominal prolegs very small; anal proleg well developed.

Larvae of this species were also common on *Nothofagus menziesii* early in December at Tophouse. The cases are made of the beech leaves in exactly the same way as specimens found on *Myrtus obcordata*. In many of the beech specimens the anterior broad portion is whitish-green and the cylindrical posterior part deep brown, the contrast

being most remarkable. Many of the cases are cylindrical throughout, and all the smaller ones are simply cylindrical. (See Plate LIV., fig. 14.)

Other localities for this species are Makara (Wellington), Mount Cook, and Lake Manapouri.

Thiotricha thorybodes (page 254.) Also from Taki-timo Mountains and Spey River (Manapouri).

Phthorimaea operculella (page 254.) Also from Whangarei, Paekakariki, Alexandra and Lumsden.

Phthorimaea thyraula (page 255.) Also from Puhu Puhu, Mount Cook and Hope Arm (Manapouri).

Phthorimaea cheradias (page 255.) Also from Mount Cook and Eglinton Valley.

PHTHORIMAEA PLAESIOSEMA. (256)

(Plate XXVIII., fig. 21 ♀.)

(*Phthorimaea plaesiosema*, Turner, Proc. R. Soc. Queensl., xxxi., 126 (1919) ♂; *P. plaesiosema*, Meyr., Wytsn. Gen. Ins. fasc. 184, 93 (1926); Morgan, Agric. Gaz. N.S. Wales, xlii., 919-921; *P. melanoplintha*, Meyr., Exotic micro-lepidoptera, iii., 279 (1926) ♂ and ♀; Hudson, Butterflies and Moths of N.Z., 256; *Gnorimoschema tuberosella*, Busck, Proc. Ent. Soc. Wash., xxxiii., 59-60 (1931). ♂ and ♀.

It will be seen from the above that the insect described on page 256 and figured on Plate XXVIII., fig. 21, as *Phthorimaea melanoplintha*, Meyr., is identical with *P. plaesiosema*, Turner, which has priority, and should be known under that name in future. The larva bores the stems of potatoes.

I am much indebted to Mr. T. Bainbrigg Fletcher for the above information.

Additional localities for *P. plaesiosema* are Whangarei and Wellington. This insect's original home was the West Coast of America and it was introduced into Australia, during the War, with potatoes from Peru.

Phthorimaea hippeis (page 256.) Also from Jack's Pass (Hanmer).

PHTHORIMAEA PULVEREA.

(*Phthorimaea pulvereae*, Philp., Records Canterbury Museum, III., 3, 181.)

(Plate LVIII., fig. 17 ♂.)

This rather dull-looking species was discovered by Mr. S. Lindsay, near the mouth of the Hapuka River.

The expansion of the wings is slightly less than $\frac{1}{2}$ inch (12 mm.). The fore-wings are *very pale dull ochreous, strewn with scattered blackish-brown scales*, thickly on the costa and towards apex and tornus, and sparsely on the dorsal and central areas; *there are four distinct blackish spots, arranged in a straight line in the disc, from near base to beyond middle*; the cilia are pale dull ochreous, with numerous scattered blackish scales. The hind-wings and cilia are dull ochreous-grey.

Distinguished from *Ph. cheradias*, its nearest ally, by its very dull colouring, less distinct markings, absence of clear costal and terminal dots and broader wings.

The perfect insect appears in November.

Described and figured from the unique specimen kindly lent to me by Professor Speight.

Phthorimaea glaucoterma (page 256.) A figure of the female of this interesting species is given on Plate LXI., fig. 12. Also occurs at Mount Cook.

Gelechia schematica (page 257.) Also from Lake Rotoiti, Birdling's Flat, Lake Ohau and Oreti River.

Gelechia parapleura (page 257.) Also from Birdling's Flat, Broken River, and Knife and Steel (Fiord County).

Gelechia aerobatis (page 257. Plate LXII., fig. 3 ♀.) In the female the colouring is much more strongly contrasted. The costal area of the fore-wings is creamy-white, and the much broader dorsal area deep chocolate-brown, the discal markings being obscured by this. The head, thorax, and abdomen are dark chocolate-brown. The wings of the female are shorter and more acutely pointed than in the male. Also from Arthur's Pass.

GELECHIA PUMILA.

(*Gelechia pumila*, Philp., Records Canterbury Museum, III., 3, 182.)

(Plate LVIII., fig. 4 ♂.)

This species was discovered by Mr. S. Lindsay at Yaldhurst, Canterbury. It has also occurred at Clarence Bridge and Lake Pukaki.

The expansion of the wings is about $\frac{1}{2}$ inch (13 mm.) Very like *Gelechia monophragma*, from which it differs in its smaller size, less distinct markings, darker speckling of fore-wings, and paler hind-wings.

The perfect insect appears in March.

Described and figured from the type specimen kindly lent to me by Professor Speight.

GELECHIA LENIS.

(*Gelechia lenis*, Philp., Trans. N.Z. Inst., ix., 302.)

(Plate LVIII., fig. 3 ♂.)

This pretty species was discovered by Mr. Philpott at Lake Pukaki.

The expansion of the wings is $\frac{1}{2}$ inch (12 mm.). *The fore-wings are bright brownish-ochreous*; there is a broad stripe of speckled grey on the costa from the base to $\frac{2}{3}$; the space below the fold is white, strewn with scattered pale brown scales; *a series of elongate black spots forms a broken longitudinal stripe in the disc from near base to beyond $\frac{1}{3}$* ; the cilia are pale ochreous with several rows of greyish scales. The hind-wings and cilia are very pale ochreous. The head and thorax are white; the basal portion of the abdomen reddish-ochreous, the terminal dark grey.

The perfect insect appears in December.

Described and figured from the type specimen kindly lent to me by Dr. Miller.

GELECHIA CONTRARIA.

(*Gelechia contraria*, Philp., Records of Auckland Institute Museum, I., 1, 8.)

(Plate LVIII., fig. 2 ♂.)

This very beautiful little species was discovered by Mr. C. E. Clarke at Waiho Gorge, Westland.

The expansion of the wings is slightly over $\frac{1}{2}$ inch (14-15 mm.). Head pearly white. Palpi ochreous mixed with brown. Antennae dark brown. Thorax brown. Abdomen grey. Legs ochreous, anterior pair brown. Fore-wings with costa curved

shortly at apex, apex short-pointed, termen very oblique; light golden brown, sparsely sprinkled with darker towards base and darker on the fold; a stripe of white beneath fold from base to tornus, mixed with brown on apical half; cilia pale brownish-ochreous with obscure dark sub-basal line round apex. Hind-wings pale grey; cilia pale ochreous.

Near *G. parapleura*, Meyr., but at once distinguished by the brown thorax.

The perfect insect appears in January.

Described and figured from the type specimen in the Auckland Museum. The above is mainly taken from Mr. Philpott's original description.

GELECHIA PARVULA.

(*Gelechia parvula*, Philp., Records of Auckland Institute Museum, I., 1, 7.)

(Plate LVIII., fig. 18 ♂.)

This very distinctly-marked species was discovered by Mr. C. E. Clarke at Lake Manapouri. It has also occurred at Bluecliff (Fiord) and at Arthur's Pass.

The expansion of the wings is nearly $\frac{1}{2}$ inch (10-12 mm.). Head pearly white. Palpi whitish-ochreous. Antennae purplish-brown. Thorax ochreous-white, tegulae dark purplish-brown. Abdomen greyish-brown. Legs ochreous mixed with fuscous, anterior pair wholly fuscous, tarsi obscurely annulated with ochreous. Fore-wings lanceolate, dark purplish-brown; a broad stripe along dorsum and termen reaching nearly to middle of wing, ochreous white; cilia concolorous with wing. Hind-wings leaden grey; cilia pale ochreous.

Resembles the much larger *G. parapleura* Meyr., but with the upper and lower halves of the fore-wing more strongly contrasted.

The perfect insect appears in December and January.

Described and figured from the type specimen in the Auckland Museum. The above is taken from Mr. Philpott's original description.

GELECHIA EURYBATHRA.

(*Gelechia eurybathra*, Meyr., Records Canterbury Museum, III., 368.)

(Plate LVIII., fig. 19 ♂.)

This interesting species was discovered by Mr. S. Lindsay at Porter River, Canterbury, and subsequently taken at Jack's Pass (Hanmer.)

The expansion of the wings is about 1 inch (10-12 mm.). The fore-wings are elongate-lanceolate, apex slightly produced, acute; white or whitish-ochreous sometimes brownish-mixed on dorsal and apical areas; a rather broad dark brown or blackish-brown median streak from base to apex, reaching basal end of costa; the cilia are pale ochreous, or pale brownish. Hind-wings grey, or light grey; cilia as in fore-wings.

Closely related to *G. monophragma* and very similar but easily separated by the basal end of the median streak extending to costa, from which in *monophragma* it is remote; this difference is constant. The brown second joint of palpi and darker grey hind-wings are also distinctions usually appreciable.

The perfect insect appears in November.

GELECHIA CALASPIDEA.

(*Gelechia calaspidea*, Clarke, Trans. Royal Soc. N.Z., lxiv., 14.)

(Plate LVII., fig. 20 ♂.)

This species was discovered by Mr. C. E. Clarke on Flat Top Mountain, Lake Manapouri, at an altitude of 4,000 feet.

The expansion of the wings is nearly $\frac{5}{8}$ inch (15 mm.). Fore-wings with apex rather pointed; dull brownish-grey, slightly tinged with ochreous; a paler area beneath fold; stigmata blackish; a series of black dots along costa and termen near apex; cilia same colour as wing. Hind-wings and cilia pale ochreous-grey.

Perhaps nearest *G. contraria* Philp., but immediately seen to differ by the lack of the light bar along dorsum and other details, and to be distinguished from *schematica* by the absence of the grey streak along costa and the dark irroration, etc.

The perfect insect appears in January.

Described and figured from the type specimen in the Auckland Museum.

Gelechia monophragma (page 257.) Also from Clarence River, Puhī Puhī, Mount Cook and Paradise (Lake Wakatipu).

Gelechia lithodes (page 258.) Also from Puhī Puhī riverbed, Birdling's Flat and Te Anau-Manapouri District.

Gelechia caerulea (page 258.) This species is very common in the bed of the Waiho River. It is practically invisible when resting on the sand or shingle. The correct spelling of the specific name is given here.

Anisoplaca acrodactyla (page 258.) Also from Brooklands Beach, Hope Arm (Lake Manapouri) and Milford Track.

Anisoplaca achyrota (page 258.) Also from Pohangina, Governor's Bay, Puhī Peaks (Kaikoura), Arthur's Pass, Temuka and Eglinton Valley.

Anisoplaca ptyoptera (page 259.) Also from Mount Cook and Waiho Gorge.

ANISOPLACA FRAXINEA.

(*Anisoplaca fraxinea*, Philp., Trans. N.Z. Inst., lviii., 364.)

(Plate LVIII., fig. 20 ♂.)

This very dull-looking species was discovered by Mr. Philpott, at Nelson and Flora River. It has also been taken by Mr. S. Lindsay at Price's Valley Bush (Banks Peninsula) and Mount Cook; and by Dr. Turner at Arthur's Pass.

The expansion of the wings is slightly over $\frac{3}{4}$ inch (21 mm.). The fore-wings are rather elongate with the apex rounded; very dull greyish-ochreous, covered with numerous small blackish strigulae, denser on a transverse band beyond middle; the stigmata very obscure or obsolete. The hind-wings are dark greyish-ochreous with paler cilia.

The perfect insect appears in February and March.

Described and figured from a specimen submitted by Mr. Philpott.

Genus.—TANAOC TENOTA, Meyr.

Antennae in male bipectinated, scape with strong flap of scales. Labial palpi porrect, second joint thickened with scales, terminal short, pointed. Fore-wings with vein 7 to termen, 9 and 10 out of 8. Hind-wings ovate, veins 4-7 parallel.

Represented by one species.

TANAOC TENOTA DUBIA.

(*Tanaoc tenota dubia*, Philp., Trans. N.Z. Inst., lxii., 34.)
(Plate LX., fig. 8 ♂.)

This very remarkable species was discovered by Mr. C. E. Clarke at Auckland.

The expansion of the wings is nearly $\frac{3}{4}$ inch (18 mm.). The head and palpi are dull ochreous. *Antennae strongly bipectinated* and with dense pecten, brown. Thorax pale brown. Abdomen ochreous. Legs ochreous, anterior pair brownish-black, tarsi annulated with ochreous. Fore-wings elongate-oval, costa strongly arched, apex broadly rounded, termen rounded, oblique; pale dull brown; an inwardly oblique thick blackish-brown mark in disc at about $\frac{1}{4}$; a small round blackish-brown discal dot at $\frac{3}{8}$; cilia dull brown. Hind-wings and cilia pale brownish-grey.

The perfect insect appears in January.

Described and figured from a specimen in the Auckland Museum.

Genus.—LECITHOCERA, H.S.

Head smooth. Antennae 1 or over 1, somewhat stout towards base. Labial palpi long, recurved, second joint with appressed scales, terminal joint as long as second, slender, acute. Fore-wings with veins 2 and 3 stalked, 7 and 8 stalked, 7 to apex or termen, 9 often out of 7. Hind-wings 1 or somewhat over 1, trapezoidal, veins 3 and 4 connate or stalked or coincident, 5 rather approximated, 6 and 7 stalked.

Represented by a single Australian species, which has apparently been artificially introduced quite recently.

LECITHOCERA MICROMELA.

(*Lecithocera micromela*, Low., Trans. Royal Soc. South Australia, xxi., 55; Philp., Trans. N.Z. Inst., lviii., 364.)
(Plate LVIII., fig. 14 ♂.)

This Australian species was first found in New Zealand, by Dr. A. Jefferis Turner, at Rotorua. It has since occurred amongst *Haloragis erecta*, on the hills at the back of Rona Bay, Wellington Harbour, and is apparently spreading.

The expansion of the wings is about $\frac{1}{2}$ inch (13 mm.). The fore-wings, head, and thorax are black, very slightly sprinkled with bronzy scales. The palpi and antennae are dull ochreous. The hind-wings are blackish-grey, with very slight bronzy reflections.

The perfect insect appears in March.

Subfamily COSMOPTERYGIDES.

Genus SYNTOMACTIS, Meyr. (page 303.) Now merged with *Pyroderces*. *Syntomactis deamatella* therefore becomes *Pyroderces deamatella*.*

Pyroderces deamatella also occurs at Wainuiomata, Claverley (Conway River) and Bold Peak (Lake Wakatipu).

*Meyrick, "Exotic Micro-Lepidoptera," iii., 91, 1924.

Pyroderces apparitella (page 301.) Also from Whangarei and Blackmillar (Kaikoura). A fresh specimen, taken at Wellington on 16th March, appears to indicate the possibility of a second brood.

Pyroderces aellotricha (page 301.) Also from Whangarei. A figure of this species is given on Plate LVIII., fig. 5.

THECTOPHILA PLAGIAULA.

(*Thectophila plagiaula*, Meyr., Trans. Roy. Soc. N.Z., lxvii., 427.)
(Plate LXI., fig. 28 ♂.)

This very distinctly-marked species was discovered by Mr. S. Lindsay on Freehold Range (Lake Ohau).

The expansion of the wings is about $\frac{1}{2}$ inch (12-15 mm.). The head is white, with an ochreous-grey median stripe. Palpi white. Thorax ochreous-grey, with a white stripe on each side of back. Fore-wings narrow-lanceolate, ochreous-grey; a conspicuous white subdorsal streak from base to tornus, leaving a narrow ochreous-grey dorsal streak; cilia grey, whitish towards apex. Hind-wings and cilia grey.

Mr. Meyrick states:—"I think this may quite possibly be the other sex of *T. acmotypa* (page 302), described from a single female, but as it differs so much in markings, and comes from a separate (but similar) locality, I consider it should bear a special name until the sexes are taken together."

The perfect insect appears in December. Four specimens were captured flying at dusk, amongst snow grass, 4,000 feet above sea level.

Limnoecia phragmitella (page 302. Plate LXII., fig. 4.) So far as I have been able to ascertain no specimen of this interesting species has been taken in New Zealand since the single example captured by Mr. Meyrick in 1880, in the swamps of the Waikato at Hamilton. The figure now given is taken from a British specimen kindly given to me by Mr. T. Bainbrigge Fletcher. A beautiful plate* in Stainton's Natural History of the Tineina depicts the full life history of this species. The moth is stated to be very retired in habit and thus is hardly likely to be found at large, but may possibly be bred from bulrush heads with the down hanging therefrom. Unfortunately for the collector the larva of the comparatively common *Scieropepla typhicola* produces an exactly similar effect on the bulrush heads. In his Revised Handbook of British Lepidoptera Mr. Meyrick gives the distributions of *L. phragmitella* as follows:—England to York, Europe, Africa, North America, Australia, New Zealand, and states that the wide distribution of this often overlooked species is apparently natural, and probably due to transportation of the *Typha*-down by wind, the plant being also cosmopolitan.

Microcolona characta (page 303.) There are two distinct broods of this insect. The first brood appears in September and October, or November, and the second brood in February and March. Also from Pohangina and French Pass.

*Plate IV., Vol. XI.

Batrachedra psathyra (page 303.) Also from Hope Arm (Manapouri) and Milford Track.

BATRACHEDRA LITTERATA.

(*Batrachedra litterata*, Philp., Trans. N.Z. Inst., lviii., 370.)
(Plate LVII., fig. 14 ♀.)

This species was discovered, by Dr. A. Jefferis Turner, at Greymouth, and Mr. S. Lindsay subsequently found it at Claverley (Conway River).

The expansion of the wings is 7-16 inch (10 mm.) The fore-wings are pale yellowish-fawn colour, paler towards the base, and slightly mottled; *the extreme apex is narrowly margined with black*; the cilia are greyish-ochreous, becoming pale fawn-colour around apex. The hind-wings are grey with pale grey cilia.

The perfect insect appears in February.

Described and figured from a specimen kindly lent to me by Mr. Philpott.

BATRACHEDRA ASTRICATA.

(*Batrachedra astricata*, Philp., Records of Auckland Institute Museum, I, 1, 14.)
(Plate LVII., fig. 22 ♂.)

This species was discovered by Mr. C. E. Clarke at Opoho near Dunedin.

The expansion of the wings is slightly over $\frac{1}{2}$ inch (13-15 mm.). The fore-wings are elongate narrow, parallel-sided with the apex round-pointed; white, densely speckled with blackish-brown scales, patches of which form the stigmata; first discal at about $\frac{1}{2}$, obliquely beyond plical; second discal at $\frac{3}{4}$, rather below middle; cilia pale brownish-grey with a blackish-brown line round apex. The hind-wings and cilia are pale greyish-brown.

Related to *B. tristicta*, Meyr., but there is no round black apical spot.

The perfect insect appears in December.

Described and figured from a specimen in the Auckland Museum.

Batrachedra tristicta (page 304.) A figure of this species is now given on Plate LVII., fig. 15. The specimen, forming the subject of this figure, was captured by Mr. S. Lindsay at Claverley (Conway River), and kindly given to me.

Batrachedra eucola (page 304.) Also from Whangarei, Wellington (eastern side of harbour), Claverley (Conway River), and Hope Arm (Manapouri).

Subfamily OECOPHORIDES.

Endrosis lactella (page 260.) The correct spelling of the specific name is here given.

Schiffermuelleria orthophanes (page 260.) Also from Blackmillar (Kaikoura) and Claverley (Conway River).

BORKHAUSENIA DECORA.

(*Borkhauseniana decora*, Philp., Trans. N.Z. Inst., lviii., 365.)
(Plate LIX., fig. 3 ♂.)

This very handsome species was discovered by Mr. Philpott at Lake Rotoroa, near Nelson.

The expansion of the wings is barely $\frac{1}{2}$ inch (9-11 mm.). *The fore-wings are dark leaden metallic with bright orange-*

yellow markings edged with black; space beneath fold orange-yellow; an oblique band from about $\frac{1}{4}$ of costa joining this; a very broad Y-shaped marking beyond middle; a broad terminal band; cilia blackish-grey. The hind-wings and cilia are deep brown.

Very close to *B. compsogramma*, but a darker and more richly-coloured insect.

The perfect insect appears in February.

Described and figured from a specimen kindly lent to me by Mr. Philpott.

Borkhauseniana compsogramma (page 261.) Also from Waimarino (North Island), Tophouse, Puhū Puhū, Lyttelton Hills, Claverley (Conway River), Arthur's Pass, Dunedin, and Milford Track.

Borkhauseniana honorata (page 261.) Also from Arthur's Pass and Hope Arm (Lake Manapouri).

Borkhauseniana hoplodesma (page 261.) Also from Puhū Puhū, Mount Grey, Bottle Lake, Governor's Bay and Te Anau-Manapouri District.

Borkhauseniana affinis (page 262.) Also from Governor's Bay, Cave Creek and Arthur's Pass.

Borkhauseniana paratrimma (page 262.) Also from Arthur's Pass, The Hump and Bluff.

Borkhauseniana melanamma (page 262.) Also from Puhū Puhū, Clarence Bridge, Dunedin, Queenstown and Te Anau-Manapouri District. In some of the specimens taken in the Puhū Puhū riverbed the transverse bands are very strongly marked.

Borkhauseniana xanthomicta (page 262.) Also from Clarence Bridge, Mount Cook, and Hope Arm (Manapouri).

Borkhauseniana maranta (page 263.) Also from Lake Tekapo and Te Anau-Manapouri District.

Borkhauseniana paula (page 263.) Also from Governor's Bay and Birdling's Flat.

BORKHAUSENIA LEVICULA.

(*Borkhauseniana levicula*, Philp., Records of Auckland Institute Museum, I, 1, 8.)
(Plate LIX., fig. 2 ♂.)

This species was discovered by Mr. C. E. Clarke, on Flat Top Mountain (Lake Manapouri), at an elevation of about 4000 feet.

The expansion of the wings is about $\frac{1}{2}$ inch (13 mm.). Head, palpi and thorax whitish-ochreous mixed with brown. Antennae ochreous closely annulated with fuscous, ciliations in ♂ $\frac{3}{4}$. Abdomen grey, brassy tinged. Legs grey mixed with ochreous and brown. Fore-wings narrow, costa moderately arched, apex round-pointed, termen extremely oblique; greyish-white mixed with dark fuscous; markings pale ochreous mixed with dark fuscous; a rather broad fascia from costa at base to dorsum at about $\frac{1}{3}$, a similar fascia from costa at $\frac{1}{4}$ to dorsum at $\frac{2}{3}$; a third fascia from costa at $\frac{1}{2}$ to above tornus where it coalesces with an inwardly oblique fascia from costa at $\frac{3}{4}$; a moderately broad band round termen; cilia greyish-white mixed with ochreous and fuscous. Hind-wings grey; cilia grey with obscure darker basal line.

Belongs to the *xanthomicta-xanthodesma* group, but very much paler than any of the other species; the shape of the fore-wings is also a good distinguishing character.

The perfect insect appears in December.

Described and figured from a specimen in the Auckland Museum. The above is taken from Mr. Philpott's description.

BORKHAUSENIA LASSA.

(*Borkhausenia lassa*, Philp., Records of Auckland Institute Museum, I., 1, 9.)

(Plate LVII., fig. 30 ♂.)

A single specimen of this obscure species was captured by Mr. C. E. Clarke at Leith, Dunedin.

The expansion of the wings is slightly under $\frac{1}{2}$ inch (11 mm.). Head and thorax pale brown. Palpi, 2nd joint brown with apex whitish, terminal joint fuscous, with apex whitish-ochreous. Antennae ochreous annulated with fuscous, ciliations in ♂ 1. Abdomen purplish-grey. Legs ochreous mixed with fuscous, all tarsi banded with fuscous. Fore-wings with costa hardly arched, apex broadly rounded, termen rounded, oblique; white, densely irrorated with pale fuscous except beneath fold; markings consisting of obscure brown fascia and pale yellow spots; a rather large yellow patch on dorsum at base; a brown stripe along fold connecting with a slightly outwards-curved fascia from costa at $\frac{1}{4}$; a rather prominent yellow spot at junction of these two fasciae and some yellow scales mixed with fascia from costa; a brown fascia from costa at $\frac{1}{2}$ to tornus enclosing a yellow spot in disc and with some yellow scales at tornus; an obscure brown subterminal fascia containing some yellow scales; cilia brown with some white and yellow scales. Hind-wings and cilia fuscous-grey.

Probably with some affinity to the preceding species, but very distinct.

The perfect insect appears in December.

Described and figured from the type specimen in the Auckland Museum. The above is taken from Mr. Philpott's original description.

BORKHAUSENIA OPHIODRYAS.

(*Borkhausenia ophiodyras*, Meyr., Trans. Roy. Soc. N.Z., lxvi., 282.)

(Plate LXI., fig. 14 ♀.)

A single specimen of this interesting species was discovered by Mr. S. Lindsay on Bank's Peninsula, in bush above Le Bon's Bay.

The expansion of the wings is slightly over $\frac{5}{8}$ inch (17 mm.). The fore-wings are golden-ochreous-orange with brown markings, the stigmata forming rounded spots; plical somewhat beyond first discal; a brown streak along fold between these; a short wide streak from second discal spot to tornus; a distinct subterminal line with sharp outward projection near apex; cilia orange-yellow with a faint brown bar near tornus. Hind-wings and cilia pale grey.

A distinct species allied to the *armigerella* group.

The perfect insect appears in February.

Described and figured from the unique specimen kindly lent by Mr. Lindsay.

BORKHAUSENIA ENODIS.

(*Borkhausenia enodis*, Philp., Trans. N.Z. Inst., lviii., 85.)

This species was taken by Mr. Philpott in the Cobb Valley and other localities in the vicinity of Nelson.

The expansion of the wings is nearly $\frac{3}{4}$ inch (19-20 mm.). The fore-wings are ochreous-yellow; the hind-wings grey.

Evidently only separable from the extremely common *B. armigerella* on characters afforded by the male genitalia. Mr. Philpott admits that he is unable to assign a female to this form.

The perfect insect appears in November and December.

BORKHAUSENIA SINUOSA.

(*Borkhausenia sinuosa*, Philp., Trans. N.Z. Inst., lix., 488.)

Two male specimens of this species were taken by Mr. Philpott in the Botanical Gardens at Wellington.

The expansion of the wings is slightly under $\frac{3}{4}$ inch (17-19 mm.). Stated to differ from *B. enodis* in having the costa rather more arched and the apex more rounded. No female was assigned to this species and it is clearly only distinguishable by the genitalia of the male insect.

The perfect insect appears in December.

BORKHAUSENIA GRATA.

(*Borkhausenia grata*, Philp., Trans. N.Z. Inst., lviii., 85.)

This species was taken by Mr. Philpott on the Dun Mountain, Nelson. It also occurs at Mount Cook.

The expansion of the wings is nearly $\frac{3}{4}$ inch (20-22 mm.). The fore-wings are vivid orange-ochreous. Hind-wings very pale greyish-ochreous, almost white.

Extremely similar to the common *B. apertella* and apparently only separable on the male genitalic characters as Mr. Philpott was unable to assign any female to this form.

The perfect insect appears from November till January.

Borkhausenia horaea (page 263.) The correct expansion of the wings is $\frac{5}{8}$ inch (13 $\frac{1}{2}$ -15 mm.) Also from Gore Bay and Lyttelton Hills.

Borkhausenia apertella (page 264.) Also from Top-house and Te Anau-Manapouri District.

Borkhausenia eriphaea (page 264.) Also from Mount Cook.

Borkhausenia perichlora (page 264.) Also from Te Anau-Manapouri District.

Borkhausenia phegophylla (page 265.) Also from the Te Anau-Manapouri District.

Borkhausenia basella (page 265.) Also from Whangarei and Te Anau-Manapouri District.

Borkhausenia politis (page 265.) Also from Erua and Te Anau-Manapouri District.

Borkhausenia idiogama (page 266.) Also from Wai-marino.

Borkhausenia pronephela (page 266.) Also from Te Anau-Manapouri District.

Borkhausenia chloradelpha (page 266.) Also from Whangarei.

BORKHAUSENIA LAUDATA.

(*Borkhausenia laudata*, Philp., Records of Auckland Institute Museum, I., 1, 9.)

(Plate LVII., fig. 28 ♂.)

This bright-looking species was discovered by Mr. C. E. Clarke at Bluecliff (Fiord). It has also been found at Waitati.

The expansion of the wings is slightly over $\frac{1}{2}$ inch (13-15 mm.). Head and palpi purplish-brown. Antennae dark brown, minutely spotted with ochreous, ciliations in ♂ $2\frac{1}{2}$. Thorax purplish-brown, apex and tips of tegulae yellow. Abdomen purplish-brown. Legs fuscous, tarsi very obscurely annulated with ochreous. Fore-wings elongate, costa moderately arched, apex round-pointed, termen straight, oblique; bright ferruginous; beneath fold rather bright ochreous; a blackish spot below fold at $\frac{1}{2}$ margined anteriorly with ferruginous and posteriorly with ochreous-white; cilia ferruginous. Hind-wings purplish-fuscous; cilia fuscous with darker basal line.

Nearest to *B. amiculata* Philp., but rather smaller and with longer antennal ciliations. There are also several differences in colour and markings.

The perfect insect appears in January.

Apparently recognisable by the acutely pointed fore-wings and bright reddish-brown colouring, very sharply contrasted with the bright ochreous area below fold.

Described and figured from a specimen in the Auckland Museum. The above is taken from Mr. Philpott's original description.

Borkhausenia vestita (page 266.) Also from Flat Top Mountain, Manapouri.

Borkhausenia siderota (page 267.) Also from Arthur's Pass and Mount Cook.

Borkhausenia epichalca (page 267.) Observed swarming on *Dracophyllum longifolium*, Arthur's Pass, about 3,500 feet, 6.40 p.m., summer time, January 18th, 1928.

Borkhausenia oxyina (page 267.) Also from Te Anau-Manapouri District and Milford Track.

Borkhausenia thalerodes (page 268.) Also from Mount Cook.

Borkhausenia nycteris (page 268.) Also from Tophouse (Nelson), Mount Cook, Dunedin, and Te Anau-Manapouri District.

Borkhausenia homodoxa (page 268.) Also from Milford Track and Eglinton Valley.

BORKHAUSENIA TEPHROPHANES.

(*Borkhausenia tephrophanes*, Meyr., Trans. N.Z. Inst., lx., 488.)
(Plate LIX., fig. 7, ♀.)

This rather inconspicuous species was discovered at Flora Creek, (Mount Arthur), at an altitude of about 2,500 feet.

The expansion of the wings is $\frac{3}{4}$ inch (19 mm.). The fore-wings have the costa gently arched, *the apex acute, and the termen obliquely inwards-curved below apex; glossy leaden-grey, the apical third heavily sprinkled with dark brownish-grey scales, especially near tornus, where there is a curved whitish line reaching half across the wing; a small patch of densely crowded brownish-grey scales near middle of fold and a few very widely scattered scales near costa and in disc; cilia greyish-ochreous.* The hind-wings and cilia are dark brown. The head and thorax are grey and the abdomen brownish-black.

The perfect insect appears in January and may be looked for in sub-alpine forest. Although similar to *Borkhausenia nycteris* its peculiar shining leaden grey colour and tornal suffusion clearly distinguish it from that species.

Borkhausenia ancogramma (page 268.) The single specimen treated by Mr. Philpott as the holotype of *Bork-*

hausenia latens, Philp., Trans. N.Z. Inst., lviii., 365, seems to be quite indistinguishable from a small, rather pale specimen of *B. ancogramma*, Meyr. No special characters are set out as essentially characteristic of *B. latens*. *Borkhausenia bellatula*, Philp., Trans. N.Z. Inst., lx., 304, is also identical with *B. ancogramma*.

Unlike most members of the genus *Borkhausenia*, *B. ancogramma* is met with in the late summer and autumn. This species has occurred at Hen Island, Whangarei, Rotorua, and several localities in the immediate neighbourhood of Wellington, in the North Island, and at Lake Rotoroa (Nelson) in the South Island.

Borkhausenia marcida (page 269. Plate LXII., fig. 24 ♂.) This is quite a distinct species and a figure of it is now given. As already indicated, it may be recognised by its peculiar opaque-looking whitish colouring, very indefinite brownish speckling, and absence of any distinct subterminal line. Additional localities.—Clarence Bridge and Brooklands Beach.

Borkhausenia fenestrata (page 269.) Also from Puhī Puhī, Glentui and Mount Blowhard.

Borkhausenia brachyachma (page 269.) Also from Dunedin and Milford Track.

Borkhausenia morosa (page 270.) Also from Waimarino (North Island), Tophouse, Lake Rotoroa, Puhī Puhī and Arthur's Pass.

Borkhausenia epimyliia (page 271.) Also from eastern side of Wellington Harbour and Tophouse.

BORKHAUSENIA BERENICE.

(*Borkhausenia berenice*, Meyr., Trans. N.Z. Inst., lx., 488.)
(Plate LVII., fig. 27 ♀.)

This very bright-looking little species was discovered at Gollan's Valley near Wellington.

The expansion of the wings is 9-16 inch (15 mm.). The fore-wings are *orange-ochreous with whitish markings and clusters of black and purplish-brown scales; a pale purplish-brown patch at base and along basal portion of fold; a white patch on dorsum near middle; an irregular patch of pale purplish-brown and black scales on dorsum before tornus; two rather small similar clusters of scales on costa at about $\frac{1}{3}$ and $\frac{1}{2}$; a whitish area between these and towards base; a curved subterminal line indicated by a very imperfect series of single jet black scales; two or three blackish scales at apex; cilia orange-ochreous, tipped with blackish at apex and tornus.* The hind-wings and cilia are pale brownish-grey. The head and thorax are white; the tegulae dull ochreous, and the neck shaded with blackish. The abdomen is brown.

The perfect insect appears in November and may be looked for in mixed beech forest.

BORKHAUSENIA MORELLA, n.sp.

(Plate LXL., fig. 31 ♀.)

This handsome and very distinct species was discovered by Mr. A. J. Hipwell at Onehunga.

The expansion of the wings is nearly $\frac{5}{8}$ inch (15 mm.). The fore-wings are rather elongate, with apex rounded, and termen oblique; *creamy-white, with black and pale ochreous-fawn markings; very small black marks on costa at base and $\frac{1}{3}$; a much larger and somewhat triangular costal spot at $\frac{2}{3}$, and an extensive irregular blotch just before apex, almost reaching across wing;*

an outwardly oblique broken chain of black scales from dorsum at $\frac{1}{3}$ to beyond middle of wing; a very distinct black spot in disc considerably beyond middle, and two rather indefinite rows of black scales below centre of wing; scattered dull fawn-coloured scales are present around most of the black markings, and form an extensive patch in disc beyond middle; a few isolated fawn-coloured scales are present generally; cilia fawn-colour, with obscure narrow black bars. Hind-wings grey; cilia pale greyish-fawn colour. Head and thorax creamy-white with a few fawn-coloured scales. Abdomen reddish-brown, grey towards apex. Hind tibiae heavily clothed with long fawn-coloured hair.

Apparently nearest to *B. berenice* but quite distinct.

The perfect insect appears in April.

BORKHAUSENIA COMOSARIS.

(*Borkhausenia comosaris*, Meyr., Trans. N.Z. Inst., lxii., 95.)

This rather remarkable species has occurred at Gollan's Valley on the eastern side of Wellington Harbour.

The expansion of the wings of the male is about $\frac{1}{2}$ inch (13 mm.). The fore-wings are ochreous-yellow, slightly orange-tinged; a rather thick dark brownish-grey costal streak from base to near $\frac{2}{3}$; a small group of blackish scales forming plical stigma; some slight sprinkling of brownish scales from lower angle of cell to tornus. The hind-wings are brownish-grey; *an expanded group of erect brownish-grey hairs occupying base of wing.* The head and thorax are brownish-grey and the tegulae yellowish except shoulder.

Immediately distinguishable by the expanded hairs of the hind-wings, doubtless a sexual character.

The perfect insect appears early in December.

Apparently very rare, but probably often mistaken for some of the common yellow species of *Borkhausenia*.

BORKHAUSENIA POROPHORA.

(*Borkhausenia porophora*, Meyr., Trans. N.Z. Inst., lx., 488.)

(Plate LVII., fig. 7 ♀.)

This rather obscure species has occurred at Takaka.

The expansion of the wings is $\frac{9}{16}$ inch (15 mm.). The fore-wings, which have the apex obtuse and the termen very obliquely rounded, are *pale pinkish-ochreous with markings composed of scattered dark brown scales*; an irregular longitudinal patch at base; a diffused transverse band at $\frac{1}{3}$ joined to this; a second broken transverse band at $\frac{2}{3}$ *partially enveloping a ring-shaped mark near the end of fold*; several small marks between these; a Y-shaped mark on costa before apex joining a blotch a little before tornus; cilia pinkish-ochreous. The hind-wings and cilia are ochreous.

The perfect insect appears in January.

BORKHAUSENIA ANGULARIS.

(*Borkhausenia angularis*, Philp., Trans. N.Z. Inst., lx., 302.)

(Plate LVII., fig. 8 ♀.)

This very obscure species was found by Mr. Philpott at Lake Rotoroa, near Nelson.

The expansion of the wings is $\frac{5}{8}$ inch (16-20 mm.). The fore-wings are elliptical with the apex and tornus rounded, *brownish-ochreous with darker brown markings*; a large basal patch enclosing paler area on costa; a small blotch on fold beyond this; blotches on costa near middle and beyond middle; a suffused patch on dorsum near tornus, connected with a strongly curved subterminal line; three or four obscure dark spots on costa and termen near apex. The hind-wings are pale brownish-ochreous, darker near apex. All the cilia are brownish-ochreous.

The head and thorax are thickly speckled with blackish-brown. The abdomen, *which is very large*, is brownish-ochreous.

The perfect insect appears in January, and frequents mixed forest.

Described and figured from the type specimen kindly lent to me by Dr. Miller.

BORKHAUSENIA HONESTA.

(*Borkhausenia honesta*, Philp., Trans. N.Z. Inst., lx., 303.)

(Plate LVII., fig. 6 ♂.)

This very obscure species was discovered by Mr. Philpott, at Lakes Tekapo and Pukaki.

The expansion of the wings is nearly $\frac{3}{4}$ inch (16-19 mm.). The fore-wings are very pale greyish-ochreous, *almost white in disc, densely strewn with dark brownish-ochreous scales on the costa and apical third*; the markings are blackish; two clusters of blackish scales on fold, near base and middle; another cluster in disc above middle; *a distinct horse-shoe-shaped mark in disc beyond and above middle; a very strongly twice angulated subterminal line.* The hind-wings are dull ochreous-brown. All the cilia are pale brownish-ochreous, with darker basal line.

The perfect insect appears in December.

Described and figured from the type specimen kindly lent to me by Dr. Miller.

BORKHAUSENIA CLARKEI.

(*Borkhausenia clarkei*, Philp., Trans. N.Z. Inst., lviii., 366.)

(Plate LIX., fig. 1 ♂.)

This very obscure species has occurred at Kaco (North of Auckland) and at Kauri Gully.

The expansion of the wings is $\frac{5}{8}$ inch (15-16 mm.). The fore-wings are *rather broad with the apex and tornus rounded; white, faintly tinged with bluish-grey and heavily sprinkled and mottled with blackish*; plical stigma large, obliquely before first discal, touching large blotch on dorsum; three suffused patches on costa at about $\frac{1}{3}$, $\frac{1}{2}$, and beyond middle; a rather indistinct subterminal line, doubly angulated below costa; a blotch near tornus; cilia grey mixed with blackish-grey. The hind-wings and cilia are dark greyish-ochreous.

The perfect insect appears in January and frequents open forest or scrub.

This form has a strong resemblance to *Trachypepla photinella*.

LEPTOCROCA AQUILONARIS.

(*Leptocroca aquilonaris*, Philp., Trans. N.Z. Inst., lxii., 31.)

Three specimens of this species were obtained by Mr. C. E. Clarke at Kauri Gully, Auckland, and Whangarei, and are now in the Auckland Museum.

The expansion of the wings is about $\frac{3}{4}$ inch (16-20 mm.).

Apparently only distinguishable from the allied obscure forms by the genitalic characters of the male. Mr. Philpott gives no figure in this case.

The perfect insect appears in January.

LEPTOCROCA LENITA.

(*Leptocroca lenita*, Philp., Trans. N.Z. Inst., lxii., 32.)

(Plate LIX., fig. 4 ♂.)

A single specimen of this species was captured at Newton's Flat in the Buller Gorge.

The expansion of the wings is $\frac{5}{8}$ inch (16 mm.). The fore-wings are *creamy-white, with four rather indefinite transverse*

bands of scattered brown and pink scales, darkest on the costa; the first at base enclosing small black spot near dorsum; the second at about $\frac{1}{3}$ enclosing black plical and first discal stigmata; the third much fainter, at $\frac{2}{3}$ enclosing second discal spot; the fourth terminal, broad on costa, very narrow at tornus, margined inwardly by a row of blackish dots; cilia pale brownish-ochreous with a row of faint brown dots. Hind-wings pale ochreous, densely strewn with pale brown scales; cilia ochreous.

The perfect insect appears in December.

Described and figured from the unique specimen in the Auckland Museum.

LEPTOCROCA LINDSAYI.

(*Leptocroca lindsayi*, Philp., Records of Canterbury Museum, III., 249.)

(Plate LIX., fig. 6 ♂.)

This very pale-coloured species was discovered by Mr. S. Lindsay at Yaldhurst, Canterbury.

The expansion of the wings is slightly over $\frac{5}{8}$ inch (17 mm.). The antennae are grey, ciliations in male 1. Legs dark grey, hair on posterior tibiae ochreous. The fore-wings are white, with scattered pale brownish-black scales, forming rather indefinite markings; a distinct patch on costa at base; another distinct patch on dorsum at $\frac{1}{4}$; a large, very indefinite, triangular cluster of scales on outer half of costa, its apex reaching tornus; a very small discal dot; cilia grey. Hind-wings pale greyish-brown strewn with darker scales, especially towards apex; cilia greyish-ochreous.

In this species the male genitalia are stated to offer good differentiating characters.

The perfect insect appears in December.

Described and figured from the unique specimen kindly lent to me by Mr. Lindsay and now in the Canterbury Museum.

LEPTOCROCA XYRIAS.

(*Leptocroca xyrias*, Meyr., Records of Canterbury Museum, III., 368.)

(Plate LIX., fig. 5 ♂.)

This species was discovered by Mr. S. Lindsay at Blackmillar (near Kaikoura).

The expansion of the wings is slightly over $\frac{5}{8}$ inch (18 mm.). The fore-wings are elongate, costa gently arched, apex obtuse, termen very obliquely rounded; *brown, densely strewn with darker brown scales towards base and costa; a slightly raised dark brown dot beneath fold at $\frac{1}{4}$; a dull reddish spot in disc beyond middle; cilia brownish-grey, basal half overlaid paler, outer third whitish-grey. Hind-wings grey, heavily sprinkled with blackish scales towards apex; cilia grey, outer third whitish-grey. Antennal ciliations 1.*

Although an obscure insect the specimen is in very fine condition, and the absence of features is natural.

The perfect insect appears in December.

Described and figured from a specimen kindly lent to me by Mr. Lindsay.

Chersadaula ochrogastra (page 272.) Also from Stephen's Island.

Euchersadaula tristis (page 273.) The insect described as *Trachypepla anastrella* on page 286 is *Euchersadaula tristis*, Philp., Trans. N.Z. Inst. lvi., 393, and the heading of the description should be amended accordingly.

Plate XXXI., fig. 12, represents the male of *Euchersadaula tristis*. The localities for this species are Wellington, Nelson and Jack's Pass (Hanmer), and the time of appearance November and early December. It is an extremely abundant species around Wellington, and flies freely in hot sunshine, especially in the afternoon.

Euchersadaula lathriopa (page 273.) Also from Mount Cook.

Compsistis bifaciella (page 273.) This species rests with the fore portions slightly raised. Stands on all three pairs of legs which are placed backwards; the wings are slightly wrapped around the body, their posterior extremity touching the ground. The antennae are placed backwards, considerably divergent, usually not touching wings.

Thamnosara sublitella (page 273.) Also from Waimarino (common), Picton, Stephen's Island, Nelson, Clarence Bridge (also common), Puhī Puhī and Mount Cook.

Gymnobathra philadelphia (page 274.) Also from Worsley Stream (Manapouri.) One only. Apparently a very rare insect.

Gymnobathra hyetodes (page 274.) Also from McKinnon Pass.

Gymnobathra hamatella (page 274.) Also from Puhī Puhī.

GYMNOBATHRA OMICHLEUTA.

(*Gymnobathra omichleuta*, Meyr., Trans. N.Z. Inst., lx., 489.)

(Plate LIX., fig. 20 ♂.)

This dull-looking species has occurred on the eastern side of Wellington Harbour, at Christchurch, and at Puhī Puhī.

The expansion of the wings is $\frac{5}{8}$ inch (16-17 mm.). The fore-wings, *which have the termen falcate, are dull ochreous-brown, thickly sprinkled with darker scales; the markings, which are only visible in certain lights, consist of an oblique dusky bar from dorsum at $\frac{1}{4}$, nearly reaching costa, and a discal dot and median shade beyond middle; the cilia are dark ochreous-grey. The hind-wings and cilia are very pale greyish-ochreous, speckled with darker, and with discal dot. The antennae are whitish with black rings; the head bright ochreous-brown; the thorax and basal portion of abdomen brownish-ochreous, the terminal segments darker.*

The perfect insect appears from January till March frequenting scrub. Nearest to *G. hamatella*.

Gymnobathra cenchrias (page 274.) Also from Puhī Puhī.

Gymnobathra flavidella (page 275.) Also from Puhī Puhī and Hokitika.

Gymnobathra parca (page 276.) Also from Whangarei, Sinclair Head (Cook Strait) (North Island), Clarence Bridge, Puhī Puhī, Mount Cook and Te Anau-Manapouri District.

Gymnobathra calliploca (page 276.) Also from Whangarei, Waimarino, Greenstone River, Te Anau-Manapouri District and Milford Track.

GYMNOBATHRA PRIMARIA.

(*Gymnobathra primaria*, Philp., Trans. N.Z. Inst., lviii., 366.)
(Plate LIX., fig. 18 ♂.)

This species was discovered, by Mr. Philpott, on the Tableland of Mount Arthur, at an elevation of about 4,000 feet above sea-level. It has also occurred at Flora River (3,000 feet), on the Dun Mountain, and in the Aniseed Valley near Nelson.

The expansion of the wings is 11-16 inch (19-21 mm.). The fore-wings are oblong with the termen obliquely rounded; *dull brownish-ochreous, sparsely speckled with black scales*; a small black spot on costa at base; black dots on fold, above fold and in disc beyond middle; *five or six black spots on costa from $\frac{1}{2}$ to apex*; the cilia are brownish-ochreous barred with black. The hind-wings are grey, with pale brownish-ochreous cilia.

The perfect insect appears from December till February.

GYMNOBATHRA INAEQUATA.

(*Gymnobathra inaequata*, Philp., Trans. N.Z. Inst., lviii., 367.)
(Plate LIX., fig. 16 ♂.)

This species is another of Mr. Philpott's discoveries, having occurred on the Dun Mountain, at Flora River, at Cobb Valley and Lake Rotoroa in the Nelson District.

The expansion of the wings is $\frac{3}{4}$ inch (17-19 mm.). It is very similar to both *Gymnobathra primaria* and *G. levigata*, but much paler in colour than either, with hardly any black speckling on the fore-wings, and only three black marks on the costa.

The perfect insect appears in November and December. It appears to be restricted to localities under 3,000 feet above sea-level.

Described and figured from a specimen kindly given to me by Mr. Philpott.

GYMNOBATHRA LEVIGATA.

(*Gymnobathra levigata*, Philp., Trans. N.Z. Inst., lviii., 366.)
(Plate LIX., fig. 17 ♂.)

This species was discovered by Mr. Philpott on the Dun Mountain and on the Mount Arthur Tableland at elevations from 3,000 to 4,000 feet above sea-level.

The expansion of the wings is barely $\frac{5}{8}$ inch (14-17 mm.). Differs from *Gymnobathra primaria* in its smaller size and much heavier sprinkling of black scales, especially on terminal area; there are only two small black costal marks, and a slight, but distinct difference in the outline of the hind-wings; *the second joint of the palpus is not much thickened with scales and tapers smoothly into the terminal joint*.

The perfect insect appears in November and December.

Gymnobathra bryaula (page 276.) Also from Whangarei.

GYMNOBATHRA CALIGINOSA.

(*Gymnobathra caliginosa*, Philp., Trans. N.Z. Inst., lvii., 707.)
(Plate LIX., fig. 28 ♂.)

This very obscure species was found by Mr. S. Lindsay on Coopers Knobs, Port Hills, Canterbury, and at Puhi Puhi near Kaikoura.

The expansion of the wings is slightly over $\frac{5}{8}$ inch (17 mm.). Antennal ciliations extremely short. Legs brown; hair of posterior tibiae ochreous; tarsi annulated with whitish-ochre-

ous. Fore-wings rather long, costa moderately arched, apex obtuse, termen rounded, little oblique; pale brown, more or less mixed with blackish-brown; markings very obscure; blackish-brown; first discal spot at $\frac{1}{3}$; plical obliquely beyond first discal and connected with it by a bar; second discal at about $\frac{1}{2}$; sometimes an obscure, interrupted, transverse line at $\frac{2}{3}$; a very obscure whitish subterminal line, sometimes absent; cilia ochreous with two brown bands. Hind-wings pale grey, with scattered brownish scales, especially towards apex; cilia ochreous with brown basal line.

In one example the fore-wing is strongly suffused with ochreous, especially along costa. Related to *G. cenchrias* (Meyr.) but a darker and more obscure form. The genitalia of the male offer good distinguishing characters, and the antennal ciliations are shorter.

The perfect insect appears in November.

The above is taken from Mr. Philpott's original description.

Described and figured from a specimen kindly supplied by Mr. Lindsay.

Gymnobathra thetodes, Meyr. (page 276) was captured in the same locality as this, and is very probably identical. Should this prove correct the name *thetodes* would have priority. The figure of *G. thetodes* (Plate XXX., fig. 24) was copied from rather a poor specimen in the Fereday Collection.

Gymnobathra omphalota (page 277.) Also from Waimarino, Stephen's Island, Picton, Tophouse, Clarence Bridge, Puhi Puhi and Te Anau-Manapouri District.

Gymnobathra squamea (page 277.) Also from Kepler Mountains. The unique type specimen of *G. nigra*, Philp., Records of Auckland Institute Museum, I., 1, 9, is clearly merely a worn example of *G. squamea*.

GYMNOBATHRA AURATA.

(*Gymnobathra aurata*, Philp., Trans. N.Z. Inst., lxii., 32.)
(Plate LIX., fig. 27 ♂.)

This species was discovered by Mr. C. E. Clarke at Opoho, Dunedin.

The expansion of the wings is slightly under $\frac{1}{2}$ inch (11 mm.). Fore-wings with costa slightly arched, apex broadly rounded, termen oblique; dark grey; some dark suffusion beneath costa at base; a large blotch of yellow beneath fold at base; a dark blackish fascia with some admixture of yellow above fold from costa at $\frac{1}{3}$; slightly curved and not quite reaching dorsum with its extremity resting on a fairly large dorsal patch of yellow; an outwardly oblique dark blackish fascia mixed with yellow from costa at $\frac{1}{2}$ coalescing above tornus with a similar but inwardly oblique fascia from costa at $\frac{2}{3}$; a very obscure terminal fascia of the same colours; cilia dark grey sprinkled with white. Hind-wings and cilia brownish-ochreous.

Not near any other *Gymnobathra*; superficially the species recalls a *Borkhausenia* of the *xanthomicta* group.

The perfect insect appears in November and December.

Described and figured from specimen in the Auckland Museum. The above is taken from Mr. Philpott's original description.

GYMNOBATHRA ORIGENES.

(*Gymnobathra origenes*, Meyr., Trans. Roy. Soc. N.Z., lxvi., 282.)
(Plate LXII., fig. 17 ♀.)

This obscure little species was discovered by Mr. S. Lindsay, on Mount St. Arnaud, at an elevation of 4,000 feet.

The expansion of the wings of the female is $\frac{1}{2}$ inch (12 mm.). The head and tegulae are bronzy-brown, the thorax steely-bluish-black. The fore-wings are rather elongate, with the apex pointed and termen obliquely rounded; *bronzy-brown, bases of scales paler*; stigmata forming small, very obscure spots of dark brown suffusion, plical nearly beneath first discal; a few scattered whitish scales before apex; cilia pale blackish-brown. Hind-wings and cilia pale blackish-brown.

The perfect insect appears in December.

Described and figured from the unique specimen in the Canterbury Museum.

Izatha picarella (page 279.) Also from Whangarei, Takitimo Mountains, and Whitestone River.

Izatha acmonias (page 279.) Also from Waimarino, Quinton Huts, and Arthur River (Te Anau).

Izatha balanophora (page 279.) The insect described as the male at above reference, and figured on Plate XXXII., fig. 3, is not *I. balanophora* but a distinct species *I. mesoschista*, Meyr., Trans. N.Z. Inst., lxii., 96. The description of the female on page 279 applies to the true *I. balanophora*, which is now figured on Plate LIX., fig. 8. *Izatha mesoschista* may be immediately known by the strong black curved streak in middle of disc. *I. mesoschista* is fairly common, but *I. balanophora* seems to be rather rare, and so far only recorded from Whangarei, Leigh, Auckland and Wellington. *Izatha millighani*, Philp., Trans. N.Z. Inst. lviii., 87, is a synonym of the true *I. balanophora*.

IZATHA GRISEATA, n.sp.

(Plate LXII., fig. 2 ♀.)

A single specimen of this species was taken by Mr. C. E. Clarke at Mataitai School, Auckland.

The expansion of the wings is $\frac{5}{8}$ inch (16 mm.). The fore-wings are elongate-ovate with the apex rounded and termen oblique; *pale bluish-grey with blackish-grey markings* and speckling; two fine oblique bars on basal third of costa; an elongate, longitudinal blackish mark beyond this, followed by five dots extending to apex; four large cloudy blotches along dorsum and termen reaching across disc almost as far as the costal markings; a series of blackish dots on termen; cilia grey. *Hind-wings dull brownish-ochreous*, darker near apex; cilia brownish-ochreous. Head and thorax grey; abdomen brownish-ochreous. Scale projection on labial palpi *black*.

The perfect insect appears in April.

Described and figured from the unique specimen in the Auckland Museum.

IZATHA RIGESCENS.

(*Izatha rigescens*, Meyr., Trans. N.Z. Inst., lx., 490.)

(Plate LIX., fig. 9 ♂.)

This is probably one of the dullest and most obscurely-marked species of the genus. It was discovered at Howard Point, Wellington Harbour.

The expansion of the wings is from 9-16 to nearly $\frac{3}{4}$ inch (14-18 mm.). The head and thorax are white mixed with pale

grey. The fore-wings are pale brownish-white, coarsely speckled with brownish-grey, markings blackish-brown; an obscure mark from base of costa above fold to elongate blackish plical stigma, blackish blotches on costa at $\frac{1}{3}$ and $\frac{2}{3}$; *a round pale ochreous-brown spot, without dark speckling, in disc below and beyond middle*; a series of cloudy elongate marks between veins on costa and termen; the cilia are grey mixed with blackish-brown. The hind-wings are pale brownish-grey; cilia same colour, with darker sub-basal line.

The perfect insect appears in March. Its advent so late in the season, coupled with its very dull colour and obscure markings, suggest at first sight a faded or much worn specimen of some of the other somewhat similar species. On this account it may often be overlooked.

Izatha epiphanes (page 281.) Also from Hen Island and Whangarei.

Izatha mira (page 281.) Also from Longwood Range.

Izatha prasophyta (page 281.) Also from Whangarei.

Izatha convulsella (page 282.) Also from Puhī Puhī, Mount Cook, and Te Anau-Manapouri District.

Izatha phaeoptila (page 282.) Also from Hikurangi and around Auckland.

Izatha austera (page 282.) Also from Taihape and Pohangina.

Izatha amorbas (page 282.) Also from Rona Bay (Wellington), Hope Arm (Lake Manapouri).

IZATHA FLORIDA.

(*Izatha florida*, Philp., Trans. N.Z. Inst., lviii., 86.)

(Plate LIX., fig. 10 ♂.)

This fine species was discovered by Messrs. Philpott and Heighway, on the Mount Arthur Tableland, at an altitude of 3,500 feet above sea-level.

The expansion of the wings is slightly over $\frac{1}{2}$ inch (15-19 mm.). The fore-wings are oblong, *deep brownish-black, densely speckled with bluish-white (owing to tips of many scales being so coloured), markings clear black*; a black blotch at base, with raised yellow scales preceding and following same; a large oblong mark from costa before middle, reaching fold, and enclosing a few raised black and yellow scales; a third blotch beyond this, almost reaching tornus a very broken subterminal line; all these markings are more or less margined with bluish-white scales; cilia blackish, mixed with bluish-white towards base. *The hind-wings are yellow on basal half, very broadly bordered with blackish-brown*, the cilia are blackish-brown. The abdomen is dark brownish-black, with the segmental divisions marked in pale ochreous.

The perfect insect appears in November.

Described and figured from one of Mr. Philpott's specimens.

IZATHA PLUMBOSA.

(*Izatha plumbosa*, Philp., Trans. N.Z. Inst., lviii., 86.)

(Plate LIX., fig. 11 ♀.)

A single specimen of this fine insect was taken, by Mr. Philpott, near the glacier from which the Otira River takes its source.

The expansion of the wings is slightly over $\frac{3}{4}$ inch (20 mm.). The fore-wings are oblong; *lead grey, slightly purplish-tinged, with black markings margined with white*; an irregular blotch

at base; a tuft of pale ochreous scales on dorsum at base; an inwards-curved oblique band before middle; a blotch on costa, and a horseshoe-shaped mark in disc beyond middle; a subterminal spot near middle, and a series of rather indefinite terminal marks; the cilia are leaden grey. The hind-wings and cilia are dark brown. The head and thorax are black, speckled with white; the tegulae and scutellum pale ochreous. The abdomen is black, with the segmental divisions strongly marked in white.

It is possible that this species may prove to be the female of *Izatha florida*.

The perfect insect appears in February.

Described and figured from the unique specimen kindly lent me by Mr. Philpott.

Trachypepla leucoplanetis (page 283.) Also from Arthur's Pass, Lake Manapouri and Milford Track.

Trachypepla euryleucota (page 283.) Also from Whangarei and Manapouri.

Trachypepla conspicuella (page 283.) Also from Mamaku, Kaitawa and Puhī Puhī.

TRACHYPEPLA FESTIVA.

(*Trachypepla festiva*, Philp., Records of Auckland Institute Museum, I., 1, 10 (1930). *T. polyteuca*, Meyr., Trans. N.Z. Inst., lxii., 95.)

(Plate LIX., fig. 26 ♀.)

This very interesting and distinct species was discovered by the late Mr. D. D. Milligan at Leigh, North Auckland. Subsequently Mr. C. E. Clarke and Commander Paterson obtained further specimens at Whangarei.

The expansion of the wings is nearly $\frac{3}{4}$ inch (18 mm.) The fore-wings have the basal area shining white with an elongate longitudinal blackish-brown marking on costa at base; a rather broad longitudinal blackish-brown marking along costa from about $\frac{1}{3}$ to $\frac{2}{3}$; two clear white patches below this; an angulated white line in disc before apex; apical area dark brown with several small irregular white markings; dorsal area, except towards base, pale brown; plical stigma blackish; cilia greyish-ochreous. The hind-wings and cilia are greyish-ochreous.

The perfect insect appears in December. Although superficially somewhat similar to *Trachypepla conspicuella* and other species which imitate bird droppings, this insect differs markedly in its detailed markings.

From an examination of the type specimen of *T. festiva* in the Auckland Museum I am satisfied that this is identical with *T. polyteuca*, Meyr. Mr. Philpott's name has priority.

Trachypepla amphileuca (page 284.) Also from Whangarei and Waimarino.

Trachypepla hieropis (page 284.) Also from Whangarei and Tophouse (Nelson).

Trachypepla ingenua (page 284.) Also from Arthur's Pass, Mount Cook, Milford Track and Clinton River.

Trachypepla contritella (page 285.) Specimens taken in the North Island are usually smaller than those from the South Island and the purplish tinge is almost entirely lacking. Additional localities are:—Clarence Bridge, Puhī Puhī, and Te Anau-Manapouri District.

Trachypepla protochlora (page 285.) Also from Erua.

Trachypepla aspidephora (page 285.) Also from Whangarei, Puhī Puhī and Te Anau-Manapouri District.

Trachypepla vinaria (page 285.) *Leptocrocis obliqua*, Philp., Trans. N.Z. Inst., lxi., 437, is a synonym of this species. I have seen the type specimen, which is in rather poor condition, and I am quite unable to distinguish it from *T. vinaria*. Mr. Lindsay has also examined it with the same result. Mr. Philpott states in his description that the male genitalia display satisfactory differentiating characters, but he gives no figure or description of them.

Trachypepla indolens (page 286.) Also from Whangarei and Pohangina.

Trachypepla lichenodes (page 286.) Also from Tophouse, Arthur's Pass, Waiho Gorge, Dunedin, Paradise (Lake Wakatipu), and Hope Arm (Lake Manapouri).

Trachypepla eumenopa (page 286.) Examination of a specimen of *Trachypepla metallifera*, Philp., Trans. N.Z. Inst., lviii., 368, labelled by Mr. Philpott himself, has satisfied me that this species is identical with *Trachypepla eumenopa*, Meyr., and a comparison of the two descriptions confirms this view.

Additional localities for *T. eumenopa* are:—North Island: Whangarei, Raurimu and Waimarino; South Island: Goulund Downs, Nelson, Dunedin, Eglinton Valley and Milford Track.

TRACHYPEPLA ANASTRELLA.

(*Trachypepla anastrella*, Meyr., Trans. N.Z. Inst., xvi., 19.)

(Plate LXI., fig. 6 ♂.)

This rather obscure-looking species has occurred at Puhī Puhī, Claverley, Conway River (near Christchurch), the foot of the Otira Gorge, Mount Cook, Dunedin, Te Anau, Milford and Invercargill.

The expansion of the wings is about $\frac{1}{2}$ inch (11½-14 mm.). The fore-wings have the costa moderately arched, slightly sinuate in middle, apex rounded and termen very obliquely rounded; pale ochreous tinged with dull pink on outer two-thirds, and more or less densely speckled with blackish-brown scales except towards base; a short dark streak along costa at base; a patch of dark scales on dorsum near base; two very dark patches of raised scales on fold at about $\frac{1}{4}$; suffused patches of dark grey scales beyond this; two tufts of dark brown raised scales in disc beyond middle; a rather distinct subterminal line strongly angulated beneath costa; two suffused patches of dark grey scales on outer half of costa and a less definite suffusion at apex and along termen; cilia blackish-grey. Hind-wings dull ochreous, very densely speckled with grey scales; cilia blackish-grey.

The perfect insect appears from December till March.

Described and figured from specimen kindly supplied by Mr. S. Lindsay. This is the true *T. anastrella*. See note under *Euchersadaula tristis*. 496

TRACHYPEPLA NIMBOSA.

(*Trachypepla nimbosa*, Philp., Records of Auckland Institute Museum, I., 1, 10.)

(Plate LIX., fig. 12 ♂.)

This very dark-looking obscurely-marked species was discovered by Mr. C. E. Clarke at Kauri Gully, near Auckland.

The expansion of the wings is about $\frac{1}{2}$ inch (12 mm.). Head and thorax purplish-fuscous; face mixed with ochreous. Palpi bright ochreous mixed with blackish, apex of terminal joint black. Antennae fuscous annulated with ochreous, ciliations in δ 2. Abdomen light purplish-fuscous. Legs greyish-fuscous mixed with ochreous, tarsi annulated with bright ochreous. Fore-wings elongate, costa moderately arched, apex rounded, termen rounded, oblique; dark fuscous with some whitish ochreous admixture; scale-tufts blackish tinged with steely-blue and tipped with ochreous (a basal one and plical and first discal spots); an obscure interrupted ochreous line at $\frac{1}{2}$, a suffused ochreous spot on costa before apex; cilia concolorous with wing, but with faint darker basal line. Hind-wings dark brownish fuscous; cilia dark fuscous with darker basal line.

Perhaps nearest *T. lichenodes* Meyr., but at once distinguished by the much shorter antennal ciliations.

The perfect insect appears in January.

Described and figured from the unique specimen in the Auckland Museum. The above is mainly taken from Mr. Philpott's original description.

TRACHYPEPLA CYPHONIAS.

(*Trachypepla cyphonias*, Meyr., Trans. N.Z. Inst., lviii., 314.)

(Plate LIX., fig. 14 δ .)

This very distinct species has occurred on the hills on the eastern side of Wellington Harbour.

The expansion of the wings is slightly over $\frac{1}{2}$ inch (15 mm.). The fore-wings are dark purplish-grey; a small ochreous patch on dorsum at base, not reaching costa; basal and plical stigmata small, ochreous, surrounded by a few, slightly raised, black scales; discal larger, somewhat crescentic, ochreous, bordered with very slightly raised black scales; a very indistinct darker subterminal line; cilia blackish, mixed with dull ochreous. Hind-wings and cilia ochreous-grey. The head and thorax are clear ochreous. The palpi blackish with apex of second joint ochreous. The abdomen is dull reddish-ochreous.

The perfect insect appears in December and may be looked for amongst open scrub.

TRACHYPEPLA MINUTA.

(*Trachypepla minuta*, Philp., Trans. N.Z. Inst., lxii., 33.)

(Plate LIX., fig. 13 δ .)

This very dark-looking little species was discovered by Mr. C. E. Clarke in the Auckland Domain.

The expansion of the wings is nearly $\frac{3}{8}$ inch (9 mm.). The antennal ciliations in male 5. The fore-wings have the costa slightly sinuate, apex rounded, oblique; very dark rich brown, sprinkled with bluish-white scales; a darker basal area, darker blotches on costal area at $\frac{1}{4}$ and $\frac{3}{8}$, and along termen, these portions being more or less free of bluish-white scales; black scale tufts at $\frac{1}{4}$ and $\frac{3}{8}$ margined with dull golden-ochreous; the cilia are purplish-brown tipped with coppery-metallic below apex. The hind-wings are deep brown, densely strewn with darker scales, especially towards apex; cilia dark brown.

Distinguished by its small size and very dark colouration.

The perfect insect appears in December.

Described and figured from the unique specimen in the Auckland Museum.

TRACHYPEPLA FALSILOQUA.

(*Trachypepla falsiloqua*, Meyr., Trans. Roy. Soc. N.Z., lxiii., 24.)

This species was found at Waimarino, on the Central Plateau of the North Island, at an elevation of about 2,500 feet.

δ . 20 mm. Head ochreous-whitish, a few greyish hair scales. Palpi whitish, basal half and a subapical band of second joint grey, terminal joint $\frac{3}{4}$, with two dark grey bands. Antennal ciliations $1\frac{1}{2}$. Thorax grey, with a rough posterior crest mixed whitish. Fore-wings elongate, rather dilated, costa gently arched, apex pointed, termen nearly straight, oblique; whitish, partially clouded light greenish-ochreous in disc, some scattered dark brown scales; scales of basal fourth of dorsum roughened; a brown fasciate streak from base of costa above fold to $\frac{1}{4}$, plical and first discal stigmata forming small dark bronzy-brown spots on each side of its extremity, plical slightly anterior and edged rough white scales beneath, these scales preceded by a small dark brown tuft; a spot of brownish suffusion on costa at $\frac{1}{4}$; second discal stigma rather larger, bronzy-brown, suffused bronzy-brown spots on costa rather before it and on tornus rather beyond it; an excurved dark fuscous line, gradually dilated on upper half, from costa at $\frac{1}{4}$ to dorsum before tornus; a suffused fuscous apical spot, and two or three small greyish spots on termen; cilia whitish-ochreous, an interrupted fuscous median line. Hind-wings light grey; cilia whitish-grey.

The above is a copy of the original description. But for the presence of scale tufts on the fore-wings this insect might readily be put down as a large greenish form of the very variable *Borkhausenia innotella*.

The perfect insect appears in January and frequents subalpine forest.

TRACHYPEPLA OCNEROPIS.

(*Trachypepla oneropis*, Meyr., Trans. Roy. Soc. N.Z., lxvi., 282.)

(Plate LXII., fig. 16 ϕ .)

This small and very obscure species was discovered by Mr. Meyrick at Nelson in January, 1886. It has also been found at Waimarino (2,500 feet) in the North Island, and at Takaka and on Mount Arthur (4,500 feet) in the South Island.

The expansion of the wings is about $\frac{1}{2}$ inch (11-13 mm.). Head, thorax fuscous. Palpi dark fuscous, tip of joints whitish. Antennal ciliations δ over 2. Fore-wings elongate, costa gently arched, apex obtuse-pointed, termen obliquely rounded; fuscous more or less sprinkled dark fuscous; stigmata raised, blackish, plical directly beneath first discal, a pale ochreous dot adjoining second discal beneath, edged posteriorly a few blackish scales; sometimes some pale ochreous suffusion in disc between stigmata extending upwards to costa, and a spot of pale ochreous suffusion on costa about $\frac{3}{8}$, but these may be obsolete; cilia greyish, base sometimes tinged ochreous, extreme tips whitish. Hind-wings grey; cilia light grey, tips whitish.

The perfect insect appears in January.

The spelling "oneropis" is a misprint.

Corocosma memorabilis (page 287.) Also from Wellington (Wilton's Bush and Day's Bay) and Claverley (Conway River).

Genus.—TAOSCELIS, Meyr.

Head smooth; ocelli posterior; tongue developed. Antennae $\frac{3}{4}$, in δ shortly and evenly ciliated, scape elongate, rather swollen

apically, without pecten. Labial palpi rather long, recurved, second joint not reaching base of antennae, smooth scaled, terminal joint shorter than second, slender acute. Maxillary palpi rudimentary. Thorax smooth. Hind tibiae with appressed scales. Fore-wings with discal scale tufts; vein 2 from angle, 7 and 8 stalked, 7 to apex, 11 from middle. Hind-wings 1, ovate, cilia $\frac{1}{2}$; veins 3 and 4 connate from angle, 5-7 nearly parallel.

An interesting and distinct form allied to *Corocosma*, to which it may be regarded as ancestral, showing similar remarkable features of concealed metallic colouring. Only one species is known at present.

TAOSCELIS CROCOSTOMA.

(*Taoscelis crocostoma*, Meyr., Trans. Roy. Soc. N.Z., lxvii., 428.)

(Plate LVII., fig. 29 ♂.)

This very interesting species was discovered by Mr. S. Lindsay on Freehold Range (Lake Ohau), at an altitude of about 4,000 feet above sea-level.

The expansion of the wings is nearly $\frac{1}{2}$ inch (12 mm.). Head glossy dark blackish-brown. Palpi light yellowish, terminal joint dark blackish-brown. Thorax subiridescent dark blackish-brown, under-surface and femora beneath bright metallic greenish-bronze. The fore-wings are somewhat elongate-oblong with termen obliquely rounded; dark brownish-black with slight coppery-red reflections and iridescent tinges of dull green; some very indefinite darker markings; a dull whitish crescentic mark on costa before middle and some faint paler markings between this and dorsum; another spot on costa at about $\frac{3}{4}$; a transverse series of white hair scales at about $\frac{1}{2}$ and another series subterminal; cilia blackish-brown. Hind-wings with very broad dark brown terminal band, in some lights almost coppery-red; some irregular pale ochreous patches on basal area with coppery or greenish reflections; cilia brownish-black.

The metallic markings in this species are very indefinite and difficult to describe or delineate.

The perfect insect appears at the end of December and may be looked for on mountains near the upper limit of beech forest.

Described and figured from the unique specimen in the Canterbury Museum.

ATOMOTRICHIA LEWISI.

(*Atomotricha lewisi*, Philp., Trans. N.Z. Inst., lviii., 87.)

The expansion of the wings is about 1 inch (24 mm.). The palpi have the terminal joint much shorter than second. The fore-wings are considerably dilated towards apex, dull speckled brown with very indefinite markings. The hind-wings are pale ochreous speckled with brown. The female is unknown. Represented by two specimens, in indifferent condition, taken by the late J. H. Lewis, probably in Central Otago. Perhaps identical with *A. ommatias*.

Atomotricha ommatias (page 287.) The insect figured on Plate LXI., fig. 13, is believed to be the male of this species.

Atomotricha chloronota (page 288.) Male now figured on Plate LIX., fig. 15.

Atomotricha oconomia (page 288.) Also from Dunedin.

Atomotricha sordida (page 288.) Also from Dunedin and Kepler Mountains.

Atomotricha isogama (page 288.) Also from Ohakune, Stephen's Island and Blenheim.

Atomotricha prospiciens (page 289.) Also from Eglinton Valley.

Barea dinocosma (page 289.) Also from Whangarei and Puhī Puhī (South Island).

Barea confusella (page 289. Plate LIII., fig. 38 larva.)

The larva is about $\frac{1}{3}$ inch in length. Moderately stout, cylindrical, considerably thicker posteriorly. Head and plate of segment 2 small, corneous, deep brown, highly polished; segment 3 with two triangular horny plates, segment 4 with conspicuous tubercles, segment 3 and 4 dull ochreous, segments 5-10 blackish-grey, segments 11 and 12 dull reddish, segment 13 dull ochreous. Segment 14 wholly corneous, blackish-brown, highly polished. All tubercles blackish, conspicuous, and highly polished, each emitting fine bristles.

This larva feeds on dried decaying wood, on the edges of prostrate logs, where the woody refuse is mixed with grass roots. It is fairly active, living in silken galleries amongst the refuse. Larvae were found at the end of October, and the perfect insect emerged early in the following January.

This species also occurs at Whangarei and Lake Te Anau.

Barea exarcha (page 289.) Also from Lumsden. Specimens of this insect in the Fenwick Collection indicate that it was taken in Dunedin as early as 1913.

Genus.—MERMERISTIS, Meyr.

Head with appressed scales; tongue developed. Antennae $\frac{3}{4}$, in male strongly ciliated, scape moderate, with pecten. Labial palpi moderately long, recurved, second joint not reaching base of antennae, with appressed scales, terminal joint nearly as long as second, slender, acute. Posterior tibiae clothed with hairs above. Fore-wings with vein 2 from near angle, 7 absent, 11 from middle. Hind-wings 1, elongate-ovate, cilia $\frac{3}{4}$; veins 3 and 4 connate, 5-7 nearly parallel.

Represented by a single species which also occurs in Tasmania.

MERMERISTIS SPODIAEA.

(*Mermeristis spodiaea*, Meyr., Exot. Micr. I., 298 (1915); Trans. N.Z. Inst., ix., 489.)

(Plate LVIII., fig. 13 ♀.)

This very obscure and insignificant-looking insect has occurred at Wilton's Bush and Wainuiomata, near Wellington.

The expansion of the wings is slightly under $\frac{1}{2}$ inch (12 mm.). The fore-wings are rather broad with the termen obliquely rounded, brown, lightly sprinkled with darker brown; a blackish dot on fold and in disc beyond middle; an obscure transverse line from $\frac{2}{3}$ of costa to tornus and a wavy line from $\frac{3}{4}$ of costa to tornus; the cilia are brown. The hind-wings are grey, becoming almost black towards apex; the cilia are also grey.

The perfect insect appears in February and may be looked for in forest. The occurrence of this insect in New Zealand is interesting and, in the opinion of Mr. Meyrick, probably natural.

Eulechria zophoessa (page 290.) Larva found tunnelling in bark of dead beech tree, in Gollan's Valley, Wellington, September 12, 1929.

This species also occurs at Whangarei.

LOCHEUTIS FUSCA.

(*Locheutis fusca*, Philp., Records of Auckland Institute Museum, I, 1, 11.)

(Plate LVIII., fig. 8 ♂.)

This interesting species was discovered by the late Mr. Philpott at Tongariro National Park.

The expansion of the wings is slightly over $\frac{1}{2}$ inch (13-14 mm.). Head dull ochreous, collar brighter. Palpi fuscous mixed with ochreous. Antennae fuscous, ciliations in ♂ 5. Thorax dark purplish-brown. Abdomen greyish-fuscous tinged with brassy. Legs fuscous, posterior pair ochreous, tarsi annulated with ochreous. Fore-wings rather long, costa slightly arched, apex rounded, termen rounded, oblique; pale greyish-brown with slight purple tinge mixed with darker; markings rather obscure, frequently almost obsolete; stigmata ferruginous brown; plical spot beneath first discal; second discal usually prominent, emitting a rather thick brown band to tornus; usually a small whitish ochreous patch on costa at $\frac{2}{3}$; cilia concolorous with wing, often ochreous tinged. Hind-wings golden brown heavily speckled with darker brown towards apex; cilia brown.

At once distinguished from *L. pulla*, Philp., by the very much longer antennal ciliations and from *L. vagata*, Meyr., where the ciliations are nearly as long, by the absence of the pronounced coppery sheen of that species.

The perfect insect appears in January. It was very common in *Nothofagus* forest on the banks of the Whakapapa River.

Described and figured from the type specimen in the Auckland Museum. The above is mainly taken from Mr. Philpott's original description.

LOCHEUTIS PULLA.

(*Locheutis pulla*, Philp., Trans. N.Z. Inst., lix., 488.)

(Plate LVIII., fig. 7 ♀.)

This stout-looking little insect was discovered by Mr. Philpott at Lake Rotoroa, near Nelson. It has also occurred at Waimarino, on Mount Arthur, and Mount Cedric.

The expansion of the wings is $\frac{1}{2}$ inch (13-14 mm.). The fore-wings have the costa almost straight and the termen oblique; dull brown very heavily sprinkled with bright brownish-ochreous scales which nearly cover the entire surface; there are two rather obscure rust-coloured spots in disc before middle, and a larger spot beyond middle; also a cloudy mark of the same colour on termen near tornus; the cilia are brownish-ochreous. The hind-wings and cilia are blackish-brown.

The perfect insect appears in January frequenting forest or scrub at elevations from 2,000 to 4,000 feet above sea-level.

Locheutis vagata (page 290.) Also from Milford Track.

Parocystola acroxantha (page 290.) Also from Oreti River.

Oxythecta austrina (page 291.) Also from Jack's Pass (Hanmer), Mount Peel (Canterbury), Birdling's Flat, Paradise, Flat Top Mountain (Manapouri) and Kepler Mountains. The female is now figured on Plate LVIII., fig. 12.

Philobota amenena (page 291.) Also from Mount Cook.

Nymphostola galactina (page 292.) The length of the full-grown larva is about $\frac{1}{2}$ inch (13 mm.). Cylindrical, segments deeply excised, rounded, rapidly tapering at each end of larva; uniform deep green above, whitish-green beneath; spots paler, each emitting short bristle; no horny plate on segment 2. Beaten out of *Griselinia*.

Pupa about $\frac{1}{3}$ inch long (8 mm.). Exposed like a butterfly pupa; pale green, variegated with whitish; neuration and limbs marked by blackish-brown and white dots; dorsal portion with two rows of spines and long white bristles; terminal portion retracted and very truncate. Suspended to leaf. Length of pupal life about one month.

This species has been taken at Lake Rotoiti (Nelson), Puhī Puhī (Kaikoura), and is not uncommon at Hope Arm (Manapouri).

Proteodes carnifex (page 292.) A figure of the larva is given on Plate LIV., fig. 6. This is a common form but as already stated the larva is extremely variable. This species occurs at Tophouse, Puhī Puhī Peaks, and Te Anau-Manapouri District.

Proteodes melographa (page 292.) A specimen of *Proteodes varia*, Philp., Trans. N.Z. Inst., lviii., 368, kindly given to me by the describer, was submitted to Mr. Meyrick, who testifies that it is identical with *P. melographa*, Meyr. This species also occurs at Nelson.

Proteodes clarkei (page 293.) Plate LII., fig. 27, represents the male of this species and the description given on page 293 refers to that sex. A figure of the female is now given on Plate LIX., fig. 25. The sex is semiapterous. The fore-wings, which are of about normal length, are broadly lanceolate, and the hind-wings sabre-shaped. The colouring is as in the male. I am much indebted to Mr. Gilbert Archey for the opportunity of figuring this interesting insect. The unique female, discovered by Mr. C. E. Clarke, is in the Auckland Museum. Mr. Clarke states:—

"I discovered this beautiful moth in January, 1923, when on a collecting trip with Mr. S. Lindsay. It is apparently local at 4,000 feet on Flat Top Mountain, among native grasses. On a subsequent visit in 1929 I took it plentifully, all specimens being caught at the same place. Only one female was taken, and is semi-apterous."*

Proteodes profunda (page 293.) The length of the full-grown larva is slightly over $\frac{1}{2}$ inch (14 mm.). Moderately stout, tapering considerably posteriorly; head warm brown, paler in front, two darker spots on each hemisphere above; segment 2 darker with white dorsal line. Rest of body dull purplish, a fine darker dorsal line, with cloudy white edging on each side. Underside pale pinkish-ochreous; warts conspicuous shining dark blackish-brown. Foodplant beech (*Nothofagus*.)

The pupa is enclosed in a rolled leaf joined with silk.

This species also occurs in the Te Anau-Manapouri District.

*Trans. N.Z. Inst., lxiii., 128.

Lathicrossa leucocentra (page 293.) Also from Hope Arm (Manapouri), and Clinton and Arthur Rivers.

Cryptolechia semnodes (page 294.) Also from Top-house (Nelson).

Cryptolechia apocrypta (page 294.) Also from Mount Cook and Te Anau-Manapouri District.

Cryptolechia liochroa (page 294.) Also from Whangarei, Ruapehu, Raurimu, Tophouse, Puhi Puhi, Milford Track and Longwood Range.

Cryptolechia rhodobapta (page 294. Plate LVIII., fig. 18 larva.)

The length of the full-grown larva is nearly $\frac{1}{2}$ inch. Sub-cylindrical, considerably flattened, slightly tapering posteriorly, segmental divisions very strongly marked; a series of prominent lateral warts emitting long bristles, other warts much smaller emitting shorter bristles. Head large, ochreous-brown mottled with darker brown. Segment 2 reddish-ochreous, greenish posteriorly with anterior edge white. Rest of larva red with broad very faint dusky green dorsal line; an irregular broken black lateral line; numerous faint minute whitish dots on dorsal parts of larva; terminal segment reddish-ochreous highly polished.

This larva is of active habit, feeding between joined leaves of *Phyllocladus alpinus*, where it is transformed into a pupa. Of larvae taken in January, some emerged as moths in February, March and April, whilst others remained in the pupa state during the winter, and did not emerge until the following September.

This species occurs commonly in the North Island at Whangarei, and at Waimarino 2,800 feet, and in the South Island at Arthur's Pass at about 3,000 feet. It is characteristic of subalpine localities where its foodplant is often very abundant. When at rest this insect very closely resembles a dead leaf of *Phyllocladus alpinus*.

Cryptolechia compsotya (page 294.) Also from Kaikoura, Price's Bush, Claverley (Conway River), and Hope Arm (Manapouri).

CRYPTOLECHIA LINDSAYAE.

(*Cryptolechia lindsayae*, Philp., Records Canterbury Museum, III., 3, 182.)

(Plate LVIII., fig. 16 ♂.)

This species was discovered by Mrs. J. Lindsay, at Blackmillar, Kaikoura.

The expansion of the wings is $\frac{3}{4}$ inch (19 mm.). *The fore-wings are pale dull greenish-ochreous, densely speckled with dusky grey, and with darker grey markings; stigmata rather large, but ill-defined; a series of six longitudinal dark bars on costa, with narrow greenish-ochreous interspaces; veins on outer third of wing faintly marked in darker grey; a distinct dark grey terminal line; cilia dull ochreous, mixed with grey. The hind-wings and cilia are dark ochreous-grey.*

Differs from *Cryptolechia compsotya* in the slightly narrower wings; greenish tinge of fore-wings; less distinct markings on veins, and darker hind-wings.

The perfect insect appears in December.

Described and figured from the type specimen kindly lent to me by Professor Speight.

EUTORNA INORNATA.

(*Eutorna inornata*, Philp., Trans. N.Z. Inst., lviii., 88.)

(Plate LIX., fig. 19 ♀.)

This very obscurely-marked species was discovered, by Mr. Philpott, at Seaward Moss, near Invercargill. It has also been found at Bottle Lake, Woodend Beach, Brooklands Beach and Waiuku (Canterbury).

The expansion of the wings is 9-16 inch (12-14 mm.). *The fore-wings, which have veins 2 and 3 short-stalked, are dull ochreous faintly speckled with darker; there are blackish dots on the fold and in the disc at $\frac{2}{3}$. The hind-wings are grey. The cilia of all the wings are ochreous.*

The perfect insect appears from November till March.

Described and figured from a specimen, in poor condition, submitted by Mr. Philpott.

Eutorna caryochroa (page 295.) Also from Mount Alexander (Kaikouras), Mount Cook, and Te Anau-Manapouri District.

Eutorna symmorpha (page 295.) Also from Waimarino and Hope Arm (Manapouri).

Sub-family XYLORYCTIDES. ≈ 20

Scieropepla typhicola (page 295. Plate LVIII., fig. 29 larva.) The egg is oval, much flattened, opalescent, slightly prismatic-tinged; without visible sculpture ($\times 20$); length about 1-30th inch, being very large for size of moth. It is laid in clusters of two or three.

The full-grown larva is about $\frac{1}{2}$ inch in length, rather stout, tapering most towards posterior end; segments well marked; the head is ochreous, striped with dark ochreous-brown; general colour of body very pale brownish-ochreous; a yellowish horny plate on segment 2; a fine brown dorsal line; a broad, somewhat suffused, pale brown, subdorsal line; a very irregular blotched lateral line; spiracles and tubercles very indistinct; a cluster of sunken blackish-brown dots on terminal segment; a few very fine isolated hairs, most numerous towards posterior extremity of larva.

As previously stated, this larva feeds in the seed-heads of the bullrush causing the down to hang out in masses. It joins down and seeds together with silk and feeds therein; it is fairly active when disturbed.

The pupa is concealed in a loose cocoon amongst the down.

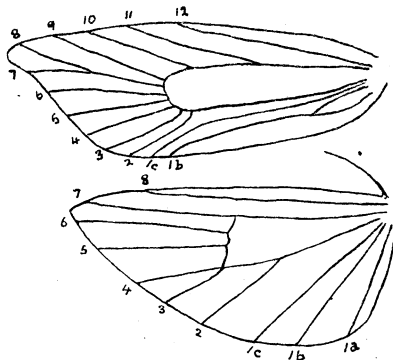
The moth is very reluctant to fly and keeps amongst the fluffy masses to which the seedheads are converted. This probably accounts for the fact that it is practically never seen at large.

This insect also occurs at Kaeo, Paekakariki, and Kaituna, near Wellington, and Lake Ellesmere (Canterbury).

Genus.—DONACOSTOLA, Meyr. ≈ 20

Head with appressed scales, sidetufts loosely raised; ocelli posterior; tongue developed. Antennae $\frac{3}{4}$, ♂ dentate, shortly ciliated ($\frac{1}{2}$), scape rather long and stout, without pecten. Labial palpi very long, curved, ascending, second joint much exceeding base of antennae, with appressed scales, terminal joint shorter than second, slender, acute. Maxillary palpi rudimentary. Posterior tibiae with scales somewhat rough above. Fore-wings 1b furcate, 2 from near angle, curved, 7 and 8 stalked, 7 to termen,

11 from middle. Hind-wings considerably over 1, trapezoidal-ovate, termen sinuate, cilia $\frac{1}{4}$ - $\frac{1}{2}$; 2 from $\frac{3}{4}$, 3 and 4 connate, 5 parallel to 4, 5-7 rather approximated towards base.



Neuration of *Donacostola notabilis*.

Type *notabilis*, Philp. Mr. Philpott provisionally referred this species to the genus *Euprionocera* Turner, which I have not seen, but Dr. Turner has regarded his genus as an Oecophorid. The present species is not Oecophorid by reason of the hind-wings; I refer it to the group of *Odites* in the *Xyloryctidae*, of which it is perhaps an early form. Its place in the New Zealand fauna is between *Scieropepla* and *Agriophara* (Meyrick).

Represented by a single species only.

DONACOSTOLA NOTABILIS.

(*Euprionocera* ? *notabilis*, Philp., Trans. N.Z. Inst., lviii., 368;
Donacostola notabilis, Meyr., ib., lxiii., 97.)

(Plate LVIII., fig. 15 ♀.)

This large and conspicuous species has occurred in the North Island at Whangarei, and on the lower slopes of Mount Ruapehu, at about 4,000 feet above the sea-level. In the South Island it has been taken at Flora River, at an elevation of about 3,000 feet and on Flat Top Mountain (Manapouri).

The expansion of the wings is almost $1\frac{1}{2}$ inches (34-37 mm.). The fore-wings are long and narrow, with the termen strongly falcate; very pale brownish-ochreous, darker on an obscure streak from base to apex; a cloudy blackish streak from apex to second discal spot; another fainter patch above tornus; first discal spot round, pale reddish-brown. The hind-wings and all the cilia are pale whitish-ochreous.

The perfect insect appears from January till March.

Described and figured from a specimen kindly supplied by Mr. Philpott, the example taken on Mount Ruapehu being in very poor condition.

Agriophara coricopa (page 296.) Also from Waiho Gorge and Milford Track.

Sub-family COPROMORPHIDES.

Phycomorpha metachrysa (page 296.) Also from Whangarei, Lake Manapouri and Eglinton River.

Isonomeutis amauropa (page 297.) Also from Claverley (Conway River), (South Island).

Isonomeutis restincta (page 297.) Also from Whangarei, and Wilton's Bush (Wellington). The male is now figured on Plate LIX., fig. 24,

Sub-family CARPOSINIDES* (page 215.)

Now transferred to the *Tineidae*, following the

Copromorphides, page 297.†

Carposina contactella (page 215.) Also from Puhī Puhī, Wairau River, Waitati, Dunedin and Te Anau.

Carposina thalamota (page 216.) Also from Blackmillar (Kaikoura) and Te Anau.

Carposina adreptella (page 216.) Also from Whangarei, Puhī Puhī and Te Anau.

Carposina iophaea (page 216.) Also from Whangarei, Waimarino, Puhī Puhī, Price's Bush, Peel Forest and Waiho Gorge.

Carposina cryodana (page 217.) Also from Takitimo Mountains, Te Anau and Bluff.

Carposina exochana (page 217.) Also from Te Anau.

Carposina charaxias (page 217.) Also from Whangarei.

Carposina eriphylla (page 217.) Also from Whangarei.

Carposina gonosemana (page 217.) Also from Whangarei, Puhī Puhī, Mount Cook and Te Anau. *C. epomiana* is now restored to specific rank, mainly on the ground of genitalic distinctions.

Carposina morbida (page 218.) Also from Wellington (North Island), Mount Hutt, Arthur's Pass and Waiho Gorge.

CARPOSINA LITERATA.

(*Carposina literata*, Philp., Records of Auckland Institute Museum, I., 1, 11.)

(Plate LIX., fig. 22 ♂.)

This species was discovered by Mr. C. E. Clarke at Defiance Hut (Franz Josef Glacier).

The expansion of the wings is about $\frac{3}{4}$ inch (22-24 mm.) Head and thorax ochreous-whitish. Palpi ochreous-whitish, mixed with brown except towards base, ciliations in ♂ 5. Abdomen white. Legs whitish-ochreous, anterior pair fuscous. Fore-wings with costa strongly arched, apex rather sharp, termen almost straight, oblique; creamy white; markings blackish fuscous margined with rather bright ochreous and sometimes mixed with white; an inwardly oblique series of spots (3) close to base; a dot below costa before $\frac{1}{4}$ and one beneath it well below fold; a third in disc beyond forms a conspicuous triangle. A rather large spot below costa almost at $\frac{1}{2}$, from which proceeds a suffused streak half-way to apex including other dots and a large white-ringed spot near to its apex; a few brownish dots on costa above this streak; a subterminal series of spots most prominent in disc; a series of dots round termen; cilia ochreous-whitish mixed with brownish. Hind-wings shining white; cilia white.

Near *C. maculosa*, Philp., but the discal dark streak is a good distinguishing character.

The perfect insect appears in January. The above is taken from Mr. Philpott's original description. The species is unquestionably very close to the well-known *C. exochana* which has the dark discal streak referred to above. In *C. exochana*, however, the termen is slightly sinuate below

*For account of Genitalia see Trans. N.Z. Inst. lix., 476.

†Meyrick, "Revised Handbook of British Lepidoptera," 599,

apex and, in most specimens, a shading of brownish-ochreous is visible between the veins.

Described and figured from a specimen in the Auckland Museum.

CARPOSINA CANESCENS.

(*Carposina canescens*, Philp., Trans. N.Z. Inst., lxi., 437.)

(Plate LX., fig. 4 ♂.)

This species was discovered by Mr. Philpott, at Governor's Bush, Mount Cook. It has also been found at the confluence of the Bealey and Waimakariri Rivers.

The expansion of the wings is about $\frac{5}{8}$ inch (15-17 mm.). The fore-wings are pale grey *very faintly tinged with green*; a black patch on costa at base reaching half across wing; about six equidistant black marks on costa; an oblique bar of raised yellow scales beneath first costal spot; four ring-like yellowish spots in disc, and a cloudy, shading between them; an obscure subterminal band, and a terminal series of faint dots; the cilia are grey. The hind-wings are shining grey, *in male with ochreous area along costa from base to $\frac{1}{2}$* ; cilia ochreous-white.

There is slight variation in the width and intensity of the black shading around the yellow markings in disc, the yellow being more or less displaced by black.

The perfect insect appears in January and February.

CARPOSINA IGNOBILIS.

(*Carposina ignobilis*, Philp., Trans. N.Z. Inst., lxi., 438.)

This extremely obscure insect was found by Mr. Philpott in Governor's Bush, Mount Cook.

The expansion of the wings is $\frac{5}{8}$ inch (16 mm.). Antennae ochreous-grey spotted with blackish-brown; ciliations in ♂ 3. Fore-wings narrow, hardly dilated posteriorly, costa rather strongly arched, apex round-pointed, termen very oblique; ochreous-grey densely irrorated with blackish, basal patch indicated by blackish scales, more prominently below fold; an oblique blackish scale tuft crossing fold at about $\frac{1}{4}$, suffusedly margined inwardly, with a darker shade which extends right across wing; some very obscure dark spots on apical $\frac{2}{3}$ of costa; an obscure blackish spot in disc at $\frac{2}{3}$; cilia densely speckled with blackish-brown and whitish. Hind-wings shining grey; cilia whitish-ochreous.

An obscure species, perhaps related to *C. canescens*, but lacking the ochreous patch on costa of hind-wing and having quite different genitalic characters.

The perfect insect was captured in February.

The above is taken from Mr. Philpott's original description.

Described from the unique specimen in the Canterbury Museum which is in poor condition.

Genus.—PARAMORPHA, Meyr.

Antennae in male strongly ciliated. Labial palpi in both sexes very long, porrect. Fore-wings with vein 7 separate, to termen. Hind-wings without cubital pecten; 3 and 4 stalked, 6 absent.

Represented in New Zealand by one species.

PARAMORPHA MARGINATA.

(*Carposina marginata*, Philp., Trans. N.Z. Inst., lxii., 33;

Paramorpha heptacentra, Meyr., ib. 96.)

(Plate LIX., fig. 23 ♂.)

This very distinctly-marked species was discovered by Mr. C. E. Clarke, at Okoroire. A second specimen was taken by Commander Patterson at Whangarei.

The expansion of the wings is about 7-16 inch (11-12 mm.). The fore-wings are white, with scattered black specks, except near costa; costal edge yellow; a black slightly raised dot beneath fold at $\frac{1}{3}$, two towards costa at $\frac{1}{3}$ and before middle, one in disc between these, two at angles of cell, and one at dorsal end of fold; a terminal series of minute blackish dots; cilia whitish. The hind-wings and cilia are pale ochreous-white.

The above description and the figure were drawn up from the specimen taken by Commander Patterson. I have little doubt, however, that Mr. Philpott's description, which has priority, refers to the same species.

Allied to *P. aquilana*, Meyr.; there are several other Australian species of *Paramorpha*, but the genus is new to New Zealand.

The perfect insect appears in December and January. It should be specially looked for in the Northern parts of the North Island. It is apparently a very rare insect.

Genus.—GLAPHYRARCHA, Meyr.

Head smooth; ocelli posterior; tongue well-developed. Antennae $\frac{3}{4}$, filiform, scape without pecten. Labial palpi very long, porrect, second joint somewhat oblique, much thickened with dense scales expanded roughly to apex, terminal joint as long as second, equally expanded with dense rough scales throughout, obtuse. Maxillary palpi absent. Legs rather long, fore tibiae short, half tarsi, hind tibiae rough-scaled above. Ovipositor short, slender exposed. Fore-wings surface without scale tufts, vein 2 from angle, 2 and 3 nearly approximated towards base, 7 to apex, 11 from middle. Hind-wings $1\frac{1}{4}$, ovate, cilia $\frac{1}{2}$; cubital pecten strongly developed; vein 2 from middle, 3 and 4 connate from angle, 5 and 6 absent, 7 from angle to apex, 8 very closely approximated to margin of cell to about $\frac{1}{4}$.

Differs from *Carposina* by absence of scale tufts, thickened palpi, and relatively gigantic size.

Represented by a single species only.

GLAPHYRARCHA EUTHREPTA.

(*Glaphyrarcha euthrepta*, Meyr., Trans. Roy. Soc. N.Z., lxvii., 429.)

(Plate LXI., fig. 19 ♀.)

A single specimen of this very remarkable species was captured by Mr. R. Scott at Arthur's Pass. It was attracted into his house by the light.

The expansion of the wings is nearly $1\frac{1}{4}$ inches (43 mm.). The fore-wings are very elongate-triangular with the apex obtuse and the termen rather obliquely rounded; brownish-ochreous, some scattered extremely minute blackish-brown specks; a short blackish speckled streak along base of costa; a small dark blackish-brown dot in disc at $\frac{1}{3}$ and one at end of cell; two or three indistinct dots towards termen in middle and traces of a terminal series of similar dots; cilia dusky brownish-ochreous. Hind-wings and cilia grey-whitish.

The perfect insect appears early in November.

Described and figured from the unique specimen in the Canterbury Museum.

Sub-family HELIODINIDES.

Genus ZAPYRASTRA, Meyr. (page 302.) This genus is better placed in the Heliodinides. (Meyrick).

Calicotis crucifera (page 297.) Also from Pohangina.

Vanicela disjunctella (page 298.) Also from Puhī Puhī, Blackmillar (Kaikoura), and Claverley (Conway River).

Stathmopoda caminora (page 298.) Also from Whangarei.

Stathmopoda aristodoxa (page 298.) Also from Pohangina.

Stathmopoda phlegyra (page 299.) Also from Clarence Bridge, Puhī Puhī, Dunedin, and Hope Arm (Manapouri).

Stathmopoda campylocha (page 299.) The figure now given on Plate LX., fig. 5, was taken from a single specimen captured in the Pohangina Forest Reserve, on February 2nd, 1932. It is apparently an extremely rare insect, but easily recognised by the special characters set out in the original description.

Stathmopoda skelloni (page 299.) Also from Whangarei and Waiho Gorge.

Stathmopoda coracodes (page 299.) This very interesting species often occurs freely amongst shrubs infested with the black fungus (*Antennaria*) amongst which its coloration is highly protective. Also from Tophouse, Mount Grey and Ashley Gorge.

Stathmopoda mysteriastis (page 300.) Also from Whangarei, Pohangina, Wellington, Clarence Bridge, Picton, Governor's Bay and Milford Track.

Stathmopoda plumbiflua (page 300.) Also from Paradise (Lake Wakatipu).

Stathmopoda aposema (page 300.) Also from Clarence Bridge, Puhī Puhī (amongst *Edwardsia microphylla*), Governor's Bay, Alford Forest and Takitimo Mountains.

STATHMOPODA ALBIMACULATA.

(*Stathmopoda albimaculata*, Philp., Trans. N.Z. Inst., lxii., 33.)
(Plate LX., fig. 6 ♀.)

This very distinctly-marked species was discovered by Mr. C. E. Clarke at Woodside, Taieri, near Dunedin.

The expansion of the wings is slightly under $\frac{5}{8}$ inch (15 mm.). The legs are dull brown, with the whorls of spines on posterior pair white. The fore-wings are dull greyish-brown, densely sprinkled with darker brown scales, especially on fold and in disc near apex; a large white spot below fold and a similar spot near apex. The hind-wings and all the cilia are greyish-brown.

The perfect insect appears in December.

Described and figured from the unique specimen in the Auckland Museum.

STATHMOPODA ENDOTHERMA.

(*Stathmopoda endotherma*, Meyr., Records of Canterbury Museum, III., 368.)
(Plate LX., fig. 7 ♀.)

This very distinct species was discovered by Mr S. Lindsay at Little River (near Christchurch).

The expansion of the wings is slightly over $\frac{1}{2}$ inch (13-14 mm.). Head and palpi brassy-whitish-ochreous. Thorax pale brassy-orange-ochreous. The fore-wings are rather narrow, long-pointed; dark bronze grey; an orange basal mark from costa to fold; dorsal area as far as fold rusty-orange, slightly tinged with grey near base; an obscure suffused rusty-red streak in disc from $\frac{1}{2}$ to beyond middle; cilia light bronze-grey. Hind-wings and cilia brownish-grey.

The perfect insect appears in January.

Described and figured from specimen kindly lent to me by Mr. Lindsay.

Thylacosceles radians (page 301.) Also from Knife and Steel (Fiord County).

Sub-family GLYPHIPTERYGIDES.*

Coridomorpha stella (page 305.) The reference to Raurimu was based on an erroneous identification.

Hierodoris frigida (page 305.) Also from Upper Hutt (Wellington.)

HIERODORIS EREMITA.

(*Hierodoris eremita*, Philp., Trans. N.Z. Inst., lxi., 438.)
(Plate LX., fig. 10 ♀.)

This interesting species was discovered by Mr. Philpott near the Ball Hut in the Mount Cook district. It also occurred in the Hooker Valley.

The expansion of the wings is slightly under 1 inch (22-24 mm.). The fore-wings are rounded oblong, greyish-silvery-white, darker towards the base, without distinct markings. The hind-wings are whitish-ochreous, heavily clouded with blackish-brown on apical half. The cilia of all the wings are white. The male is unknown.

The perfect insect appears in December.

The resemblance to a female *Gelophaula* is very evident and requires explanation.

Helioctibes callispora (page 306.) Also from Takitimo Mountains one only.

Helioctibes electrica (page 306.) Also from Mount Whakaari (Kaikouras), Harewood, Governor's Bay, Waimakariri River, Mount Cook, Dunedin, and Hope Arm (Manapouri).

Helioctibes atychioides (page 306.) Mr. Meyrick, who has taken at Whangarei, the form described by Philpott as *Helioctibes gregalis* (Trans. N.Z. Inst., lviii., 369), has kindly informed me that he is quite satisfied it is identical with *H. atychioides*. Faint indications of the pale markings are sometimes perceptible, and the larval habits are, as admitted, identical.

Another variety of *H. atychioides* with the fore-wings more or less dull orange-brown is attached to the rimu (*Dacrydium cupressinum*), and the form described by Philpott as *H. barbarica* (Records of Auckland Institute Museum I., 1, 12) is referable to this variety. It has no connection with *H. callispora* which Mr. Philpott had possibly not seen.

A further variety of *H. atychioides* with the pale markings of the fore-wings much suffused, and the base of the

*For account of Genitalia see Trans. N.Z. Inst., lviii., 337.

hind-wings clouded with white, is common amongst tauhinu (*Cassinia leptophylla*) on the coastal hills around Wellington.

Heliostibes illita (page 307.) Also from Norsewood, Pohangina, Puhī Puhī, Governor's Bay, Hope Arm (Manapouri) and Milford Track.

Simaethis exocha (page 307.) Also from McKinnon Pass.

Simaethis combinatana (page 307.) Also from Whangarei, Dean's Bush, Governor's Bay, Takitimo Mountains and Te Anau.

Simaethis colpota (page 308.) Also from Claverley (Conway River), Arthur's Pass, Hope Arm (Manapouri) and Eglinton Valley.

Simaethis symbolaea (page 308.) Also from Mount Cook.

Simaethis ministra (page 308.) Also from Rona Bay (Wellington), Picton and Arthur's Pass.

Simaethis marmarea (page 309.) Also from Mount Whakaari (Kaikouras).

Simaethis analoga (page 309.) Also from Mount Egmont.

Simaethis microlitha (page 309.) Also from Waimarino (North Island), Clarence Bridge, Mount Arthur, Mount Grey, Mount Cook and Takitimo Mountains.

Simaethis antigrapha (page 309.) Also from Mount Grey and Milford Track.

Simaethis albifasciata (page 309.) Also from Jack's Pass (Hanmer) and Flat Top Mountain (Manapouri).

Simaethis barbiger (page 310.) Also from Mount Isobel (Hanmer), Mount Peel (Canterbury), Hope Arm, Flat Top Mountain, and McKinnon Pass.

SIMAETHIS INSPOLIATA.

(*Simaethis inspoliata*, Philp., Records of Auckland Institute Museum, I., 1, 12.)
(Plate LX., fig. 18 ♂.)

This very striking little species was discovered by Mr. C. E. Clarke on Flat Top Mountain, Hunter Mountains, at an elevation of about 4,000 feet.

The expansion of the wings is about $\frac{3}{8}$ inch (10 mm.). The antennae are ringed with white; ciliations in male $3\frac{1}{2}$. The fore-wings are brownish-grey, with the principal markings speckled white; a moderate basal patch; an irregular transverse band before middle, and a curved band beyond middle ending at tornus; a large black blotch on dorsum before tornus containing three bluish-silvery-metallic spots; a series of similar metallic spots near upper half of termen. The hind-wings are bronzy-brownish-grey, with an irregular subterminal white band from tornus to beyond middle. All the cilia are brownish-grey, more or less tipped with white.

The perfect insect appears in December.

Described and figured from the unique specimen in the Auckland Museum.

SIMAETHIS FASCIATA.

(*Simaethis fasciata*, Philp., Records of Auckland Institute Museum, I., 1, 13.)
(Plate LX., fig. 17 ♀.)

This very distinct species was discovered by Mr. C. E. Clarke at Arthur's Pass.

The expansion of the wings is slightly under $\frac{1}{2}$ inch (10-11 mm.). The antennae are black ringed with white, ciliations in male 2. The fore-wings are bronzy-brownish-grey speckled with white; a conspicuous median transverse band of clear ground colour, with a strong rounded projection towards termen. The hind-wings are brownish-grey, with a short oblique white band from near tornus to near middle: all the cilia are bronzy-brown with whitish sub-basal line.

The perfect insect appears in January.

Described and figured from specimen in the Auckland Museum.

SIMAETHIS TRISTIS.

(*Simaethis tristis*, Philp., Records of Auckland Institute Museum, I., 1, 12.)
(Plate LX., fig. 16 ♂.)

This species was discovered by Mr. Philpott on the slopes of Mount Ruapehu.

The expansion of the wings is nearly $\frac{1}{2}$ inch (10-11 mm.). Head and thorax dark brown sprinkled with white. Palpi white annulated with black. Antennae black annulated with white, ciliations in ♂ $3\frac{1}{2}$. Abdomen dark brown, segmental divisions whitish. Legs dark brown mixed with white. Fore-wings with costa moderately arched, apex rounded, termen hardly rounded, oblique; deep blackish fuscous densely sprinkled with bluish white scales which tend to form fasciae at base, $\frac{1}{3}$ and $\frac{2}{3}$; a short streak of whitish scales along termen above tornus; usually a rather conspicuous white spot on costa at $\frac{2}{3}$; cilia dark brown, tipped with white at tornus and beneath apex. Hind-wings dark purplish-fuscous; a very obscure whitish fascia from tornus to about middle of wing, sometimes absent; cilia brown, more or less mixed with white and with a broad purplish-fuscous basal band.

Approaching *S. albifasciata*, Philp., but without the characteristic whitish sub-terminal shade of that species.

The perfect insect appears in January.

Described and figured from the type specimen in the Auckland Museum. The above is taken from Mr. Philpott's original description.

Choreutis bjerkandrella (page 310.) Also from Horse-shoe Lake, Price's Bush and Takitimo Mountains.

Pantosperma holochalca (page 311.) Also from Kaeo (North Auckland.)

Glyphipteryx cionophora (page 311.) Also from Ben Lomond, Takitimo Mountains and Oreti River.

Glyphipteryx aenea (page 311.) Also from Flat Top Mountain (Manapouri).

Glyphipteryx rugata (page 312.) Also from Lumsden.

Glyphipteryx ataracta (page 312.) Further specimens taken on Mount Arthur at about 4,500 feet.

GLYPHIPTERYX NECOPINA.

(*Glyphipteryx necopina*, Philp., Trans. N.Z. Inst., lviii., 88.)
(Plate LX., fig. 20 ♀.)

This species was discovered by Mr. Philpott at Golden Downs and on Gordon's Nob near Nelson.

The expansion of the wings is $\frac{1}{2}$ inch (11-15 mm.). Very like *Glyphipteryx achlyoessa* (page 312), but differing in its slightly smaller size; *smaller palpal tuft*; and fewer and much fainter black streaks in disc; *there is also a distinctive black mark, or marks, above the tornus*, and the discal and terminal areas are, in certain lights, strongly suffused with pale brownish-ochreous.

The perfect insect appears in January. It was common amongst the rough herbage on marshy ground in the valley, and on the dry scanty vegetation of the mountain at 3,000 feet.

Described and figured from a specimen kindly supplied by Mr. Philpott.

Glyphipteryx bactrias (page 312.) Mr. S. Lindsay captured a series of this local species, flying by day, among sedges (*Carex* sp.), at an altitude of approximately 1,000 feet, on Mt. Grey, North Canterbury, in November. Previously this insect had been recorded only from coastal marshes at Invercargill, and Bottle Lake, near Christchurch. (Records of Canterbury Museum, iv., 347.) It is also found at Dunedin, on the Takitimo Mountains and at Bluff.

Glyphipteryx aulogramma (page 312.) Also from Bottle Lake (Christchurch) and Mararoa River.

Glyphipteryx transversella (page 313.) Also from Whangarei, Hope Arm (Manapouri) and Milford Track.

Glyphipteryx codonias (page 313.) Also from Top-house, Puhī Puhī, Mount Cook and Paradise.

Glyphipteryx oxymachaera (page 313.) Generally distributed throughout the country.

Glyphipteryx leptosema (page 314.) Also from Whangarei, Mount Cook, and Milford Track.

Glyphipteryx brachydelta (page 315.) Also from other localities near Wellington.

Glyphipteryx asteronota (page 315.) Also from Clarence Bridge.

Glyphipteryx dichorda (page 315. Plate LX., fig. 19 ♂.) The figure of this species now given was taken from a specimen the identification of which is assured. The essential distinctions, tabulated in the original description, under headings 1-4, have been verified, but the statement that the species more closely resembles the paler varieties of *Glyphipteryx asteronota* is not correct.

This insect occurs sparingly in Wilton's Bush, near Wellington, during the second week in November. Specimens may be obtained by sweeping *Libertia*, then usually in flower. The larva probably feeds in the stems, or seed vessels, of the *Libertia*. Other localities are Mount Cook, and Hope Arm (Manapouri).

Glyphipteryx acrothecta (page 316.) Refigured on Plate LX., fig. 21, from a fine male specimen kindly supplied by Mr. S. Lindsay. Also occurs at Jack's Pass (Hammer) and Ashley Gorge.

Glyphipteryx nephoptera (page 316.) Also from Kaituna (Marlborough).

Glyphipteryx zelota (page 316.) Also from Taihape, Puhī Puhī, Mount Cook and McKinnon Pass.

GLYPHIPTERYX SIMILIS.

(*Glyphipteryx similis*, Philp., Trans. N.Z. Inst., lviii., 369.)

(Plate LX., fig. 22 ♂.)

This species was first taken resting on the snow near the top of Mount Peel, Nelson, on February 5th, 1898, at an elevation of about 5,500 feet. Other specimens have been taken in the same neighbourhood since that time, at rather lower elevations.

The expansion of the wings is about $\frac{1}{2}$ inch (12-13 mm.). Extremely similar to *Glyphipteryx zelota* but generally speaking a smaller and paler insect, with distinctly narrower wings. Formerly regarded as the southern, or alpine form, of *G. zelota*, but apparently entitled to specific rank.

The perfect insect appears from January till March, and may be looked for on mountains between 4,000 and 5,000 feet.

Glyphipteryx acronoma (page 316.) Also from Gollan's Valley (Wellington), Mararoa River and Lake Districts.

Glyphipteryx erastis (page 317.) Also from Mount Alexander (Kaikouras) and Mount Cook.

Glyphipteryx triselena (page 317.) Also from Te Anau-Manapouri District.

Charixena iridoxa (page 317.) Also from Ruahine Mountains (24th November, E. S. West), and Arthur's Pass.

Sub-family ELACHISTIDES.

Elachista archaeonoma (page 319.) Common in the Te Anau-Manapouri District.

Elachista ombrodoxa (page 319.) Also from Puhī Puhī, Mount Cook and Te Anau-Manapouri District.

ELACHISTA SAGITTIFERA.

(*Elachista sagittifera*, Philp., Trans. N.Z. Inst., lviii., 84.)

(Plate LX., fig. 1 ♂.)

This species was discovered by Mr. S. Lindsay at Arthur's Pass.

The expansion of the wings is $\frac{7}{16}$ inch (11 $\frac{1}{2}$ mm.). The fore-wings, which have the apex acutely pointed and the termen very oblique, are *white with greyish-ochreous markings*; a rather cloudy streak along costa, broadest near the base; a finer line along fold near base; *another fine line in disc from about $\frac{1}{4}$ to apex where it terminates in a black dot*; a moderately fine line along dorsum to near end of fold; the cilia are brownish-ochreous with a black line around apex. The hind-wings are brownish-grey; the cilia are brownish-ochreous.

The perfect insect appears in February.

Described and figured from a specimen submitted by Mr. Philpott.

ELACHISTA NAPAEA.

(*Elachista napaea*, Philp., Trans. N.Z. Inst., lxi., 438.)

(Plate LX., fig. 24 ♂.)

This elegant little species was discovered by Mr. Philpott at Governor's Bush, Mount Cook.

The expansion of the wings is $\frac{3}{8}$ inch (10 mm.). The fore-wings are narrow, slightly dilated posteriorly; whitish; very densely speckled with black scales, except near termen and end of fold; *a rather bright ochreous streak above fold*; cilia ochreous, sprinkled with black scales around apex. The hind-wings are brownish-ochreous with ochreous cilia.

Slightly larger than *E. ombrodoca* to which it appears closely allied.

The perfect insect appears in December.

ELACHISTA STELLATA.

(*Elachista stellata*, Philp., Trans. N.Z. Inst., lxii., 31.)

(Plate LX., fig. 23 ♂.)

This beautiful little insect was discovered by Mr. C. E. Clarke at Pembroke.

The expansion of the wings is slightly over $\frac{1}{4}$ inch ($7\frac{1}{2}$ mm.). The head and body are dark bronzy-brown. The fore-wings are iridescent, with bronzy-brown scales predominant, darker towards apex; a large snow-white spot on costa immediately before apex; cilia brownish-grey, darker around apex. Hind-wings grey, cilia brownish-grey.

The perfect insect appears in December.

Described and figured from the unique specimen in the Auckland Museum.

Elachista helonoma (page 319.) Also from Mount Cook.

Elachista thallopheora (page 319.) Also from Gollan's Valley (Wellington), Arthur's Pass and Humboldt Range (Lake Wakatipu.)

Elachista gerasmia (page 319.) Also from Whangarei, Wellington, and Takitimo Mountains.

Elachista ochroleuca (page 320.) Also from Sinclair Head (Cook Strait) and Arthur's Pass.

Sub-family SCYTHRIDES.

Scythris epistrota (page 320. Plate LIII., fig. 17 larva.)

The length of the full-grown larva is about $\frac{1}{4}$ inch. Cylindrical, a little flattened, tapering slightly towards head, and rapidly towards posterior extremity. Head blackish, with whitish streak on side. Segment 2 also blackish margined with white on anterior edge. Rest of body yellowish-green; a broad blackish lateral line, partially margined with white; numerous fine interrupted dorsal and subdorsal blackish lines; posterior segments tinged with ochreous. Underside and prolegs yellowish-green. A few very short fine black bristles.

This larva was very common on native broom (*Carmichaelia*) at Clarence Bridge, near Kaikoura, in November. When mature it spins a very irregular, rather dense, silken cocoon. The perfect insects emerged towards the end of December. This species also occurs on the Takitimo Mountains.

Elachista lacustris, Philp., is a synonym of *S. epistrota*; I have seen Philpott's paratype, and there is no question of its identity. (Meyrick, Records of Canterbury Museum, III., 369.)

SCYTHRIS NIPHOZELA.

(*Scythris niphozela*, Meyr., Records Canterbury Museum, III., 369.)

(Plate LX., fig. 14 ♂.)

This fine species was discovered by Mr. S. Lindsay at Birdling's Flat, Canterbury.

The expansion of the wings is slightly under $\frac{3}{8}$ inch (9.10 mm.). The fore-wings are elongate-lanceolate; dark grey, the terminal area or nearly the whole wing suffused with white; an irregular blackish band from dorsum before middle, not reaching

costa; a suffused blackish mark from tornus, hardly reaching above middle; in whiter examples both these bands may be connected with costa by irregular grey marks; cilia grey, round apex more or less suffused with white. The hind-wings have veins 4 and 5 coincident; bronzy-grey-whitish, apex greyer; in female a thick streak of black suffusion along dorsum from near base to near middle; the cilia are light ochreous-grey.

In *S. epistrota* the hind-wings are grey and similar in both sexes.

The perfect insect appears in December.

SCYTHRIS TRIATMA.

(*Scythris triatma*, Meyr., Trans. Royal Soc. of N.Z., lxx., 304.)

(Plate LX., fig. 2 ♂.)

This species was discovered resting on stones in a restricted spot on the bed of the Puhū Puhū River, near Kaikoura.

The expansion of the wings is slightly over $\frac{3}{8}$ inch (10 mm.). The fore-wings are elongate-lanceolate; dark bluish-slaty-grey; stigmata indicated by hardly perceptible cloudy darker spots only visible in certain lights, plical and first discal transversely placed beyond middle, second discal at $\frac{2}{3}$; obscure spots of grey-whitish suffusion beneath fold at $\frac{1}{3}$ and $\frac{2}{3}$ and towards apex; cilia grey. Hind-wings grey, paler towards base; cilia grey.

The perfect insect appears early in November.

SCYTHRIS NIGRA.

(*Scythris nigra*, Philp., Trans. N.Z. Inst., lxii., 31.)

(Plate LX., fig. 3 ♂.)

Two specimens of this species were discovered by Mr. C. E. Clarke on Mount Maungatua, near Dunedin.

The expansion of the wings is barely $\frac{1}{2}$ inch (12 mm.). The fore-wings are very dark blackish-brown, sparsely sprinkled with white scales; the cilia are dark brown. The hind-wings and cilia are dark brown.

Distinguished from *S. triatma* by its much darker colouration, and complete absence of bluish-slate colour from fore-wings.

The perfect insect appears in December.

Described and figured from a specimen in the Auckland Museum.

Sub-family HYPONOMEUTIDES.

Zelleria copidota (page 320.) Also from Jack's Pass (Hanmer), Arthur's Pass, Mount Cook, and Te Anau-Manapouri District.

ZELLERIA MACULATA.

(*Zelleria maculata*, Philp., Records of Auckland Institute Museum, I., 1, 13.)

(Plate LXI., fig. 27 ♂.)

This species was taken by Mr. C. E. Clarke on Mount Maungatua, Otago.

The expansion of the wings is slightly over $\frac{3}{8}$ inch (17 mm.). The fore-wings are elongate, parallel-sided, with the apex very slightly turned downwards; whitish-grey, very heavily mottled with darker grey, especially towards apex; there are two elongate whitish marks on dorsum beneath fold, with a blackish patch between them; a clear white spot on costa before apex; an oblique brownish-black mark in disc on fold at about $\frac{1}{3}$; cilia pale brownish-ochreous, brownish-black around apex with dull coppery-red patch above apex. The hind-wings and cilia are pale brownish-ochreous. The female is duller with markings less defined.

The perfect insect appears in December and January.

Described and figured from specimens in the Auckland Museum.

Mr. Philpott admits that he has not compared this form with *Zelleria sphenota*, Meyr. Judging, however, from the description of *Z. sphenota* it seems possible that the two forms are identical, in which case the specific name *sphenota* would have priority.

ZELLERIA PORPHYRAULA.

(*Zelleria porphyraula*, Meyr., Trans. N.Z. Inst., lviii., 314.)

(Plate LXI., fig. 26 ♂.)

This very richly-coloured species has occurred at Wilton's Bush and Gollan's Valley near Wellington in the North Island. In the South Island it has occurred at Clarence Bridge.

The expansion of the wings is slightly over $\frac{1}{2}$ inch (13 mm.). The fore-wings are narrow-elliptical, with costa arched before pointed apex; rich orange-brown, with purple markings and white dots; a distinct black bar on dorsum at base; a whitish longitudinal band along dorsum to about $\frac{2}{3}$; a row of black dots on edge of this towards disc; cloudy purplish subdorsal and median streaks; a purplish patch at apex, finely strewn with white scales; a series of indistinct white dots along costa; cilia greyish-white, orange around apex. The head is white margined with orange-yellow around the eyes. The thorax white, margined with orange-yellow, with purple tegulae. The hind-wings, cilia and abdomen are pale grey.

The perfect insect appears in November and April. It seems to be attached to the totara (*Podocarpus totara*.)

Sub-family COLEOPHORIDES.

Head smooth. Tongue developed. Antennae $\frac{2}{3}$, ♂ simple, scape usually with somewhat rough scales or projecting tuft. Labial palpi moderately long, curved, ascending, second joint usually slightly roughened or tufted at apex beneath, terminal shorter, pointed. Maxillary palpi obsolete. Fore-wings with vein 1b furcate, 5 absent, 6 and 7 connate or stalked, 7 to costa, 8 absent. Hind-wings $\frac{2}{3}$ narrow lanceolate; vein 4 usually absent, 6 and 7 connate or stalked.

Includes about 12 genera, all very small except *Coleophora* itself; the most primitive forms are found in South Africa. None of the imagos ever show any transverse markings, and few retain any sign of the stigmata. Usually the antennae are porrected in repose. Larva mining when very young, afterwards inhabiting a portable case; attaching this to the leaf or seed-vessel on which it feeds, it bores into the interior; in leaves a pale blotch is usually produced, with a round hole in one membrane, which is very characteristic and distinctive: generally with 10 prolegs, but in some species of *Coleophora* the pair on segment 10 are lost, apparently through disuse. Pupa with 4 abdominal segments fixed. (Meyrick.)

Genus.—COLEOPHORA, Hübn.

Antennae porrected in repose, often thickened with scales towards base, scape long, with pecten but merged in more or less rough scales or projecting tuft. Second joint of labial palpi more or less rough-scaled or tufted at apex beneath. Posterior tibiae rough-haired. Fore-wings with costa often long-haired beneath;

4 sometimes absent, 6 and 7 connate or stalked. Hind-wings cilia 3-4; transverse vein sometimes partially absent, 4 usually absent.

About 500 species, numerous throughout the Northern Hemisphere and Africa, elsewhere apparently scanty, and almost absent from the Australasian area. Imago with fore-wings very elongate-lanceolate; the species are often extremely similar, and require careful observation; they are also often retired in habit. Pupa normally within the larval case. Larva with prolegs on 10 present (16-legged) or absent (14-legged). (Meyrick.)

Represented in New Zealand by one species artificially introduced.

COLEOPHORA SPISSICORNIS.

(*Coleophora spissicornis*, Haw., Meyr., Revised Handbook British Lepidoptera, 750; *C. fabriciella*, Vill., N.Z. Journal of Science and Technology, ix., 248.)

(Plate LVIII., fig. 21 ♂.)

This very interesting species was first detected in New Zealand, by Mr. F. Tapley, who captured a specimen in the grounds of his residence at Governor's Bay, in November, 1922. In November, 1924, Mr. A. Tonnoir took a specimen in the grounds of the Canterbury Museum, and in the same month of 1926, eleven more specimens were taken by Mr. Tapley, at Governor's Bay. It has also occurred at Whangarei and Price's Valley Bush (Banks Peninsula).

The expansion of the wings is barely $\frac{1}{2}$ inch (12 mm.). The fore-wings, which are very narrow with the apex acute, are highly metallic greenish-bronze, becoming coppery towards the apex. The hind-wings, which are extremely narrow and very acutely pointed, are grey. All the cilia are grey. The antennae have almost the basal half much thickened with dense rough coppery-bronzy scales, the remaining portion being white, ringed with blackish-brown.

The larva inhabits a cylindrical case and feeds on the flower heads of *Trifolium arvense*.

The perfect insect appears in November.

Described and figured from specimens kindly supplied by Mr. S. Lindsay, who was the first to report the insect's occurrence in New Zealand.

Sub-family GRACILARIADES.

Acrocercops cyanospila (page 321.) Also from Price's Bush.

Acrocercops zorionella (page 321.) Also from Clinton River.

Parectopa panacivagans (page 322.) Also from Milford Track.

Parectopa aethalota (page 322.) Also from Clinton River.

Parectopa citharoda (page 322.) Also from Whangarei.

Parectopa aellomacha (page 322.) Also from Hope Arm (Manapouri), South Arm (Lake Te Anau), and Milford Track.

Gracilaria linearis (page 323.) Also from Whangarei, Puhi Puhi and Te Anau-Manapouri District.

Caloptilia

(GRACILARIA) PURPUREA.

(Gracilaria purpurea, Philp., Trans. N.Z. Inst., lviii., 89.)

(Plate LVIII., fig. 6 ♀.)

This bright-looking species was discovered by Mr. Philpott at West Plains near Invercargill.

The expansion of the wings is $\frac{5}{8}$ inch (14-15 mm.). The fore-wings are *golden yellow with strong coppery reflections; there are numerous purple strigulae*, tending to form spots at $\frac{1}{2}$, $\frac{2}{3}$, and $\frac{3}{4}$; the cilia are golden-ochreous around apex, elsewhere brownish-ochreous. The hind-wings are grey, with brownish-ochreous cilia.

Very closely allied to the variable *Gracilaria linearis* of which it may very probably prove to be an extreme form. The absence of the triangular pale ochreous patch, often present in *G. linearis*, seems to be the best distinctive character.

Described and figured from a damaged specimen submitted by Mr. Philpott.

Gracilaria elaeas (page 323.) Also from Waiouru (North Island), Mount Cook and Te Anau-Manapouri District.

Gracilaria selenitis (page 324.) Also from Tophouse (Nelson), and Mount Cook.

Gracilaria chrysitis (page 324.) A rare and very beautiful variety of this gorgeous insect has occurred at Wellington and at Picton. In this variety the orange-red colouring on head, thorax and dorsum of fore-wings is entirely replaced by deep glistening purple, with slight coppery reflections. The tibiae of the anterior legs and the scale tufts on the tibiae of the middle legs are also purple. Additional localities are Whangarei and Peel Forest (Canterbury).

Gracilaria chalcodelta (page 324.) Also from Whangarei and Waimarino.

Sub-family PLUTELLIDES.*

Dolichernis chloroleuca (page 325.) Also from Mount Cook, and Milford Track.

Doxophyrtis hydrocosma (page 325.) Also from Helensville, Paekakariki and Gollan's Valley (Wellington).

Protosynaema steropucha (page 326.) A curious variety of this species has been taken at Wellington with the veins on the fore-wings marked with suffused white lines.

This species also occurs on the Takitimo Mountains and Milford Track.

Protosynaema quaestuosa (page 326.) Also from Waiouru and Milford Track.

PROTOSYNAEMA MATUTINA.

(Protosynaema matutina, Philp., Trans. N.Z. Inst., lix., 489.)

(Plate LX., fig. 15 ♂.)

This species was discovered, by Mr. Philpott, on the Mount Arthur Tableland at an altitude of about 4,500 feet.

The expansion of the wings is slightly over $\frac{3}{8}$ inch (10 mm.). The fore-wings are elongate-oblong, with the termen hardly oblique; *pale purplish-grey, mottled and banded with purplish-black, deep yellowish-brown, and metallic green*; basal fourth suffused with purplish-black; an oblique, black-edged, bar of metallic green from costa at $\frac{1}{3}$ to fold; a very large suffused patch of purplish-black in disc before middle, followed by an irregular deep yellowish-brown band; an irregular metallic green stripe across wing near middle; an interrupted yellowish-brown transverse band beyond middle, preceded by the paler ground colour, and followed by a metallic green stripe; a subterminal band of yellowish-brown, followed by several metallic green marks on termen; four black bars on apical third of costa, with more or less metallic green interspaces; the cilia are yellowish-brown, with black mark near middle of termen, and blackish tornal patch. The hind-wings are pale brown, becoming much darker towards apex and termen; the cilia are brown. The palpi are greyish-white; *the antennae purplish-black, much thickened with scales to near apex, which is ochreous*. The head and thorax are purplish black; the abdomen purplish-brown.

Differs structurally from *Protosynaema steropucha* in the unindented termen of the fore-wing, and from *P. quaestuosa* in the much more extensive thickening of the antennae.

This insect is very difficult to describe and figure satisfactorily as the colours vary greatly in different lights.

The perfect insect appears early in November.

Described and figured from the unique specimen kindly lent to me by Mr. Philpott.

Protosynaema eratopis (page 327.) Also from Ruapehu (North Island), Dun Mountain, Mount Alexander (Kaikouras), Jack's Pass (Hanmer), Mount Grey, Arthur's Pass and near terminal moraine, Franz Josef Glacier.

PROTOSYNAEMA HYMENOPIS.

(Protosynaema hymenopis, Meyr., Trans. Royal Soc. N.Z., lxx., 304.)

(Plate LX., fig. 25 ♀.)

This very handsome species was discovered at Gollan's Valley, near Wellington.

The expansion of the wings is about 5-16th inch (11 mm.). The fore-wings are rather broad, the obtuse apex having a lobe-like appearance; an oblique white basal patch, containing two small grey marks near thorax; a broad yellow-orange, double submedian band with broad white central bar on costa; an hour-glass-shaped white band follows this, broadest on dorsum; rest of wing dull orange-yellow; all the orange-yellow markings have dusky-grey borders; a large black tornal patch, containing several rather small violet-metallic markings; a small yellow patch on the tornus; four thick black bars above tornal patch, the second and fourth broken before middle; apical area yellow, with extreme apex white; a dusky bar with violet metallic reflections divides the apical area from the rest of the wing; the cilia are blackish brown, tipped with orange-yellow. The hind-wings are rather pale brownish-black, finely speckled with darker. Legs deep grey barred with white. Antennae blackish, with cream-coloured basal joint. Head and thorax creamy-grey; tegulae dark greyish-brown. Abdomen very dark greyish-black.

The unique specimen was taken in forest in mid-November.

This species has a very marked resemblance to a typical *Glyphipteryx*.

*For account of Genitalia see Trans. N.Z. Inst. lviii., 317.

Phylacodes cauta (page 327.) Also from Broken River, larva common on sedges (S. Lindsay), Oreti River.

Cadmogenes literata (page 327.) Also from Whangarei.

Orthenches saleuta (page 328.) Also from Waimarino.

ORTHENCHES DICTYARCHA.

(*Orthenches dictyarcha*, Meyr., Trans. N.Z. Inst., lviii., 315.)

(Plate LXI., fig. 29 ♂.)

This large and very vividly marked species was discovered at Arthur's Pass, at an altitude of about 3,000 feet above sea-level.

The expansion of the wings is slightly over $\frac{3}{4}$ inch (19 mm.). The fore-wings are white, clouded with pale reddish-ochreous on dorsal area, with many warm brown markings forming an irregular reticulation; a series of small bars on costa near base; a large irregular basal blotch in disc; another large patch near middle; four somewhat suffused bars on outer $\frac{2}{3}$ of costa; a conspicuous somewhat triangular patch of clear white ground colour near middle of termen; a series of roundish brown patches on dorsum; numerous short brown bars all over wing between veins; cilia brown, with white patches below apex and near tornus. The hind-wings are pale grey with the cilia white. The head and thorax are pale pinkish-brown; the abdomen pale grey, with reddish-ochreous anal tuft.

The perfect insect appears in January and frequents beech forest.

Orthenches chartularia (page 328.) *Orthenches nivalis*, Philp., Trans. N.Z. Inst., LVIII., 89, is a synonym of this variable species. *O. chartularia* also occurs at Arthur's Pass.

Orthenches drosocalca (page 328.) Also from Waimarino, Mount Cook and Te Anau-Manapouri District. One specimen captured in September.

Orthenches porphyritis (page 328.) Also from Mount Cook, Paradise and Te Anau-Manapouri District. Fresh specimens occur around Wellington in September and March, and these almost certainly belong to two distinct broods.

ORTHENCHES SEPTENTRIONALIS.

(*Orthenches septentrionalis*, Philp., Records of Auckland Institute Museum, I., 1, 14.)

(Plate LVII., fig. 21 ♂.)

A single male specimen of this species was found by Mr. C. E. Clarke, at Kauri Gully, near Auckland.

The expansion of the wings is nearly $\frac{5}{8}$ inch (15 mm.). The fore-wings have the costa moderately arched, subsinuate, apex pointed, termen rounded, oblique; white; suffused with purplish, especially below fold; numerous interrupted transverse brown strigulae; a purplish-brown blotch on costa at $\frac{1}{3}$ and a brown suffusion along costa between this and apex; cilia greyish-brown with dark brown basal line. Hind-wings greyish-ochreous, purplish-tinged towards apex; cilia grey, with darker basal line.

The perfect insect appears in January.

Described and figured from the unique specimen in the Auckland Museum. The above is taken from Mr. Philpott's original description.

ORTHENCHES DISPARILIS.

(*Orthenches disparilis*, Philp., Trans. N.Z. Inst., lxii., 34.)

This very obscure species was discovered by Mr. C. E. Clarke at Kauri Gully, near Auckland.

The expansion of the wings is slightly over $\frac{1}{2}$ inch (14 mm.). Head and thorax greyish-brown, tegulae purplish. Palpi grey mixed with brown. Antennae brown annulated with white. Abdomen ochreous-grey. Legs purplish-brown mixed with whitish. Fore-wings with costa moderately arched, apex blunt pointed, termen hardly rounded, oblique; purplish-brown, upper half of wing white, clear basally and becoming progressively more tinged with purplish-brown after $\frac{1}{3}$; extreme edge of costa purplish-brown near base; a triangular projection of brown half into upper portion at $\frac{1}{3}$ and a similar but larger projection at $\frac{2}{3}$; cilia purplish-brown. Hind-wings subtrapezoidal; greyish-white, purplish-tinged towards termen; cilia ochreous white.

Superficially resembling some forms of *O. chartularia*, but the male genitalic characters are of a quite different character.

The perfect insect appears in January.

Described from the unique male specimen in the Auckland Museum. The above is taken from Mr. Philpott's original description.

Orthenches semifasciata (page 329.) Mr. Philpott's *Orthenches similis* seems to be mainly founded on genitalic characters. He, however, states* that the white tornal marking in *O. similis* is prominent and not dilated apically, while in *O. semifasciata* it is represented, if at all, by a broadly triangular indentation from the whitish costal area. He further adds that my figure on Plate XL., fig. 3, represents his *similis*. So far as I can judge from the specimens available, the tornal marking is subject to variation, and I am not prepared to reinstate *similis* to specific rank on this character in the meantime. Also recorded from Table Top (Tararua Range), Mount Cook and Eglington Valley.

Orthenches prasinodes (page 329; Plate LIV., fig. 35 larva.) Length when full-grown about $\frac{1}{2}$ inch (11 mm.). Cylindrical, slightly flattened, moderately stout, but strongly tapering at each end, especially posteriorly; segments deeply excised. Head small, ochreous-green; body grass green with darker dorsal stripe. Two or three days before spinning up the larva develops a rather complicated pattern of crimson markings as follows:—Segments 2, 3 and 4 each with an oval mark on midback; segments 5-11 inclusive with a rather long dull crimson bar on midback, and four shorter, more or less square crimson marks arranged on each side of this; segments 11 and 12 have a triangular dorsal mark; there is a very irregular broken lateral line on the sides of all segments except the head. The anal prolegs are long and conspicuously visible from above.

This larva lives and feeds amongst the open foliage of the *Muehlenbeckia*, and does not fold, or twist, the leaves of its foodplant. It is extremely active when touched, or otherwise annoyed.

*Trans. N.Z. Inst., lxii., 35.

The pupa is enclosed in a rather open meshwork silken cocoon, spun in a crevice. The larva is full-grown about the end of October.

The moths emerged in November.

Orthenches vinitincta (page 329.) Also from Pohangina, Porirua, Wellington, Clarence Bridge, Dean's Bush, Governor's Bay, Dunedin and Clinton River.

Orthenches polita (page 329.) Also from Waimarino (North Island.)

Orthenches chlorocoma (page 329.) When at rest this species stands on fore- and intermediate legs, with wings wrapped around hind-body; the antennae are placed close together, extended forwards in a line with the body, and closely appressed to the object on which the insect is resting. The hind-body, together with wings, is held rigidly upwards at an angle of about 35 degrees. In this position the insect exactly resembles a dead twig of broom. Other localities are: Waimarino, Mount Egmont, Gore Bay and Waiho Gorge.

Orthenches glypharcha (page 330.) Also from Whangarei and Peel Forest (Canterbury).

Orthenches virgata (page 330.) Also from Bulls (Rangitikei); bred from larvae in shoots of *Cupressus macrocarpa* received from Mr. Dalrymple.

Plutella megalynta (page 330.) Also from Arthur's Pass and Mount Burns.

Plutella psammachroa (page 331.) Also from Erua, Waimarino (Central Plateau, North Island), and Jack's Pass (Hanmer).

Circoxena ditrocha (page 331.) Also from Dean's Bush, Riccarton, and S.W. Arm (Te Anau), one only.

Sub-family LYONETIADES.*

Bedellia psamminella (page 332.) Now figured on Plate LIX., fig. 21. Also from Whangarei. Common on *Convolvulus*, Hope Arm (Manapouri).

Opogona omoscopa (page 332; Plate LIV., fig. 30 larva.) The larva of this species feeds on the fallen leaves of the Nikau Palm (*Rhopalostylis sapida*) throughout the autumn and winter months, pupation taking place in the early spring. The larva appears to prefer leaves which are very moist, and in a semi-decayed condition.

The length of the larva is slightly over $\frac{1}{2}$ inch (14 mm.). Cylindrical, moderately slender, slightly tapering towards each end. Head rather small, brown, highly polished. Dorsal plate of segment 2 deep blackish-brown, very highly polished; segments 3 and 4 larger, with large, highly polished, dorsal and lateral plates. Remaining segments becoming slightly larger until segment 11, thence gradually diminishing to extremity. General colour dull yellowish-brown, shading into blackish-brown on dorsal and median areas, except near posterior extremity; a pinkish shading on back of segments 11 and 12; warts conspicuous, blackish, emitting slender, moderately long bristles. Surface of larva highly polished as though wet, the skin itself strongly furrowed and wrinkled.

The pupa is enclosed in a cocoon of silk, frass and other refuse.

The moths emerged early in November. They are extremely secretive, hiding amongst refuse on the ground, where their dull colouring effectively conceals them.

This species seems to be abroad during the whole of the summer. Other localities are:—Nihotapu, Whangarei, Kaitawa, Rona Bay (Wellington), and Nelson.

Opogona comptella (page 333.) Also from Tophouse (Nelson.)

Amphixystis hapsimacha (page 333.) Probably two broods in the season. Fresh specimen taken after middle of March.

Eugennaea laquearia (page 333.) Also from Whangarei and Arthur's Pass (South Island.)

Erechthias acrodina (page 334.) Also from Takitimo Mountains, and Lakes Te Anau and Manapouri.

Erechthias charadrota (page 335.) Also from Stephen's Island, Dunedin and Te Anau-Manapouri District.

Erechthias terminella (page 335.) Also from Whangarei.

Erechthias exospila (page 335.) Additional localities are:—Gollan's Valley and Wilton's Bush near Wellington, and D'Urville Island (South Island). The species frequents the dead leaves of *Astelia* and its coloration resembles that of other species found in the same situation (*Amphixystis hapsimacha*, *Prothinodes grammocosa*, etc.) and is highly protective.

Erechthias hemiclistra (page 335.) Also from Whangarei.

Erechthias fulguritella (page 336.) Also from Wynham and Te Anau-Manapouri District, where common.

Erechthias macrozyga (page 336.) Also from Pohangina and Day's Bay (Wellington).

Hectacma chionodira (page 336.) Also from Whangarei.

Hectacma chasmatias (page 336.) Also from Taihape. This species was very abundant in Wilton's Bush (Wellington) in January, 1936.

Hectacma crypsimima (page 336.) Also from other localities around Wellington.

Dryadula myrrhina (page 337.) This insect is always found under dry, overhanging banks, usually where a tree has been undermined by a slip and roots and rootlets left hanging in the air. Such places are nearly always infested by spiders and their webs, but, nevertheless, this species has an undoubted preference for them. It seems possible that the larva may feed on the spider's webs, or the refuse contained therein. Also from Takitimo Mountains in October.

Dryadula pactolia (page 338.) This species has been found in a house and cellar in Gloucester (City), England, apparently established; July, August. Might perhaps feed as larva on dry refuse of ferns, and be im-

*For account of Genitalia see Trans. N.Z. Inst., lviii., 327.

ported with them (Meyrick).* Four out of five specimens of this insect in my collection were captured in my house at Karori.

Dryadaula castanea (page 338.) Also from Hope Arm (Manapouri).

Eschatotypa derogatella (page 338.) Worn specimens taken in early spring appear to indicate hibernation in the imago state.

Sub-family TINEIDES.

Endopthora omogramma (page 339.) Also from Whangarei, Dunedin, Clinton River, and South Arm (Lake Te Anau).

ENDOPHTHORA RUBIGINELLA, n.sp.

(Plate LVII., fig. 13 ♂.)

A single specimen of this beautiful insect was beaten out of scrubby forest, near the Waiho River, South Westland.

The expansion of the wings is about $\frac{1}{2}$ inch (12 mm.). The fore-wings are elliptical, whitish straw-colour very faintly tinged with reddish, except towards base which is slightly speckled with very pale grey scales; markings black and bright orange-brick-red; a longitudinal black streak on costa from base to nearly $\frac{1}{2}$, narrow on basal half thence with broad angular projection towards dorsum, but considerably narrowed before abrupt termination; short black longitudinal bars on costa near middle and beyond $\frac{2}{3}$; three minute black dots on costa before apex; a large comma-shaped blotch of red scales in contact with black bar near middle of costa, and an extensive patch of rather scattered red scales covering nearly $\frac{1}{4}$ of the wing at apex, a few isolated red scales are scattered between these markings as well as a few scattered black scales on terminal area; a small brownish-red patch on fold near middle, and a similar patch on termination of fold; cilia pale ochreous, with a few blackish hairs intermixed. The hind-wings are very pale mottled grey; cilia pale ochreous. The head is very pale brownish-ochreous; thorax white, with black line on anterior portion, and abdomen grey with pale ochreous extremity. The antennae are rather stout, dull yellowish-grey. Anterior legs black, tipped with orange-ochreous; hind legs dull ochreous, the tibiae clothed with long pale ochreous hairs.

Nearest to *E. omogramma* but differing from that species in the shape of the black streak on base of costa, whiter fore-wings with red markings, and larger size.

Endopthora pallacopis (page 339.) Also from Whangarei.

Crypsitricha stereota (page 339.) Also from Blackmillar (Kaikoura), Lees Valley, and Te Anau-Manapouri District.

Crypsitricha pharotoma (page 339.) Also from Hope Arm (Manapouri).

Crypsitricha mesotopa (page 340.) A specimen bred from moss obtained in Gollan's Valley, near Wellington. The moth emerged on September 24, thus indicating the possibility of a spring brood. The species clearly passes the winter as a pupa. Also from Whangarei, and Puhī Puhī (Kaikoura). The commonest of the genus in the Te Anau-Manapouri Lake District.

Crypsitricha roseata (page 340.) Also from Whangarei, Blackmillar (Kaikoura) and Clinton River.

Crypsitricha generosa (page 340.) The single specimen, taken by Mr. S. Lindsay at Hope Arm (Manapouri) in 1923, remains unique so far.

Habrophila compseuta (page 340.) Also from Lyttelton Hills.

Archyala paraglypta (page 341.) A smaller and paler form of this insect, with identical markings, was described by the late Mr. Philpott as a distinct species under the name of *Archyala tigrina* (Records of Auckland Institute Museum, I., I., 15). No structural characters are mentioned in the description of *A. tigrina* by which it may be distinguished from *A. paraglypta*. *A. paraglypta* also occurs at Whangarei.

Archyala halosparta (page 341.) The beginning of the description should read thus:—

The fore-wings are elliptical, with the costa rather strongly arched, and with the appearance of a distinct apical lobe.

ARCHYALA CULTA.

(*Archyala culta*, Philp., Trans. N.Z. Inst., lxii., 35.)

(Plate LXI., fig. 30 ♂.)

This very distinct species was discovered by Mr. C. E. Clarke at Opoho near Dunedin.

The expansion of the wings is slightly under $\frac{5}{8}$ inch (15 mm.). The fore-wings are elongate, costa sinuate before middle, apex round-pointed termen straight, oblique; grey; numerous fine curved transverse blackish strigulae from base to apex; a very dark obscure blackish linear marking in disc; cilia blackish-grey; a basal pale, and a sub-basal blackish line. Hind-wings deep brown, darker apically; cilia dark brown, with darker basal line.

Distinguished by the peculiar outline of the costa of fore-wings, and absence of any tendency for the strigulae to coalesce in pairs.

The perfect insect appears in December.

Described and figured from the unique specimen in the Auckland Museum.

Archyala pentazyga (page 341.) This species rests standing on all legs, with the wings forming a moderately sloped roof, and the antennae divergent and considerably erected. Also occurs at Eglinton River, one only.

Archyala terranea (page 341.) Also from Puhī Puhī, Takitimo Mountains and Te Anau.

Sagephora exsanguis (page 342.) Also from Hope Arm (Te Anau).

Sagephora felix (page 342.) Also from Whangarei and Erua.

Sagephora phortegella (page 342. Plate LIII., fig. 10 larva).

The larva is about $\frac{3}{8}$ inch in length, pale ochreous-brown, darker on back. Head finely speckled with black. Segment 2 with two broad black longitudinal bands and numerous thick black bristles; segments 3 and 4 with irregular brownish-black dorsal and subdorsal markings, the outermost considerably darker; rest of body, except terminal segment, with irregular variegated dorsal and subdorsal lines, rather obliquely placed,

*Revised Handbook of British Lepidoptera, 818.

the sub-dorsal lines being darker; terminal segment with crescentic blackish marking; numerous long fine bristles.

The larva was beaten from *Hedycarya arborea* and other shrubs in December, but the actual foodplant is most uncertain and the insect may be a moss feeder.

The pupa is enclosed in a meshwork cocoon covered with minute fragments of moss.

SAGEPHORA SUBCARINATA.

(*Sagephora subcarinata*, Meyr., Trans. N.Z. Inst., lxii., 96.)

(Plate LVIII., fig. 11 ♂.)

This species was discovered at Gollan's Valley, near Wellington. It has also occurred at Mount Cook.

The expansion of the wings is slightly under $\frac{1}{2}$ inch (11 mm.). The fore-wings are dark greyish-ochreous with deep chocolate-black markings and scattered white scales; a very heavy conspicuous chocolate-black mark on costa from base to $\frac{3}{4}$, narrow at base, its termination inwards oblique from costa and reaching half across wing, lower edge margined with white except on a short median flange, lower discal dot just beyond its angle; the cilia are grey, with an interrupted blackish basal line. The hind-wings and cilia are grey.

Closely allied to the common and rather variable *S. phortegella*, from which it differs in the shape and greater width of the costal marking, the general colouring is also darker, especially the hind-wings.

The perfect insect appears in January and frequents forest.

Sagephora jocularis (page 342.) Also from White Rock (North Canterbury), Chaney's Road (Christchurch) and Hope Arm (Te Anau).

Monopis ornithias (page 343.) Also from Wellington, Puhi Puhi, Amberley Beach, Mount Grey and Takitimo Mountains.

TINEA FURCILLATA.

(*Tinea furcillata*, Philp., Records of Auckland Institute Museum, I., 1, 15.)

(Plate LXI., fig. 20 ♂.)

This very elegant little species was discovered by Mr. C. E. Clarke at Anderson's Bay, Dunedin.

The expansion of the wings is about $\frac{3}{8}$ inch (9 mm.). The fore-wings are cream coloured with dull golden-ochreous markings, more or less sprinkled with blackish; an outwardly oblique bar on costa near base; trapezoidal markings on costa at $\frac{1}{3}$ and $\frac{2}{3}$ and several much smaller bars near apex; a fainter mottling in disc; a series of almost black spotted marks around dorsum and termen; cilia cream colour, with series of blackish-golden-ochreous marks near base and patch of similar scales near extreme tips towards middle. Hind-wings rather dark greyish-ochreous; cilia pale brownish-ochreous.

Mr. Philpott notes that in the fore-wings veins 7 and 8 are stalked as are 5 and 6 in the hind-wings.

Nearest to *Tinea texta*, Meyr., but apparently easily distinguishable from that species by the complete absence of any black apical spot and other detail characters given above.

The perfect insect appears in November.

TINEA TEXTA.

(*Tinea texta*, Meyr., Trans. N.Z. Inst., lxii., 97.)

(Plate LXI., fig. 21 ♀.)

This species was first detected in the forest at Gollan's Valley, on the eastern side of Wellington Harbour. A second specimen was taken by Commander Patterson, at Whangarei.

The expansion of the wings is about $\frac{3}{8}$ inch (7-10 mm.). The fore-wings are bronzy-yellowish-brown, with slight purplish reflections, paler in the female; basal half of wing with three obscure whitish angulated bands, irregularly edged with greyish-black, third broadest and angle reaching beyond middle of disc; an oblique white strigula from costa at about $\frac{2}{3}$, and three small white spots between this and apex; an irregular chain of white dots in disc separated by blackish marks; a fine white erect strigula from middle of termen, very small in male; a small cloudy black spot at apex; the cilia are grey barred with white in proximity to the paler wing markings. The hind-wings and cilia are grey, paler in female.

This species exhibits a considerable superficial resemblance to *Tinea accusatrix* and might easily be mistaken for that species in the field. The resemblance to *Glyphipteryx* is not, however, so pronounced as in *T. accusatrix*.

The perfect insect appears from the end of November until January.

Tinea accusatrix (page 345.) This species was common inside the forest at Puhi Puhi near Kaikoura (South Island). The specimens here are darker in colour than those found in beech forest on the eastern side of Wellington Harbour. The insect was observed flying during the forenoon with a slow pendulous flight and could be captured on the wing with a large box. It flies in swarms of two or three, possibly a marital flight, and members of the swarm frequently come to rest on twigs near the ground. Whilst resting the wings are closed, forming a very steep roof, the insect standing on all six legs; the antennae are held upwards and strongly divergent. Also from Mount Grey.

Tinea astraea (page 345.) Also from Hope Arm (Lake Manapouri).

Tinea cymodoce (page 345.) *Tinea aerata*, Philp.,* is unquestionably the female of this species, and a figure of this sex is now given on Plate LXII., fig. 22. Additional localities are:—Tongariro National Park, Cape Saunders, Tophouse (Nelson), Mount Grey, Alfred Forest, Price's Valley Bush (Banks Peninsula), and Clinton River.

Tinea argodelta (page 346.) A specimen of this very rare insect, unfortunately in poor condition, was taken in the forest above Day's Bay, Wellington Harbour, on March 11, 1935. Mr. S. Lindsay also took a specimen at Jack's Pass (Hanmer), and Mr. C. E. Clarke one at Hope Arm (Lake Manapouri).

Tinea dicharacta (page 346.) Also from Picton and Waiiau River (Lake District), where common. Further specimens have occurred amongst manuka at Gollan's Valley near Wellington.

*Records of Auckland Institute Museum, I., 1, 15.

Tinea mochlota (page 346.) Also from Clarence Bridge, Puhī Puhī, Governor's Bay, Price's Bush (Banks Peninsula), Takitimo Mountains and Invercargill.

Tinea belonota (page 347. Plate LX., fig. 12 ♂.) A figure of this species is now supplied. Since Mr. Meyrick's discovery of the species in 1887 no specimen appears to have been found until 1921, when Mr. C. E. Clarke took one at Whangarei. Two other examples are now in the Clarke Collection, at the Auckland Museum, the first captured at Waikaraka, Whangarei, and the second at Okauia, Waikato. I captured two specimens in the Pohangina Forest Reserve, on February 4, 1932, and one of these formed the subject of the figure; the other enabled the identification of the species to be verified. *Gymnobathra zephyrana* Clarke, Trans. N.Z. Inst., lvi., 419, is a synonym of this species.

Tinea lindsayi (page 347.) This species varies considerably in the distinctness of the transverse bands on the fore-wings, and in some examples the markings can be definitely described as follows.—Fore-wings grey, slightly purplish-tinged, with darker-edged dull yellowish-brown transverse bands; a small basal patch, followed by a rather indefinite band at about $\frac{1}{4}$; two or three conspicuous bands near middle of wing and a curved subterminal band, double on costa. All forms of this insect may, however, be recognised by the shining white face and terminal joint of palpi. According to Mr. Lindsay* the larva tunnels the bark of *Hedycarya arborea*. Additional localities for this species are:—Blackmillar (Kai-koura), Governor's Bay, and Price's Valley Bush (Banks Peninsula).

TINEA DIVIDUA.

(*Tinea dividua*, Philp., Trans. N.Z. Inst., lviii., 370.)

(Plate LX., fig. 9 ♂.)

This very distinct species has been taken by Mr. Philpott at Flora River, and on Gordon's Pyramid, near Mount Arthur.

The expansion of the wings is $\frac{3}{4}$ inch (17-18 mm.). The fore-wings are *bright brown*, with a few scattered white scales; there is a *broad, sinuous, whitish-ochreous band along the dorsum*; on the upper edge of this band, in the middle, is a *dark brown spot*, and two other similar spots are situated above the dorsal stripe, nearer the tornus; the cilia are light brown, with a few whitish scales. The hind-wings are dark brown, paler towards the base; the cilia are also brown.

The perfect insect appears in January.

Described and figured from a damaged specimen submitted by Mr. Philpott.

TINEA ATMGRAMMA.

(*Tinea atmogramma*, Meyr., Trans. N.Z. Inst., lviii., 316.)

(Plate LXI., fig. 18 ♂; 17 ♀.)

This species was discovered at Arthur's Pass, at an altitude of about 3000 feet above the sea-level.

The expansion of the wings is barely $\frac{1}{2}$ inch (12 mm.). The fore-wings are rather elongate with the termen very oblique;

blackish, irregularly spotted and mottled with light and dark, and with coppery reflections; there are about four ill-defined light-edged dark patches on the costa; four or five clear white dots around apex and termen, the spot at the apex larger than the others and surrounded with black; the cilia are blackish, with indistinct paler bronzy tufts below apex and at tornus. The hind-wings are blackish-grey, with strong violet reflections, the cilia are blackish-grey. The female has the fore-wings shorter and broader, *with ill-defined pale transverse bands at about $\frac{1}{2}$ and $\frac{2}{3}$, and a series of alternate black and ochreous-grey bars on outer $\frac{2}{3}$ of costa.*

This species is nearest to *Tinea argodelta*, but without the clear white dorsal spot of that species. *The antennae are remarkably short for the genus ($\frac{2}{3}$)*. The approach of the markings to those of a typical *Glyphipteryx* is very interesting.

The perfect insect appears in January and may be looked for in beech forests on mountains.

TINEA CONSPECTA.

(*Tinea conspecta*, Philp., Trans. N.Z. Inst., lxii., 35.)

This is a very obscure species, represented by two specimens, found by Mr. C. E. Clarke in the Auckland Domain.

The expansion of the wings is nearly $\frac{3}{4}$ inch (8 mm.). The fore-wings are brassy-ochreous-grey, darker towards apex, with very faint purplish reflections; a conspicuous darker centred white mark on dorsum at about $\frac{1}{2}$ and a much smaller spot near end of fold; a blackish discal spot at about $\frac{2}{3}$, edged with white towards termen; three obscure dark marks on basal half of costa followed by three white dots; two conspicuous white spots on costa before apex and one on termen. Hind-wings and cilia pale grey.

The perfect insect appears in November and January.

Described from the type specimen in the Auckland Museum, which is in very poor condition, and inadequate for the proper definition of a species.

TINEA MUNITA.

(*Tinea munita*, Meyr., Trans. N.Z. Inst., lxiii., 24.)

(Plate LX., fig. 13 ♂.)

A single specimen of this rather striking species has occurred at Wilton's Bush near Wellington.

The expansion of the wings is slightly over $\frac{1}{2}$ inch (7 mm.). The fore-wings are *purplish-brown*, darker towards apex, *costa rather broadly ochreous-white from middle to apex*; a faint blackish edging at base of costa and two dusky marks beyond this; *a conspicuous black mark on costa near middle and a rectangular black mark on dorsum opposite this*; three black bars on costa on apical third and a small black spot at apex; a terminal series of very small black marks; the cilia are ochreous-white barred with blackish near the dark wing markings. The hind-wings are purplish-grey; cilia grey.

The perfect insect appears in February.

TINEA GRANELLA.

(*Tinea granella*, Linn., Meyrick Revised Handbook of British Lepidoptera, 328.)

(Plate LXI., fig. 23 ♂.)

A series of this wide ranging, semi-domestic species was obtained by Mr. S. Lindsay, in a grocery store at Christchurch in October, 1929. Larvae and pupae were

*Records of Canterbury Museum, III., 251.

found amongst dried almonds from Sicily, upon which the larvae were feeding.* Mr. C. E. Clarke also captured the insect in Dunedin City.†

The expansion of the wings is about $\frac{1}{2}$ inch (9-14 mm.) The fore-wings are whitish, irregularly speckled with brown; an oblique blackish-brown mark from base of costa to fold, a smaller mark beyond this; an oblique mark from costa to middle of disc, a spot on fold before middle, and some small costal and dorsal spots blackish-brown. The hind-wings are grey.

The larva is yellowish-white with the head pale brown and dorsal plate of second segment pale brownish. It feeds on corn grains.

The perfect insect is found in granaries and is sometimes very abundant. It is recorded from Europe to Japan, India, Africa, North America, and Australia, having been spread by civilization. It seems to have reached New Zealand quite recently.

TINEA PELLIONELLA.

(*Tinea pellionella*, Linn. Meyrick Revised Handbook of British Lepidoptera, 830.)

(Plate LXI., fig. 22 ♀.)

This well-known domestic pest was first detected in New Zealand by Mr. S. Lindsay, at Christchurch, in December, 1924.* It has since been found at Wellington and Nelson.

The expansion of the wings is about $\frac{1}{2}$ inch (10-14 mm.). The fore-wings are pale greyish-ochreous more or less speckled with greyish-brown; there are five brown spots; two near base—sometimes absent, one in disc before middle, one on fold below this, and one in disc beyond middle, larger and rounder than the others; the cilia are pale greyish-ochreous. The hind-wings are whitish-grey.

The larva is dull-whitish with the head reddish-brown and a dark brown horny plate on segment 2. It constructs a flattish portable case of the substance on which it has been feeding, feathers, cloth, wool, furs, etc., etc., and is most abundant and destructive in wardrobes if neglected.

The perfect insect may be found in houses throughout the year, but is most plentiful during the summer months. It is a very widespread species, having been recorded from Europe, Asia Minor, India, Japan, North America, Africa and Australia.

Astrogenes chrysograptæ (page 347.) A small form of this species, in very poor condition, was described by the late Mr. Philpott as a distinct species under the name of *Astrogenes insignita*. The arrangement of the metallic markings in this form, which are only visible in certain lights and are partially removed by abrasion, do not appear to be inconsistent with those normally present in *A. chrysograptæ*, and the size of that species is variable. Under the circumstances I do not think that the validity of *A. insignita* as a distinct species can be admitted. Also from Erua, Eglinton Valley and Clinton River.

*Records of Canterbury Museum, III., 252.

†Trans. Royal Soc. N.Z., lxiv., 14.

*Records of Canterbury Museum, III., 252.

Prothinodes grammocosma (page 347.) Also from Whangarei and Waimarino.

Prothinodes lutata (page 347.) Also from Gollan's Valley (Wellington).

Proterodesma mysticopa (page 348.) Common in the Te Anau-Manapouri District.

Trithamnora certella (page 348.) Also from Whangarei and Kaitawa (Wellington.)

Lysiphragma mixochlora (page 348. Plate LIII., fig. 34 larva.)

The length of the full-grown larva is about $\frac{3}{4}$ inch. Cylindrical, thickest immediately behind segment 2, otherwise slightly tapering posteriorly. Head shining, deep reddish-brown; plate of segment 2 reddish-brown, darker posteriorly, base of head showing through as two dark lunate marks. General colour of segments 3 and 4 pale ochreous; rest of body pale dull brownish-ochreous; segments 11 and 12 a little brighter; segments 3 and 4 with elongate dorsal and roundish lateral horny plates, segments 5-12 with four conspicuous dorsal and four or five much smaller lateral horny plates; segment 13 with single series of plates; segment 14 minute with horny dorsal plate and several long bristles; each horny plate on other segments emits a long slender bristle.

This larva lives under the bark of dead karaka trees, and is sometimes very abundant, feeding under a curtain of silk and refuse. It is clear that the perfect insect must be commoner than is generally supposed and its protective resemblance to a moss- or lichen-covered twig is evidently highly efficient.

Also from Pohangina.

Lysiphragma epixyla (page 349.) Larva found feeding under dead Hinau bark (*Eleocarpus dentatus*), Gollan's Valley (Wellington), 12th September, 1929. Also under old beech bark (*Nothofagus*) amongst powdered wood.

Additional localities—Whangarei, Flora River (Mount Arthur), Puhī Puhī, and common in the Te Anau-Manapouri District.

Lysiphragma howesii (page 349.) Also from Puhī Puhī, Governor's Bay, Dunedin and Clinton River (one only).

Lindera tessellatella (page 350.) Also from Whangarei and Christchurch.

Talaeporia aphrosticha (page 350.) Also from Hunter Mountains, Kepler Mountains, and Flat Top Mountain (Manapouri), not uncommon.

Talaeporia microphanes (page 351.) Also from Flat Top Mountain (Manapouri), Hunter Mountains, Kepler Mountains and McKinnon Pass.

TALAEPORIA TRIANGULARIS.

(*Talaeporia triangularis*, Philp., Records Auckland Institute Museum, I., 1, 16.)

(Plate LXI., fig. 5 ♂.)

This species was discovered by Mr. C. E. Clarke on The Hump (Southland). It has also occurred at Waitati, Flat Top Mountain, Hunter Mountains, Kepler Mountains and McKinnon's Pass.

The expansion of the wings is about $\frac{1}{2}$ inch (13 mm.). The antennae are ochreous ringed with brown. The fore-wings have the costa almost straight, the apex rounded and the termen very oblique; ochreous, densely mottled with brown, especially towards apex; there are three large, clear ochreous spots on dorsum and a series of much smaller ochreous spots around apex and termen. The hind-wings and all the cilia are brownish-grey.

The perfect insect appears from November till January.

Described and figured from specimens in the Auckland Museum.

Genus MALLOBATHRA (page 351.)

The following interesting notes are taken from Mr. C. E. Clarke's paper* on the Lepidoptera of Te Anau-Manapouri Lakes District:—

Another occurrence, of a different kind, was the rather surprising appearance of moths belonging to the Genus *Mallobathra* and its allies in the following circumstances. One morning, shortly after daybreak, at 4000 feet, at my camp on the slopes of Mount Hart, I was glancing through the doorway at the fine mist that was falling when I observed a specimen of the hitherto rarely seen moth, *M. illustris* Philp., on the wing. I expected it to be a stray specimen, but on observation I also saw one of *Talaeoporia aphrosticha* Meyr. flying. I captured them both, and then went out and found that several others were there, and I subsequently took good series of both these species and of others, all flying in the heavy dew of early morning. Apparently the extreme fragility of their structure has necessitated this adaptation to environment. I have taken *M. perisseuta* Meyr., *T. microphanes* Meyr., and *Scoriodyta conisalia* Meyr., and also the type specimens of *T. triangularis* Philp. at other places since then, also in the damp mists before sunrise, when other insects are usually quiescent. Some of these are common in their habitats, but on the mountains I have never seen any specimens of *T. aphrosticha*, *T. triangularis*, or *M. illustris* during the day time, and the others are not so plentiful at any time as in moist places at daybreak. They may, however, be taken sparingly at any time of day in the forests. These species are mostly regarded as very rare, but they are probably not often observed, although plentiful.

I have lately taken specimens of *Mallobathra nocturna* Clarke at Auckland during early mornings when the air was densely laden with moisture. The type, however, was beaten out of brushwood at Kauri Gully in the day time. *M. araneosa* Meyr. I have only captured in early mornings at Dunedin.

Pre-sunrise-flying species of *Mallobathra* discovered since the above was written are *M. lapidosa*, Meyr. from upper Routeburn River, and *M. memotuina* Clarke, from Anderson's Bay, Dunedin.

Mallobathra fragilis (page 352.) Also from Puhi Puhi, Peel Forest and Mount Cook.

Mallobathra metrosema (page 352.) Also from Day's Bay (Wellington) and Jack's Pass (Hanmer).

Mallobathra illustris (page 352.) Also from Flat Top Mountain (Manapouri), Skelmorlie Peak, and McKinnon Pass.

Mallobathra lapidosa (page 352.) The type specimen of *Mallobathra cataclysmata*, Clarke, agrees with the female specimens of *M. lapidosa* in my collection. It must therefore be sunk as a synonym of *M. lapidosa*. The locality Harris Saddle, Upper Routeburn River, Lake Wakatipu is, however, a new one for *M. lapidosa*.

Mallobathra perisseuta (page 353.) Also from Taki-timo Mountains, and Hope Arm (Manapouri).

MALLOBATHRA TONNOIRI.

(*Mallobathra tonnoiri*, Philp., Trans. N.Z. Inst., lviii., 90.)
(Plate LXI., fig. 1 ♂.)

This very darkly-coloured species was discovered by Mr. A. Tonnoir at Lake Moana near Greymouth. It has also occurred near Wellington.

The expansion of the wings is about $\frac{5}{8}$ inch (17-19 mm.). The antennae are black with ciliations in male $2\frac{1}{2}$. The fore-wings have the costa very slightly sinuate, apex hardly rounded, termen oblique; dark brownish-ochreous very heavily and irregularly spotted and blotched with deep blackish-brown; an irregular pale ochreous patch on dorsum before tornus; cilia coarse and shaggy-looking, blackish-brown. Hind-wings deep brown; cilia as in fore-wings.

The perfect insect appears in September and December.

MALLOBATHRA STRIGULATA.

(*Mallobathra strigulata*, Philp., Trans. N.Z. Inst., lv., 214; ib. lviii., 100; ib. lix., 490; Huds., B. and M. of N.Z., 352.)

It is possible this form may prove to be a distinct species. As stated in the original description it is larger (expansion of wings 15-17 mm.) than the common and variable *M. crataea*, and the markings may be slightly more distinct than is usual in that species. Genitalic differences are also referred to. Locality, Dun Mountain.

MALLOBATHRA SUBALPINA.

(*Mallobathra subalpina*, Philp., Records Canterbury Museum, III., 250.)
(Plate LX., fig. 11 ♂.)

This rather obscure species was discovered by Mr. S. Lindsay at Red Lake, Sebastopol Spur, Mt. Cook.

The expansion of the wings is about $\frac{7}{16}$ inch (11 mm.). The fore-wings are rather broad, with the apex and tornus much rounded; dark bronzy ochreous, mottled and speckled with dark purplish-brown; an obscure, pale ochreous blotch on middle of dorsum enclosing a dark spot. The hind-wings are dark purplish-brown. All the cilia are bronzy brown.

Very similar to *M. crataea* but a smaller and darker insect with shorter antennal pectinations ($2\frac{1}{2}$).

The perfect insect appears in December.

Described and figured from a specimen kindly supplied by Mr. Lindsay.

*Trans. N.Z. Inst., lxiii., 114.

MALLOBATHRA CANA.

(*Mallobathra cana*, Philp., Trans. N.Z. Inst., lviii., 89.)

(Plate LXI., fig. 2 ♂.)

This very pale-looking, narrow-winged species was discovered by Mr. Philpott on the Dun Mountain, Nelson, at an altitude of 3500 feet.

The expansion of the wings is $\frac{3}{8}$ inch (16 mm.). The fore-wings are elongate-triangular, with the termen very oblique; pale brownish-ochreous, with numerous darker brown strigulae, tending to form spots on outer third of costa and around termen; there are several suffused larger brown spots at about $\frac{1}{2}$; the cilia are brown, mixed with ochreous. The hind-wings and cilia are greyish-ochreous.

The perfect insect appears in December.

MALLOBATHRA ANGUSTA.

(*Mallobathra angusta*, Philp., Trans. N.Z. Inst., lix., 489.)

(Plate LXI., fig. 4 ♂.)

This large and very dark-looking species, was discovered, by Mr. Philpott, on the track to the Tableland of Mount Arthur, at an altitude of about 3000 feet.

The expansion of the wings is 13-16th inch (21 mm.). The fore-wings are elongate, with the apex rounded and the termen very oblique; dark brassy-ochreous with very numerous heavy, almost black, strigulae; there is a large rectangular blotch of blackish on the costa before the middle, and a similar blotch on the dorsum below this; the cilia are ochreous, mixed with blackish. The hind-wings and cilia are deep blackish-brown.

The perfect insect appears in November.

Described and figured from a specimen kindly lent by Mr. Philpott.

MALLOBATHRA MEMOTUINA.

(*Mallobathra memotuina*, Clarke, Trans. Roy. Soc. N.Z., lxiv., 14.)

(Plate LXI., fig. 3 ♂.)

This large and very striking species was discovered by Mr. C. E. Clarke, on the face of the Vauxhall Cliff, Anderson's Bay, Dunedin.

The expansion of the wings is $\frac{3}{8}$ inch (16 mm.). The fore-wings are pale ochreous, with deep chocolate-brown transverse bands having slight purple reflections; a small cloudy basal patch, followed by a broken transverse band at $\frac{1}{3}$; a broad transverse band beyond this, bifurcating below disc, the outer branch reaching tornus; a broad band from costa near middle terminating in disc; a broader band beyond this with three slender branches reaching termen; two very slender short bands from costa near apex; cilia brown. The hind-wings are ochreous-brown, very densely sprinkled with darker brown scales; cilia brown.

The perfect insect appears in November and early December flying shortly after daybreak.

Described and figured from a specimen in the Auckland Museum.

MALLOBATHRA OBSCURA.

(*Mallobathra obscura*, Philp., Trans. N.Z. Inst., lviii., 370.)

This form, which was taken by Mr. Philpott in Southland, is admitted to be extremely like *Mallobathra homalopa* but slightly brighter in colour and proportionately broader-winged. The differences in the male genitalia are

deemed sufficiently definite to warrant specific separation. Its habits are clearly identical with those of *M. homalopa*.

Mallobathra homalopa (page 353.) Also from Whangarei, Hope Arm (Manapouri), and Milford Track.

Mallobathra globulosa (page 353.) This is a synonym of *M. scoriota*. The insect described under that heading, and figured on Plate XXXIX., fig. 11, must be known as *Mallobathra scoriota* in future.

Scoriodyta conisalia (page 354.) In some very exposed situations, such as the coastal hills between Wellington Harbour and Sinclair Head, the cases of this insect may sometimes be found, in considerable numbers, attached to the rough crevices, on the underside of large stones lying on the ground. Also from Lumsden and Mararoa River, in October: common.

Sub-family NEPTICULIDES.

Nepticula cypracma (page 355.) Also from Hope Arm.

Nepticula lucida (page 355.) Also from Mount Cook and Te Anau-Manapouri District.

Nepticula erichtitus (page 356.) Also from Takitimo Mountains.

Nepticula progonopis (page 356.) Also from Arthur's Pass.

Nepticula oriastra (page 356.) Also from Arthur's Pass (4000 ft.), and Te Anau-Manapouri District.

NEPTICULA INSIGNIS.

(*Nepticula insignis*, Philp., Trans. N.Z. Inst., lviii., 89.)

(Plate LXI., fig. 24 ♂.)

This elegant little species was discovered, by Mr. Philpott, on the Mount Arthur Tableland, at an altitude of 4000 feet above sea-level.

The expansion of the wings is $\frac{1}{4}$ inch (7 mm.). The fore-wings are white, heavily sprinkled with large bright brownish-ochreous scales, especially on apical half; one or two black scales on fold at $\frac{1}{4}$, sometimes absent; three or four black scales in disc at $\frac{1}{2}$, forming a rather conspicuous black spot; a similar spot before apex; the cilia are greyish-ochreous, with two or three rows of brownish-ochreous scales around apex. The hind-wings and cilia are grey.

The perfect insect appears in November.

Described and figured from one of Mr. Philpott's specimens.

NEPTICULA SOPHORAE n.sp.

(Plate LXI., fig. 25 ♀.)

This very pretty little species was named by Dr. Morris N. Watt, but, so far as I have been able to ascertain, no description of it has ever been published.

The expansion of the wings is under $\frac{1}{4}$ inch ($5\frac{1}{2}$ mm.). The fore-wings are very pale whitish-ochreous, densely speckled with very small black dots; there is a black spot in the disc below and before middle and another at about $\frac{3}{4}$; the cilia are pale whitish-ochreous. Hind-wings and cilia grey.

Family **HEPIALIDAE.**

Hepialus virescens (page 357.) Mr. Stanton Harecourt captured a large female specimen of this insect struggling with a tomtit.

Porina senex (page 360.) Also from Ben Lomond.

Porina dinodes (page 360.) Also from Chateau Tongariro (National Park, centre of North Island). Common at Lake Te Anau in February. Has occurred at Waiho Gorge in April. Varies considerably in depth of colour.

Porina enysii (page 361.) A very fine variety of the female was discovered by Mr. H. G. Drew, on 20th January, 1927, resting on a log on the sea-beach, half way between Waitotara and Waverley. Through Mr. Drew's kindness I am enabled to give a figure of this beautiful specimen on Plate LXII., fig. 12.

On January 11th, 1929, Mr. F. M. Shepherd, of Kariotahi, Waiuku, kindly sent me a full grown larva of *Porina enysii*. He informed me that it was found 12 inches below the surface, in wet soil, at the sea's edge.

Other localities for *Porina enysii* are:—Whangarei, about a dozen each season, and Mount Egmont.

Porina characterifera (page 362.) Mr. A. H. Ahrens informs me that this insect is common on the Puketoi Ranges, Pahiatua District, flying on steep faces where native bush still exists. Other localities are Puhimaho (King Country) and Karori.

Porina cervinata (page 362.) Also from Puhi Puhi, Waiho Gorge, and common in the Te Anau-Manapouri District.

Porina despecta (page 362.) Also from Pohangina (North Island), Puhi Puhi, very common in the Te Anau-Manapouri District.

Porina mimica (page 362.) Also from Waipukurau and Anderson's Bay.

Porina jocosca (page 363.) Also from McKinnon Pass, one only, in February.

Porina umbraculata (page 363.) Also from Puhi Puhi and Waiho Gorge.

Porina signata (page 363.) On one occasion a larva of this species was discovered eating a potato.

Also from Whangarei, and Puhi Puhi (South Island).

Porina fusca (page 364.) Also from Mount Cook, McKinnon Pass and Kepler Mountains.

Porina oreas (page 364.) Also from Flat Top Mountain (Manapouri), in January.

Porina ascendens (page 365.) Also from Flat Top Mountain, abundant.

PORINA GOURLAYI.

(*Porina gourlayi*, Philp., Trans. N.Z. Inst., lxii., 36.)

(Plate LXII., fig. 5 ♂, 6 ♀.)

This pretty species was discovered by Mr. E. S. Gourlay, at Flora Camp, Mt. Arthur, about 3,000 feet above sea-level.

The expansion of the wings of the male is about 1½ inches (35 mm.); of the female 1¼ inches (42 mm.). Antennae ochreous, closely serrate in male and minutely ciliate. Fore-wings with costa subsinuate; pale whitish-ochreous to bright orange-ochreous; many blackish-ringed pale-centered dots, the most prominent being a subtriangular one in disc and one, or two, others beyond it; there is usually a dot on costa near base and another obliquely below and beyond it; an obscure blackish subterminal shade followed and sometimes preceded, by a chain of dots; a thick black streak from dorsum near base, reaching halfway to tornus, its upper margin with two strong indentations filled with whitish; a series of dark-centered lunules round termen; cilia concolourous with wing. Hind-wings brownish-ochreous or pale greyish-ochreous; cilia pale ochreous.

The markedly dentate dorsal streak is distinctive. The female is commonly paler than the male, but not in all instances.

The perfect insect appears in January.

The above is taken from Mr. Philpott's original description.

Family **MICROPTERYGIDAE.**

Chapter XIX (page 366). In the introductory remarks to this chapter for *Erioccephala* read *Micropteryx*.

Mnesarchaea paracosma (page 366.) Also from Mount Whakaari (Kaikouras), Governor's Bay, Mount Cook, and Takitimo Mountains. Very common in October at the last-named locality.

MNESARCHAEA HAMADELPHA.

(*Mnesarchaea hamadelpha*, Meyr., Trans. N.Z. Inst., xx., 91; *similis*, Philp., ib. lv., 667; ib. lix., 490; nec. Huds., B. and M. of N.Z., 367.)

(Plate LXI., fig. 8, ♂.)

As the result of correspondence between the late Mr. Alfred Philpott and Mr. E. Meyrick, it transpires that two distinct species were for many years included under the name *Mnesarchaea hamadelpha*.

The true *M. hamadelpha*, figured on Plate LXI., fig. 8 of the present work, may be known by the shape of the chocolate-brown costal marking which is blunt at its outer extremity and abruptly turned downwards; the thorax is ochreous (not white) and the small chocolate-brown marking near dorsum more remote from the base of the wing.

The perfect insect appears in December and January. So far it appears to be restricted to the Nelson Province, having been taken at Mount Arthur, Flora River, Lake Rotoroa, and Cobb Valley, at elevations between about 1500 and 3500 feet.

MNESARCHAEA ACUTA.

(*Mnesarchaea acuta*, Philp., lx., 304; *M. hamadelpha* Huds., B. and M. of N.Z., 367.)

(Plate XXXIX., fig. 24 ♂.)

The insect described as *Mnesarchaea hamadelpha* on page 367 and figured on Plate XXXIX., fig. 24, must now be known as *M. acuta*, Philp. It may be separated from the true *M. hamadelpha*, Meyr., by the special characters given under the heading of that species. Also from Picton and McKinnon Pass.

Micropardalis doroxena (page 367.) The correct spelling of the name of this species is here given.

Micropardalis aurella (page 367.) Also from Waimarino).

Sabatinca rosicoma (page 368.) Also from Mangamuka (Auckland).

Sabatinca ianthina (page 368.) Also from Jack's Pass (Hanmer), in November (S. Lindsay).

Sabatinca demissa (page 368.) Also from Waimarino.

Sabatinca quadrijuga (page 369.) Common in October, Takitimo Mountains and Oreti River.

Sabatinca caustica (page 369.) Also from Takitimo Mountains in October.

Sabatinca chrysargyra (page 369.) Also from McKinnon Pass, and Milford Track.

Sabatinca aenea (page 370.) Also from Peel Forest.

Sabatinca lucilia (page 371.) Also from Wayby Gorge and Waipu Caves.

Sabatinca calliarcha (page 371.) Also from Arthur's Pass, Bluecliff, S.W. Arm (Lake Te Anau), and Milford Track.

SABATINCA ABYSSINA.

(*Sabatinca abyssina*, Clarke, Trans. Roy. Soc. N.Z., lxiv., 15.)

Expansion of wings ♂ 12 mm. Head and thorax aeneous. Abdomen dark fuscous. Fore-wing ovate, rather blunted at apex; very pale aeneous with fasciae of dark purple; an irroration of purple dots on base to $\frac{1}{3}$ of costa, where a wide outwardly oblique fascia of dark irrorated purple crosses to dorsum, another subparallel at beyond $\frac{1}{2}$, and another also subparallel, more or less bifurcated, towards apex, some loose irroration between fascias, of purple dots. Cilia ochreous-aeneous. Hind-wings dark purplish-grey. Cilia pale ochreous-aeneous.

"This is the largest species of *Sabatinca* known to me. It was taken on the rough iceworn rocks at the north eastern side of Franz Josef Glacier, Westland, in January."

The above is a copy of Mr. Clarke's original description. The type specimen, in the Auckland Museum, consists of fragments, gummed on a card, and is not adequate for the preparation of a useful figure.

SABATINCA HEIGHWAYI.

(*Sabatinca heighwayi*, Philp., Trans. N.Z. Inst., lviii., 90.)

(Plate LXI., fig. 32 ♀.)

This very handsome and extremely interesting species was discovered, by Mr. W. Heighway, in the Leslie Valley, Mount Arthur Tableland.

The expansion of the wings is slightly under $\frac{1}{2}$ inch (13½ mm.). The fore-wings are rather elongate, with the base of the costa strongly arched, the apex pointed, and the termen very oblique; *ivory yellow with strong pinkish reflections*; three broad, curved, transverse bands of *greenish-orange* on basal half, darker towards costa and dorsum; edges of second and third band, partially margined with dark brown; *rest of wing mainly greenish-orange*, traversed at about $\frac{3}{4}$ by a very strongly angulated band of pinkish-ivory; four spots of the same colour are situated on the dorsum, one at the apex and two on the costa, all more or less completely margined with dark brown; a broad suffused streak of warm brown in disc from $\frac{1}{2}$ to apex; the cilia are bright orange-brown with obscure fainter bars. The hind-wings and cilia are blackish, with purple reflections. The head and thorax are dull green, with long shaggy hair; the abdomen dull purplish-brown. The antennae are orange-brown, tipped with black. The hind-legs are blackish, barred with ochreous.

The perfect insect appears in November.

Described and figured from a very fine specimen lent to me by the late Mr. Philpott.

CENSUS OF SPECIES

	Restricted to North Island.	Restricted to South Island.	Common to Both Islands.	Restricted to Chatham Islands.	Restricted to Sub- Antarctic Islands.	TOTAL.	Species common to Australia and N.Z. (Included in Total.)
BUTTERFLIES	—	3	13	—	—	16	7
SPHINGIDAE	—	—	2	—	—	2	2
ARCTIADAE	—	3	3	—	—	6	1
NOCTUIDAE	18	48	88	1	2	157	25
GEOMETRIDAE	19	104	130	4	3	260	8
PYRALIDAE	18	120	104	2	1	245	19
THYRIDIDAE	—	—	1	—	—	1	—
PTEROPHORIDAE	1	8	7	—	—	16	2
PSYCHIDAE	—	1	1	—	—	2	—
COSSIDAE	—	1	1	—	—	2	2
TORTRICIDAE	23	66	48	—	1	138	9
AEGERIADAE	—	—	1	—	—	1	1
TINEIDAE	108	223	245	2	—	578	31
HEPIALIDAE	3	10	8	—	—	21	—
MICROPTERYGIDAE.....	5	16	5	—	—	26	—
TOTAL	195	603	657	9	7	1471	107

APPENDIX.

THE LEPIDOPTERA OF THE TE ANAU-MANAPOURI LAKE DISTRICT.

The following extracts from Mr. C. E. Clarke's very interesting article on the Lepidoptera of the Te Anau-Manapouri Lakes District (Trans. N.Z. Inst., LXIII., 112) will, it is thought, be of special value to New Zealand entomologists in the future.

"The large expanse of mountainous and densely-wooded country which almost encircles Lakes Manapouri and Te Anau is best reached by overland travellers from both Dunedin and Invercargill by taking a road that branches to the west at the base of the Takitimo Mountains. This road crosses the Mararoa River at 'The Key of the Lakes,' and proceeds through the 'Wilderness' to diverge again after a mile or two, a branch from the Te Anau trail striking north at the Whitestone River to meet the valley of the Eglinton.

The many series of precipitous crags and ranges converging on the lakes are mostly accessible by climbing the wooded spurs that lead to the subalpine, but the difficulties of transit from one alpine meadow to another render it necessary usually to descend to the lake level before making another ascent, this being the method I have pursued almost invariably, with four to six-day excursions to the heights.

The tracks to Milford and Doubtful Sounds are the most frequented localities of these mountains, and seldom do tourists venture to other parts, although the scenic attractions are of great beauty and exhibit a diversity of interests.

In such a wide field, containing so many unnamed and almost untrodden peaks, it is certain that many new species remain to be discovered, my own experience being that every locality visited has added a quota of new material.

My collecting in these sanctuaries has usually included the traversing of the Milford Track from Glade House to the Sound, which I have done on four occasions, with an excursion or two each time to other places on the way. These visits have been always in December and January, excepting one in October to the Takitimos, and one to the Eglinton River and then the McKinnon Pass in February. It is more than 20 years since my first visit to the Milford Track, since when the following expeditions to various parts elsewhere in this region have been made:

In 1923, with Mr. Stuart Lindsay, a camp was made in the Hope Arm, Lake Manapouri, and on two occasions we climbed the Hunter Mountains.

In 1925, to the Waiau River from Tuatapere, and then to the Takitimo Mountains.

In 1926, with Mr. R. Milnes, across the Milford Track to the Sound and to the subalpine of Mount Skelmorlie, also to the Takitimos.

In 1927, to the valley of the Eglinton River, and then to the end of the South Arm, Lake Te Anau, from whence I climbed an unnamed mountain of the Kepler Mountains.

In 1928 I returned to Hope Arm, climbing Flat Top Mountain to its summit at about 5000 feet. This was a particularly productive expedition.

In 1929, with Mr. Arthur Richardson, I camped at the Worsley Stream and climbed Mount Kemp to the subalpine, after which we went to the Milford Track, collecting again on the Clinton and Arthur Rivers, and on McKinnon Pass.

I have at various times visited the Oreti, Mararoa, Whitestone, and Spey Rivers, as well as the 'Five Lake' swamps near Manapouri.

The favourite collecting field, however, was the McKinnon Pass, and the ease with which it may be reached made it a welcome rendezvous always.

The prevailing beech (*Nothofagus*) forest extends up the slopes to an altitude of a little over 3500 feet, mixed bush being found generally on the outskirts and along rivers, the nature of the vegetation abruptly changing again above the bush line, above which the most interesting collecting is obtained.

The subalpine meadows are of great beauty with their flowers and colour generally, and sometimes extend for miles among the ridges, but are usually broken by the presence of scree and arêtes and precipitous pinnacles, so that upland investigation presents many difficulties to the travelling entomologist. I found it best to establish base camps and only climb with bivouac tent and light equipment, usually to make four-day raids on the heights. A dry shelter under a giant boulder can be found without difficulty, and the presaged certainty of discovering new and interesting specimens is at the same time enhanced by the pleasure of dwelling temporarily in a rock-garden of rare beauty, conspicuous among the species of flowering plants being *Celmisias*, *Ranunculus*, *Gaultherias*, *Senecios*, *Olearias*, and other handsome plants, as well as the particular friends of the entomologist, the *Hebes* and *Dracophyllums*, whose blossoms are so attractive to insects.

At from 3000 to 4000 feet elevations, in sheltered positions above the forests, local tracts of peculiar plant associations nurture the most desiderata, and there is a tendency for otherwise uncommon species to be favoured and form colonies, distinct types of local species occa-

sionally being apparently confined to one particular locality.

In more or less isolated upland 'overhanging valleys' semi-apterous tendencies are prevalent, and in two such places I visited—on Flat Top Mountain, Hunter Mountains, Lake Manapouri, and Kepler Mountains, Lake Te Anau—I was interested to find a remarkable number of moths with wings shortened, at least, or semi-apterous females.

The following there found were of this nature:—

<i>Ichneutica ceramias</i> Feld.	<i>Notoreas villosa</i> Philp.
<i>Venusia undosata</i> Feld.	<i>Proteodes clarkei</i> Philp.
<i>Xanthorhoe occulta</i> Philp.	<i>Scoparia clavata</i> Philp.
<i>X. helias</i> Meyr.	<i>Gymnobathra coarctatella</i> Walk.

Some of the new or little known species that occurred plentifully at times, locally, but have not been found previously numerous were the following:—

<i>Ichneutica lindsayi</i> Philp.	<i>Hyponodes costistrigalis</i> Steph.
<i>Porina ascendens</i> Meyr.	<i>Melanchra chryserythra</i> Hamps.
<i>P. oreas</i> Huds.	

<i>M. asterope</i> Huds.	<i>C. melochlora</i> Meyr.
<i>M. lithias</i> Meyr.	<i>Metacrias erichrysa</i> Huds.
<i>Selidosema terrena</i> Philp.	<i>Dasyuris octans</i> Huds.
<i>Orthoclydon chlorias</i> Meyr.	<i>D. leucobathra</i> Meyr.
<i>Hydriomena praeupta</i> Philp.	<i>D. hectori</i> Butl.
<i>Tatosoma apicipallida</i> Prout.	<i>D. austrina</i> Philp.
<i>Plutella megalynta</i> Meyr.	<i>Notoreas incompta</i> Philp.
<i>P. psammochroa</i> Meyr.	<i>N. villosa</i> Philp.
<i>Proteodes clarkei</i> Philp.	<i>N. omichlias</i> Meyr.
<i>Astrogenes insignita</i> Philp.	<i>Xanthorhoe umbrosa</i> Philp.
<i>Glyphipteryx scintilla</i> Clarke.	<i>X. dissimilis</i> Philp.
<i>Scoparia asaleuta</i> Meyr.	<i>X. chionogramma</i> Meyr.
<i>S. subita</i> Philp.	<i>X. obarata</i> Feld.
<i>S. fumata</i> Philp.	<i>Gelophaula vana</i> Philp.
<i>S. panopla</i> Meyr.	<i>Tauroscopa trapezitis</i> Meyr.
<i>S. legnota</i> Meyr.	<i>Orthenches vinitincta</i> Philp.
<i>S. illota</i> Philp.	<i>Nepticula lucida</i> Philp.
<i>S. clavata</i> Philp.	<i>Tinea dicharacta</i> Meyr.
<i>Harmologa sanguinea</i> Philp.	<i>Sabatinea calliarcha</i> Meyr.
<i>Borkhausenia vestita</i> Philp.	<i>S. chrysargyra</i> Meyr.
<i>B. honorata</i> Philp.	<i>Mnesarchaea acuta</i> Philp.
<i>B. laudata</i> Philp.	<i>Mallobathra illustris</i> Philp.
<i>B. compsogramma</i> Meyr.	<i>M. perisseuta</i> Meyr.
<i>B. robiginosa</i> Philp.	<i>Taleporia aphrosticha</i> Meyr.
<i>Aletia empyrea</i> Huds.	<i>T. microphanes</i> Meyr.
<i>Chloroclystis malachita</i> Meyr.	<i>T. triangularis</i> Philp."
<i>C. punicea</i> Philp.	

AN UNKNOWN CASE-BEARING LARVA.

On Plate LIV., fig. 27, I have illustrated a case-bearing larva of unusual interest, which may be found occasionally by general beating of forest, or scrub, in various parts of New Zealand. These larvae are met with as early as December, and are apparently full grown about the middle of February. Specimens have been under observation, every summer, from the year 1910 to date, but so far all efforts to rear the imago have proved fruitless. Some entomologist in the future will no doubt succeed in solving the mystery. The following descriptions of the case and larva are given in the meantime:

The length of the case is about $\frac{1}{4}$ inch; cylindrical horn-shaped, gently tapering posteriorly. It is composed of minute roundish fragments of lichen of very regular size and shape, placed on its outside like overlapping tiles. There are usually pairs of lappet-shaped projections on the back of the case, at about $\frac{1}{3}$ and $\frac{2}{3}$ from base to apex; these are composed of clusters of the above described

tiles. The whole case is constructed with great neatness and regularity, and is a fine specimen of insect architecture. The larva carries the case almost upright and, when at rest, the flange at the anterior opening fits closely to the surface of the branch, or twig, on which the larva has been walking. The food of the larva is possibly lichens, or algae, attached to the twigs.

The length of the larva, when withdrawn from its case, is about 3-16th inch. The head and second segment are horny, black and highly polished; the third segment has an elongate horny dorsal plate and a small ill-defined lateral plate; the legs are stout with their terminal joints horny and blackish-brown. The remaining segments of the body are soft, dull greenish-ochreous, with blackish mottling on back and sides; there is a faint lateral ridge; minute prolegs are situated on segments 7, 8, 9 and 10, the remaining segments rapidly tapering posteriorly; the terminal segment is the smallest and is furnished with a horny black dorsal plate and a pair of stout prolegs, the latter enabling the larva to retain a firm hold on its case. A few very slender hairs are situated on the anterior and posterior portions of the larva.

A SUGGESTED EXPLANATION OF VARIATION IN CRYPTIC LEPIDOPTERA.

(From the Entomologists' Monthly Magazine, LXXI., 156, July, 1935.)

In the course of my work on N.Z. Lepidoptera I have often come across striking instances of great variation amongst those species which are specially protected from their enemies by a close resemblance to their surroundings (Protective resemblance, or Cryptic coloration), but, so far as I am aware, no attempt has so far been made to explain why Cryptic coloration should be associated with great variability, especially amongst the commoner and more abundant species where it so frequently occurs. This is particularly noticeable in the case of the Geometridae,

the most interesting group of the Macro-Lepidoptera we have in New Zealand. In order to present the subject in an intelligible form, I propose first to give a few of the most striking instances of actual variation which have come under my notice, and then to state, as briefly as possible, the explanation which has suggested itself to me as the most probable.

In the beautiful genus *Chloroclystis* we have such extreme variation that the greatest difficulty has been experienced in fixing the limits of many of the species,

and much still remains to be done, before our knowledge of the genus can be regarded as in any way satisfactory. In all the species the general colour scheme is directed to the protection of the insects whilst resting with outspread wings on tree trunks. In some there is a certain amount of approximation to the appearance of bird droppings and these often rest on leaves (*C. sphragitis*, *C. sandycias*, etc.). Large white blotches are commonly met with on the fore-wings of species, which are otherwise more or less green, or brown, in their general coloration, and these forms are strikingly suggestive of white lichens, or bird droppings, such markings also tend to break up the real outline of the insect, and thus contribute towards its invisibility. In the extremely variable and abundant *Tortrix excessana* similar white blotches occasionally occur, and this form was at one time regarded as a distinct species under the name of *Tortrix biguttana*. Great variation exists in the very common *Hydriomena deltoidata*, but the very numerous species included under *Xanthorhoe* are not so variable. In *Epirrhantis* the general coloration is that of dead leaves, and extreme variation is always in evidence. In the dark brown forms irregular blotches of yellow occur, and markings suggestive of patches of fungi, so often present on dead leaves, are met with in endless variety. Almost all the species comprised in the extensive genus *Selidosema* are subject to such great variation that here again there has been the utmost difficulty in comprehending the true species, and we are still far from a complete knowledge of these difficult forms. Several of the commonest species (*S. productata*, *S. dejectaria*, and *S. panagrata*) are at the same time the most variable. The interesting genera *Azelina*, and *Gargaphia*, include some of the most variable "dead leaf" forms we have and, in addition, possess the extraordinary instinct of allowing themselves to fall through the air, with outspread wings, when they exactly resemble a falling leaf. Even if the exact spot where they come to rest is located, the utmost difficulty is often experienced in finding the insect. Finally, in the genus *Declana*, we have in the abundant *D. floccosa* one of the most variable moths in New Zealand. The colour scheme of the fore-wings, which alone are exposed when the insect is resting, closely approximate to grey lichen, but the light and dark markings exhibit endless variety both in form and in intensity, a whole drawerful of specimens is in fact needed before any adequate idea of the species can be grasped.

As an example of extreme variation, outside the Lepidoptera, the very interesting little Neuropteran *Drepanacra binocula* may be mentioned. When resting its resemblance to a dead, or partly skeletonized leaf, is almost perfect, but the object aimed at is attained by endless variation in the detailed pattern on the wings. In some forms the midrib of the "leaf" is distinctly indicated by a dark line from the base to the apex of the fore-wing, but in others there is no trace of this adaptation. This insect rests with its

wings closed as a steep roof, and the shape of the fore-wings, which alone are displayed, give the leaf-like appearance to all the numerous forms of this remarkable insect. Needless to say *D. binocula* has many synonyms.

It was whilst netting varieties of *Chloroclystis sandycias*, on the coast hills near Sinclair Head, Cook Strait, last October, that an idea occurred to me which I do not remember having seen published. The conception of "Common Warning Colours" is of course a very old one and forms the basis of the Mullerian theory of Mimicry. It is, in fact, generally agreed that a conspicuous pattern and coloration, held more or less in common by a number of distasteful, or obnoxious, insects (and their mimics), protects the "association" from destruction, in so far as birds, and other predators, soon learn *one* such pattern and avoid it. As a result, the insects comprised in such an "association" are not subjected to the same amount of "experimental tasting" as they would be if of *different* patterns, however conspicuous such varied patterns might be. Now the idea which has occurred to me is the obverse of this. A cryptic resemblance, however perfect, if possessed by a common and highly edible species, would soon be recognised and learnt by predators, and although still to a certain extent effective, would tend, as the knowledge of predators increased, to become less efficient. On the other hand, if the disguise is varied in endless detail, the task of learning, and locating, the cryptic species is enormously increased, and in this way great benefit will accrue to all species which add to a cryptic appearance the additional attribute of great variability. It has often been assumed that a very variable species is an assemblage of incipient species in the making. Such an explanation is somewhat conjectural, the question immediately arising as to why the intermediate forms have not been eliminated in the same way as they have been in the constant species, often very closely allied to the variable ones. On the other hand, if variation is actively beneficial in baffling the insects' enemies, its prevalence in cryptic forms is quite comprehensible, and the fact that so many highly variable species are also very abundant seems to favour this view.

In conclusion I desire to point out that the explanation here tentatively given has been reached through a study of a comparatively small section of the limited insect fauna of New Zealand, and it is now presented mainly with the object of stimulating other workers, who may be more fortunately placed to test its general validity.*

*In a subsequent issue of the "Entomologists' Monthly Magazine" (October, 1935), Professor G. D. Hale Carpenter points out that E. B. Poulton, now Sir Edward Poulton, F.R.S., had put forward a somewhat similar explanation many years previously. This was not known to me when the article was written, and the above ideas were arrived at entirely independently. In any case the opinion that *variation in cryptic Lepidoptera is the obverse of "Common Warning Colours,"* is not expressed in the earlier explanations cited by Professor Carpenter.

ADDENDUM.

Melanchra vitiosa (Suppl., page 398.) Additional foodplant *Coprosma rotundifolia*.

Chloroclystis sandycias (page 90.) Additional foodplant *Coprosma rhamnoides*.

Hydriomena callichlora subspecies **harmonica** Clarke (Plate XLVIII., fig. 19; Suppl. page 407.) A single specimen of this remarkable form was taken at rest on the trunk of a beech tree (*Nothofagus fusca*), in Gollan's Valley, on February 21, 1939, in which position it was quite conspicuous. The wings on the right side (both fore- and hind-wings) have a large elongate gash, the moth having evidently been seized by a bird whilst at rest with wings closed in usual position. It is clear that this extremely rare variety is not nearly so well protected as the typical form and Mr. Clarke's suggestion that *harmonica* is a case of atavism is probably a correct explanation.

Scoparia diphtheralis (page 192). This species was very much commoner than usual during the summer of 1938-1939.

Epichorista emphanes (Suppl., page 434.) The young shoots and blossoms of *Nothofagus fusca* in Gollan's Valley have nearly all been eaten off by the larva of this insect, and towards the end of October, 1938, the larvae were present in countless thousands, their silken threads covering the trees everywhere. The fallen bracts from the blossoms of the beech trees are used by the larvae to construct very neat cocoons about $\frac{3}{8}$ inch in length. The moths are now (November-December, 1938) appearing in prodigious numbers, the same as they did during the corresponding months of 1935.

Izatha epiphanes (Suppl., page 448.) This species was very much commoner than usual during the summer of 1938-1939.

Heliostibes illita (Suppl., page 457.) A variety of this insect, very seldom met with, has the fore-wings extremely dark blackish-brown faintly speckled with paler spots; the hind-wings are almost uniform dark blackish-brown, the usual yellow markings being indicated by slightly paler patches.

INDEX.

	PAGE		PAGE		PAGE		PAGE
<i>abdit</i>	434	Anisoplaca	440	bactrias	458	cataxesta	424
abrogata	408	annulata	391	badia	398	<i>Catocalides</i>	401
abyssina	471	anthracias	411	balanophora	448	caustica	471
accusatrix	465	anticlina	401	<i>barbarica</i>	456	cauta	462
acharis	423	antigrapha	457	barbigera	457	cedrinodes	409
Acharneodes	437	antimorus	419	Barea	451	Celama	391
achyrota	440	antiquana	430	basella	443	celerio	391
acmonias	448	Apatetris	438	Batrachedra	442	celidota	429
acompa	425	apertella	443	beata	409	cenchrias	446
acompsa	404	apheles	426	Bedellia	463	ceraunias	392
acontistis	392	<i>aphrias</i>	437	<i>bellatula</i>	444	certella	467
Acrocercops	460	aphrosticha	467, 468	belonota	466	cervinata	470
Acroclita	436	apicipallida	401, 402	benedicta	409	chalara	426
acroductyla	440	apocrypta	453	berenice	444	chalcites	401
acrodina	463	aposema	456	bifaciella	446	chalcodelta	461
acronoma	458	apparitella	441	bilineolata	404	chalicodes	424
acrothecta	458	apselias	419	bipunctella	422	chaophila	436
acroxantha	452	aquilonaris	445	bisunialis	424	characta	441
acuta	470	araneosa	468	Bityla	391	(Microcolona)	
acutata	412	archaeonoma	458	bjerkandrella	457	characta	423
Adeixis	412	Archyala	464	blenheimensis	392	(Scoparia)	
admirationis	392	ARCTIADAE	391	boisduvali	430	characterifera	470
adonis	409	arcuata	431	bolina	387	charadrias	430
adrepella	454	arenosa	405	Borkhausenia	442	charadrota	463
aduncalis	422	argentaria	415	brachyacma	444	charaxias	454
adusta	415	argodelta	465	brachydelta	458	charidema	407
adversa	423	Argyria	420	bryaula	447	Charixena	458
aegalis	428	Argyroploce	437	bryopis	409	charopa	436
aegrota	410	arida	407	bulbulata	408	chartularia	462
aëllomacha	460	aridella	434	Cadmogenes	462	chasmatias	463
aëllotricha	441	aristarcha	413	caerulea	394	cheradras	439
aenea (Gelophaula)	434	aristias	404	(Physetica)		Chersadaula	446
aenea	457	aristodoxa	456	caerulea	440	chionodira	463
(Glyphipteryx)		Aristotelia	438	(Gelechia)		chionogramma	409
aenea (Sabatinca)	471	arotis	394	caesius	419	chlamydota	423
aeolodes	429	asaleuta	424	calamogona	438	(Scoparia)	
<i>aerata</i>	465	Asaphodes	408	calaspidea	440	chlamydota	408
aerobatis	439	ascendens	470	Calicotis	456	(Xanthorhoe)	
aethaliana	436	Ascerodes	432	caliginosa	447	chloradelpa	443
aethalota	460	ascomorpha	433	(Gymnobathra)		chlorias	408
affinis	442	aspera	392	caliginosa	426	Chloroclystis	403
Aglossa	428	aspidephora	449	(Scoparia)		chlorocoma	463
agorastis	398	aspidota	426	calliarcha	471	chloroleuca	461
agrionata	402	aspistana	434	callichlora	407, 476	chloronota	451
Agriophara	454	asterisca	427	callicrena	412	chlorosaris	437
<i>Agrotides</i>	392	asteronota	458	calliploca	446	Choreutis	457
albifasciata	457	asterope	398	callirrhous	419	choristis	424
albimaculata	456	Asthena	407	callispora	456	chrysargyra	471
alcyone	397	astraea	465	camelias	409	chryserythra	400
alectoraria	413	astragalota	426	caminora	456	chrysitis	461
Aletia	393	astricta	442	campsiptera	429	chrysograpta	467
alopa	392	Astrogenes	467	campylocha	456	cinigerella	418
alopencana	431	ataracta	457	cana	392	cionophora	457
alta	401, 402	atmogramma	466	(Ichneutica)		Circoxena	463
Alucita	429	(Tinea)		cana	469	<i>ciserodes</i>	424
amauropa	454	Atomotricha	451	(Mallobathra)		citharoda	460
amblyterma	408	atristriga	394	canescens	455	citroena	410
amenana	452	atronivea	417	<i>canescens</i>	392	clarata	410
amorbas	448	atychioides	456	captiosa	400	clarkei	445
amphileuca	449	aulogramma	458	Capua	431	(Borkhausenia)	
Amphixystis	463	aurata	447	<i>Caradrinides</i>	391	clarkei	418
amplexana	435	aurella	471	cardui	388	(Orocrambus)	
analoga	457	austera	448	carnifex	452	clarkei	452
anaspila	418	Austramathes	392	Carposina	454	(Proteodes)	
anastrella	449	austrina	452	<i>Carposinides</i>	454	clarkei (Tortrix)	432
anceps	411	<i>austrina</i>	411	caryochroa	453	clavata	425
ancogramma	444	autocharis	407	castanea	464	Clepticosma	428
Andesia	392	autochroa	423	catacaustus	419	Cnephasia	436
angularis	445	autumna	425	cataclysmata	468	coctilis	399
anguligera	406	Azelina	416	Catamacta	431	codonias	458
angusta	469	axena	425	cataphracta	410	coeleno	396
angustipennis	419	Bactra	437	catapyrrha	412	Coleophora	460
animosa	423					<i>Coleophorides</i>	460

	PAGE		PAGE		PAGE		PAGE
colpogramma	413	decora	442	epimyliia	444	flava	413
colpota	424	decorata	397	epiphaea	422	(Selidosema)	
(Scoparia)		defigurata	391	epiphanes	448, 476	flavescens	433
colpota	457	Deilephila	391	Epirrhantis	413	flavidalis	423
(Simaethis)		dejectaria	415	epistrota	459	flavidella	446
<i>columbina</i>	438	Delogenes	418	Epitheetis	438	floccosa	416
columella	435	deltophora	425	epixyla	467	florida	448
comastis	423	demissa	471	epomiana	454	fluminea	414
combinatana	457	deprivatalis	429	epotis	430	fortis	392
comosaris	445	derogatella	464	Erana	394	fragilis	468
composita	394	despecta	470	erastis	458	<i>fraterna</i>	433
compsauta	464	diaclealis	423	eratopis	461	<i>fraudulenta</i>	434
Compsistis	446	Diasemia	422	Erebia	387	fraxinea	440
compsoqramma	442	diatmeta	396	erebopsis	423	frigida	456
compsoptypa	453	dicharacta	465	Erechthias	463	fugitivana	437
compta	392	dichorda	458	eremana	431	fulguritella	463
comptella	463	dicrenellus	419	eremita	456	fumata	426
conditana	433	Dicromodes	412	ergatis	423	fumipalpata	405
confusella	451	dictyarcha	462	erichrysa	391	furcatalis	429
conisalia	469	dinocosma	451	erichtitus	469	furcillata	465
consentiens	430	dinodes (Porina)	470	<i>Eriocephala</i>	470	furtiva	396
conspecta	466	dinodes (Scoparia)	423	eriphaea	443	furva	405
conspicuenta	449	dione	392	eriphylla	454	fusca (Locheutis)	452
contactella	454	Dipaustica	394	erratica	405	fusca (Porina)	470
contexta	425	diphtheralis	476	Eschatotypa	464	<i>galactalis</i>	424
contraria	439	diplorrhous	419	eucalypti	430	galactina	452
contritella	449	Diploseustis	428	Euchersadaula	446	gallaria	416
convulsella	448	Diptychophora	421	Euchoeca	407	Gauna	428
copidota	459	discariana	436	eucola	442	Gelechia	439
<i>Copromorphides</i>	454	disjunctella	456	Eucosma	437	<i>Gelechiades</i>	437
coracodes	456	disjungens	394	eucrossa	394	Gelophaula	434
cordalis	422	disparalis	462	Eucymatoge	405	generosa	464
coricopa	454	dissimilis	410	Eudorana	430	GEOMETRIDAE	401
Coridomorpha	456	ditrocha	463	Eugennaea	463	gerasoma	459
Corocosma	450	dives	395	Eulechria	451	glacialis	417
corruptus	419	dividua	466	eumenopa	449	Glaphyrarcha	455
corylanus	419	Dodonidia	387	eurybathra	440	Glaucoccharis	427
Cosmodes	391	Dolichernis	461	euryleucota	449	glaucophanes	421
Cosmophila	401	dolopaea	436	Eurythecta	431	glaucoterma	439
<i>Cosmopterygides</i>	441	Donacostola	453	euthrepta	455	<i>globulosa</i>	469
COSSIDAE	430	doroxena	471	Eutorna	453	glomeratus	391
costistrigalis	400	dotata	398	Euxoa	392	glypharcha	463
<i>Crambides</i>	418	Doxophyrtis	461	exarcha	451	<i>Glyphipterygides</i>	456
Crambus	419	drosocalca	462	exillis	425	Glyphipteryx	457
cremnopa	413	Dryadaula	464	exocha	457	Gnorimoschema	439
critica	423	dryas	404	exochana	454	gobiata	405
Crociosema	437	dryocyma	406	Exoria	437	gorierilla	388
crocostoma	451	dubia	441	exoriens	410	gonosemana	454
Crocydopora	418	<i>Ecclitica</i>	435	exospila	463	gorgopis	421
crucifera	456	Ectopatria	392	expolita	406	<i>gourlayi</i> (Aletia)	394
cryodana	454	egregia	417	exquisita	394	<i>gourlayi</i> (Porina)	470
crypsidora	435	ejuncida	426	exsanguis	464	Gracilaria	460
crypsimima	463	Elachista	458	<i>fabriciella</i>	460	<i>Gracilariades</i>	460
crypsinoia	425	<i>Elachistides</i>	458	falcatalis	429	graminosa	394
Crypsitricha	464	elaeas	460	falcatella	412	grammalis	422
Cryptolechia	453	elaphra	425	falsa	426	grammocoma	467
Ctenopseustis	433	elaina	422	falsidica	393	grannella	466
cucullina	394	electilis	420	falsiloqua	450	Graphiphora	392
culta	464	electrica	456	famularis	427	grata	443
cultus	419	elegans	391	farinaria	418	<i>gregalis</i>	456
cuneata	393	elephantina	434	farinata	409	griseata (Adeixis)	412
cuprealis	428	elutella	418	fascialata	413	griseata (Declana)	416
curva	432	emphanes	434, 476	fascialis	422	griseata (Izatha)	448
cyameuta	426	emplasta	436	fasciata	457	griseipennis	393
cyanopetra	400	empyrea	394	(Simaethis)		Gymnobathra	446
cyanospila	460	encausta	433	fasciata	402	gypsothis	413
cyclobathra	431	enchophorus	419	(Tatosoma)		gyrotoma	424
cymatias	423	Endophtora	464	fastigata	433	<i>Habrophila</i>	464
cymatodes	401	endotherma	456	felix	464	halianthes	405
cymodoce	465	Endrosis	442	fenestrata	415	halopis	426
cymozeucta	410	enodis	443	feredayi (Declana)	444	halosparta	464
cynica	412	ensyii (Dasyuris)	411	feredayi (Scoparia)	425	hamadelpa	470
cyphonias	450	ensyii (Porina)	470	ferox	411	hamatella	446
cypracma	469	Ephestia	418	festiva	435	haplotomus	419
cyptastis	425	ephorus	419	(Harmologa)		hapsimacha	463
Danaus	387	epiastra	394	festiva	449	Harmologa	435
Dasypodia	401	Epiblema	437	(Trachypepla)		harmonica	422
Dasyuris	411	epichalca	444	fervida	433	(Diptychophora)	
deamatella	441	Epichorista	434	fibrata	393	<i>harmonica</i>	407, 476
Declana	416	epicremna	426	flava (Cosmophila)	401	(Hydriomena)	
declarata	410	epicryptis	402				

- | | PAGE | | PAGE | | PAGE | | PAGE |
|-----------------------|----------|---------------------------|------|----------------------|------|----------------------|----------|
| harpophorus | 420 | ingenua | 449 | lichenodes | 449 | melochlora | 403 |
| Hectacma | 463 | innominata | 392 | (Trachypepla) | | melographa | 452 |
| hectori | 411 | innotatalis | 429 | lignana | 398 | memorabilis | 450 |
| heighwayi | 471 | inornata | 453 | limatula | 424 | memotuina | 469 |
| helias | 410 | insignis | 395 | Limnoecia | 441 | Mermeristis | 451 |
| heliastis | 429 | (Melanchra) | | limodoxa | 418 | merope | 398 |
| helioclypa | 422 | insignis | 469 | limonodes | 409 | merula | 387 |
| <i>Heliodinides</i> | 456 | (Nepticula) | | Lindera | 467 | mesochista | 448 |
| Heliostrabus | 456 | insignis | 411 | lindsayae | 453 | mesotropa | 464 |
| heliotis | 419 | (Notoreas) | | lindsayi | 435 | metachrysa | 454 |
| Heliothela | 423 | insignita | 467 | (Epichorista) | | Metacrias | 391 |
| Hellula | 422 | (Astrogenes) | | lindsayi | 392 | metallifera | 421 |
| helmsi | 387 | insignita | 414 | (Ichneutica) | | metallifera | 449 |
| helonoma | 459 | (Selidosema) | | lindsayi | 446 | metrosema | 468 |
| hemicihista | 435 | inspoliata | 457 | lindsayi | 438 | microsema | 393 |
| hemicihista | 463 | interpunctella | 418 | (Thiotricha) | | microbathra | 436 |
| hemicycla | 423 | interrupta | 421 | lindsayi (Tinea) | 466 | Microcolona | 441 |
| hemionana | 434 | intractana | 431 | linearis | 460 | Microrodes | 402 |
| hemipteraria | 413 | inuitata | 433 | liochroa | 453 | microdora | 421 |
| hemizona | 407 | iolanthe | 407 | literata | 462 | microlitha | 457 |
| Hendecasticha | 436 | iophaea | 454 | (Cadmogenes) | | micromela | 441 |
| <i>HEPIALIDAE</i> | 470 | iridia | 428 | literata | 454 | Micropardalis | 471 |
| Hepialus | 470 | iridoxa | 458 | (Carposina) | | microphanes | 467, 468 |
| <i>heptacentra</i> | | ischnomorpha | 418 | lithias | 400 | microphthalma | 423 |
| hermione | 417 | isogama | 451 | lithodes | 440 | micropolis | 412 |
| hexaleuca | 411 | Isonomeutis | 454 | litterata | 442 | MICROPTERYGI- | |
| Hierodoris | 456 | Izatha | 448 | Locheutis | 452 | DAE | 470 |
| hieropsis | 449 | jactatana | 436 | longstaffi | 394 | Micropteryx | 470 |
| hippeis | 439 | jeanae | 437 | loreyi | 393 | <i>millighani</i> | 448 |
| hokowhitalis | 430 | jocosa | 470 | lotinana | 431 | mimica | 435 |
| holanthes | 421 | jocularis | 465 | lucida | 469 | (Epichorista) | |
| holochalca | 457 | junctilinea | 417 | lucidata | 408 | mimica (Porina) | 470 |
| homalopa | 469 | Kiwaia | 437 | lucilia | 471 | minima | 405 |
| homodoxa | 444 | kuehniella | 418 | ludibunda | 398 | ministra | 457 |
| Homoeosoma | 418 | Kupea | 420 | luminatrix | 426 | minusculalis | 423 |
| Homohadena | 392 | labradus | 388 | lunata | 404 | minuta | 450 |
| homoscia | 400 | lactella | 442 | lunata | 415 | mira | 448 |
| honesta | 445 | lactiflua | 414 | lutata | 467 | mitis | 394 |
| honorata | 442 | lacustris (Aletia) | 394 | Lycaena | 388 | mixochlora | 467 |
| hoplodesma | 442 | lacustris | 459 | lychnophanes | 434 | Mnesarchaea | 470 |
| horeaa | 443 | lacustris | 404 | <i>lycosema</i> | 429 | mochlophorana | 437 |
| howesi | 421 | lacustris (Chloroclystis) | | <i>Lyoniades</i> | 463 | mochlota | 466 |
| howesii | 467 | lapidosa | 468 | Lythria | 412 | modesta | 431 |
| humilis | 405 | laquearia | 463 | Lysiphragma | 467 | modica | 414 |
| (Chloroclystis) | | Laspeyresia | 437 | machaeristes | 419 | molifera | 423 |
| humilis | 431 | lassa | 443 | macropetana | 436 | mollis | 396 |
| (Pyrgotis) | | lata (Melanchra) | 396 | macrozyga | 463 | molybditis | 433 |
| huttoni (Metacrias) | 391 | latens | 444 | maculata | 459 | monacha | 415 |
| Hybernia | 415 | Lathicrossa | 453 | maculosa | 433 | <i>Monoctenia</i> | 412 |
| hybrealis | 422 | lathriopa | 446 | magnimaculata | 405 | monophragma | 440 |
| Hydriomena | 406 | laticostatus | 402 | malacellus | 420 | Monopsis | 465 |
| <i>Hydriomenides</i> | 401 | laudata | 443 | malachita | 405 | monospilalis | 429 |
| hydrocosma | 461 | Lecithocera | 441 | Mallobathra | 468 | monoviridisata | 402 |
| hyetodes | 446 | lectus | 419 | maoralis | 423 | morbida | 454 |
| Hymenia | 422 | legionaria | 426 | maoriaria | 410 | morella | 444 |
| hymenopsis | 461 | legnota | 426 | maranta | 442 | morosa | 444 |
| <i>Hyphenides</i> | 400 | lenis | 439 | maranda | 444 | (Borkhausenia) | |
| Hyphenodes | 400 | lenita | 445 | marginata | 455 | morosa | 400 |
| Hypolimnas | 387 | leonina | 421 | marmarea | 457 | (Melanchra) | |
| <i>Hyponomeutides</i> | 459 | leptalea | 425 | marmarina | 423 | Morova | 429 |
| ianthina | 471 | Leptocroca | 445 | marmorata | 392 | munda | 394 |
| Ichneutica | 392 | leptomera | 416 | matutina | 461 | munita | 466 |
| ida (Chloroclystis) | 405 | leptosema | 458 | maya | 395 | muscosata | 403 |
| ida (Dichromodes) | 412 | lestevata | 401 | mechanitis | 411 | Musotima | 422 |
| idiogama | 443 | Leucania | 392 | Mecyna | 423 | mutans | 396 |
| ignobilis | 455 | leucaniana | 432 | Megacraspedus | 438 | mylites | 419 |
| illita | 457, 476 | leucelaea | 414 | megalyntha | 463 | myrrhina | 463 |
| illota | 425 | leucobathra | 412 | megaspilata | 408 | mysteriastis | 456 |
| illustris | 468 | leucocentra | 453 | melampetrus | 418 | mysticopa | 467 |
| imbriferana | 436 | leucogramma | 427 | melanaegis | 423 | napaea | 458 |
| imperfecta | 410 | leucophthalma | 421 | Melanchra | 394 | nebulosa | 421 |
| inaequata | 447 | leucoplanetis | 449 | <i>Melanchrides</i> | 392 | necopina | 457 |
| incendiaria | 435 | leucothrinca | 432 | melanamma | 442 | nelsonaria | 416 |
| incompta | 411 | levicula | 442 | Melanchra | 394 | nephelias | 410 |
| inconstans | 400 | levigata | 447 | <i>Melanchrides</i> | 392 | nephoptera | 458 |
| indistinctalis | 424 | levis | 400 | melanocentra | 405 | Nepticula | 469 |
| indocilis | 415 | lewisi | 451 | melanombra | 438 | <i>Nepticulides</i> | 469 |
| indolescens | 449 | lichenodes | 405 | <i>melanoptintha</i> | 439 | nereis | 405 |
| indomita | 432 | (Chloroclystis) | | melanosperma | 432 | nervosa | 392 |
| <i>indubitata</i> | 429 | | | melicerte | 401 | Nesarcha | 422 |
| infensa | 397 | | | melinarta | 413 | nigra | 413 |
| | | | | meliturga | 423 | (Dichromodes) | |

	PAGE
<i>nigra</i>	447
(Gymnobathra)	
<i>nigra</i> (Scythris)	459
<i>nimbosa</i>	449
<i>niphospora</i>	426
<i>niphostrota</i>	430
<i>niphozela</i>	459
<i>nitens</i>	422
<i>nivalis</i>	462
<i>nivea</i>	438
<i>niveata</i>	416
NOCTUIDAE	391
<i>nomeutis</i>	426
<i>notabilis</i>	454
<i>notata</i>	423
<i>noteraula</i>	437
Notoreas	411
<i>nullifera</i>	393
<i>Nyctemera</i>	391
<i>nycteris</i>	444
<i>Nymphostola</i>	452
<i>Nymphula</i>	422
<i>obbarata</i>	410
<i>obliqua</i>	449
<i>obliquana</i>	433
<i>oblongana</i>	435
<i>obscura</i>	469
(Mallobothra)	
<i>obscura</i>	410
(Xanthorhoe)	
<i>obsecrata</i>	394
<i>obstructus</i>	419
<i>occulta</i>	410
<i>ochnosema</i>	436
<i>ochrea</i>	414
<i>ochrogastra</i>	446
<i>ochroleuca</i>	459
<i>ochthistis</i>	399
<i>ocneropis</i>	450
<i>octans</i>	395
<i>octophora</i>	426
<i>oculata</i>	427
<i>oculiferella</i>	417
<i>oeconoma</i>	451
<i>Oecophorides</i>	442
<i>oenospora</i>	418
<i>olivea</i>	396
<i>oliveri</i>	396
<i>ombrodoxa</i>	458
<i>omichleuta</i>	446
<i>omichlias</i>	411
<i>omicron</i>	400
<i>ommatias</i>	451
<i>omogramma</i>	464
<i>omoplaca</i>	397
<i>omoscopa</i>	463
<i>omphalota</i>	447
<i>oncobolus</i>	420
<i>operculella</i>	439
<i>ophiodryas</i>	443
<i>Ophiusa</i>	401
<i>Opogona</i>	463
<i>oppositus</i>	419
<i>optanias</i>	437
<i>oraria</i>	410
<i>oreas</i>	470
<i>organaea</i>	426
<i>oriastra</i>	469
<i>origenes</i>	448
<i>orites</i>	430
<i>ornatus</i>	419
<i>ornithias</i>	465
<i>Orocrambus</i>	418
<i>Orophora</i>	430
<i>orophylla</i>	408
<i>orphnaea</i>	411
<i>Orthenches</i>	462
<i>Orthoclydon</i>	408
<i>orthocopa</i>	432
<i>orthophanes</i>	442
<i>orthropis</i>	423

	PAGE
<i>oxyina</i>	444
<i>oxymachaera</i>	458
<i>Oxythecta</i>	452
<i>pactolia</i>	463
<i>pallacopis</i>	464
<i>pallida</i>	391
<i>pallidula</i>	427
<i>paltomacha</i>	425
<i>panacivagans</i>	460
<i>panagrata</i>	415
<i>panopla</i>	425
<i>Pantosperma</i>	457
<i>paracausta</i>	396
<i>paracosma</i>	470
<i>paradelpha</i>	411
<i>paradesma</i>	438
<i>Paradetis</i>	408
<i>paraglypta</i>	464
<i>paralodes</i>	404
<i>paraloxa</i>	431
<i>Paramorpha</i>	455
<i>parapleura</i>	439
<i>paraxysta</i>	393
<i>paratrimma</i>	442
<i>parca</i>	446
(Gymnobathra)	
<i>parca</i> (Scoparia)	427
<i>Parectopa</i>	460
<i>parmata</i>	394
<i>parmifera</i>	423
<i>Parocystola</i>	452
<i>parora</i>	408
<i>parorma</i>	422
<i>parthenia</i>	436
<i>parvitis</i>	391
<i>parvula</i>	440
<i>partheniata</i>	411
<i>paula</i>	442
<i>pelanodes</i>	400
<i>pellionella</i>	467
<i>pelurgata</i>	413
<i>pentadactyla</i>	420
<i>pentazyga</i>	464
<i>pergrata</i>	415
<i>perichlora</i>	443
<i>perieralis</i>	428
<i>periphanes</i>	424
<i>perisseuta</i>	468
<i>perornata</i>	412
<i>persecta</i>	434
<i>Persectania</i>	394
<i>pervius</i>	419
<i>pessota</i>	392
<i>petrias</i>	436
<i>petrina</i>	426
<i>petrograpta</i>	396
<i>phaeoptila</i>	448
<i>phaeoxyla</i>	432
<i>phalerias</i>	424
<i>pharatomya</i>	464
<i>phaula</i>	392
<i>phegophylla</i>	443
<i>philadelphia</i>	446
<i>Philobota</i>	452
<i>philocapna</i>	422
<i>phlegyra</i>	456
<i>phortegella</i>	464
<i>photinella</i>	445
<i>phragmitella</i>	441
<i>phricias</i>	400
<i>Phrissogonus</i>	402
<i>Phthorimaea</i>	439
<i>Phycitides</i>	417
<i>Phycomorpha</i>	454
<i>Phylacodes</i>	462
<i>Physetica</i>	394
<i>picarella</i>	448
<i>pictoriana</i>	432
<i>pictula</i>	394
PIERIDAE	388
<i>Pieris</i>	389

	PAGE
<i>plaesiosema</i>	439
<i>plagiaula</i>	441
<i>planetopa</i>	421
<i>Platyptilia</i>	429
<i>plebeiana</i>	437
<i>plexippus</i>	387
<i>plinthina</i>	403
<i>plinthoglypta</i>	431
<i>Plodia</i>	418
<i>plumbea</i>	409
<i>plumbiflua</i>	456
<i>plumbosa</i>	448
<i>Plusia</i>	401
<i>Plusiades</i>	401
<i>Plutella</i>	463
<i>Plutellides</i>	461
<i>pluto</i>	387
<i>pluviata</i>	411
<i>Poliades</i>	392
<i>polita</i>	463
<i>politis</i>	443
<i>polyleuca</i>	449
<i>pomonella</i>	437
<i>pongalis</i>	423
<i>Porina</i>	470
<i>porophora</i>	445
<i>porphyraula</i>	460
<i>porphyrias</i>	408
<i>porphyritis</i>	462
<i>postvittana</i>	432
<i>potamias</i>	437
<i>practica</i>	408
<i>praecipitalis</i>	434
<i>praefectata</i>	408
<i>praesignis</i>	396
<i>prasinias</i>	409
<i>prasinodes</i>	462
<i>prasophyta</i>	448
<i>Precis</i>	388
<i>primaria</i>	447
<i>prionota</i>	407
<i>prochloa</i>	432
<i>profunda</i>	452
<i>progonopis</i>	469
<i>pronophela</i>	443
<i>propria</i>	394
<i>Proselena</i>	430
<i>prospiciens</i>	451
<i>Proteodes</i>	452
<i>Proternia</i>	422
<i>Proterodesma</i>	467
<i>Proteroeca</i>	423
<i>Prothinodes</i>	467
<i>Protithona</i>	437
<i>protochlora</i>	449
<i>Protosynaema</i>	461
<i>prototoxa</i>	415
<i>provida</i>	392
<i>psammachroa</i>	463
<i>psammimella</i>	463
<i>psammittis</i>	425
<i>psathyra</i>	442
<i>pseudostinaria</i>	408
PSYCHIDAE	430
PTEROPHORIDAE	429
<i>Ptocostola</i>	420
<i>ptyoptera</i>	440
<i>pulchraria</i>	407
<i>pulla</i>	452
<i>pulverea</i>	439
<i>pumila</i>	439
<i>punicea</i>	404
<i>puparum</i>	391
<i>purdii</i>	392
<i>purpurea</i>	392
(Austramathes)	
<i>purpurea</i>	461
(Gracilaria)	
<i>purpurifera</i>	406
PYRALIDAE	417
<i>Pyralides</i>	428
<i>pyramidas</i>	430

	PAGE
<i>Pyraustides</i>	422
<i>Pyrgotis</i>	430
<i>Pyroderces</i>	441
<i>quadrijuga</i>	471
<i>quadristrigata</i>	402
<i>quaestoria</i>	424
<i>quaestuosa</i>	461
<i>querula</i>	437
<i>radians</i> (Euxoa)	392
<i>radians</i> (Thylacosceles)	456
<i>rapae</i>	389
<i>Raumatia</i>	437
<i>recta</i>	410
<i>regilla</i>	412
<i>repercussa</i>	424
<i>restincta</i>	454
<i>reticularis</i>	435
<i>rhodobapta</i>	453
<i>rhodopleura</i>	394
<i>Rhopalocera</i>	387
<i>rigescens</i>	448
<i>rivalis</i>	403
<i>rixata</i>	406
<i>robusta</i>	431
<i>rosearia</i>	408
<i>roseata</i>	464
<i>rosicoma</i>	471
<i>rotuella</i>	426
<i>rubella</i>	405
<i>rubiginella</i>	464
<i>rubropunctaria</i>	407
<i>rudiata</i>	415
<i>rufescens</i>	408
<i>rufipellis</i>	405
<i>rugata</i>	457
<i>rureana</i>	431
<i>Sabatinea</i>	471
<i>saeva</i>	397
<i>Sagephora</i>	464
<i>sagittifera</i>	458
<i>Salebria</i>	417
<i>saleuta</i>	462
<i>salustius</i>	388
<i>Samana</i>	412
<i>Proteodes</i>	403, 476
<i>sanguinea</i>	435
<i>sapiens</i>	393
<i>saristes</i>	419
<i>scariphota</i>	413
<i>Sceliodes</i>	422
<i>schematica</i>	439
<i>Schiffermuelleria</i>	442
<i>Scieropepla</i>	453
<i>scissaria</i>	412
<i>scitulus</i>	419
<i>scoliastris</i>	435
<i>Scoparia</i>	423
<i>Scoriodyta</i>	469
<i>scoriota</i>	469
<i>scripta</i>	426
<i>scruposa</i>	433
<i>scutata</i>	395
<i>Scythrides</i>	459
<i>Scythris</i>	459
<i>selenitis</i>	461
<i>Selidosema</i>	413
<i>Selidosemides</i>	413
<i>semialbata</i>	403
<i>semifasciata</i>	462
<i>semifssata</i>	408
<i>semivittata</i>	393
<i>semnodes</i>	453
<i>senex</i>	470
<i>septentrionalis</i>	462
<i>sequens</i>	400
<i>Sericea</i>	401
<i>sericodes</i>	410
<i>sideraspis</i>	426

	PAGE		PAGE		PAGE		PAGE
siderota	444	Stomopteryx	438	timora	401, 402	ustistriga	396
signata	470	strategica	391	Tinea	465	vagata	452
Simaethis	457	stricta	410	TINEIDAE	437	vagella	418
similata	407	strigulata	468	<i>Tineides</i>	464	vana	434
similis	458	stulta	393	tipulata	401	Vanessa	388
(Glyphipteryx)		suavis	415	tonnoiri	468	Vanicela	456
<i>similis</i>	470	subalpina	468	toreuta	417	varia (Proteodes)	452
(Mnesarchaea)		subcarinata	465	tornospila	403	varia (Eurythecta)	437
<i>similis</i>	462	subfasciata	429	topia	402	variabilis	416
(Orthenches)		subita	423	torodes	424	variegata	431
similis	394	sublignalis	417	torogramma	432	venipunctata	408
(Persectania)		sublitella	446	toroneura	392	Venusia	407
simplex (Crambus)	419	subobscurata	409	Tortricidae	430	verriculata	407
simplicella	438	subrectaria	407	<i>Tortricides</i>	430	vestita	444
sinuata	426	subsecivella	438	Tortrix	432	vigens	430
sinuosa	443	sulcana	393	Trachypepla	449	villida	388
siraea	434	symbolaea	457	transaurea	412	villosa	411
siria	406	symmorpha	453	transversella	438	vinaria	449
siriana	434	<i>Syntomactis</i>	441	(Epitheetis)		vinitincta	463
siriellus	419	Talaeporia	467	transversella	458	virescens	470
skelloni	456	Talis	421	(Glyphipteryx)		virgata	463
sophorae	469	Tanaoctenota	441	trapezitis	421	vitiosa	398, 476
sordida	451	Taoscelis	450	trapezophora	423	vittellus	419
sparsa	438	tartarea	398	triangularis	467, 468	vulcanica	411
spatiosa	433	Tatosoma	401	triatma	459	vulgaris	419
speciosa	434	Tauroscopa	421	<i>trimaculata</i>	437	White Butterfly	389
spectans	401	Tawhitia	421	triphragma	406	xanthaspis	408
sphaeriata	412	temenaula	393	triselena	424	xanthogramma	395
sphenias	433	tephrophanes	444	tristicta	442	xanthogrammus	420
sphenota	460	terminella	463	tristicta	446	xanthomicta	442
SPHINGIDAE	391	terranea	464	(Euchersadaula)		Xanthorhoe	408
sphragitis	405	terrena	414	tristis	457	Xyleutes	430
spissicornis	460	tessellatella	467	(Simaethis)		<i>Xyloryctides</i>	453
Spilonota	436	testulatus	402	trisolca	434	xyrius	446
spina	392	tetrachroa	399	Trithamnora	467	Ypsilon	392
spodiaea	451	tetracycla	424	tritonellus	419	Zapyrastra	456
Sporophylla	418	tetraphala	438	trivirgata	425	zatrophana	434
squamea	447	texta	465	<i>tuberosella</i>	439	zelaea	431
Stathmopoda	456	thalamota	454	tuhualis	419	Zelleria	459
stella	456	thalerodes	444	tuicana	427	zelota	458
(Coridomorpha)		thallophora	459	turneri	425	<i>zephyrana</i>	466
stella	428	Thamnosara	446	typhicola	453	zestodes	433
(Glaucoccharis)		Thectophila	441	umbraculata	470	zopherana	436
stellata	459	Theoxena	412	umbrosa	409	zophochalca	438
Stenoptilia	429	thetodes	447	undalis	422	zophodactyla	430
stephanitis	408	Thiotricha	439	unica	392	zophoëssa	451
stereota	464	thorybodes	439	unicolor	430	zorionella	460
steropaea	425	thyraula	439	urticae	404		
steropastis	394	thyridias	423	ustaria	413		
steropucha	461	Thyrididae	429	ustimacula	423		
<i>Sterrhides</i>	401	<i>tigrina</i>	464	ustiramis	423		
stinaria	411	tigris	433				
stipata	398						

PLATES AND EXPLANATIONS.

PLATE LIII.

PREPARATORY STAGES.

NOCTUIDAE.

FIG.		PAGE
1.	Larva of <i>Leucania sulcana</i> . (Imago, Plate VII., fig. 11.)*	393
2.	Larva of <i>Melanchra coctilis</i> . (Imago, Plate LV., fig. 19.)	399
3.	Larva of <i>Melanchra omoplaca</i> . (Imago, Plate VIII., figs. 26, 27.)	397
11.	Larva of <i>Melanchra vitiosa</i> . (Imago, Plate IX., fig. 13.)	398
16.	Larva of <i>Agrotis ypsilon</i> . (Imago, Plate VI., fig. 21.)	392
28.	Larva of <i>Persectania composita</i> . (Imago, Plate VII., fig. 27.)	394

GEOMETRIDAE.

4.	Larva of <i>Tatosoma tipulata</i> . (Imago, Plate XII., figs. 8, 9.)	401
5.	Young larva of ditto just hatched.	
6.	Larva of <i>Selidosema prototoxa</i> . (Imago, Plate XLVIII., figs. 23, 24.)	415
12.	Larva of <i>Azelina nelsonaria</i> . (Imago, Plate XVIII., figs. 7, 8.)	416
13.	Larva of <i>Venusia xanthaspis</i> . (Imago, Plate XIII., fig. 5.)	408
14.	Larva of <i>Selidosema colpogramma</i> . (Imago, Plate LV., figs. 31, 32.)	413
15.	Larva of <i>Xanthorhoe semifissata</i> . (Imago, Plate XIII., figs. 47, 48.)	408
22.	Larva of <i>Xanthorhoe venipunctata</i> . (Imago, Plate XIII., fig. 35.)	408
23.	Larva of <i>Hydriomena purpurifera</i> . (Imago, Plate XII., fig. 45.)	406
24.	Larva of <i>Xanthorhoe adonis</i> . (Imago, Plate XIV., fig. 5.)	409
25.	Larva of <i>Venusia autocharis</i>	407
26.	Larva of <i>Asthena pulchraria</i> . (Imago, Plate XII., figs. 29, 30.)	407
27.	Larva of <i>Selidosema monacha</i> . (Imago, Plate XVI., figs. 25, 26.)	415
31.	Larva of <i>Declana floccosa</i> just hatched. (Imago, Plate XVIII., figs. 23-34.)	416
32.	Half-grown larva of same.	
33.	Full-grown larva of <i>Declana floccosa</i> .	

PTEROPHORIDAE.

7.	Larva of <i>Alucita furecatalis</i> . (Imago, Plate XXIII., fig. 17.)	429
8.	Pupa of ditto.	
35.	Larva of <i>Platyptilia acolodes</i> . (Imago, Plate XXIII., fig. 14.)	429
36.	Pupa of ditto.	

TORTRICIDAE.

9.	Larva of <i>Harmologa oblongana</i> . (Imago, Plate XXVI., fig. 16.)	435
19, 20, 21.	Larva of <i>Ctenopseustis obliquana</i> . (Imago, Plate XXV., figs. 3-10.)	433
30.	Larva of <i>Capua alopecana</i> . (Imago, Plate XLV., fig. 11.)	431
37.	Larva of <i>Harmologa columella</i> . (Imago, Plate LII., fig. 4.)	435

TINEIDAE.

10.	Larva of <i>Sagephora phortegella</i> . (Imago, Plate XXXVII., figs. 20, 21.)	464
17.	Larva of <i>Seythris epistrota</i> . (Imago, Plate XXVIII., fig. 13.)	459
18.	Larva of <i>Cryptolechia rhodobapta</i> . (Imago, Plate XLIX., fig. 25.)	453
29.	Larva of <i>Scieropepla typhicola</i> . (Imago, Plate XXXII., fig. 15.)	453
34.	Larva of <i>Lysiphragma mixochlora</i> . (Imago, Plate XXXIX., fig. 9.)	467
38.	Larva of <i>Barea confusella</i> . (Imago, Plate XXXII., fig. 11.)	451

All the figures are magnified. The natural length of the insect is shown by a line beside each figure.

*Just before last moult.

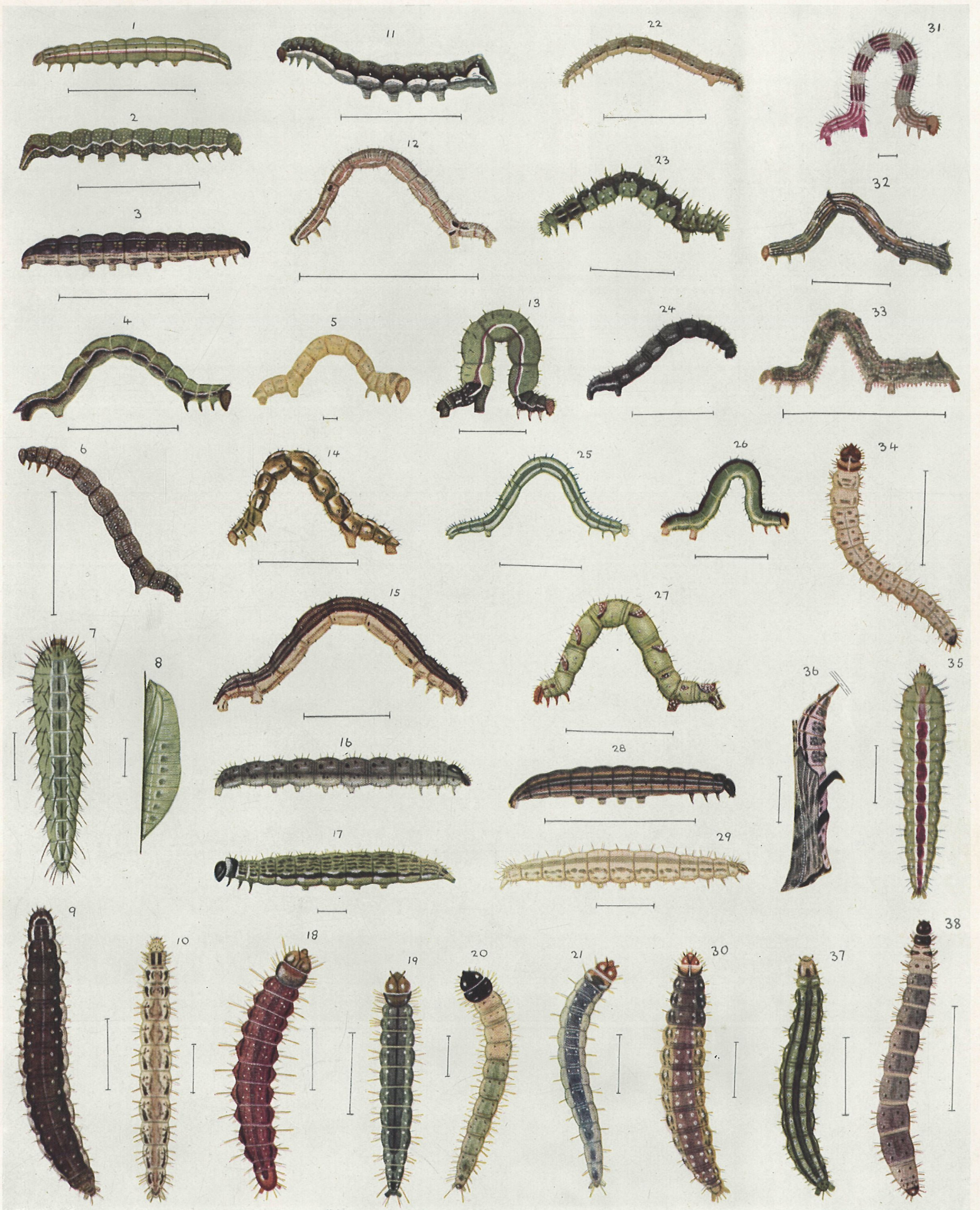


PLATE LIV.

PREPARATORY STAGES.

PIERIDAE.

FIG.		PAGE
24.	Larva of <i>Pieris rapae</i> . (Imago, Plate LXII., fig. 7.)	389
25.	Pupa of ditto.	

NOCTUIDAE.

10.	Larva of <i>Melanchra xanthogramma</i>	395
16.	„ „ „ <i>ochthistis</i> . (Imago, Plate IX., fig. 14.)	399
17.	„ „ „ „ just hatched.	
20.	„ „ „ <i>infensa</i> . (Imago, Plate VIII., fig. 19.)	397
21.	„ „ <i>Bityla defigurata</i> . (Imago, Plate X., fig. 12.)	391
28.	„ „ <i>Melanchra stipata</i> . (Imago, Plate VIII., fig. 35.)	398
29.	„ „ „ <i>diatmeta</i> . (Imago, Plate VIII., fig. 7.)	396
32.	„ „ „ <i>coeleno</i> . (Imago, Plate VIII., fig. 20.)	396
34.	„ „ „ <i>aleyone</i> . (Imago, Plate VIII., fig. 25.)	397

GEOMETRIDAE.

1.	Larva of <i>Chloroclystis urticae</i>	404
2.	„ „ „ <i>aristias</i> . (Imago, Plate XI., fig. 26.)	404
3.	„ „ <i>Tatosoma alta</i> . (Imago, Plate XII., fig. 10.)	402
4.	„ „ „ <i>lestevata</i> . (Imago, Plate XII., fig. 4.)	401
5.	„ „ <i>Chloroclystis rivalis</i> . (Imago, Plate XV., fig. 18.)	403
7.	„ „ <i>Hydriomena rixata</i> . (Imago, Plate XII., fig. 44.)	406
8.	„ „ <i>Declana atronivea</i> . (Imago, Plate XVIII., fig. 18.)	417
9.	„ „ <i>Epirrhanthis alectoraria</i> . (Imago, Plate XVI., fig. 5.)	413
11.	„ „ <i>Chloroclystis semialbata</i> variety on flowers of <i>Edwardsia</i> . (Imago, Pl. XI., fig. 5.)	403
12.	„ „ „ „ variety on flowers of <i>Coprosma grandifolia</i>	403
22.	„ „ <i>Euchoea rubropunctaria</i> . (Imago, Plate XI., fig. 39.)	407
23.	„ „ <i>Phrissogonus testulatus</i> . (Imago, Plate XI., fig. 7.)	403
26.	„ „ <i>Declana griseata</i> . (Imago, Plate XVIII., fig. 15.)	416
36.	„ „ <i>Chloroclystis melochlora</i> . (Imago, Plate XI., fig. 14.)	403

PYRALIDAE.

19.	Larva of <i>Nesarcha hybrealis</i> . (Imago, Plate XXI., fig. 30.)	422
31.	„ „ <i>Mecyna flavidalis</i> . (Imago, Plate XXI., fig. 27.)	423
33.	„ „ „ <i>marmarina</i> . (Imago, Plate XXI., fig. 26.)	423

PTEROPHORIDAE.

18.	Larva of <i>Platyptilia falcatalis</i> . (Imago, Plate XXIII., fig. 7.)	429
-----	---	-----

TINEIDAE.

6.	Larva of <i>Proteodes carnifex</i> . (Imago, Plate XXXII., fig. 23.)	452
13.	„ „ <i>Thiotricha tetrphala</i> removed from case. (Imago, Plate XXVII., fig. 17.)	438
14.	„ „ ditto in case constructed of leaves of <i>Nothofagus</i>	438
15.	„ „ „ „ „ „ „ „ <i>Myrtus obcordata</i>	438
27.	Case-bearing larvae, imago unknown	474
30.	Larva of <i>Opogona omoscopa</i> . (Imago, Plate XXXVI., fig. 11.)	463
35.	„ „ <i>Orthenches prasinodes</i> . (Imago, Plate XXXVI., fig. 5.)	462

All the figures are magnified. The natural length of the insect is shown by a line beside each figure.



PLATE LV.

NOCTUIDAE.

FIG.		PAGE
1.	<i>Cosmophila flava</i> ♂ (Plate IX., fig. 28, ♀)	401
2.	<i>Bityla pallida</i> ♂ (Plate X., fig. 10)	391
3.	<i>Melanchra captiosa</i> ♀	400
4.	„ <i>furtiva</i> ♂ (Plate VIII., fig. 14 ♀)	396
5.	„ <i>dives</i> ♂	395
6.	„ „ ♀	
9.	„ <i>ludibunda</i> ♀	398
10.	<i>Aletia sapiens</i> ♂	393
11.	<i>Melanchra badia</i> ♂	398
12.	„ <i>scutata</i> ♂ (Plate VIII., fig. 12 ♀)	395
13.	„ <i>mutans</i> ♀ (Plate VIII., fig. 13 ♂)	396
14.	„ <i>petrograpta</i> ♀	396
17.	„ <i>saeva</i> ♂	397
18.	„ „ ♀	
19.	„ <i>coctilis</i> ♂ (Plate LIII., fig. 2 larva.)	399
20.	„ <i>tetrachroa</i> ♀	399
21.	„ <i>pelanodes</i> ♂	400
22.	<i>Persactania similis</i> ♀	394
25.	<i>Leucania paraxysta</i> ♂	393
26.	„ „ ♀	
27.	<i>Aletia lacustris</i> ♂	394
28.	„ <i>eucrossa</i> ♀	394
29.	<i>Melanchra cyanopetra</i> ♂	400
30.	<i>Ectopatria aspera</i> ♂	392

GEOMETRIDAE.

7.	<i>Venusia verri culata</i> ♀ variety (Plate XIII., fig. 10, typical form.)	407
8.	<i>Selidosema adusta</i> ♂	415
15.	„ <i>insignita</i> ♂	414
16.	„ <i>pergrata</i> ♂	415
23.	„ <i>flava</i> ♂	413
24.	<i>Declana toreuta</i> ♀	417
31.	<i>Selidosema colpogramma</i> ♂ (Plate LIII., fig. 14 larva.)	413
32.	„ „ ♀	

All the figures are of the natural size.



PLATE LVI.

GEOMETRIDAE.

FIG.		PAGE
1.	<i>Selidosema modica</i> ♂	414
2.	" " " ♀	
3.	<i>Xanthorhoe citroena</i> ♂	410
4.	" " " ♀	
10.	" <i>obscura</i> ♂	410
11.	<i>Chloroclystis rufipellis</i> ♂	405
13.	" <i>tornospila</i> ♂	403
18.	<i>Asaphodes amblyterma</i> ♂	408
21.	<i>Dasyuris micropolis</i> ♀	412
22.	<i>Xanthorhoe maoriaria</i> ♂	410
30.	<i>Notoreas hexaleuca</i> ♀	411
31.	<i>Selidosema melinata</i> ♀	413

PYRALIDAE.

5.	<i>Tauroscopa nebulosa</i> ♂	421
6.	<i>Orocrambus clarkei</i> ♂	418
7.	<i>Scoparia quaestoria</i> ♀	424
9.	" <i>tuicana</i> ♀	427
12.	" <i>pallidula</i> ♂	427
14.	<i>Homoeosoma ischnomorpha</i> ♂	418
15.	<i>Scoparia parca</i> ♂	427
16.	" <i>oculata</i> ♂	427
17.	<i>Crambus lectus</i> ♀	419
19.	<i>Salebria sublignalis</i> ♂	417
20.	<i>Gauna aegalis</i> ♀	428
24.	<i>Scoparia contexta</i> ♂	425
25.	" <i>famularis</i> ♀	427
26.	" <i>sinuata</i> ♀	426
27.	" <i>gyrotoma</i> ♀	424
28.	<i>Crambus ornatus</i> ♂	419
29.	" <i>malacellus</i> ♂	420
32.	<i>Diptychophora bipunctella</i> ♂	422
33.	<i>Scoparia ustiramis</i> ♂	423
34.	<i>Homocosoma anaspila</i> ♀	418
35.	<i>Scoparia autumnna</i> ♀	425
36.	<i>Aglossa cuprealis</i> ♂	428
37.	<i>Kupea electilis</i> ♀	420

TORTRICIDAE.

8.	<i>Eurythecta phaeoxyla</i> ♂	432
23.	<i>Gelophaula aridella</i> ♂	434

Most of the figures are magnified and in these the expansion of the wings is shown by a line beneath each figure.



PLATE LVII.

TORTRICIDAE.

FIG.	PAGE
1. <i>Tortrix indomita</i> ♂	432
2. „ <i>clarkei</i> ♀	432
3. <i>Capua variegata</i> ♂	431
4. <i>Pyrgotis modesta</i> ♂	431
5. <i>Epichorista mimica</i> ♂	435
9. <i>Bactra optanias</i> ♀ (Plate XLV., fig. 30 ♀)	437
10. <i>Argyroplote chlorosaris</i> ♀ (Plate XXVI., fig. 26 ♂)	437
11. <i>Acroelita discariana</i> ♀	436
12. „ „ ♂	
16. <i>Pyrgotis pyramidias</i> ♀ variety (Plate XXIV., fig. 12, typical form)	430
17. <i>Epichorista speciosa</i> ♂	434
18. <i>Eurytheeta leucothrinca</i> ♂	432
19. <i>Tortrix ascomorpha</i> ♀	433
23. <i>Epichorista elephantina</i> ♀ (Plate L., fig. 16 ♂)	434
24, 25. <i>Proselena antiquana</i> ♀ vars. (Plate XLV., fig. 29 ♂)	430
26. <i>Epichorista lindsayi</i> ♂	435

TINEIDAE.

6. <i>Borkhausenia honesta</i> ♂	445
7. „ <i>porophora</i> ♀	445
8. „ <i>angularis</i> ♀	445
13. <i>Endophthora rubiginella</i> ♂	464
14. <i>Batrachedra litterata</i> ♀	442
15. „ <i>tristicta</i> ♀	442
20. <i>Gelechia calaspidea</i> ♂	440
21. <i>Orthenches septentrionalis</i> ♂	462
22. <i>Batrachedra astricta</i> ♂	442
27. <i>Borkhausenia berenice</i> ♀	444
28. „ <i>laudata</i> ♂	443
29. <i>Taoscelis crocostoma</i> ♂	451
30. <i>Borkhausenia lassa</i> ♂	443

All the figures are magnified. The approximate expansion of the wings is shown by a line beneath each figure.

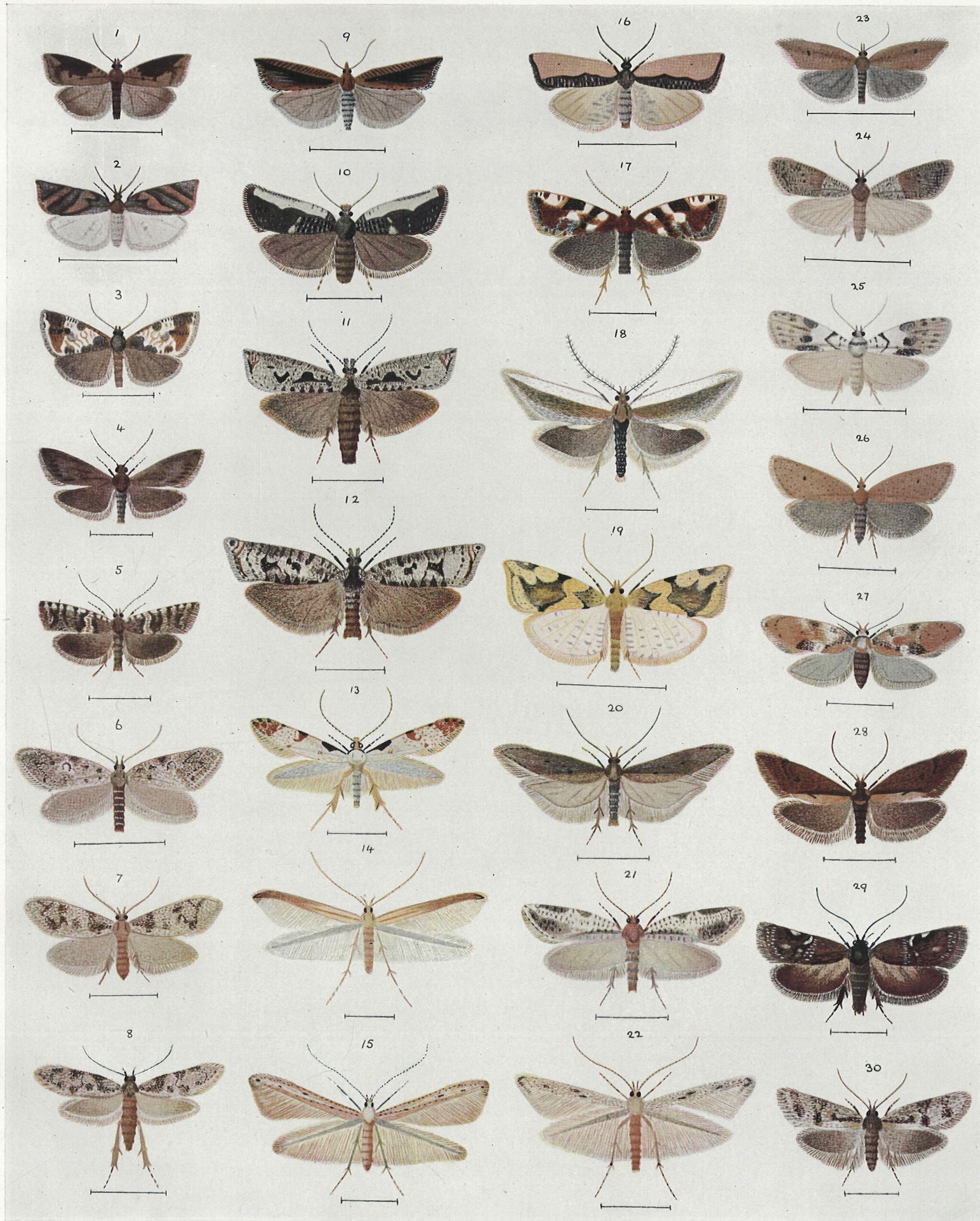


PLATE LVIII.

TINEIDAE.

FIG.	.....	.....	.....	.....	.....	.....	.....	.....	.....	PAGE
1.	<i>Apatetris nivea</i>	♂	.....	.....	.....	.....	.....	.....	.....	438
2.	<i>Gelechia contraria</i>	♂	.....	.....	.....	.....	.....	.....	.....	439
3.	„	<i>lenis</i>	♂	.....	.....	.....	.....	.....	.....	439
4.	„	<i>pumila</i>	♂	.....	.....	.....	.....	.....	.....	439
5.	<i>Pyroderces aelotricha</i>	♀	.....	.....	.....	.....	.....	.....	.....	441
6.	<i>Gracilaria purpurea</i>	♀	.....	.....	.....	.....	.....	.....	.....	461
7.	<i>Locheutis pulla</i>	♀	.....	.....	.....	.....	.....	.....	.....	452
8.	„	<i>fusca</i>	♂	.....	.....	.....	.....	.....	.....	452
9.	<i>Kiwaia jeanae</i>	♂	.....	.....	.....	.....	.....	.....	.....	437
10.	„	„	♀	.....	.....	.....	.....	.....	.....
11.	<i>Sagephora subcarinata</i>	♂	.....	.....	.....	.....	.....	.....	.....	465
12.	<i>Oxythecta austrina</i>	♀	.....	.....	.....	.....	.....	.....	.....	452
13.	<i>Mermeristis spodiaea</i>	♀	.....	.....	.....	.....	.....	.....	.....	451
14.	<i>Lecithocera micromela</i>	♂	.....	.....	.....	.....	.....	.....	.....	441
15.	<i>Donacostola notabilis</i>	♀	.....	.....	.....	.....	.....	.....	.....	454
16.	<i>Cryptolechia lindsayae</i>	♂	.....	.....	.....	.....	.....	.....	.....	453
17.	<i>Phthorimaea pulverea</i>	♂	.....	.....	.....	.....	.....	.....	.....	439
18.	<i>Gelechia parvula</i>	♂	.....	.....	.....	.....	.....	.....	.....	440
19.	„	<i>eurybathra</i>	♂	.....	.....	.....	.....	.....	.....	440
20.	<i>Anisoplaca fraxinea</i>	♂	.....	.....	.....	.....	.....	.....	.....	440
21.	<i>Coleophora spissicornis</i>	♂	.....	.....	.....	.....	.....	.....	.....	460

Except figure 15 all the figures are magnified. The approximate expansion of the wings is shown by a line beneath each figure.

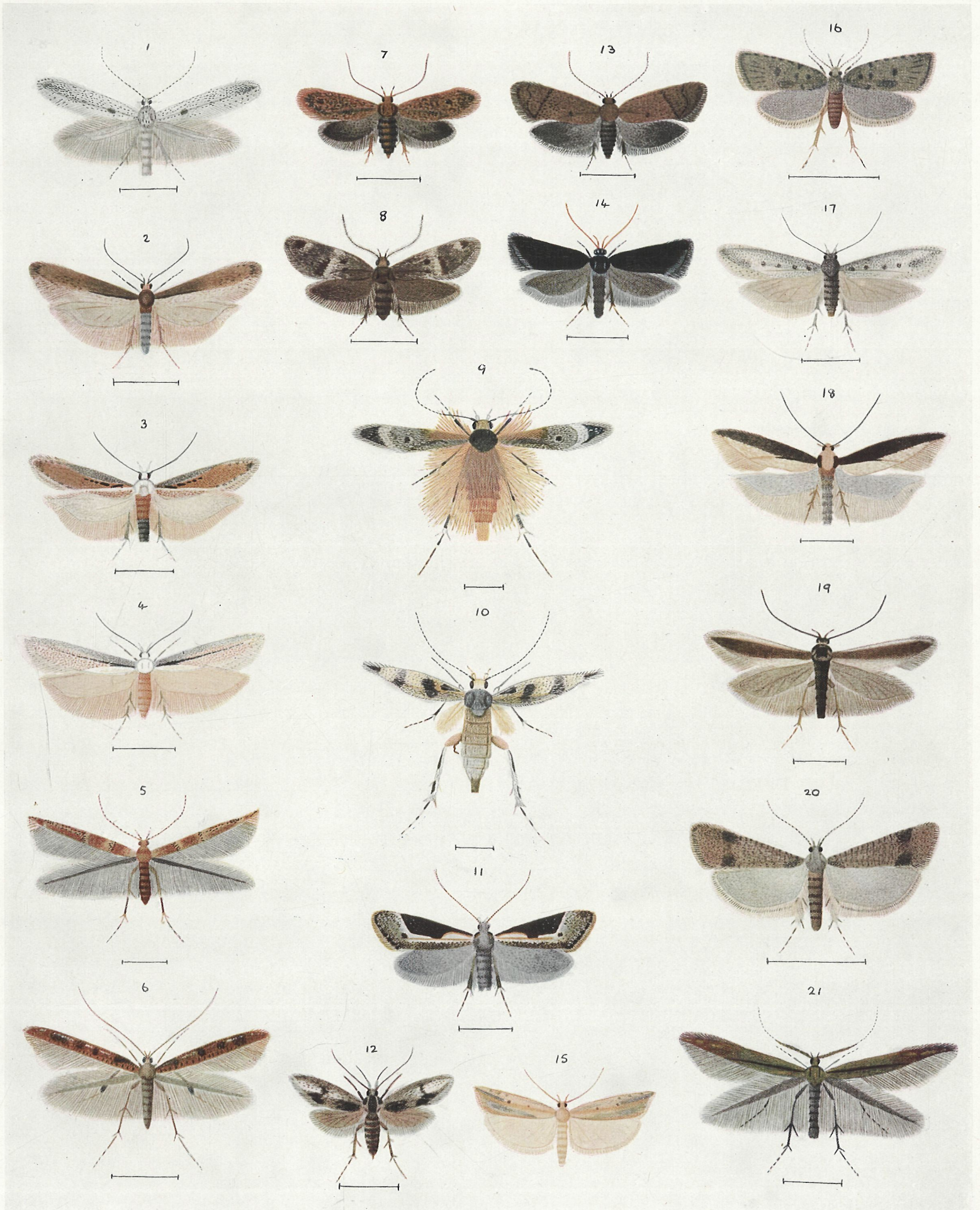


PLATE LIX.

TINEIDAE.

FIG.		PAGE
1.	<i>Borkhausenia clarkei</i> ♀	445
2.	" <i>levicula</i> ♂	442
3.	" <i>decora</i> ♂	442
4.	<i>Leptocroca lenita</i> ♂	445
5.	" <i>xyrias</i> ♂	446
6.	" <i>lindsayi</i> ♂	446
7.	<i>Borkhausenia tephrophanes</i> ♀	444
8.	<i>Izatha balanophora</i> ♀	448
9.	" <i>rigescens</i> ♂	448
10.	" <i>florida</i> ♂	448
11.	" <i>plumbosa</i> ♀	448
12.	<i>Trachypepla nimbosa</i> ♂	449
13.	" <i>minuta</i> ♂	450
14.	" <i>cyphonias</i> ♂	450
15.	<i>Atomotricha chloronota</i> ♂	451
16.	<i>Gymnobathra inaequata</i> ♂	447
17.	" <i>laevigata</i> ♂	447
18.	" <i>primaria</i> ♂	447
19.	<i>Eutorna inornata</i> ♀	453
20.	<i>Gymnobathra omichleuta</i> ♂	446
21.	<i>Bedellia psamminella</i> ♀	463
22.	<i>Carposina literata</i> ♂	454
23.	<i>Paramorpha marginata</i> ♂	455
24.	<i>Isonomeutis restincta</i> ♂ (Plate XLIX., fig. 13 ♀)	454
25.	<i>Proteodes clarkei</i> ♀ (Plate LII., fig. 27 ♂)	452
26.	<i>Trachypepla festiva</i> ♀	449
27.	<i>Gymnobathra aurata</i> ♂	447
28.	" <i>caliginosa</i> ♂	447

All the figures are magnified. The approximate expansion of the wings is shown by a line beneath each figure.

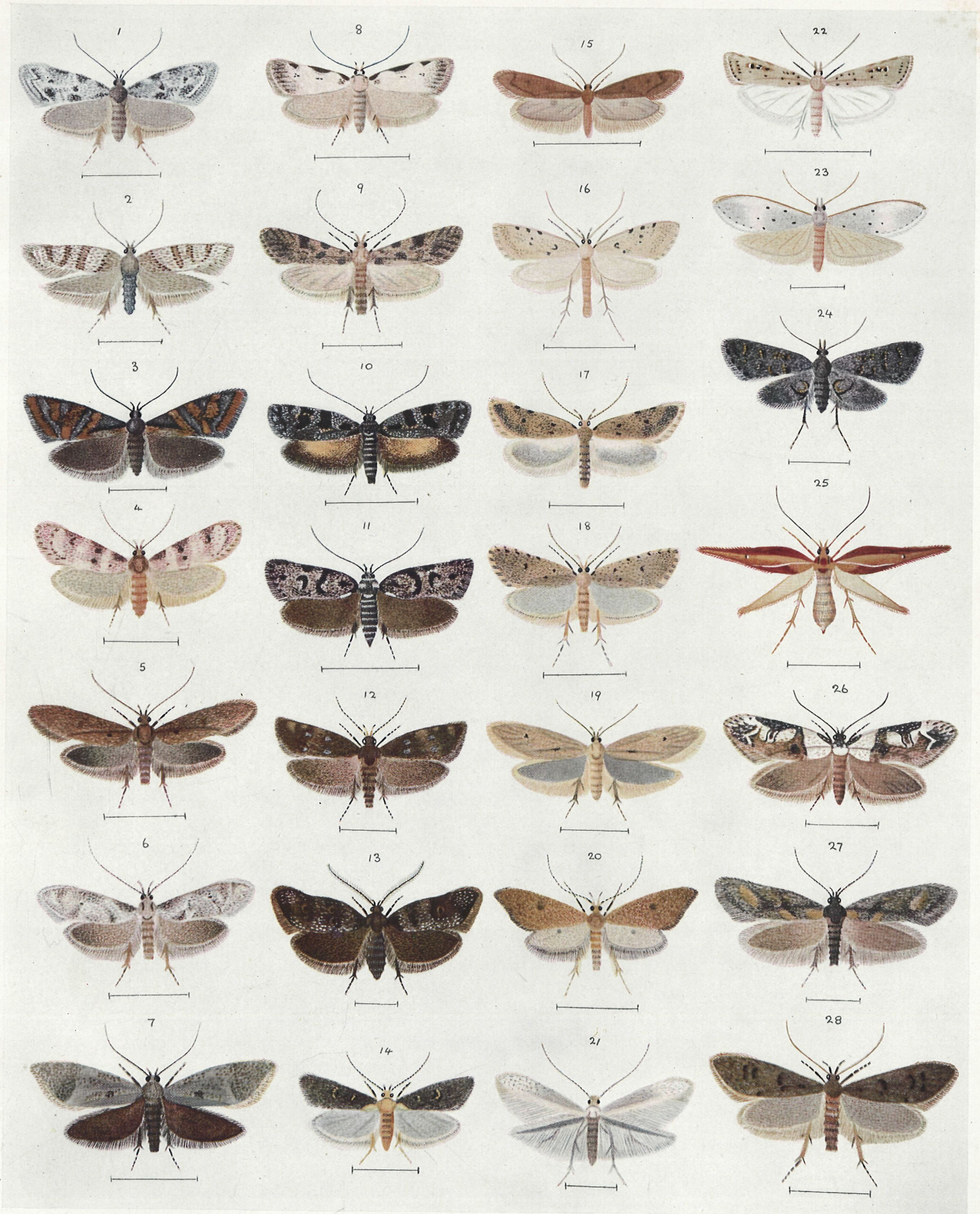


PLATE LX.

TINEIDAE.

FIG.		PAGE
1.	<i>Elachista sagittifera</i> ♂	458
2.	<i>Scythris triatma</i> ♂	459
3.	„ <i>nigra</i> ♂	459
4.	<i>Carposina canescens</i> ♂	455
5.	<i>Stathmopoda campylocha</i> ♂	456
6.	„ <i>albimaculata</i> ♀	456
7.	„ <i>endothema</i> ♀	456
8.	<i>Tanaoctenota dubia</i> ♂	441
9.	<i>Tinea dividua</i> ♂	466
10.	<i>Hierodoris eremita</i> ♀	456
11.	<i>Mallobathra subalpina</i> ♂	468
12.	<i>Tinea belonota</i> ♂	466
13.	„ <i>munita</i> ♂	466
14.	<i>Scythris niphozela</i> ♂	459
15.	<i>Protosynaema matutina</i> ♂	461
16.	<i>Simaethis tristis</i> ♂	457
17.	„ <i>fasciata</i> ♀	457
18.	„ <i>inspoliata</i> ♂	457
19.	<i>Glyphipteryx dichorda</i> ♂	458
20.	„ <i>necopina</i> ♀	457
21.	„ <i>acrothecta</i> ♂	458
22.	„ <i>similis</i> ♂	458
23.	<i>Elachista stellata</i> ♂	459
24.	„ <i>napaea</i> ♂	458
25.	<i>Protosynaema hymenopis</i> ♀	461

All the figures are magnified. The approximate expansion of the wings is shown by a line beneath each figure.

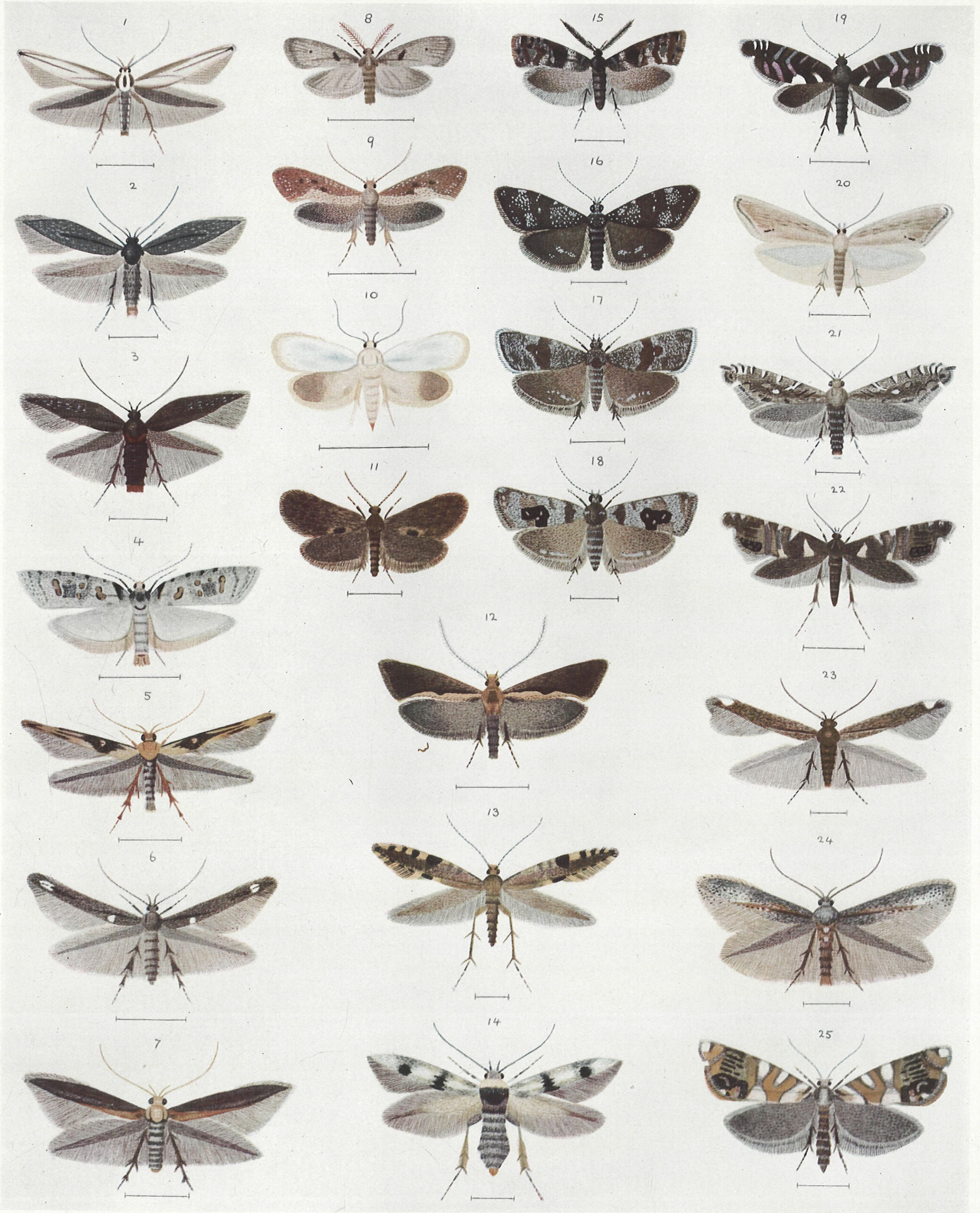


PLATE LXI.

PYRALIDAE.

FIG.		PAGE
9.	<i>Hellula undalis</i> ♂	422
15.	<i>Tawhitia leonina</i> ♂	421

TORTRICIDAE.

7.	<i>Cnephasia ochnosema</i> ♂	436
10.	<i>Spilonota emplasta</i> ♂	436
11.	„ <i>charopa</i> ♂	436
16.	<i>Gelophaula praecipitalis</i> ♂	434

TINEIDAE.

1.	<i>Mallobathra tonnoiri</i> ♂	468
2.	„ <i>cana</i> ♂	469
3.	„ <i>memotuina</i> ♂	469
4.	„ <i>angusta</i> ♂	469
5.	<i>Talaeoporia triangularis</i> ♂	467
6.	<i>Trachypepla anastrella</i> ♂	449
12.	<i>Phthorimaea glaucoterma</i> ♀	439
13.	<i>Atomotricha ommatias</i> ♂	451
14.	<i>Borkhausenia ophiodyras</i> ♀	443
17.	<i>Tinea atmogramma</i> ♀	466
18.	„ „ ♂	
19.	<i>Glaphyrarcha euthrepta</i> ♀	455
20.	<i>Tinea furcillata</i> ♂	465
21.	„ <i>texta</i> ♀	465
22.	„ <i>pellionella</i> ♀	467
23.	„ <i>granella</i> ♂	466
24.	<i>Nepticula insignis</i> ♂	469
25.	„ <i>sophorae</i> ♀	469
26.	<i>Zelleria porphyraula</i> ♂	460
27.	„ <i>maculata</i> ♂	459
28.	<i>Thectophila plagiacula</i> ♂	441
29.	<i>Orthenches dictyarcha</i> ♂	462
30.	<i>Archyala culta</i> ♂	464
31.	<i>Borkhausenia morella</i> ♀	444

MICROPTERYGIDAE.

8.	<i>Mnesarchaea hamadelpha</i> ♂	470
32.	<i>Sabatinea heighwayi</i> ♀	471

Except Nos. 15 and 19 all the figures are magnified. The approximate expansion of the wings is shown by a line beneath each figure.

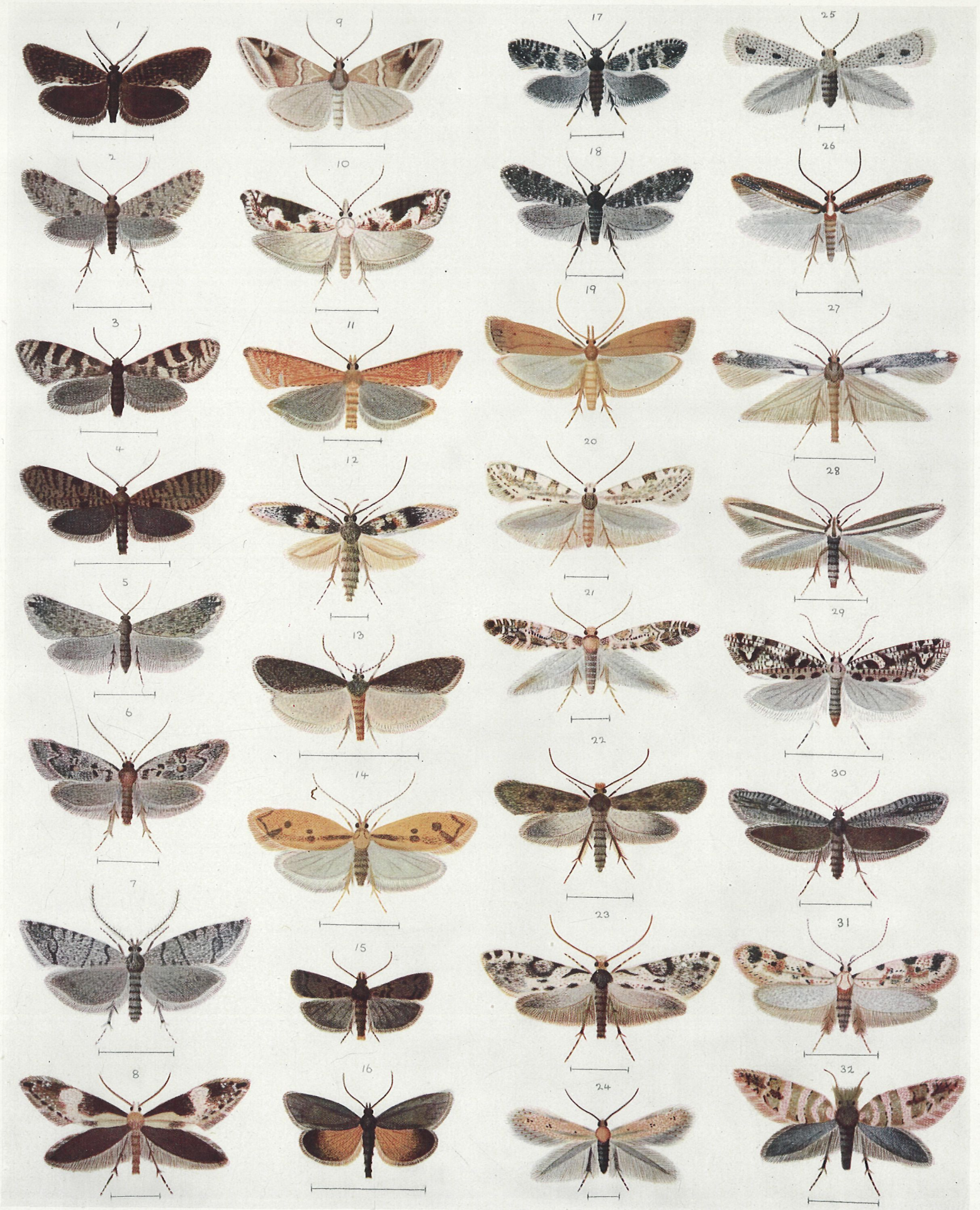


PLATE LXII.

FIG.	BUTTERFLIES.	PAGE
7.	<i>Pieris rapae</i> ♂ (Plate LIV., fig. 24 larva, 25 pupa)*	389
27.	„ „ ♀	
NOCTUIDAE.		
19.	<i>Aletia loreyi</i> ♂	393
11.	<i>Dasypodia cymatodes</i> ♀	401
GEOMETRIDAE.		
1.	<i>Dasyuris enysii</i> ♂	411
13.	<i>Eucymatoge dryocyma</i> ♀	406
18.	<i>Hydriomena</i> ? <i>iolanthe</i> ♀ (antennae conjectural)	407
25.	<i>Chloroclystis bilineolata</i> ♂ variety	404
26.	„ <i>melanocentra</i> ♂	405
PYRALIDAE.		
9.	<i>Crambus angustipennis</i> ♂ (Plate XX., fig. 38 ♀)	419
10.	<i>Glaucocharis stella</i> ♀	428
14.	<i>Scoparia chalicodes</i> ♀	424
15.	<i>Argyria pentadactyla</i> ♀ (Plate XX., fig. 48 ♂)	420
20.	<i>Scoparia apheles</i> ♀	426
21.	<i>Tauroscopa howesi</i> ♂	421
TORTRICIDAE.		
8.	<i>Gelophaula aenea</i> ♂	434
TINEIDAE.		
2.	<i>Izatha griseata</i> ♀	448
3.	<i>Gelechia aerobatis</i> ♀ (Plate XLV., fig. 24 ♂)	439
4.	<i>Limnoecia phragmitella</i> ♂	441
16.	<i>Trachypepla ocnepis</i> ♀	450
17.	<i>Gymnobathra origenes</i> ♀	448
22.	<i>Tinea cymodoce</i> ♀ (Plate XLVII., fig. 13 ♂)	465
23.	<i>Epithectis</i> ? <i>transversella</i> ♀	438
24.	<i>Borkhausenia marcida</i> ♂	444
HEPIALIDAE.		
5.	<i>Porina gourlayi</i> ♂	470
6.	„ „ ♀	
12.	„ <i>enysii</i> ♀ variety (Plate XLI., figs. 7-10)	470

Most of the figures are magnified and in these the expansion of the wings is shown by a line beneath each figure.

*These figures represent the summer form. The spring form, named *metra* by Stephens, who, together with others, considered it a distinct species, has the tips of the forewings only slightly clouded with black, and the black spots near the centre of the wings are always more or less faint in the male. Sometimes the central spot, and also the blackish clouding of the tip are entirely absent.

