

ART. XXXIV.—*Description of new Genera and Species of Psychidæ.*

By R. W. FEREDAY, C.M.E.S.L.

Plate IX.

[Read before the Philosophical Institute of Canterbury, 6th December, 1877.]

LIOTHULA, n.g.

[From λείος "smooth," and θυλαξ "a case."]

Male.—Head small; head and thorax pilose; proboscis none; palpi obsolete; antennæ as long as the thorax, bipectinate, the branches very long towards the base, from whence to beyond the middle the branches abruptly decrease in length, and thence gradually decrease to the tip; body robust; abdomen extending more than half its length beyond the hind wing; stout near the thorax and tapering thence to the tip; legs slender; femora and tibiæ pilose; fore-wings diaphanous, thickly clothed with scales, narrow, nearly straight along the costa, slightly rounded at the tips, hind margin very oblique; discoidal cell closed by a transverse angular nervure, the angle of which projects inwards; median nervure emitting four branches, the branches nearly equidistant from each other, the second springing from the first at the point of junction of the transverse nervure. Between the median nervure and the inner margin are two nervures which unite in the disc and form one nervure from thence to the hind margin; discoidal cell divided longitudinally by two rather indistinct veins; hind-wings with discoidal cell closed by a transverse irregular nervure and divided longitudinally by a forked vein; median nervure emitting four branches, the first of which springs from the second at about one-third of the length of the latter, which is abruptly curved at its base; the second branch about twice further from the third than from the first.

Female.—Apterous.

I cannot, from authorities at hand, find a description of any genus of this family entirely applicable to this insect. The nearest appears to be the genus *Metura*, described in the Catalogue of Lepidoptera in the British Museum.

Liothula omnivora, n.s.

Male.—Fuliginous.

Expanse of wings—14·5 lines.

Length of body—8 lines.

Hab.—Canterbury, New Zealand, especially in the neighbourhood of Christchurch.

Fig. A represents the male perfect insect. Larva varying from light to dark dull brown, mottled with dirty white, sometimes with a pinkish



R.W.Fereday, del. To illustrate paper by R.W.Fereday.

J.B. lith.



shade. Head and three first segments retractile. The cases of full-fed larvæ vary in size from $1\frac{1}{2}$ to $3\frac{1}{2}$ inches, long, narrow, and tapering, colour varying from light to dark grey, generally smooth but sometimes ornamented with pieces of twig or leaves laid on longitudinally in somewhat regular order, inside thickly lined with fine brown silk. The case is exceedingly tough. I have tested its strength and found that fracture takes place at 32 lbs. The larva is found feeding on all kinds of trees and shrubs, both evergreen and deciduous, not even rejecting the common laurel, and I have named the insect *omnivora* on that account. I noticed it first on willow trees, when I came to the colony in 1862. Willow, wattle, and coniferous trees appear to afford a particularly favourite food. The cases found on the willow and wattle are generally smooth and plain, but those on the coniferous trees are frequently embossed with small pieces of twig and foliage laid on longitudinally in an order that seems to indicate design. Until fully grown the larva moves about with the case from leaf to leaf feeding with its anterior segments and prolegs extruded. Attached to the interior of the mouth of the case are silken threads which the larva, when disturbed, draws so as to close the orifice. The larva before assuming the pupa state fixes the case by repeated bindings of silk round a twig, as shown in plate IX., on firmly attaching it to the trunk of the tree. The larva whilst feeding suspends the case by a thread. The case is very small at first, the larva commencing to form it soon after birth; and, as the larva increases in size, so is the case enlarged, the larva adding to it from time to time as a mason builds a chimney. Fig. 1 represents a case fixed to a twig of willow with the pupa skin extruded; fig. 4, a case containing a partly-grown larva as suspended when at rest.

Notwithstanding the security afforded by the case, a dipterous insect (somewhat resembling a common bluebottle-fly, but not larger than a common house-fly) is very destructive to the larva. I have found as many as nine out of every ten cases filled with the cocoons of the fly. The fly (fig. 2) is represented at rest on the case.

I find the cases have become much less common in my garden than formerly, which I attribute to the increase of birds.

Fig. 3 represents a portion of the branch of a larch fir, with a case of this insect attached. The silk wound round the branch prevented the return of the sap, and caused an extraordinary swelling of the upper part of the branch. It was found by Mr. James Townsend, at Christchurch.

OROPHORA, n.g.

[From *ὀροφή* "thatch," and *φορεῖν* "to bear," alluding to the case being covered with pieces of grass in the manner of thatch.]

Male.—Body stout, extremely lanate; head small, not prominent; palpi

obsolete; antennæ rather longer than the thorax, ciliated, tapering to the tips; abdomen not extending beyond the hind-wings; fore-legs longer than the others, slender, almost bare; wings broad, diaphanous, thinly covered with hairs; fore-wings slightly concave along the costa, hardly oblique along the hind margin, rounded at the anal angle; discoidal cell closed by a transverse angular nervure, the angle of which projects inwards; median nervure emitting four branches, the first of which springs from an abrupt bend in the second at the junction of the transverse nervure, the second about a third further from the third than from the first. Between the median nervure and inner margin are two nervures which unite in the disc, and form one nervure from thence to the hind-margin. Of these two nervures the one farthest from the hind-margin is hardly visible towards the base. Hind-wings with discoidal cell closed by a transverse angular nervure, and divided by a vein springing from the angle of the transverse nervure; median nervure emitting four branches, the first of which springs from the second at about a third of the length of the latter, which is abruptly angulated at its base; the second branch more than half further from the third than from the first.

Female.—Apterous.

Not finding its generic characters entirely agree with any of the descriptions in the British Museum catalogue, I have described a new genus for this insect as above.

Orophora toumatou, n.s.

[From the specific name of the shrub upon which the cases are found.]

Male.—Ochreous grey; the long hairs on the body and base of the wings tinged with pale ochreous.

Expanse of wings—12·5 lines.

Length of body—5 lines.

Hab.—Canterbury plains.

Fig. B. represents the male perfect insect.

Larva.—I have never seen the larva when full-fed. Its case measures in length about sixteen lines; the exterior covered with pieces of stems of grass, from a line to five lines in length, laid on longitudinally and in the manner of thatch; the interior thickly lined with fine silk. The cases are found fixed to twigs of wild Irishman (*Discaria toumatou*), but it may be inferred, from the covering of the cases, that it probably does not feed on the shrub but upon the tussock-grass generally growing where the shrub is found. It is some years since I found the cases on *Discaria toumatou*, growing in the river beds of the Rakaia and Waimakariri, on the Canterbury Plains, and I did not find any case in its earlier stage before the larva had fed up and changed to the pupa state.

Fig. 5 represents a larva case of this insect affixed to a twig of *Discaria toumatou* (fig. 6).

I have never met with any of these insects on the wing; all my specimens have been bred from cases.

ART. XXXV.—*On the Butterflies of New Zealand.* By ARTHUR G. BUTLER, F.L.S., &c. Communicated by JOHN D. ENYS, F.G.S.

Plate XII.

[Read before the Wellington Philosophical Society, 12th January, 1878.]

OF the fourteen species of Rhopalocerous Lepidoptera hitherto recorded as unquestionably occurring in New Zealand, exactly one half appear to be endemic forms; of the remaining seven, six are probably of Australian origin, or at any rate are common to Australia and New Zealand, whilst the remaining species is of American origin.

In the present paper it is proposed, where necessary, to give the synonymy of each of the species, with a short description and with one or more figures; so that by reference to this little memoir the collector may be enabled to recognize without difficulty any New Zealand species which he may obtain.

LEPIDOPTERA.

Section *Rhopalocera*.

The term *Rhopalocera*, as applied exclusively to the butterflies, is a mere convenience, and does not (as has been falsely stated by some lepidopterists) express any constant distinction between butterflies and moths; indeed, these groups are only to be distinguished by family characters, such as the structure and habits of the larvæ, the form and economy of the pupæ, and the habits, form of venation, or other structural peculiarities of the imago; the same characters do not hold good as distinctive marks throughout the moths, and thus it happens that some genera are in a wretched state of "limbo," neither accepted as butterflies by the student of that group, nor permitted to rest peacefully among the moths.

Butterflies therefore are not all "club-horned," some have clubs, some have filiform antennæ, some have moniliform and subserrated antennæ. In the *Hesperiidæ* alone you have any amount of variation of structure—clubs, hooks, whips, spoons; all indicating a mere generic distinction and not differing from the same organs in such families as the *Sphingidæ*, *Carteriidæ*, and *Agaristidæ*. The term *Rhopalocera* therefore is used to indicate the five highest families of the Lepidoptera—the *Nymphalidæ*, the *Erycinidæ*, the *Lycenidæ*, the *Papilionidæ*, and the *Hesperiidæ*.