

THE LEPIDOPTERA OF THE EGMONT NATIONAL PARK

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INTRODUCTION

Although New Zealand has several fine National Parks set aside to preserve the natural scenic beauty of their area, and to protect the native fauna and flora therein, very few entomologists have made an extensive detailed study of these areas. Apart from a few favoured insects which are mentioned in passing in the National Park Handbooks, there are no detailed local lists of insects published. With the scarcity of entomologists in New Zealand, and the rarity of local knowledge about the distribution of even common species, it is very important that local lists of insects should be published and revised as often as possible, especially in the National Parks which are, and should be, vast faunistic reserves in a country whose face is changing so rapidly from the onslaught of farming and forestry.

I have been fortunate in living near Mt. Egmont and have been able to collect there extensively since 1963.

G. V. Hudson, states (1928) of Mt. Egmont that "in his experience this isolated mountain is far from productive". In my experience he could not have been further from the truth.

The Egmont National Park comprises Mt. Egmont, and a six-mile radius from its summit 8,260 ft., and the Pouakai and Kaitake Ranges, a total area of 82,000 acres containing 72,000 acres of rain forest. The altitude of the park boundary ranges from about 1,000 ft. around the Pouakai and Kaitake Ranges, to about 1,700'-2,000' on Mt. Egmont itself. The forest trees comprise most of the trees commonly found in the North Island forests with the notable exception of beech (*Nothofagus* species). This leaves a corresponding gap in the species of Lepidoptera which are normally found only in association with beech forest, e.g. *Melanchra praesignis*, *M. coctilis*, *M. tartarea*, and *M. dotata*.

The mixed podocarp forest extends to about 3,000', where it gives way to sub-alpine scrub and a zone of mountain cedar, which in turn gives way to tussock between 4,000' and 4,500' which extends to about 5,000', above which are the alpine fell fields.

Little collecting has yet been done above 5,000' and less has been done in the Pouakai and Kaitake Ranges, but it is doubtful whether there would be any species here that are not found on Mt. Egmont itself.

Emergence

Apart from the northern regions of the park the snowfall on Mt. Egmont comes down to about 1,500' about three times during the average winter, between the end of May and the end of August, and at other times during this period is usually lying in shady places in the bush down to 2,500' for most of the time. As can be expected no moths are found on the wing above this 2,500' level during winter and very few below. However, certain species do emerge in the zone between 1,700' and 2,500' even in mid-winter, and these cold-resistant species are, possibly for this reason, common on Mt. Egmont and throughout the whole of New Zealand, e.g. *Melanchra insignis*, *M. ustristriga*, *M. mutans*, *M. plena*, *Erana graminosa*, *Rhapsa scotosialis*, *Declana floccosa* and various members of the genus *Selidosema*. Insect activity on the mountain increases with increase of temperature with a peak emergence period at all altitudes from the end of January to mid March. This period exactly coincides with the emergence period of those moths which are only found at around 3,000' or above, namely *Leucania lissoxylla*, *Melanchra maya*, *M. olivea*, *M. lata* and *M. averilla*. These tend to be the rarer and more local species.

Between these two extremes is the common emergence pattern on the mountain where the species starts to emerge in early October at 1,500' and is found in November at 2,000'; by December it is emerging at the 2,500' level and reaches 3,000' in the peak emergence period in January. Examples are *Leucania semivittata*, *Melanchra paracausta*, *Melanchra pauca* and many others. This type of emergence I would call a 'temperature-dependent' emergence pattern.

There is one other type of emergence pattern which seems inexplicable unless one postulates a sort of inborn time mechanism in the species, where it emerges simultaneously at all altitudes. This mechanism may well be activated by the length of daylight. *Melanchra mollis* emerges in the middle of November simultaneously from sea level to 3,000'. *Melanchra agorastis* emerges only in late January and February, from sea-level to 3,500'. *Melanchra infensa* appears from sea level to 3,500' in the latter half of November, and *Melanchra coeleno* appears at all altitudes in November. This type of emergence I would call a 'time dependent' emergence.

Identification:

Most of the species mentioned in this list are in my personal collection, and have been identified firstly by comparison with illustrations and descriptions of wing pattern by Hudson (1928, 1939, 1950) and then checked against the actual specimens in the Hudson Collection in the Dominion Museum. They have also been checked by two other lepidopterists, Mr. J. S. Dugdale and Dr. D. E. Gaskin, to whom I am much indebted. Specimens of the rarer and more local species have been deposited with the Dominion Museum and Entomology Division (D.S.I.R.), Nelson.

All records mentioned in this paper were made by the author unless otherwise stated.

PART I. NOCTUIDAE

In this family one species, **Melanchra averilla**, is found only on Mt. Emont. There are two species, namely **Leucania paraxysta** and **L. harti**, which are recorded only on Egmont and the Central Plateau in the North Island. We then have three species, **Melanchra maya**, **Melanchra rubescens** and **Aletia griseipennis** which are recorded in the North Island only on Egmont and Ruapehu, yet are found throughout the South Island. There are also those which in the North Island are found only on Mt. Egmont and found widely in the South Island, namely **Melanchra olivea**, **Melanchra lata** and **Leucania lissoxyla**.

It is therefore obvious, even when considering this family alone, that Mt. Egmont holds an important place in the ecology and zoogeography of New Zealand. Further investigation may provide some of the answers concerning these distributions.

There now follows a detailed list of species so far recorded in the Egmont National Park.

Heliothis armigera (Huebner)

This common lowland species has been recorded only once. South Egmont 3,000' 16.1.70.

Agrotis ypsilon aneituma (Walk.)

Common up to 3,000'; October to April.

Agrotis infusa (Boisd.)

Three specimens of this Australian migrant were captured on Mt. Egmont in the 1968-69 season, when there was a large influx of Australian Lepidoptera in Taranaki. (See Fox, K. J., **N.Z. Ent.** 4 (2): 6-10). South Egmont 1,700' 27.2.69 (1); 2,800' 26.10.68 (1); 27.2.69 (1).

It is assumed that these moths were aestivating as they do in Australia, but none were observed in the 1969-70 season, and it seems unlikely that they were able to survive the winter to breed here.

Agrotis innominata Huds.

Usually restricted to coastal areas, but has occurred twice on Mt. Egmont. South Egmont 2,800' 25.2.69 (1); 1,700' 27.2.69 (1).

Graphiphora campita Walk.

Common throughout the Park up to 3,500' from early November to the end of February.

Austramathes purpurea (Butl.)

Although never abundant, occurs throughout the area from 1,500' to 2,800'; perhaps commonest on the Pouakai Range near Pukeiti; from November to February.

Homohadena fortis (Butl.)

Two records are known of this rare moth. South Egmont 2,800' 10.11.68; Dawson's Falls 3,000' 8.11.69.

Ichneutica ceraunias Meyr.

Very common between 2,800' and 4,000', with occasional specimens caught down to 1,700', probably blown down by the wind. The peak emergence period is in January, but specimens have been observed as early as October. Specimens from Mt. Egmont are much paler in colour than those taken on Mt. Ruapehu.

Leucania purdii Fer.

Very common Mt. Egmont from 1,600' to 3,500', commonest during November, December and January, but at low altitudes has been found as early as September and as late as April.

Leucania lissoxyla Meyr.

Six specimens recorded: East Egmont 3,500' 13.1.67 (1); 26.2.68 (2); 4,000' 22.12.69 (2); Dawsons Falls 3,000' 11.2.69 (1), F. Chambers.

To my knowledge these are the only known records of this species from the North Island.

Leucania sulcana Fer.

Occasional records have been noted; South Egmont 1,700' 27.2.69 (1); 20.4.69 (2); 2,800' 25.2.69 (5); 15.1.70 (2).

Leucania semivittata Walk.

Specimens have been observed up to 4,000'; October to February. Specimens were reared from larvae found on *Carex* sp. (1,700' 26.10.68, J. Dugdale).

Leucania harti Howes

Fairly common on all sides of Mt. Egmont between 1,600' and 3,000' in January. I have also captured specimens of this species on Mt. Ruapehu and at Waiouru. Known also from the southern Kaiangaroa Plains (J. Dugdale).

Leucania paraxysta Meyr.

Very common around 3,000' in January and February, and has occurred up to 4,000'. Prior to these observations this species was recorded only from Mt. Ruapehu, in the North Island.

Leucania blenheimensis Fer.

One specimen only from Dawson's Falls 16.1.70. I have also recorded this species from Manaia and Lake Rotoaira, Tongariro National Park. These are the only records from the North Island.

***Pseudaletia separata* (Walk.)**

The northern army worm seems to be mainly restricted to low altitudes and it has only been observed infrequently in the National Park. South Egmont 1,600' 29.1.67 (1); 2,200' 15.1.70 (1); 3,000' 16.1.70 (abundant).

***Aletia moderata* (Walk.)**

Occurs in small numbers on the mountain at all levels up to 4,000'; common between 3,000' and 3,500' in January and December.

***Aletia griseipennis* (Feld.)**

Occasional specimens have been observed as low as 2,200', but usually restricted to between 2,800' and 4,000' where it is common from December to the end of March.

This species is only found south of Taupo.

***Aletia inconstans* (Butl.)**

One only of this rare species (eastern slopes, 3,500' 12.1.1967). This is the first record from Egmont.

***Dipautistica epiastrea* (Meyr.)**

Rarely met with on Egmont; to date only a single specimen (south side, 1,700' 29.1.1967).

***Persectania steropastis* (Meyr.)**

Occurs sparingly between 2,200' and 3,500' in mid summer. Larvae from Toe-toe (*Arundo conspicua*) 23.10.69 produced adults in early December.

***Persectania aversa* (Walk.)**

Abundant throughout the Egmont National Park, up to 3,500' from January to April.

***Persectania arotis* (Meyr.)**

Common on the mountain in January between 2,000' - 3,000'.

Larvae common on Toe Toe in October.

***Persectania atristriga* (Walk.)**

Plentiful throughout the Park in January and February up to about 3,000'.

***Persectania propria* (Walk.)**

Recorded in the Dawson Falls area in January, 1970; South Egmont 2,200' 15.1.70 (1); 3,000' 14.1.70 (2); 16.1.70 (8).

These are the first records for Mt. Egmont.

***Erana graminosa* Walk.**

Found abundantly at lower altitudes during every month of the year, occurring up to 4,000' in January and February, and is the most abundant Noctuid found in the winter months.

***Melanchra pauca* Philp.**

As implied by the name, found infrequently; several specimens between 1,700' and 3,100'. South Egmont 1,700' 29.9.69 (1); 2,100' 21.10.68 (1); 2,500' 14.11.63 (1); 2,800' 10.11.68 (1); 13.1.69 (2); 3,100' 8.11.69 (common).

***Melanchra maya* Huds.**

This beautiful moth occurs around the neighbourhood of Daw-

sons Falls in January and February. South Egmont 2,800' 23.1.69 (3); 9.1.69 (2); 3,000' 11.2.69 (1), F. Chambers; 10.12.69 (2); 16.1.70 (abundant).

Melanchra insignis (Walk.)

Very common. Found throughout the area up to 3,500'. Has been observed in mid-winter up to 2,000'.

Melanchra plena (Walk.)

Like *M. insignis*, common all over the Egmont National Park, up to an altitude of 3,000', and has also been found up to 2,000' in July. A very variable species even in the same locality, the ground colour can vary from deep green through to brown and even purple.

Melanchra chlorodonta (Hamps.)

In my experience especially abundant on Mt. Egmont up to 3,100' throughout the year; even in mid-winter found up to 2,000'. Ground colours on the Egmont specimens vary from dark chocolate brown through various shades of lighter brown to pale yellow.

Melanchra brunneosa Fox

First discovered on Mt. Egmont in 1964 by the author, and since recorded from Mangatōa Saddle (King Country), Lake Waikaremoana, Marlborough Sounds and the Nelson district. Occurs in the forest between 1,700' and 3,200'; about thirty specimens have so far been recorded on Mt. Egmont; emergence period is from November to January. (For description of this species see Fox, K. J., A New Noctuid from the North Island. Rec. Dom. Mus. In press).

Melanchra mutans (Walker)

Found abundantly up to 4,000' above which level it is largely replaced by *Melanchra furtiva* (see below). Adults occur throughout the whole year and in winter have been found up to 2,000'.

Melanchra furtiva Philp.

Very similar to *M. mutans*; occurs above 2,800'. Pupae have been found in the turf at 4,500' in October, and these emerge in captivity at the end of November and early December. Records of adults are: East Egmont 3,500' 12.1.67 (4); 4,000' 22.12.69 (1); South Egmont 2,800' 23.1.69 (2).

Melanchra alcyone Huds.

Well distributed throughout Taranaki, and occurring in most months of the year, but has only once been recorded within the National Park (southern slopes, 2,100' 4.11.66).

Melanchra coeleno Huds.

Generally distributed in the area up to 2,900' in November. Pukeiti 24.10.68 (1); South Egmont 2,100' 4.11.66 (plentiful); 2,500' 14.11.63 (plentiful); 2,900' 7.11.64 (1).

Melanchra omoplaca (Meyr.)

Plentiful throughout up to 3,500' in November, December and January.

Melanchra infensa (Walk.)

Plentiful throughout the area up to 3,500' from November to January.

Melanchra olivea Watt.

In the North Island, restricted to Mt. Egmont (common in South Island), and so far has only been recorded in the sub-alpine scrub zone from 3,000' to 4,000'. In the past it has often been confused with the next species, **Melanchra lata**, which has a similar distribution. East Egmont 3,500' 12.1.67 (common); 26.2.68 (common); 4,000' 22.12.69 (2); South Egmont 3,000' 10.12.69 (1); 16.1.70 (1).

Melanchra lata Philp.

Like **M. olivea**, widespread in South Island, but in North Island recorded only on Mt. Egmont; found from 2,800' to 4,000', from the end of December to February, often in large numbers. South Egmont 2,800' 23.1.69 (common); 25.2.68 (3); East Egmont 3,500' 12.1.67 (abundant); 4,000' 22.12.69 (common).

Melanchra mollis Howes

Fairly common throughout the Park up to altitudes of 4,000' from November to the end of February; emerges at the same time in November whether at sea level or 3,000'.

Melanchra ustistriga (Walk.)

Very common and widespread. Found throughout up to 4,000'; emerges in mid-winter and has been observed up to 2,000' in August.

Melanchra averilla Huds.

Restricted to Mt. Egmont; found commonly between 2,500' and 4,000' from November to February; a very similar species **M. beata**, is found in the Tasman Mountains in the South Island.

Melanchra paracausta (Meyr.)

Emerges in early November at 1,500' and by mid-January it is emerging at 3,500'. Generally distributed throughout, but never abundant.

Melanchra inchoata Philp.

One specimen of this exceedingly rare moth was recorded at East Egmont (3,200') on 8.11.69. It is otherwise known from Stephens Island, Cook Strait.

Melanchra pansicolor (Howes)

One specimen only during six years of collecting (southern slope, 1,700' 30.11.68). It may well be more abundant because by artificial light outdoors at night it is easily confused with **Melanchra lignana**, a very common species.

Melanchra diatmeta Huds.

Found throughout; more commonly on the Pouakai Range, from October to January up to about 3,000'.

Melanchra rubescens (Butl.)

Generally distributed in the South Island, but is restricted in

the North Island to Mt. Ruapehu and the Central Plateau, and to Mt. Egmont. It occurs on Mt. Egmont up to 3,000' in January and February, but is never common. South Egmont 1,700' 29.1.67 (5); 2,500' 17.1.65 (1); 2,800' 25.2.69 (1); 3,000' 11.2.69 (1), F. Chambers; East Egmont 4,000' 22.12.69 (2).

Melanchra lignana (Walk.)

Commonly seen on the National Park boundaries where they adjoin farm land, but rarely seen in the bush. South Egmont 1,600' 23.9.65 (4); 20.4.69 (common); 2,800' 10.1.70 (1); 3,100' 8.11.69 (5); East Egmont 2,200' 26.2.68 (1).

Melanchra stipata (Walk.)

Common and generally distributed throughout the area up to 3,100' from October to February. Also at lower altitudes in April and June.

Melanchra merope Huds.

This rare, large and beautiful insect has been recorded frequently on Mt. Egmont but usually only single specimens are seen. South Egmont 1,700' 27.1.69 (1); 2,000' 4.11.66 (2); 12.11.67 (1); 21.11.67 (1); 2,200' 15.1.70 (1); 2,500' 29.1.67 (1); 2,800' 25.2.69 (1); 27.2.69 (1); 10.1.70 (1); 3,000' 11.2.69 (1); 16.1.70 (1); East Egmont 3,500' 26.2.68 (1).

Melanchra agorastis Meyr.

Common up to 3,500' in January and February. There seems to be a simultaneous appearance of this species in late January from sea level to 3,000'.

Melanchra vitiosa (Butl.)

Common on the Pouakai Range, and elsewhere throughout the Park up to 2,800' from November to February.

Melanchra ochthistis Meyr.

Common at all seasons in Taranaki farm land surrounding Mt. Egmont, but only found occasionally inside the National Park. East Egmont 3,500' 1.12.68 (1); Pouakai Range 1,500' 6.11.66 (2); South Egmont 2,200' 15.1.70 (1).

Melanchra prionistis (Meyr.)

A few specimens have been taken late in the season usually at high altitudes. South Egmont 2,800' 23.1.69 (1); 25.2.69 (1); 3,000' 27.3.69 (1), F. Chambers; 16.1.70 (1); Kahui Hut 2,600' 15.3.69 (1), F. Chambers; North Egmont 3,000' 11.8.69 (1) (in hut), K. Spitzer.

Bityla defigurata (Walk.)

Sporadic appearance throughout the Park. Often hibernates in mountain cabbage tree (**Cordyline indivisa**). Pouakai Range 1,500' 6.11.66 (3); South Egmont 1,700' 20.4.69 (4); 2,800' 9.1.69 (1); 3,000' 16.1.70 (1); East Egmont 3,000' 11.8.69 (1) (in hut), K. Spitzer.

Ariathisa comma (Walk.)

Fairly common throughout the area up to 3,000' from November to February.

Rhapsa scotosialis Walk.

Common throughout the Park up to 3,500' and has been captured in every month of the year. On mild winter evenings it has been seen up to 2,500'.

Hypenodes anticlina Meyr.

First recorded in 1969 when it occurred in great profusion around Dawsons Falls at 3,000' in January and early February.

Approximately 150 species of the family Noctuidae have been recorded from New Zealand, and of these several are rare migrants, several are restricted to beech forest, and many are restricted to lowland areas, while a few are geographically restricted to the South Island or the out-lying islands. The 59 species recorded from Mt. Egmont are a formidable proportion of the remaining species to be recorded from this isolated mountain area.

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(To be continued)