

FIRST CARNIVOROUS PSYCHID CATERPILLAR FROM NEW ZEALAND

Brian Patrick
Otago Museum
Box 6202, Dunedin

Introduction

No caterpillar species from the family Psychidae, which is carnivorous on other species, has previously been reported from New Zealand. Caterpillars of several other families are known to eat passive live prey in New Zealand. These include *Stathmopoda coracodes* (Oecophoridae: Stathmopodinae), *Isonomeutis amauropa* (Copromorphidae) and *Batrachedra agaura* (Batrachedridae), all of which feed on scale insects.

This brief report documents observations over the past eight years in the Dunedin area.

RESULTS

The case-bearing larvae of *Rhathamictis perspersa* Meyrick (Psychidae) have been observed on five occasions to eat stationary live prey such as spider's eggs, pupa of the choreutid moth *Asterivora colpota* and lacewing pupa of *Micromus tasmaniae* and *Wesmaelius subnebulosus*. The case-larvae feed beneath the loose bark of a wide variety of both native and introduced trees. Additionally they have been observed feeding on a variety of dead insects such as moths. The cases are widespread and locally common in southern New Zealand at least, and a male bred from these cases closely matches the description for *R. perspersa*. In contrast to the fragile winged males, the females were found to be apterous, and only capable of walking over the trunk. I predict that the species wide dispersal is due to "ballooning" of the larvae in the wind on threads of silk after hatching.

Adults have been only reared twice;

- a male from many cases found under loose bark of sycamore trees in the Otago Museum grounds, Dunedin on 16 February 1998. Large numbers of pupa of Neuroptera and spider eggs were present at this site.
- a female on 3 January 1995, from a case under loose bark of a kahikatea in Woodhaugh Gardens, Dunedin. Later a batch of comparatively large eggs was laid within a "nest" of long hairs on the bark.

In the wild, adults have been only found once in southern New Zealand, and this was on 25 February 1990. On this occasion five males were beaten from kanuka dominated forest in the Dunedin Botanical Gardens. This observation confirms that the species emerges in late summer. My observations confirm only one generation is passed each year

The species was originally described from Wellington and till now has been rarely recollected. I have observed the cases to be surprisingly numerous under a large variety of trees that have loose bark. Examples are *Olearia hectorii* at Waikaia Bush,

rimu at Waitati, Harbour Cone and Otago Peninsula, kanuka at Bradford, Dunedin and strawberry tree at Belleknowes, Dunedin.

When they contain a fully fed larva, the brown neat cases are 7-9mm long. Aggregations of them can be found through the winter months under loose bark, often amongst spider webs and their egg sacs. They continue to feed into spring and early summer. They feed and grow reasonably slowly. The larvae are thin and purplish, with short pale hairs over the body.

Three other species of the genus, all undescribed, are known from southern New Zealand. For only one species is the female known and it is brachypterous. These species are found on a variety of substrates such as rock cliffs and alpine schist tors, but their feeding habits have not been noted. They too may be predatory species in addition to detritus feeders.

Other native genera of New Zealand Psychidae feed on litter and detritus (*Mallobathra*), foliage (*Liothula*, *Orophora*), and algae on rock and tree surfaces (*Reductoderces*, *Scoriodyta* & *Grypotheca*).

Many more observations are needed to fully understand the biology and ecology of *R. perspersa*. I hope that this note will stimulate more study on the species and its feeding habits, systematics and biogeography.