

ART. XIX.—On the Occurrence of *Metacrias strategica* at Invercargill.

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SEEMING that only a single specimen of this insect appears to have been previously met with, a record of its occurrence in the Invercargill district, and a brief account of the habits and life-history of the species, may perhaps be deemed worthy of a place in the "Transactions of the New Zealand Institute." I shall not at present attempt to give a technical description of this moth in any of its stages, but shall only give a simple record of my experience in finding and rearing the larvæ.

My first specimen of the moth I reared in 1897 from a chrysalis taken from under a log in a swampy locality about four miles east of Invercargill. The cocoon was spun amongst those of *Nyctemera annulata* on the under-surface of the log.

On the 13th August I took several larvæ from under logs in the bush, which, from their resemblance to the caterpillar-skin adhering to the chrysalis of the *strategica* I had reared, I thought must be the larvæ of that moth. I found them in similar circumstances to the other—at the roots of grasses on the surface of the ground under logs. They harmonized so well with the dark-brown bush-earth and the brown stalks of the grass that it was hard to detect them. The bush from which I took them is on the banks of the Waihopai River, about two miles north of Invercargill. At various times I took as many as fifty caterpillars from this one place, and although I looked in other portions of the surrounding bush I could find no traces of the insect, although the conditions seemed identical. The area over which I found them scattered was about 4 chains long by about half a chain broad.

My records of captures give me: 13th August, 1899, six larvæ; 31st October, 1899, sixteen larvæ; 29th October, 1899, three larvæ, three pupæ; 10th September, 1899, fourteen larvæ; 22nd October, 1899, fourteen larvæ, two pupæ. These resulted in imagos as follows: 19th November, 1899—one male and one female emerged; 20th November, 1899—one male emerged; 29th November, 1899—one male and one female emerged; 5th December, 1899—two males and two females emerged; 7th December, 1899—one male emerged (the wings of this specimen never developed properly).

On the 27th November, 1899, I found a female moth in the bush at West Plains (about five miles north-west of Invercargill); it was lying under a log, and had laid its eggs in the usual manner—i.e., it had burst open. Many of the eggs were lying scattered about, but the majority were still lying in the shell of their parent. Of these eggs about forty produced caterpillars, but, unfortunately, they all died within a week, so I suppose I had not placed them under their natural conditions. The caterpillars when first emerged were of a very pale golden-brown, and very small. The hairs were thinly scattered, and seemed very long in proportion to the size of the body. Of the female moths which I reared three laid eggs, but all the eggs proved unfertile, and as the moths simply fell to pieces I lost them also. The eggs are of a dull-white colour, and about the same size as those of *N. annulata*. I also took one female from the bush where I had originally taken the caterpillars, but the eggs produced no larvæ. On the 11th February, 1900, I again took six larvæ from this bush, but they were of small size.

On the 27th February, when passing down an unformed sand road at Otatara (due west from Invercargill, and about eight miles by road), I found these larvæ in fair numbers crawling along the sandy road in the full glare of the sunshine. They seemed to do very little feeding, but I noticed one or two that stopped to rear themselves up against a blade of grass for that purpose. They were all travelling towards the north, and varied in size from very small to half-grown.

On the 8th March I took six more from the same road. These were all about half-grown, with the exception of one, which was as small as though freshly emerged. All these were feeding, and it seemed to me that perhaps the period during which they wander might be over.

I noticed that there were two distinct types in this caterpillar, the one being a glossy-black above merging into rich-brown underneath, the other a deep glossy-brown above merging into light-brown below. The brown is, I think, the future male moth, and is generally larger than the black, or future female moth. The caterpillars, especially the darker ones, strongly resemble those of *N. annulata*, and I found I was liable to pass over them as such. This similarity may account for this moth being so little known, as it certainly spreads over a considerable area here. The hairs of the *Metacrias* caterpillar are longer, and are also arranged in denser tufts. There are also several long grey hairs projecting from its anal extremity. On being alarmed it rolls itself up into a ball and remains in that position for a considerable time. The caterpillars generally feed by day, but when nearly full-grown I noticed them feeding by night

also. When full fed they measure about $1\frac{1}{4}$ in. in length. I found a caterpillar of this length under the same log with one of about $\frac{1}{4}$ in. in length. The small one died without pupating.

When about to pupate the caterpillar spins for itself a brown cocoon, into which it works its own hairs in a wonderful manner. The larval skin remains firmly attached to the extremity of the chrysalis. The chrysalis is jet black, and is incapable of movement. The head is very stout and blunted at the top, and the abdomen bends in slightly, so that the pupa has a curious curved appearance.

The moths emerged during the night or early in the morning, and in the case of the males had their wings dried by the evening. They were never restless, even when I kept them in the breeding-cage for several days. Of those I reared I only remember to have seen one flying.

When looking for pupæ in the bush I saw two moths flying, which I identified as *M. strategica*, but I could not catch them. Their flight was very swift, about 7 ft. from the ground, and greatly resembles that of the humble-bee.

The specimen figured by Mr. Hudson in his "New Zealand Moths and Butterflies" seems to be larger and more brilliant than those I have, but the markings in one of mine are somewhat similar. The female moth is wingless and of a dull-grey colour. The legs are exceedingly weak, and the moth can only crawl along very slowly by their aid. The female moth is very weak, and several of those I have reared never properly emerged from the pupæ, having pieces of it adhering to them. Two of them never left the cocoon, apparently lacking the strength to force their way out.

The larvæ I collected were free from ichneumons, but when collecting in the bush from which I had taken them I found a cocoon containing the fragments of a pupa, and by the side of these two ichneumon chrysalises from which the imagines had emerged.
