



## Boulder Copper

*Lycaena (Boldenaria) boldenarum*

### Description

A native Butterfly that is one of New Zealand's smallest butterflies running a close second to the Southern Blue. It is certainly the smallest Copper, add its small size & flight close to the ground, it becomes a very overlooked Butterfly, even when they are in plentiful supply. To see them, it is best to look for them along a river or gravel path on a sunny day when they rest with their wings open showing their bright colours, otherwise they become almost invisible when they close their wings. The male has a striking purple, whereas the female is more like the average Copper colour. It was split from the genus *Lycaena* in 1995 after much ongoing discussion regarding its status for many years. Like the Glade & Rauparaha's Copper, the Boulder Copper doesn't travel much more the 10-50 metres from areas of the larval foodplant. All the coppers are all suffering from Wasp predation, especially paper wasps, as they are a good source of protein for the wasp's developing larvae. Attracting Boulder Coppers to your garden is fairly easy, just grow some Creeping Pohuehue (*Muehlenbeckia axillaris*) in a rock garden including local stones or shingle as they will land on this to sunbathe.

### Ovum

Laid singularly on the foodplant, either side of leaves or the stem. Olive-Green in colour & dome-shaped which is pitted all over with ridges. They hatch in about 8 days.

### Larvae

Colour varies from olive-green, through yellow-green, through yellow-pink to reddish-brown with a white edged dorsal stripe & oblique segmental stripes. In the South Island the green variation is predominant. Unlike the other Coppers, they have shorter & straighter setae plus they are brighter in colour in the 4th instar. Their distinctive feature from other Coppers is a prominent diamond shaped that is white with brown margins on its prothorax. It has its legs & head covered by fleshy side flanges (giving it a Woodlouse shape), it appears to have a slow slug-like movement, especially in the 4th instar. In the first instar they only feed beneath the leaves, grazing the lower tissues in oval patterns. From the second instar they begin to eat notches from the side of the leaves. They prefer to eat new growth & in flowering season, November & December, they will eat the flower clusters. They can be often found beneath loose stones under the foodplant. There is also a high chance that the native Southern Ant (*Chelaner antarcticus*) will be present, however there has been no proven link between them & the larvae of the Boulder Copper

as suspected in the past. This suspicion came about because lots of Lycaenidae Butterflies do have such links with Ants. However the larvae do have thick skins that reduce the risk posed by nearby Ants causing injury. Since the foodplant is partly deciduous, the over-wintering larvae move to a sheltered spot near the base of the foodplant & spend the winter in a quiescence. These overwintering larvae go on to pupate in September or October. Grows up to 10mm when fully grown.

### Pupa

Variable in colouration depending on the larva colour. A red larva will produce a dark-brown pupa with a reddish abdomen, whereas a greenish larva will produce a light-brown pupa. Both forms have a speckled black abdomen. They hide amongst dry litter or stones on the ground usually protected by a dried leaf which they attach themselves to by a small cremaster & has some silken strands in place of a girdle over its thorax to help secure it. The odd one has been recorded as pupating in the foodplant like the Glade Copper, but they can be told apart as the Glade Copper has a rough texture due to setae. The pupa is about 6-7mm long.

### Imago

The imago has a 17-27mm wingspan, the average being 20-23mm. The male has a iridescent mauve or purple sheen on the upperwings with pronounced veins. Whereas the female has orange-brown upperwings with purple-blue spots around edge of wing. Both genders have black spotting on the upperwings. The underside is similar on both genders & is blue-grey to brown-grey with brown markings which vary to match local rock types, so will be lighter in the Taupo area where there is lots of Pumice & darker in the Southern Alps where there is greywacke, this allows the butterfly to rest almost invisibly on boulders & shingle. To aid this disguise, it holds its wings against or over a stones, making it almost invisible (as in the ovipositing picture). The males flight is generally rapid, & darting near to the ground, whereas the females is more fluttery. Their jerky flight can make them very hard to follow as they disappear into 'thin air'. They rarely fly or settle over 1 metre high. They are a sun worshipper & often rest on stones or shingle with their wings open at about 30-40° with its head away from the sun. They will quickly close their wings if a cloud passes or a gust of wind disturbs them. Just like the Black Mountain Ringlet, they absorb the radiated warmth from the stones. Depending on the habitat & location, they can be seen flying with seen flying with the Common Copper, Common Blue or the Southern Blue. They appear darker in flight than the Blues. But may need following until settling to know for sure, however the undersides are similar at first glance. Males appear more common especially early in the



season, but is probably due to them spending more time on the wing & sunbathing than females that take their time ovipositing. There is said to be 2 generations per year, however it is suspected that there is 3 or more generations in some localities in favourable years. They appear to have a constant cycle of all lifestages from November to March similar to the Red & Yellow Admirals.

**Male**



© Jérôme Albre



© Attapon Tansakul

**Habitat**

Found in areas of Tussock & shingle. Also along watercourses (especially braided rivers) & roadsides where their larval foodplant is present. It is generally found from sea level up to 2000m, but is less common above 1300m.

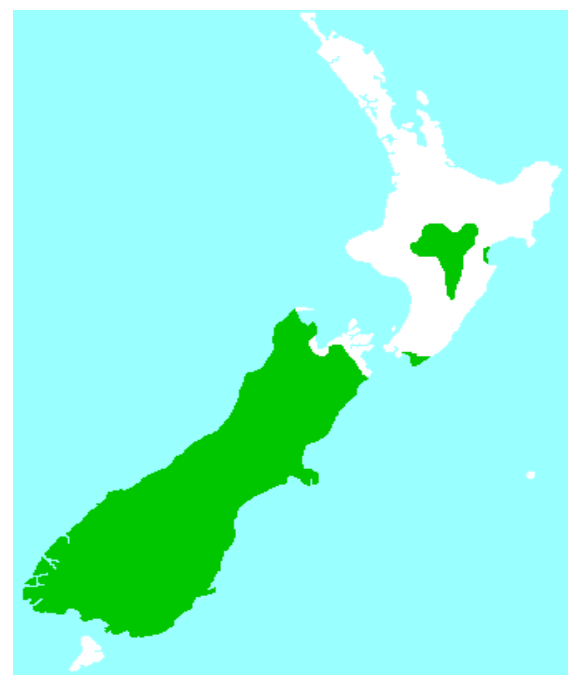
**Food Plants**

Only recorded on Creeping Pohuehue (*Muehlenbeckia axillaris*) & Maori Dock - Runa (*Rumex flexuosus*) in the wild, but in captivity they have fed on other varieties of Pohuehue (*Muehlenbeckia spp.*).

**Status**

Widespread Found throughout the South Island & central areas of the North Island, but is more commonly encountered in the upland areas like the Southern Alps & the central plateau..

**Distribution**



© Attapon Tansakul

**Female**



© Mike Lusk



## Phenology

	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Adult						■	■	■	■	■	■	
Egg						■	■	■	■	■	■	
Caterpillar	■	■	■	■	■	■	■	■	■	■	■	■
Pupa				■	■	■	■	■	■	■	■	

## Variations

There are numerous variations around the country that could technically become sub-species, but haven't yet due to the small areas they inhabit. In 1946 JT Salmon did make a start with the two sub-species listed below. It is generally considered that there are local variations. I wouldn't be surprised if there is developments with more sub-species being described in future since the genus was changed from *Lycaena* to the sub-genus *Boldenaria* in 1996.

Pictures of the underwings from around the country showing how well the variations match the local stone.

Whakapapa - © Attapon Tansakul



Cobb Valley - © Robert Arter-Williamson



Lewis Pass - © Jérôme Albre



This is probably New Zealand's best camouflaged Butterfly!

## Sub-Species

There are presently 2 sub-species described, both from the Fiordland area. *B. b. caerulea* is found in the Upper Hollyford valley which has a mainly grey underside with a thin dark line across the centre & *B. b. ianthina* which is found in Milford Sound. It has a thick dark centre of the underside. Both existing & any new sub-species will be variations of the underside that is only found in one area.

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