

# **Insects and freshwater fish on Tiritiri Matangi**



# Some common insects

## How do we know what insects are living on the island?

Researchers set special traps in likely places – grassland, pohutukawa forest, regenerating scrub and so on. Traps include tent-like contraptions up in the bushes and pitfall traps down on the ground. Samples from these traps are collected at intervals and studied.

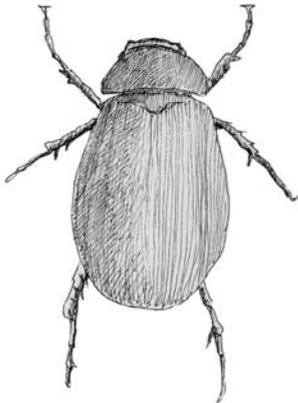
A study carried out between September 2001 and April 2002 found 315 species of beetles!

Listed here are just a few of the most common insects you might see during your visit. There are many more.

## Yellow striped chafer beetle

*Odontria xanthosticta*

These nocturnal feeders were once a source of food for kiore. For a while after the kiore were removed from the island, these beetles got out of hand, stripping and generally damaging foliage from karaka, ngaio and puahou. However, an ecological balance has now been attained with this native insect.



When they are at their highest populations in late summer these beetles are a major part of the diet of tuatara.

They are a species of scarab beetle, and hide in leaf litter and grass by day, emerging at dusk to fly up onto trees to feed. Trees with good moisture content, such as karaka, karamu, and taupata are also favourite food for these beetles.

## Gossamer damselfly

*Ischnura aurora*

These can be seen hovering over the island's ponds. It is the smallest damselfly of the six species found in New Zealand, and is less than 25 millimetres in length. They were first recorded in New Zealand in 1926 and are now common in the Auckland region.

Males, seen more frequently than females, have a red abdomen with a blue patch at the tip. Females, which range widely looking for new bodies of water in which to lay their eggs and so are not seen so frequently, have a greenish abdomen.

## Copper butterfly

*Lycaena salustius*

Also known by its Maori name, pepe parariki.



Copper butterflies are frequently seen on the island in summer. It is a small butterfly, 24 – 34 millimetres across the wings, with orange and black wings, and can most often be seen in the vicinity of the small leaved pohuehue. The butterfly lays its eggs on the pohuehue and when the little green caterpillars hatch out they feed on the plant's leaves and flowers. The caterpillars are very difficult to spot.

Once called the common copper, it belongs to a group of copper butterflies found throughout New Zealand and all looking very similar.



## Chorus cicada

*Amphipsalta zealandica*

The Maori name for cicadas is kihikihi. Cicadas lay eggs the size of a grain of rice in a herring-bone pattern in the thin branches of trees. Each female lays 400 to 600 eggs in 40 to 50 nests. Eggs hatch to become nymphs, which are soft and creamy white and feed on tree roots underground. When mature, the nymphs climb up tree trunks to moult and become adults. Male cicadas die soon after mating.

Cicadas can be black, green or brown, and they have wings which filter out ultraviolet light. They eat by sucking sap.

Only male cicadas sing, and the cicada song is the loudest sound made in the insect world.

## Weta

There are three different kinds of weta on Tiritiri Matangi: tree weta, cave weta, and ground weta. The most common and most frequently seen is the tree weta. All weta are nocturnal, sleeping during the day in various hiding places and only come out at night to feed.

Weta are known as the dinosaurs of the insect world, as they have been around since before the time of the dinosaurs. In fact, they are older than tuatara. By insect standards, they are large.

Some people are alarmed by the sight of the 'sting' at the end of some weta. In fact, this is just the ovipositor of the female, which is used to lay eggs. Female weta are able to lay 100 to 300 eggs, which hatch out three to five months later, by which time the parents have usually died.



## **Cave weta**

### *Gymnoplectron acanthocera*

There are 60 species of cave weta. They are very quiet and unable to hear.

They are found not only in caves, but also in dark places such as inside hollow logs. These are slim weta, with very long antennae and legs. They scavenge on lichens and other organic matter, and are able to jump up to two metres.

## **Ground weta**

### *Hemiandrus pallitarsus*

Ground weta are the smallest of the weta family and they are deaf. They have no ears on their front legs as other weta do. They live in tunnels underground and are mainly carnivorous. Ground weta look like tree wetas but are much smaller and they don't have spiky back legs.

There are 36 species of ground weta.

## **Auckland tree weta**

### *Hemideina thoracica*

These are the most common weta, and the ones you are most likely to see on Tiritiri Matangi. They are sometimes called the bush weta.

Their usual home is in holes in trees, and they communicate with a rasping sound made by rubbing 'pegs' on the inside of their hind legs against a row of ridges on their abdomen (this is called 'stridulating'). This is a common sound heard in the bush at night on the island.

They have 'ears' on the insides of their front legs.

The male tree weta can be quite aggressive and will fight other males. He hisses and bites when threatened.

Tree weta are omnivorous, feeding mostly on fresh leaves but the occasional fruit and insect can be eaten.

One male can live with up to ten females.

Sometimes you will be able to see a tree weta in the weta boxes attached to trees on both the Kawerau Track and the Wattle Track.

## **Stick insects**

New Zealand stick insects belong to the order *Phasmatodea* (phantom – referring to the way they disappear into their surroundings).

There are several different stick insects on Tiritiri Matangi but they are so well camouflaged that you will be lucky to see any, and the fact that they are usually only active at night makes it even more difficult.

Stick insects can be brown, green or grey, and their bodies can be smooth or prickly.

They are mainly foliage feeders, with some species eating a wide range of food, while others will only eat a specific kind. For example, *clitarchus* only live on kanuka and manuka.

Stick insects cannot make sounds, and have no ears, but they have good eyesight.

Males are much smaller than females, and are also often a different colour.

Breeding is different with different species – some females can reproduce only if they mate with a male, some can reproduce with or without mating, and some are able to reproduce without a male at all (parthenogenically).

Most female stick insects just drop their eggs wherever they happen to be at the time, and they lay their eggs anytime, day or night. But eggs only hatch at night. Their eggs are surprisingly large, and look like droppings or seeds. They have a hard outer shell.

Hatchlings emerge as nymphs and moult in order to grow. They do this five or six times in about six months, until eventually emerging as an adult.

## Sandhoppers

### *Corophium acutum*

These are the little crustaceans which spring up and down when you disturb a piece of seaweed or wood on the beach. During the day, Greg the takahe is sometimes known to patrol Hobbs Beach picking up sandhoppers, and at night, the occasional kiwi has been seen on the beach, possibly doing the same.

#### References:

SOTM Bulletins 15, December 1993, 17 May 1994, 41 Autumn 2000.

Dawn Chorus 54, Winter 2003.

Dawn Chorus 61, May 2005.

[www.cicada.net.nz](http://www.cicada.net.nz)

Gibbs, George. Photographs Brian Enting & Rod Morris: 'New Zealand Geographic' No 21 Jan – March 1994, 'The Demon Grasshoppers – New Zealand Weta' pp 90 – 117.

Chudleigh, Brian. 'New Zealand Geographic' No 83, Jan – Feb 2007 'Princes of Camouflage' pp50 – 63.

# Banded kokopu

*Galaxias fasciatus*



In the tiny bush-covered streams on Tiritiri Matangi there are little fish which hardly anyone ever sees because they don't know they are there!

These are called banded kokopu, and they are one of five different native fish which, when they are babies, are known as whitebait.

The banded kokopu is the smallest whitebait of all, but it is an excellent climber, so if it is caught and put into a bucket with other whitebait (for the fisher to take home to eat), it will often escape by wriggling up the bucket's sides!

Eventually banded kokopu grow to over 200 millimetres in size.

Banded kokopu got their name from the adult's thin pale vertical bands along the sides and over the back.

The banded kokopu lays her eggs on the edges of her home stream. When there is a big overflow of water after rain, the eggs hatch and the larval fish get washed out to sea. Several months later the little fish return.

Banded kokopu usually live in very small streams where there is virtually a complete overhead canopy and the entire stream is shaded. They avoid dirty streams.

They hunt for food at night – such things as beetles, which might have fallen into the stream from the bush and trees above.

Research is being done to determine how they find their way to bush streams after being out at sea. It appears that the young banded kokopu follow the scent (pheromones) of adults, but that is not yet proven.