

Olly's Cicadas

by Alison Ballance

Olly Hills loves cicadas. When he was little, his mum would lift him into trees so he could catch them. As he got older, he'd drag a chair over and climb up. Eventually, Olly was big enough to climb trees on his own. Now he's a cicada expert. He's even written a book about them.

Large, loud, and easy to find

Olly lives in Hamilton. His house is near a gully, which is filled with big trees, birds, and glow-worms. Best of all, in summer, the gully is home to thousands of cicadas. Olly likes cicadas "because they're large, loud, and easy to find". He also says they're easy to catch.

When he first became interested in cicadas, Olly had lots of questions. He'd want to know what kind he'd caught. Olly's mum, Tara, admits she only recognised two species. If it was a big cicada, she'd say it was a chorus cicada. If it was small, she'd say northern snoring cicada. (She later learnt this kind is rare in Hamilton, so her answer was almost certainly wrong!)

Since those early days, Olly's discovered seven different species of cicadas living in and around the gully. He knows what each of these species sounds like and looks like. He also recognises their different behaviours. Olly's mum now knows a lot more about cicadas, too.





Cicadas of *Cicadas of New Zealand*

Olly read every single insect book he could find. He also searched for articles online even though “most of them were very complicated to read,” he says. Websites were more useful. Olly got in touch with some of the people who’d written them. They were happy to answer his questions, but he kept wishing there was a book about New Zealand cicadas written for curious kids like him. Olly decided he’d just have to write that book himself.

“I thought it would take one month,” he says, but he was forgetting one thing: there are forty-two species of cicadas in New Zealand – at least. Researching that many would take a lot of work. In fact, it took thirteen months before *Cicadas of New Zealand* was finished. New Zealand **entomologists** were so impressed they invited Olly to their conference to talk about his work.



entomologist: a person who studies insects

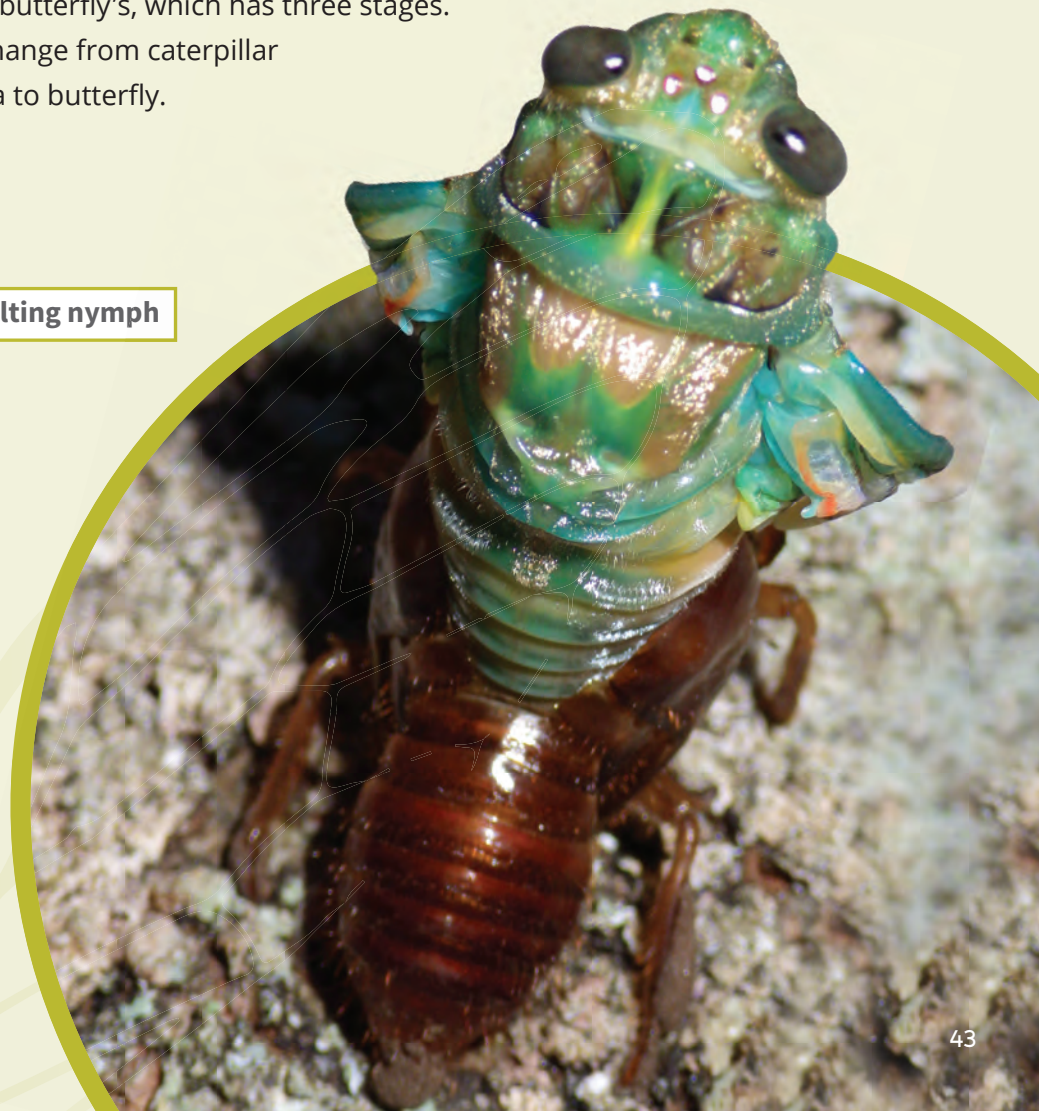
True bugs

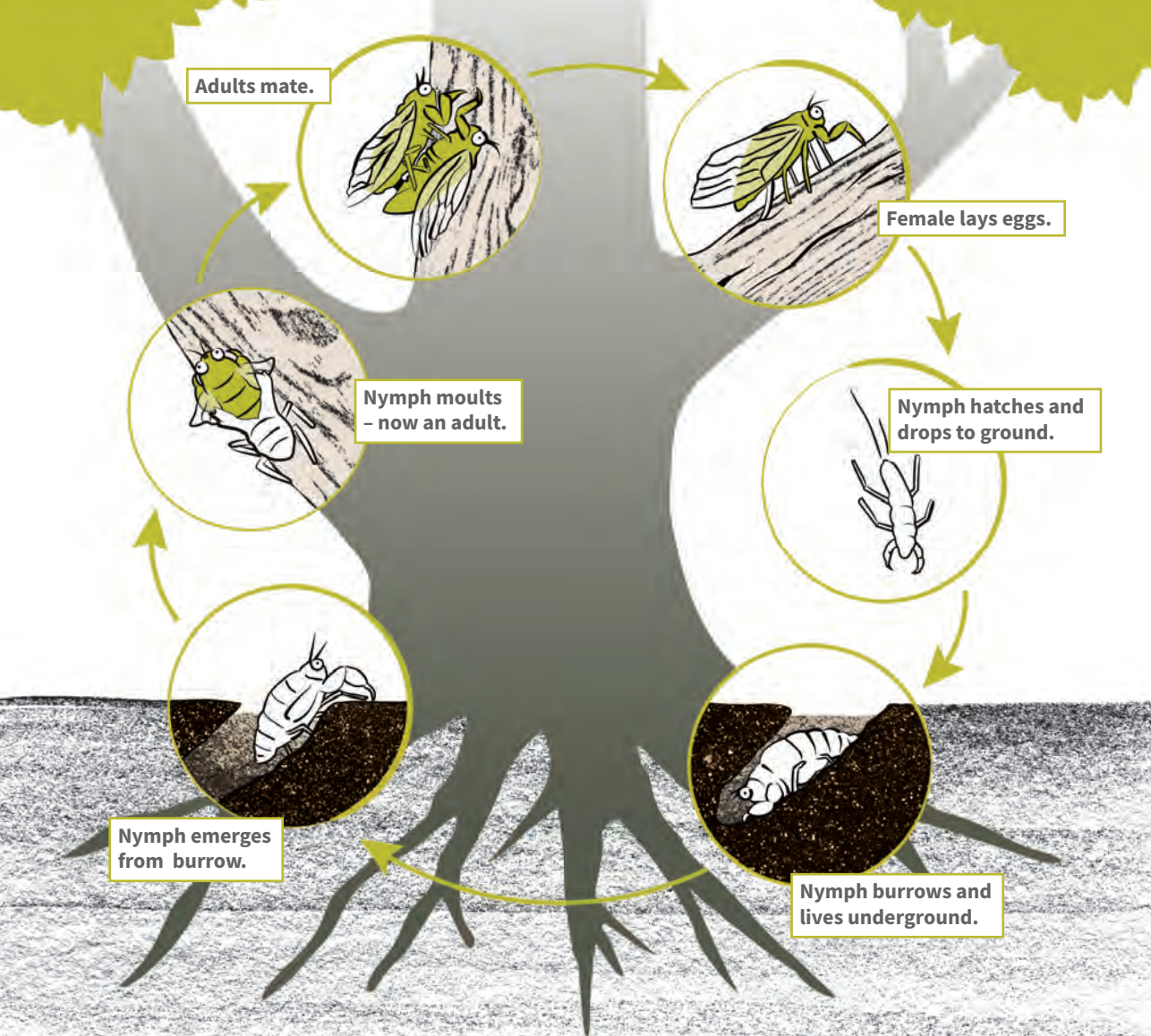
People often use the word “bug” to describe all kinds of creatures. But bugs are actually a special group of insects called Hemiptera (also known as true bugs). Cicadas, aphids, leaf hoppers, and bed bugs all belong to this group. While true bugs come in many shapes and sizes, they all have a kind of mouthpiece called a proboscis. “This works a bit like a straw, and they use it to suck up sap,” Olly says.

True bugs have a simple life cycle. Eggs hatch into nymphs, which look more or less like an adult. Before they reach adulthood, nymphs must grow and moult, something that happens several times. This life cycle is different from a butterfly’s, which has three stages.

They change from caterpillar to pupa to butterfly.

A moulting nymph





Life cycle

An adult cicada's life is short: between one and three weeks. The cycle begins when a female cicada lays her eggs in the slits she makes in bark or sometimes grass stems. She does this using her **ovipositor**. Nine to eleven months later, tiny wingless nymphs hatch and drop to the ground, where they burrow into the soil. Different species of cicada stay underground for different amounts of time. In New Zealand, most nymphs stay buried for two to five years. They live on sap from tree roots.

ovipositor: a long thin tube on a female cicada, used to lay eggs

When a nymph is ready, it uses its front legs to come to the surface, usually at night. It then climbs a tree to moult. The nymph's skin splits across and then along its back. Pushing out of this skin takes around an hour. By morning, the cicada's skin and wings are hard. It's now ready to fly off to look for a mate.

Olly says that late summer is the best time to spot cicada nymphs. "During the day, look for empty cicada shells on trees. When it's dark, return with a torch. You'll find nymphs on the ground. If you wait long enough, you should be able to watch them climb the trees."

Buzz, clap, click

Cicadas are loud. Sometimes the males turn off their ears (called tympana) so they don't make themselves deaf. Male cicadas buzz and clap to attract females, and the females click back to show they're interested. A male cicada makes sound using its tymbals. These are two drum-like skins found on each side of its abdomen, just behind the wings.

A cicada contracts and expands its muscles to move its tymbals in and out, making a sharp click "like when you open a new jar of jam," Olly says. Cicadas repeat this movement up to four hundred times a second. The buzzing drone that results is often called singing. In te reo Māori, cicadas are known as kihikihi, a name that sounds similar to their noise.

Each species of cicada makes its own sound so cicadas from the same species can recognise each other. And here's a strange fact: children hear some cicadas better than adults, especially the April green cicada, which has a high-pitched call. "But our ability to hear high pitches starts to change at around eighteen," Olly says.

A cicada's operculum, which protects its ear drums





New Zealand species

Entomologists have named forty-two species of cicadas in New Zealand, but Olly says this number will definitely grow because some new species haven't been named. There will be undiscovered species too. Olly thinks he's even found some himself!

New Zealand cicada species are divided into five groups: clapping, kikihia, black, clay bank, and redtail. Some species are rare, while others are more common and are found in all kinds of **habitats**. Wellington has more kinds of cicadas than any other part of New Zealand.

Clapping cicadas

There are three species of clapping cicadas: chorus cicadas, chirping cicadas, and (confusingly) clapping cicadas. As their name suggests, these species make clapping as well as the usual singing sounds. They make the most noise during the day but also chirp on warm nights. Chorus cicadas have bright green bodies and sing in groups. The chirping cicada is nicknamed the "disco-beat cicada" because of its rhythmic call. Clapping cicadas have olive bodies and sing on their own. All three clapping cicadas make a loud screeching noise when they're held.



Kikihia cicadas

There are sixteen species of kikihia cicadas, and they're all small. Both male and female kikihia click their wings. Most cicada species sing in the sun, but this group includes some shade singers.

April green cicadas sing almost all year round. Snoring cicadas sound like ... yes ... someone snoring, and the clock cicada sounds like a fast-ticking clock.



Black cicadas

New Zealand has nineteen species of black cicadas. They are small and dark and often hairy. A lot of these species live in the mountains, including one in the **alpine zone**. The screaming cicada is found on Mount Ruapehu and in the north of the South Island. You can guess what the screaming cicada's song sounds like ...



Clay-bank cicada

There's only one species of clay-bank cicada. It's found in the North Island only, in low-lying and coastal areas.



Redtail cicadas

There are three species of redtail cicadas. They've been known to sit on a person's finger and sing without flying away.



Cicada hunting

Olly has now seen all kinds of cicadas in all kinds of habitats around New Zealand – he’s made sure of it! Family holidays are often planned so he can look for new species along the way. (Olly’s two younger sisters put up with, but don’t share, his interest.) Of course, Olly would like to see *every* cicada species in New Zealand. Recently, he was excited to find the Myer’s cicada, a rare species found only in the Orongorongo Valley near Wellington. He’s now planning the next family holiday. “My ideal day would be spent searching for the rare lolanthe cicada,” he says. “I’ve heard them in the Kaimai Range.”

Find out more

For more information, including recordings of cicadas, go to:
<http://bit.ly/CicadaCentral>.

Try playing some of the high-pitched calls to grown-ups to see if they can hear them!



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