



School Journal

November 2019

TITLE	READING YEAR LEVEL
After the Fire	5
Hana Kōkō	5
The Weird Zone	6
Summer Sounds	6
For the Ancestors: One Woman's Malu	6
Fantastic Penguins	6
Olly's Cicadas	5

This Journal supports learning across the New Zealand Curriculum at level 3. It supports literacy learning by providing opportunities for students to develop the knowledge and skills they need to meet the reading demands of the curriculum at this level. Each text has been carefully levelled in relation to these demands; its reading year level is indicated above.

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**SCHOOL JOURNAL
LEVEL 3
NOVEMBER 2019**



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AFTER THE FIRE

BY ADRIENNE FRATER

Joe was first off the bus. He was meeting Mum at the rescue centre, and she'd worry if he was late. He began to run, though not fast because of his asthma. The air wasn't as smoky today, but the helicopters were still there, carting their big red buckets. Joe could see one in the distance, heading to the valleys. It was only two weeks since the fire, but it felt like the helicopters had been there forever.

Mum was waiting at the gate. "Hi, love," she said, giving Joe a kiss. She looked tired. "They're short of volunteers today. I might give a hand if you don't mind."

Joe nodded. He didn't mind. He took the two apples his mum held up. "Thanks," he said. "You remembered."

Mum smiled. "Of course I did. One for you, one for Albert."

They arranged to meet in an hour, and Joe started for the stables on the far side of the showgrounds. He liked walking past the goats and chickens and turkeys. Their pens were nearly full, with animals still arriving each day. No wonder they needed more volunteers.

The stable was full, too. Albert was the only alpaca. He was in a stall next to a grey pony named Puffin. Joe stroked his pet's coffee-coloured coat and began to talk quietly.





“Mum got you an apple,” he said. “She couldn’t come. She’s helping out today.”

“Hey, Joe.” It was Sadia, the girl who rode Puffin. “My mum is helping, too. I’m here for a while. Do you want to take Albert for a walk?”

Joe nodded shyly. He’d always been the quiet one. At his new school, he hadn’t made any real friends yet. Sadia was older – she went to intermediate – but they’d both been evacuated at the same time, and they both loved animals. Plus it helped that she liked to talk.

“Take this,” she said, handing Joe a red halter. “It was Puffin’s, but I’m sure it will fit Albert.”

They walked the pony and alpaca to the centre of the showgrounds, where the sheep were grazing. Albert stopped to eat some hay. Most of the feed had been donated. The grass at the showgrounds, like the grass everywhere, was long gone. The drought had seen to that. After the grass, the trees had started dying, which had seemed a terrible thing ... until the fires started.

“You look sad,” said Sadia. “What are you thinking about?”

“Mum’s orchard,” Joe said. “We planted it last autumn. It’s probably gone.”

Sadia frowned. “The year before my family left Bangladesh, it was a bad rainy season. There were floods, and my grandparents’ village washed away. They lost everything – but they survived. That’s all that matters, yes?”

Joe nodded. What could he say?

When Dad came to pick them up, he was smiling. “I have good news. We can go home tomorrow.”

“Albert too?” Joe asked.

“Maybe not. We’ll have to see what things are like. Besides, there’s no grass.”

“There was no grass before the fire,” Joe pointed out. “We can buy hay.”

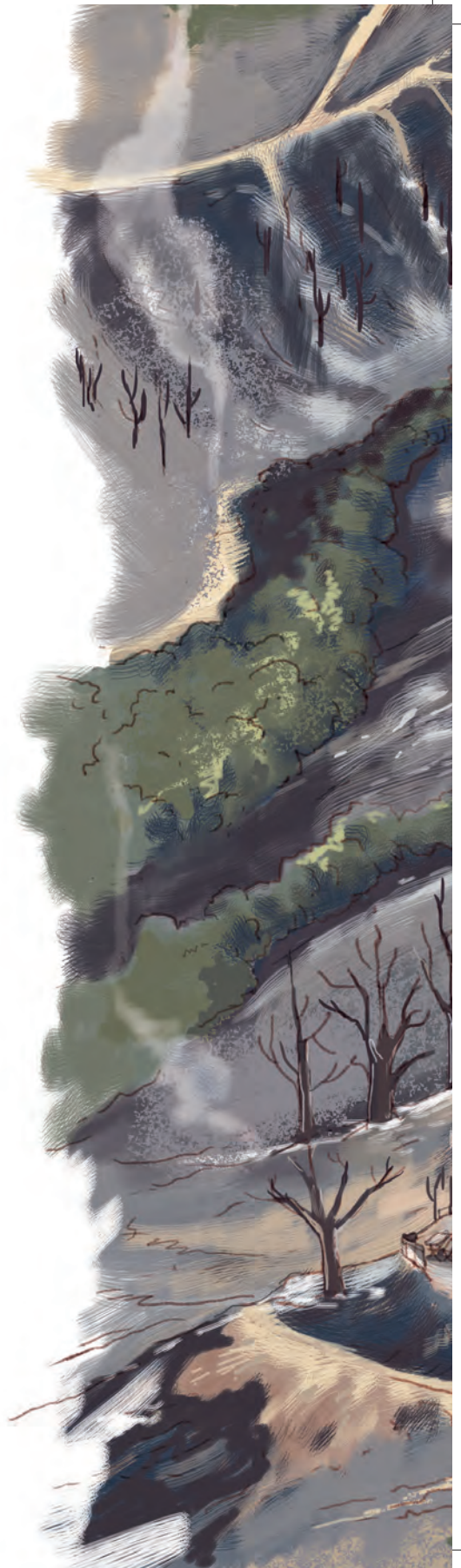
“Don’t rush us, Joe,” Mum said gently. “Albert will be fine for a few more days.”

Joe had trouble sleeping that night. Their unit at the motel was hot and stuffy, and each time he fell asleep, he dreamt about fire – everything burning. He was grateful to the firefighters who had saved their house, but what hadn’t been saved?

The next morning, they packed their few things and drove home. Joe peered out the window, mapping the damage. Their valley had been hard hit. Most of the pine forest was gone, replaced by scorched hills covered in grey ash like snow. In the few places that were still green, wide strips had been bulldozed to form a containment line – one more ugly thing spoiling the view.

“It’ll take a while to stop burning,” Dad said, nodding towards a large dark patch where the forest still smoked. “Don’t worry. They wouldn’t let us back if it wasn’t safe.”

The neighbours’ houses were still there. A few farm buildings were singed, some big trees on the flat were gone, and – strangest of all – there were no animals. The three white goats at the Hagues’ place were gone. So was their miniature pony. There were no sheep, no cows, not even birds – anywhere.





“Mum,” Joe said. “Sadia told me a story.”

“Sadia?”

“My friend at the rescue centre.” He liked saying the word friend. “She told me about her grandparents and the big floods they had in Bangladesh.”

Mum listened and then asked about Sadia. It felt good to have something to talk about, but as they approached their corner, he saw her shoulders tense up.

“Can I walk from here?” he asked.

Outside, the acrid smell of smoke was overpowering, and Joe had to use his inhaler. He walked down the drive, taking it all in. The cabbage trees Dad had planted still stood in their two neat rows, unhappy but alive. The shade trees behind them were harder hit. Most were skeletons. And Mum’s orchard was gone.

Joe had helped plant those trees: apples, peaches, apricots. Before the drought got really bad – and before the water ban – he’d been in charge of watering. He’d never stopped hoping that somehow the orchard had survived.

Mum was in the far corner, sitting at the picnic table. It was a beautiful spot, with a view down to the stream and willow trees, but now it was desolate, everything but the table gone. Joe couldn’t understand how it had survived.

“I’m really sorry, Mum,” he said. He stood, waiting.

Eventually, she spoke. “Well, at least we still have a fence around Albert’s paddock.” This was true. Like the picnic table, the fence hadn’t been touched. The fire made no sense at all. “We’ll pick him up tomorrow,” Mum added.

Joe smiled. He was impatient for Albert to come home, but that didn’t help his mum. “It’s OK,” she said, seeing the guilty look on his face. “We’re here. That’s all that matters, like your friend Sadia said.”

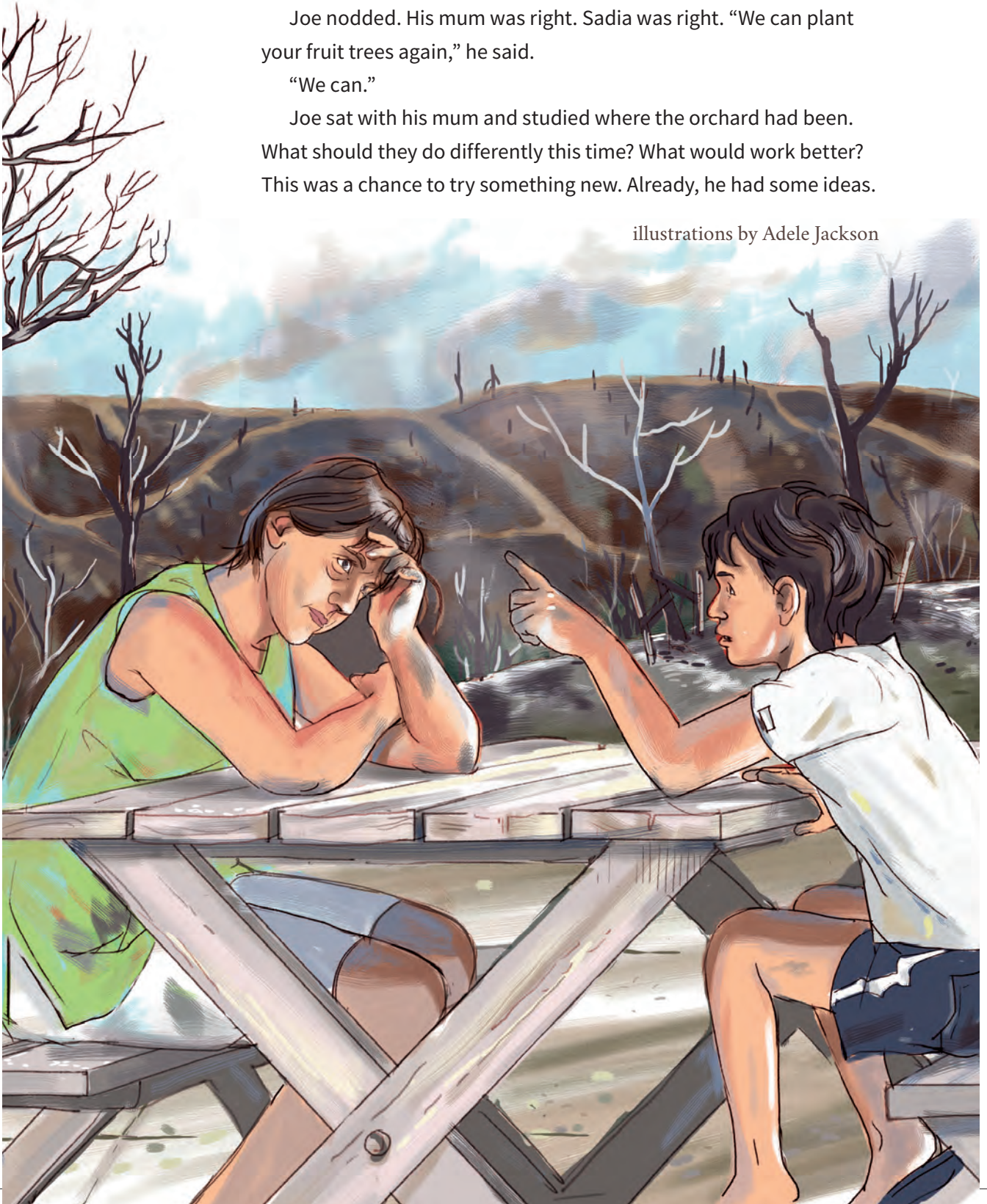


Joe nodded. His mum was right. Sadia was right. “We can plant your fruit trees again,” he said.

“We can.”

Joe sat with his mum and studied where the orchard had been. What should they do differently this time? What would work better? This was a chance to try something new. Already, he had some ideas.

illustrations by Adele Jackson



Summer Sounds

Summer's door opens
with the sun.
Tūi creak it to
and fro – hinged, cracked –
their calls sound
from wires slung
along the street, where
skateboards drop percussive
noise on asphalt
as the day livens, warms
with cicada talk
and traffic, blare of horns
and mowers lowering lawns;
their commentary
carries, insistent
under all.

Jenny Bornholdt








FOR THE
ANCESTORS
ONE WOMAN'S MALU

BY MADELEINE CHAPMAN



Growing up in Sāmoa, Matalena Leaupepe saw tatau everywhere. Men often had pe’a, the Samoan tattoo that covers the torso and thighs. Matalena’s dad was the ali’i (high chief) of their village. He had a pe’a. Her grandmother and great aunties wore malu. As a young child, Matalena loved to sit and examine the stars inked around their knees.

FAR AWAY



When Matalena was ten, her family moved to Wellington, and she stopped seeing beautiful tatau everywhere. Why? Because it was often cold and windy. In Sāmoa, where it’s always warm, it’s common for men to wear only a lavalava, with no shirt. Their tatau can be seen all the time, but in New Zealand, “My dad wore pants and a shirt every day,” Matalena says, “and my aunties and their malu were far away.”

Matalena’s memory of the tatau faded until they were almost forgotten. Then, when she was twenty-one, Matalena became a tāupou. This is a role in fa’aSāmoa that is about women fostering peace and harmony in family and village life. The role of tāupou was given to Matalena by her father. He also asked if she would consider getting a malu – an honour, but Matalena wasn’t ready. “I was young, and I thought having dots and lines on my legs would look weird, especially to strangers in public.”

Then Matalena’s dad passed away. It would be two decades before she got her malu. Over the years, she sometimes regretted saying no. “I worried that I’d missed my chance,” Matalena says.





STRONG



The word “malu” means to shelter or protect. Add two macrons and you get “mālū” and a different meaning: soft, tender, compassionate. To protect *and* be soft is what makes a Samoan woman strong.

Wearing a malu is a good way to show strength because getting one hurts. To share this pain, a person always has a partner called a soa. Matalena’s soa was a friend from work. The women got their malu together. Matalena went first while her soa sat with her, providing encouragement. Then they swapped places.

Supporters provide help in all kinds of ways. “They pray, cheer you on, sing, and offer words of encouragement,” Matalena says. Getting a malu is a very spiritual experience. “Sometimes people see or experience things they wouldn’t normally see or experience. Having lots of support makes you stronger. It helps you to focus and overcome challenges during the ritual.”

Matalena felt spirits while she was getting her malu. They were familiar spirits, people who had passed: her dad, her grandmother, a friend, her grandfather. Matalena never met her grandfather. She’d never seen a photograph of him, either. “Yet I felt strongly he was with me the whole time. I could see him vividly.”

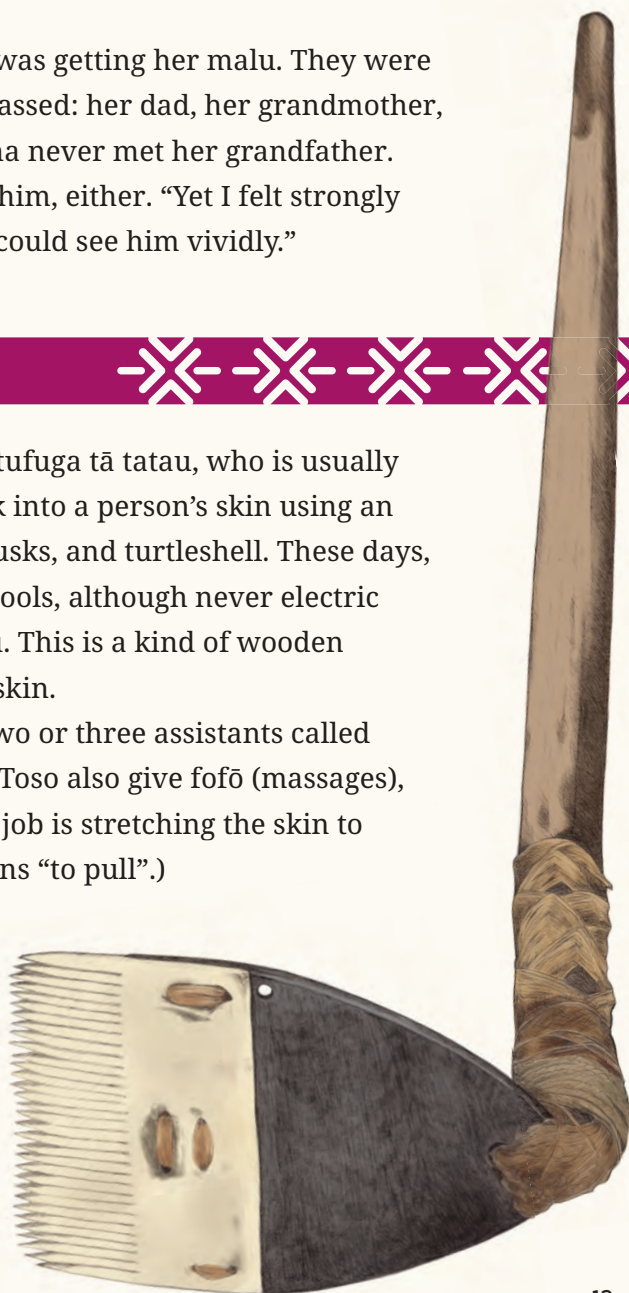
INK

Malu are designed and done by a tufuga tā tatau, who is usually male. Traditional tufuga insert ink into a person’s skin using an au – a tool made from wood, pig tusks, and turtleshell. These days, many tufuga use plastic or metal tools, although never electric ones. The tufuga also has a sausau. This is a kind of wooden mallet used to tap the au into the skin.

A tufuga doesn’t work alone. Two or three assistants called toso help prepare the equipment. Toso also give fofō (massages), but perhaps their most important job is stretching the skin to present to the tufuga. (“Toso” means “to pull”.)

Matalena clearly remembers the sound of the tufuga’s work. “His tapping was a continuous drone,” she says, “wood on wood as his sausau hit the au like a hammer to a nail.”

PAIN



PAIN



For Matalena, the pain felt exactly like someone *was* tapping nails into her skin. And not small nails, either. “It felt like big nails were being hammered into my legs over and over again.” She especially remembers the feel of the au around her knees, where the bone is close to the skin.

The pain is part of the process. Matalena says it shouldn’t be fought. “There’s no way that battle can be won. Even the strongest woman will be humbled by the experience.” Being humble and accepting the pain is partly how a malu or pe’a is earned. “And going through that experience with someone else,” Matalena says, “bonds you to that person for the rest of your life.”

So there was a lot of pain. But there was also joy – and grief because of those no longer here. A sense of celebration too. Matalena felt all kinds of emotions during the ceremony.





People often get a tattoo because they want a pretty picture on their skin. But having a malu or pe'a isn't about this. Matalena wasn't worried about how her tatau would turn out. "I wanted a malu so I could honour my ancestors and culture," she says. "That's all that mattered. I trusted I'd receive the right design." Before he began, Matalena's tufuga asked questions about her village and family. He used her answers to plan what he would do.

Women don't have malu, they *wear* malu – and they wear them with pride because having one comes with responsibility. Matalena knew this; it's mostly why she waited. "I wanted to be older," she says, "and better able to fulfil my responsibilities."

Matalena had been hesitant to get her malu for another reason: she wasn't sure if she'd earned one. Had she done enough for her people to wear her culture on her legs every day? "In fa'aSāmoa, we have a saying," she explains. "O le ala i le pule o le tautua. The way to leadership is through service." Slowly, Matalena came to understand what this meant and the ways she was serving her people already. "Service is a big part of life," she says. "Samoan women serve in their families and in their jobs. It's the way we live."



JOURNEY



Matalena believes life is a journey. For her, getting a malu was another step on that journey. “I wanted to challenge myself,” she says, “so I could keep growing.” Now that she has a malu, it’s important to Matalena that other people understand what it means. “People get a malu or tatau for all kinds of reasons,” she says. “For young Samoans born here, it’s often a way to express identity, both as a Samoan and as a New Zealander.” Matalena relates to this. Her malu is a way to honour who she is.

One day soon, Matalena hopes New Zealand will be more like Sāmoa and she’ll see tatau everywhere. “And I hope people will appreciate their beauty and understand their significance.”



THE LEGEND OF TILAFIAGĀ AND TAEMĀ



Tilafaigā and Taemā were co-joined twins who brought the knowledge and tools of tatau from Fiji to Sāmoa. Before they left Fiji, they were told by tattooists to “tattoo the women and not the men”. As the twins paddled their canoe across the ocean, they made sure to repeat the instruction over and over. “Tattoo the women and not the men. Tattoo the women and not the men.”

There are different explanations about what happened next. Some versions of the legend say the twins were distracted by a beautiful shell, deep in the water, and forgot the instruction. Others say they were bewitched by those who didn’t want the tradition shared. But all the stories end the same. By the time they reached Sāmoa, the twins passed on a different instruction. “Tattoo the men and not the women.”

It was once rare for Samoan women to be inked, and only high-ranking women ever wore malu. By the late twentieth century, this had changed, and it was common to see women with tattoos.



Hana Kōkō

by Steph Matuku

We were all curious the day Dad went shopping and came home with his bag bulging. Ānaru tried to make him open it. Nan and Auntie Kōwhai tried, too. But he refused.

“At least give us a clue,” I said, giving the bag a friendly poke.

“Ho, ho, ho,” said Dad.

“Hmm,” said Ānaru. “I’m thinking Santa’s in there.”

“Correct!” Dad cried. “Geoff asked me to dress up on Saturday. So I bought a Santa costume.”

Geoff was the manager of the local farmers’ market, and this Saturday was the last Saturday before Christmas. Our whānau loved the market. We had a stall there every week, selling jam and chutney made from the fruit in our orchard. Dad cooked it all himself, and on market day, he was our frontman. He liked to be generous – and he liked attention. Sometimes, after a good conversation with a passer-by, he’d give them a jar of something for free. “That’s for jamming a good story,” he’d say.

People liked my dad and all his jam and chutney. Even counting the freebies, we still made a profit. There was always enough for Ānaru and me to get paid for helping out. We’d spend our money at the fudge stall. Market days were the best, and so was our dad – although the day he came home with his costume, it was clear Auntie Kōwhai thought he was nuts.







“You can’t be Santa,” she said.
“It’s December. You’ll get heatstroke.”

“Yeah,” I said. “You’ll sizzle like streaky bacon.”

“Will I?” said Dad. Clearly he knew something we didn’t.

“You will,” Ānaru said. “Another thing: you don’t look anything like Santa – no offence.”

He was right about that. Everyone knows Santa Claus is plump, with rosy cheeks and a curly white beard. My dad’s brown and muscly. He has tattoos on his arms and legs, and he can’t grow a beard. He’s tried a few times, but the hairs just don’t want to come. We doubted they were even there.

Nan laughed. “You’ll have to tie a pillow round your tummy, which is ironic considering how much time you spend at the gym trying to get rid of the pillow round your tummy!”

“Hold on, hold on,” Dad said. “When did I say *how* I was dressing?”

“Just before!” Ānaru said. “You said you bought a Santa costume.”

“Ah, well,” Dad said. “I see the confusion ... but you’re all jumping the gun. I’m not going as a regular Santa. I’m going as Hana Kōkō, the Māori Santa!”

Ānaru and I exchanged a look. “That’s a cool idea, Dad,” I said slowly.

“But people can be a bit weird about tradition.”

“Tradition,” Nan snorted. “What rot! Whose tradition?”

“That’s right,” Auntie Kōwhai said. “This is Aotearoa! Who wears a woolly suit and a furry hat and boots in summer?”

“Yeah,” said Ānaru. We were on a roll. “I always thought a sleigh pulled by magic reindeer was a bit strange, too.”

“Giving presents to every person in the world in one night?” I said.

“And what if you don’t have a chimney?” Nan grumbled. “Hardly fair. Where’s the Christmas spirit in that?”

“The elves!” I added. “They work all year round. No weekends, no holidays. Who wants presents made by slave labour?”

“Look on the bright side,” Nan said. “At least they get to play with the new toys before they come out in the shops.”

“Speaking of which,” Dad said. “I need elves to make putiputi harakeke for our stall. Hmmm. I wonder where I could find some? Let me see ...”

Nan went off to cut flax. When she got back, Auntie Kōwhai cleaned the leaves and split them into even-sized widths. We spent the rest of the night weaving putiputi until our fingers were stiff. “Just like real elves,” Ānaru said.



On Saturday, we set up in our usual spot under the pūriri tree. Dad was still arranging his jars when Geoff came over. He was with his grandson, a small boy with an ice block. Red juice was dripping all down his front.

“Ready for duties?” Geoff asked Dad in a low voice, giving me and Ānaru a wink. We didn’t say anything. We had the feeling he had no idea what Dad was up to – and besides, Geoff’s grandson was there. Who spoils Hana Kōkō for a little kid?



Dad went off to get changed. The market was busy already. We stood by our stall and gave away putiputi. One lady said she would use hers as a bookmark. A guy with a topknot tucked his one in his hair, then bought four jars of chutney. We were having a nice chat when there was a fuss in the crowd. People were turning to look. It was Dad, of course – and he looked cool as. He was wearing a shirt printed with pōhutukawa flowers, a kākahu kura, and a piupiu. Around his neck, he wore his pounamu hei tiki, and he carried a kete.

“Meri Kirihimete!” Dad called. His eyes were sparkling. He was loving it. People were smiling and clapping as he passed by. “Kia ora, Hana Kōkō!” called the lady on the fudge stall.

Geoff appeared out of nowhere. He didn’t look pleased. “I told you to wear a Santa Claus outfit!” he said. “What’s that meant to be?”

Ānaru narrowed his eyes. I felt my ears getting hot. But Dad just grinned. He took a putiputi harakeke and a jar of relish and handed them to Geoff. “Meri Kirihimete,” he said. “I’m Hana Kōkō, here to spread the spirit of Christmas, just like you asked.”

Geoff didn’t know what to say. Now people were taking photos of Dad. Ānaru and I were smiling like anything. Geoff’s grandson tugged on Dad’s cloak. His mouth was stained red; his shirt was even redder. “Hey, Santa! You’ve got summer clothes like me!”

Dad gave him a high-five. “Smart, eh?”



illustrations by
Scott Pearson

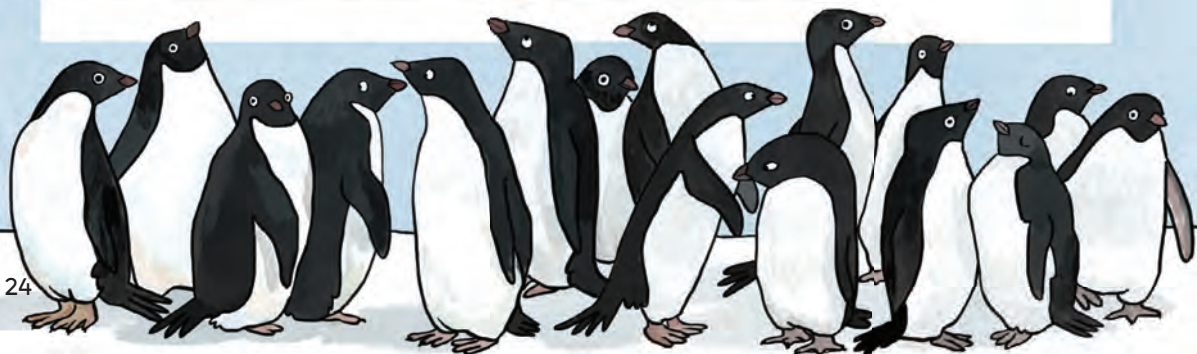


FANTASTIC PENGUINS

BY GISELLE CLARKSON

Most people picture penguins in Antarctica, hanging about on the ice. We don't imagine them zipping across waves or scaling sea cliffs like mountaineers. And we're even less likely to imagine them living in rainforests or the tropics. Yet penguins do all these things – they're unlike any other birds on the planet.

Penguins arrived on the scene around 60 million years ago. Some species, like the kumimanu, came and went. Fossilised remains of this huge penguin tell us it was over 160 centimetres tall. That's as tall as some people (even the emperor penguin – our largest living species – is 40 centimetres shorter).



A PENGUIN'S PLACE

Penguins are found only in the Southern Hemisphere. Sometimes, Galapagos penguins swim across the equator when they're out fishing – but they always return south. So what do penguins have against the Northern Hemisphere? Predators. There are far too many of them for a flightless seabird. In the Southern Hemisphere, there's a lot less to worry about – except seals, sharks, orca... and of course people, the biggest threat of all.



Penguins can survive all kinds of habitats. Emperor penguins raise their chicks in Antarctic blizzards, where temperatures can drop to minus 40 degrees Celsius.



Meanwhile, African penguins need to keep their eggs cool. Along the coast of Namibia and South Africa, where African penguins live, the temperature can climb above 40 degrees Celsius.

Penguins need dry land to raise chicks and to moult. The rest of the time, the sea is their home. Some stay in the water for so long that barnacles grow on their tails! Because penguins are built to stay snug in the water, it's easy for them to overheat on land. Luckily they have very clever ways to keep cool. This includes making their blood flow closer to the skin so it can be cooled down by the air (you can tell when a penguin is hot – it has very pink feet). Another cooling trick is to face the sun. The white feathers on a penguin's front don't absorb as much heat as the black feathers on its back.



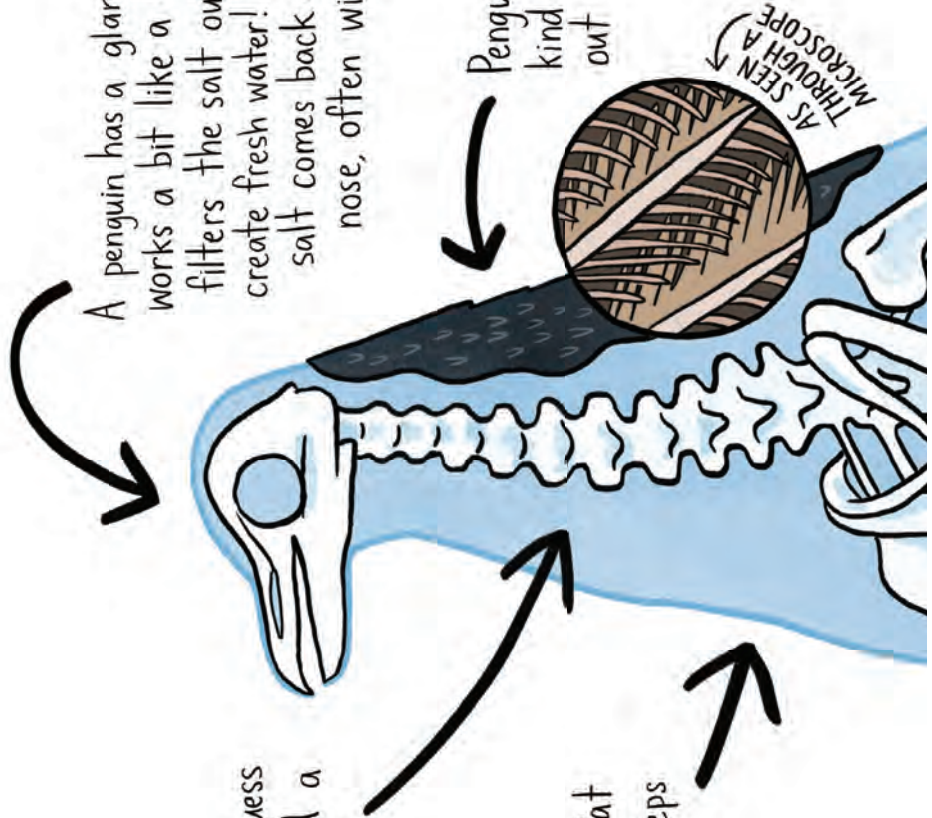
PARTS OF A PENGUIN

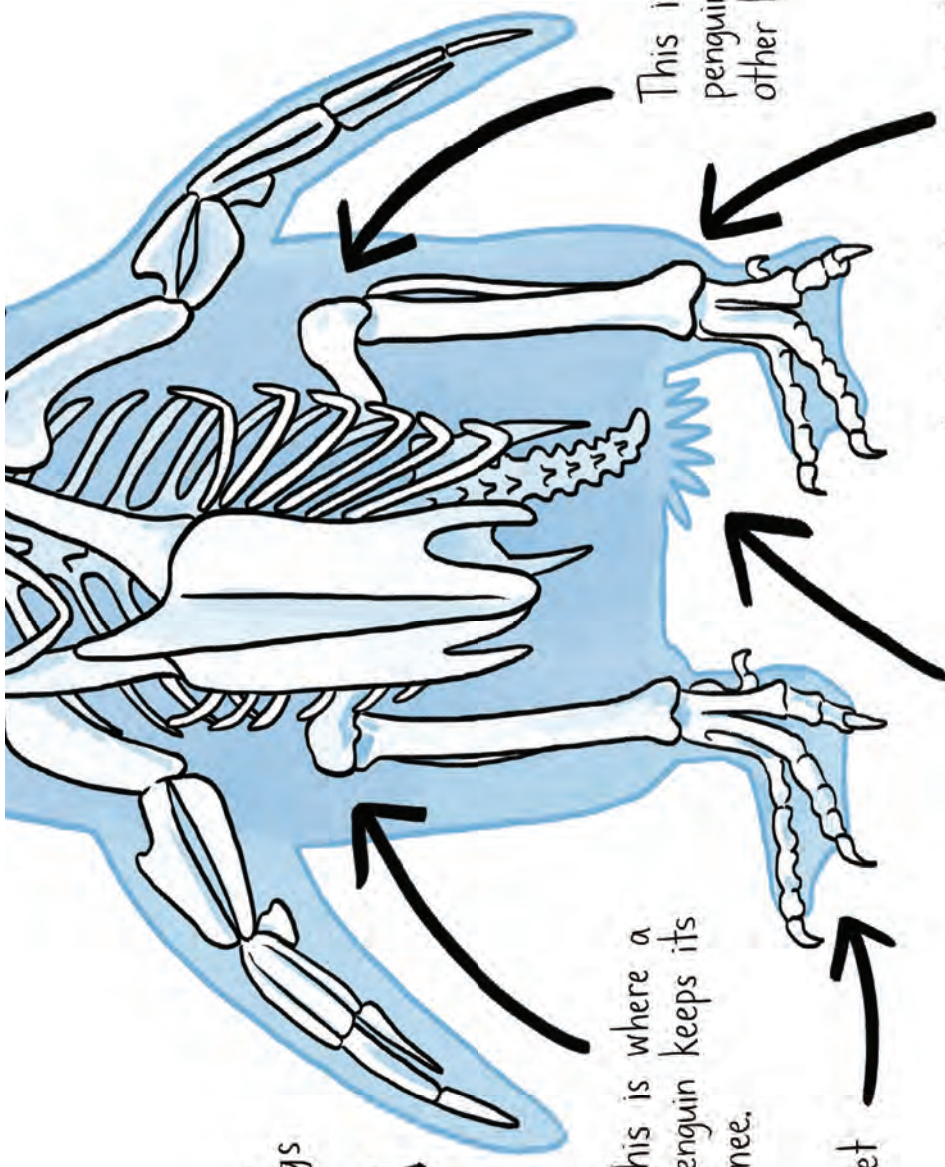
I bet you'd never guess that a penguin had a neck this long!

A penguin has a gland in its head that works a bit like a kidney. The gland filters the salt out of seawater to create fresh water! All that concentrated salt comes back out the penguin's nose, often with a sneeze!

A thick layer of fat (called blubber) keeps penguins warm.

Penguin feathers form a kind of mesh that keeps out water and ice.





Flippers,
not wings

This is where a
penguin keeps its
knee.

Webbed feet

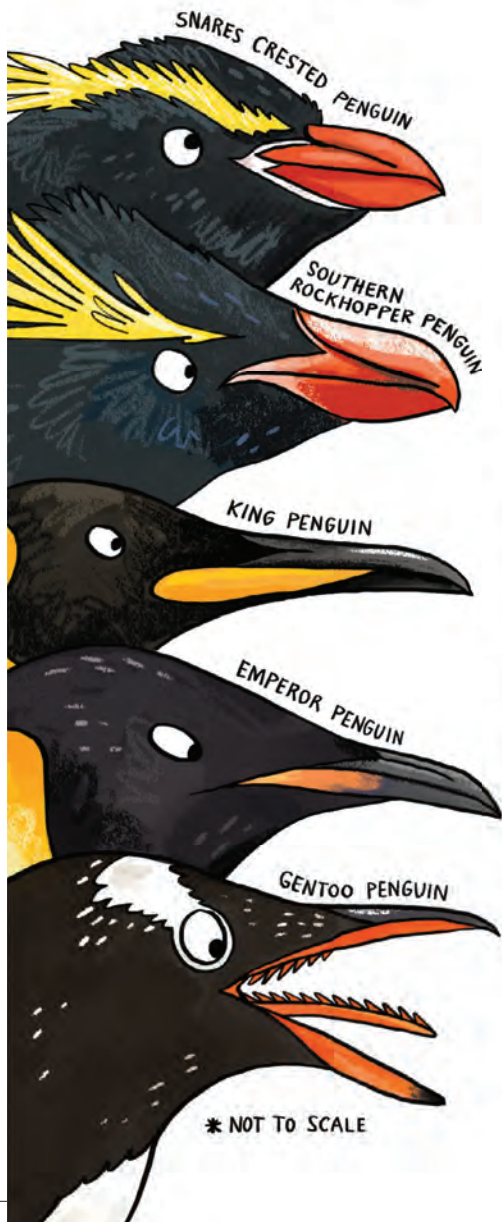
This is where a
penguin keeps its
other knee.

Birds that fly have light, flexible bones, but penguins need dense, rigid bones. This helps them dive deeper and cope with water pressure.

Tail feathers help penguins balance on land and steer accurately in the water.

PREENING

Like all seabirds, penguins spend a lot of time nibbling the base of their tails – but it's nothing to do with being itchy or dirty. This is where they have a little nozzle called a preen gland. Nibbling releases oil that the bird then spreads over its feathers to keep them waterproof and in good condition.



CATASTROPHE!

Most birds lose a few feathers at a time when they moult, but penguins lose all their feathers at once over a few weeks, called a catastrophic moult. Penguins can't swim during this time, which means no food. To prepare for a moult, a penguin spends weeks overeating.



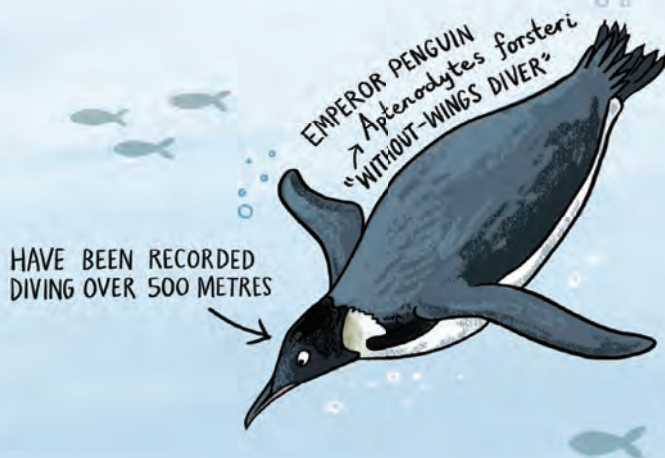
PENGUIN BILLS

Penguin bills – they're worth a closer look! Emperor penguins and king penguins have long, slender bills, an excellent tool for catching small prey, such as krill and lantern fish. They're like the difference between picking up peas with tweezers and picking them up with barbecue tongs. Many penguins, however, do have the barbecue tongs! Crested penguins have a big, hooked bill that's good for tasks like crushing fish skulls. These thicker bills work very well out of the water too. Crested penguins that live on steep, rocky coastlines use their bills to balance and climb. They're also useful for wrestling rivals.

If you ever get the chance, look inside a penguin's bill. It's freaky in there! A penguin eats seriously slippery food, which explains the thick, spiky bristles that cover its tongue. The bristles help a penguin hold on to its food long enough to swallow it.

DIVERS and GREAT DIVERS

You might have noticed the scientific names for penguin species. A lot of them end in *-dyptes* or something similar. "Dyptes" means "diver" in ancient Greek. (Megadyptes means "great diver".) I love the way these names tell us something special about penguins.



Scientists estimate there are between seventeen and twenty species of penguin in the world. New Zealand has six, which is more than anywhere else. We also have the most penguin fossils. Sometimes other kinds of penguins show up on our shores, but they're considered vagrant. This means they arrived by accident and probably won't breed here.

Nobody knows for sure how many species of penguin there are. Sometimes one species ends up living in two different places. Eventually, as these two groups evolve, they become different species of penguin, but you can only tell them apart by looking at their DNA.

Woolly Geese

The first Europeans to see penguins got a lot of things wrong. They thought Magellanic penguins were a kind of goose, and they decided king penguin chicks were a different species from their parents. They named these chicks the "woolly penguin".



AOTEAROA'S LOCALS



SNARES CRESTED PENGUIN

Snares crested penguins live only on the Snares, a small group of islands south-west of Rakiura/Stewart Island. The coolest thing about this species is that they climb trees. Penguins have been spotted on branches up to 2 metres off the ground!

HOIHO / YELLOW-EYED PENGUIN

Hoiho are very shy birds. While many species will happily mingle, most hoiho prefer a peaceful life, without the hustle and bustle of a colony. But don't be fooled - "hoiho" in te reo Māori means "noise shouter"! Hoiho build their nests in coastal scrub, so we need to make sure this scrub is protected. You'll find hoiho on the east coast of the South Island, on Rakiura/Stewart Island, and on the subantarctic Auckland Islands. And on one other place: the five-dollar note!



SHHH!



EASTERN ROCKHOPPER PENGUIN

Eastern rockhoppers have the funkiest eyebrows in the penguin world. They're also fantastic climbers. They live on steep, bouldery subantarctic islands.



TAWAKI / FIORDLAND CRESTED PENGUIN

Tawaki are New Zealand's best-kept penguin secret. They live mostly in Fiordland, where few people see them. If you visit Piopiotahi/Milford Sound, look out for one whizzing across the water! Tawaki also live on Rakiura/Stewart Island. They nest in lush, coastal rainforest under tree roots and boulders. Tawaki are champion swimmers. Some swim up to 7,000 kilometres to find food, even though there's good stuff to eat closer to land. This behaviour might be because their subantarctic penguin ancestors hunted in these places, so their instinct is to do the same. The name tawaki comes from the legendary being Tāwhaki, who was associated with thunder and lightning. The feathers on these penguins' heads look like bolts of lightning.



ERECT CRESTED PENGUIN

It's easy to recognise an erect crested penguin: they have yellow feathers that stick straight up on their heads. They live alongside eastern rockhoppers in the subantarctic.

KORORĀ / LITTLE BLUE PENGUIN

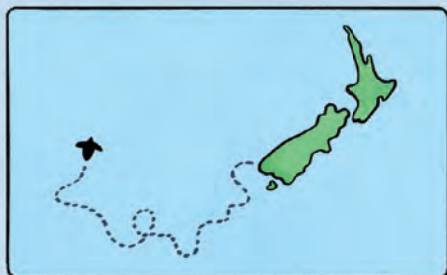
Kororā are found all around New Zealand's coast. Because they live close to people, they get into trouble on our roads. Dogs are a danger, too.



PENGUINS IN THE FUTURE

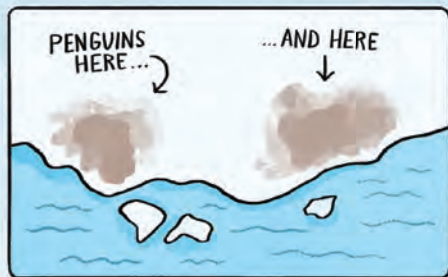
Every year, scientists discover new facts about penguins. New technology gives them ways to collect information that was impossible - until now ...

Tiny cameras worn by hoiho and tawaki provide a penguin's-eye view underwater, showing us what they eat and how they hunt.



Tiny devices attached to a penguin's leg can tell us where they go when they're out at sea. GPS units with depth sensors tell us how deep they dive and for how long.

Remote-controlled robot penguins with cameras are used by researchers to study penguin behaviour without disturbing the colony.

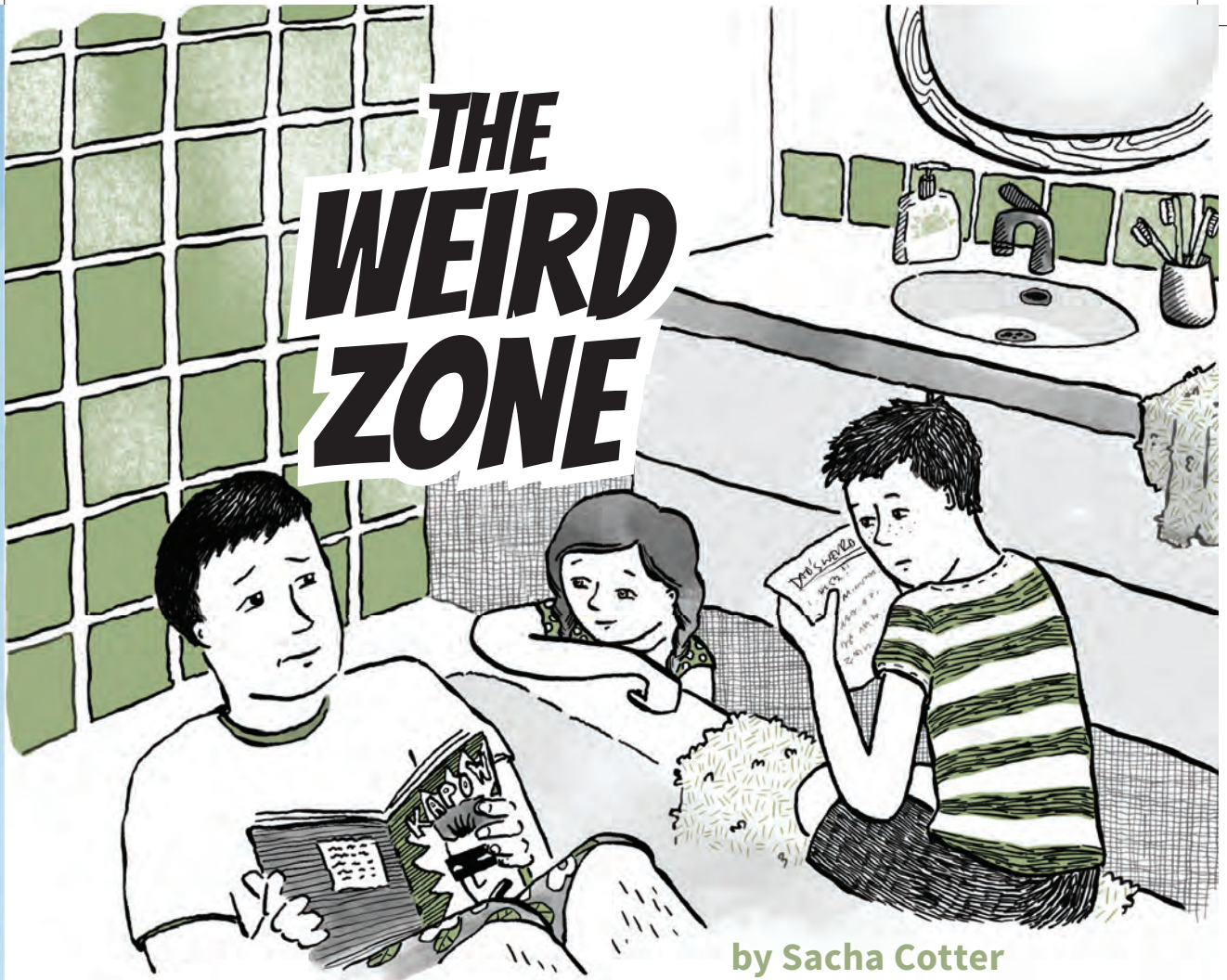


Satellite photos help scientists study the population and movement of penguin colonies in Antarctica. There are so many penguins you can see their poo from space! Different diets give different penguin species different-coloured poo.

When we know where penguins feed and breed, we can establish predator-free sanctuaries and marine reserves. And the better we understand how our changing climate and warming seas affect penguins, the better we can fight for their survival. There's still so much to learn about penguins. I don't think they'll ever stop surprising us.



THE WEIRD ZONE



by Sacha Cotter

It's Boxing Day – the day we always leave to go camping – and Dad's being weird. We find him in the bathroom, reading a comic in the bath.

“Dad! What are you doing? We need to hit the road!” I say.

He looks at us, eyes all squinty, like he has no idea what we're talking about.

“Our camping trip ...,” says Kahurangi.

“Oh, right,” Dad says. “I forgot.” He's trying to play it cool, a tricky thing to pull off when you're lying fully clothed in a bath.

I'm tired and hot from packing the car ... without his help. I've had enough.

“Dad, you're acting weird.”

“Really weird,” Kahurangi adds.

“I have no idea what you mean,” Dad says.

So Kahurangi pulls out the list.



We've been tracking Dad's weirdness for months. It started with his idea that we stay at home and build a fort from cushions instead of camping. This was followed by the intense brow sweat he'd get whenever we brought up the holiday. And the time Kahurangi caught him burning a catalogue from an outdoors shop. It's all there.

I decide to go with something recent. "When we asked you to get the tents, you didn't."

Dad slides down in the bath. "In my defence," he says, "I couldn't find them."
"Dad! The tents have lived on the same shelf for years."

"Well, your mum always did all that. You know I'm not practical."

This is true. Also true that it's our first summer holiday since Mum moved in with Dave. Dad's still finding his feet. Even so, our list is long.

"And you haven't even looked at the camping gear," says Kahurangi. Another fact. We've had it laid out on the garage floor for a week. Air beds, pump, sleeping bags, gas cooker, chiller – the works.

"Now that's a bit of an exaggeration."

"Dad! We had takeaways six nights in a row so you could avoid getting food from the garage freezer." For a second, it looks like Dad might say something important. He opens his mouth, but the words aren't there.

"Anyone would think you didn't want to come," Kahurangi adds sadly.

That gets him. Dad scrambles out of the bath and hugs us tight. It's the least-weird thing he's done all week. "Come on, kids," he says. "Let's get out of here. It's Boxing Day!"

* * * * *





The campground's heaving. It smells of lunchtime barbecues and sea air. I can't wait for a sausage and a swim – but first, we need to set up camp. We have an awesome spot, right by the beach.

In our family, we have a tradition: kids in one tent, parents in another. Kids' zone. Parents' zone. Kahurangi and I always fill ours with games and flippers and basically as much mess as we like. We don't have to tidy up. Putting up the tent – and eventually taking it back down – is our only job. We could do it in our sleep! In fifteen minutes flat, we're standing back, admiring our handy work.

“Nice one,” I say. “Let’s load her up, then we’re done!”

But Kahurangi doesn’t go for our gear. He’s distracted. It’s Dad, of course. He’s back in the car, windows up even though it’s sweltering. Weirdness seems to be peaking. Clearly something’s upsetting him ... but what?

“We come here every year,” Kahurangi says. “He’s never acted like this before.”

Then I have a thought. “Kahurangi, can you remember Dad ever putting up the tent?” I start to laugh.

“It was usually Mum,” he says. “Why? What’s so funny?”

“Come on,” I say. “I think I know what this is about.” I whack the car window with my hand. Bang, bang, bang. Reluctantly, Dad rolls it down. “It’s OK, Dad,” I say. “We can help!”

“You can?”

“You can’t put up a tent, can you?”

Dad’s cheeks blush, which is an achievement considering he’s already parboiled in the stinking-hot car.

“Why didn’t you just tell us?” Kahurangi says. “It’s nothing to be embarrassed about!”

“Come on,” I say. “We’ll do it together.”

* * * * *





The big tent's finally up. Turns out it's not that much harder than putting up a small one, with some help from the nice people in the caravan next door. We've had a swim. Our bellies are full of chips and battered oysters. We've played spotlight with the kids next door. It's time for bed. Dad does a big, noisy dad-yawn, the kind that gives you a fright if you don't see it coming. Keeping up with us kids has worn him out. But he doesn't budge, just looks at the big orange parents' tent and sighs.

Thoughts of my cosy sleeping bag and the lullaby of the waves make my eyes heavy, but not so heavy that I don't notice that sigh. The weight of it. Something's still not right with Dad. This time, I'm getting to the bottom of things. No more mystery. No more weird lists. It's time for a proper talk.

"Dad," I say. "What's wrong? Really?"

He sags like a tent in the rain.

“It’s done now, Dad. The tent’s up,” Kahurangi says. “And we can take it down. You don’t need to worry about a thing.”

“Get a big sleep,” I say. “You’ll feel better in the morning.” This is what Dad always says to us, only now he’s shaking his head.

“I’m sorry, kids. I’ve been acting pretty weird lately.”

We nod vigorously. It makes Dad smile.

“It’s just that ... well ... we used to do this trip with your mum. You know that. It’s a family tradition. And yes, she did put up the tent. I’m not practical.” We nod again. “It’s different this year. It’ll be the first time I sleep by myself. It’s meant to be the parents’ tent. I guess I’m lonely.”

We hug Dad tight. Tight enough to feel his heartbeat.

“I should’ve been more honest, but I didn’t want to spoil things. Plus I really do hate putting up tents!” Dad grins. “And your mum’s so good at it!” We laugh, but when we stop, I’m back to thinking about Dad being lonely. Nobody should feel like that on a camping trip.

I look at the big orange tent and the small red tent and realise a solution’s staring me in the face. We’ve always had a parents’ zone and a kids’ zone – so what? I know as much as anyone that things change. Feelings change, families change – and so can traditions. “There’s plenty of room in our tent, Dad,” I say.

Kahurangi’s eyes light up. “Yeah, heaps of room,” he says.

Dad smiles. It’s the first time he’s heard the word tent without breaking into a sweat. Progress.

“Are you sure?” he asks. “What about the kids’ zone?”

“We were thinking about changing that anyway, weren’t we, Kahurangi?” I say. “It’s not very inclusive.”

Kahurangi gets my drift. “Yup. Sure were,” he says. “We might rename it the weird zone. A place where all family members are welcome.”

“Sounds like I’ll fit right in!” Dad says.

“One other thing,” I add. I think I might as well ... seeing as we’ve got the upper hand. “Don’t ask us to tidy up.”

“Got it,” Dad says. “Some traditions shouldn’t change, right?”

illustrations by Kirsten Slade



WEIRD ZONE

Pop!

TRACES & TEEN

4 P

12/14/77 12/13/14/15

3.

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

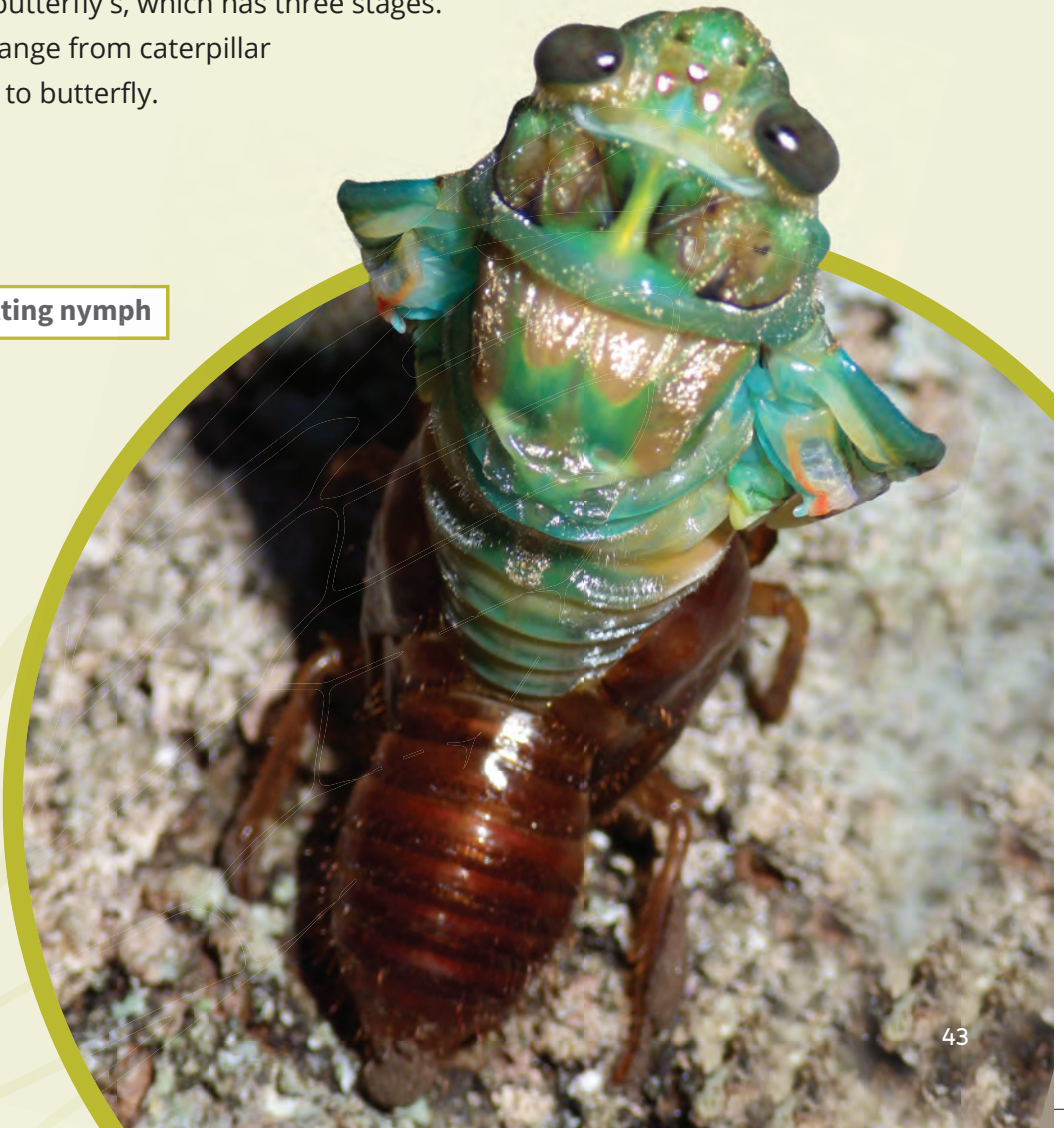
True bugs

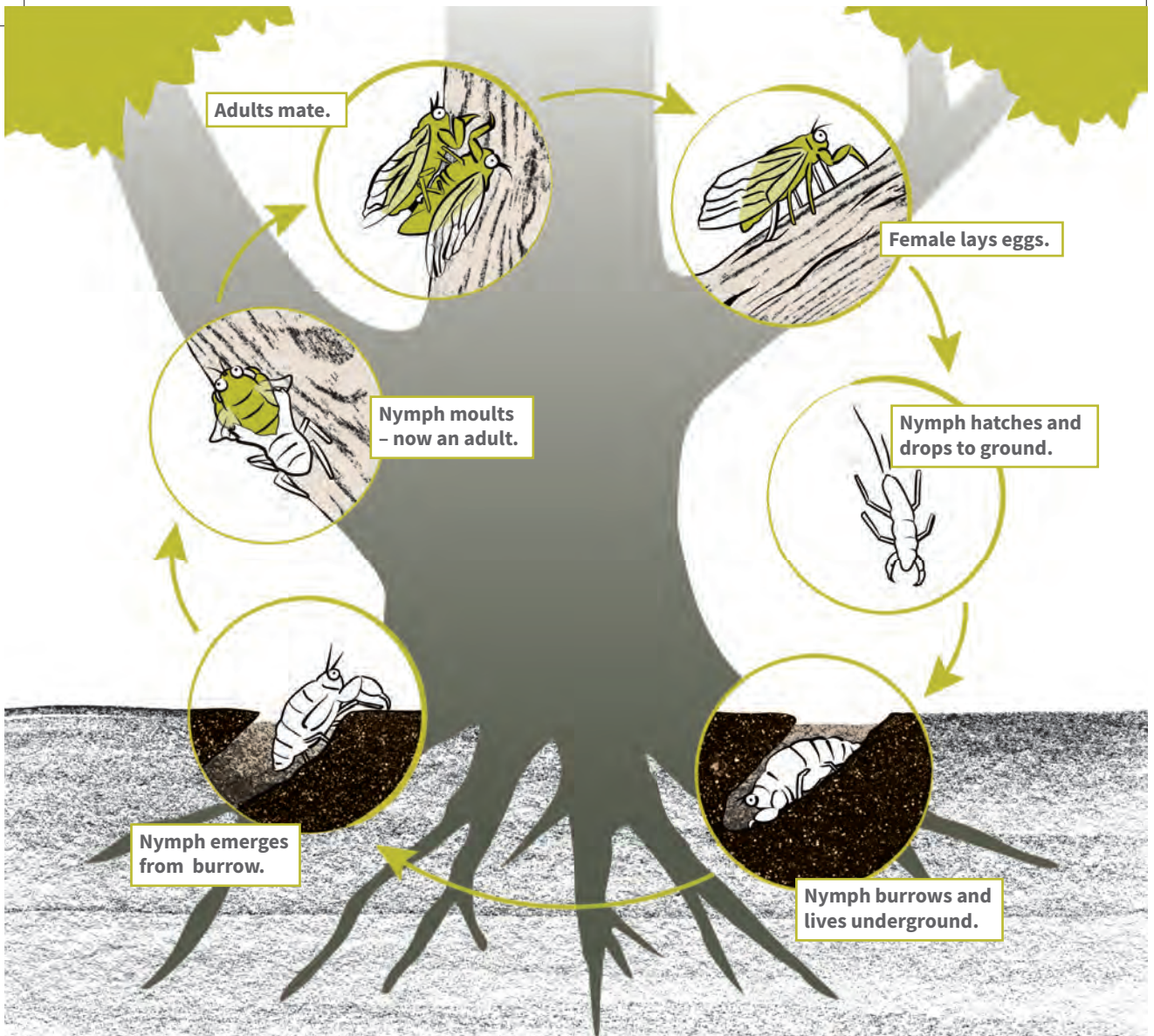
People often use the word “bug” to describe all kinds of creatures. But bugs are actually a special group of insects called Hemiptera (also known as true bugs). Cicadas, aphids, leaf hoppers, and bed bugs all belong to this group. While true bugs come in many shapes and sizes, they all have a kind of 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.



habitat: the environment in which an animal lives

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 redbtail 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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