

ENTOMOLOGICAL SOCIETY NEWSLETTER

Dec 2024

FROM THE PRESIDENT

Kia ora koutou,



Although I can be a bit of a Christmas grinch (who puts a holiday in the middle of field season!) I must say, things get so busy at the end of the year that I need the enforced break. Whether you are into the festivities or not, I hope you have time put aside to recharge in your own way. For many it has been a tough year; there have been significant cuts across the public service, CRIs, universities, and sciences in general continue to struggle. Some of our members have been directly affected and many (most?) will have affected colleagues. We are all trying to do more with less, but we keep going because we love what we do, and we know our insects, spiders, and other tiny creatures are incredibly important.

In August we had a fantastic conference in ōtautahi Christchurch. It was a sombre start with the tragic death of Stephen Thorpe just days before, but we focused on celebrating his life and incredible contributions to entomology.





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From the President (cont.)

Thank you Johnno, Steve and Greg in particular, for pulling everything together so beautifully. The depth of Stephen's contribution to New Zealand entomology was reflected in the sheer number of conference speakers that acknowledged his influence or involvement in the work they were presenting.

The conference committee did a brilliant job all around. The venue, food, and organisation were superb. Nic Toki revved us up with a stirring opening plenary. Poetry night was a real treat. There was a highly competitive conference dinner quiz – with every team arguing they should have won if not for this or that technicality – after which Johnno Ridden showed us some dance moves, and Peter Johns took us on a trip down the Society's memory lane. The conference T-shirt was a highlight for me (it stole the show at a DOC public talk in Twizel recently when worn by one of the presenting rangers!). The presentations covered the full spectrum from taxonomy to behaviour to applied and social science. As usual, student attendance was high, and the judges had a very difficult task – congratulations to all our winners. And finally, Robert Hoare outdid himself (and all those other guys) with an epic poetry performance that had us all exhausted – I knew something was up when he took off his shoes!





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From the President (cont.)

Looking forward, Jenny Jandt and her posse of BOTY champions are ready to unleash the conundrum of the year – how can we possibly choose a favourite?! The nominees all look amazing. Your task as members is not just to vote, it's to get someone who doesn't think bugs are cool to vote as well. I'm sure Jenny can come up with a prize for that!

Finally, I'm pleased to announce we are reinstating our joint AU/NZ conferences after Covid forced us into a long-distance relationship since 2020. We will be joining the Aussies at ANU in Canberra 1-4 December 2025 for a joint conference. We know everyone has cost pressures so will be looking for ways to support attendance, include relevant symposia your managers/financers will value, and we recommend getting flights booked early for best prices. We plan to reciprocate in 2029 with a joint conference in Wellington and have also confirmed Waikato for 2026 (month TBC).

I leave you with one of our conference quiz-poems - penned by Lily Duval under the encouragement of her rowdy conference and exec committee table-mates: Look here – what a blue, bawdy, wise, coy, quick, repugnant, feral, yet cute quiz, featuring eleven epic invertebrates and laudable - just wonderful - taxonomic orders!

Heoi anō tāku mō nāianeī. Kia pai tō koutou Kirihimete!



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Bug of the Year 2025!

For those of you unable to attend the Bug of the Year presentation at the Society's Christchurch conference, our 2025 nominees are now out!



Visit <https://bugoftheyear.ento.org.nz/> to learn more about the 21 amazing candidates vying to become our third winner. As always, voting starts Jan 1st, but you can start campaigning right now!

**WHO WILL BE
THE 2025 NZ BUG
OF THE YEAR?**



And if your favourite didn't make the list this time, why not get in early and make a nomination for the next edition?
[Recommend Next Year's Nominees Here! – New Zealand Bug of the Year](#)

Entomological Society Newsletter

Bug of the Year 2025! (cont.)

But wait, there's more! This year, we're adding to the fun. Following on from the wildly successful poetry night held at the Christchurch conference, the Entomological Society of New Zealand and the New Zealand Poetry Society Te Rōpū Toikupu o Aotearoa are joining forces for our first ever Bug of the Year Poetry Competition.

Budding poets (or should that be larval poets?) can visit [Poetry Competition – New Zealand Bug of the Year](#) for more details.



Image by Tovah Kashetsky

As always, any Bug of the Year questions can be directed to the committee here: bugoftheyear@ento.org.nz

Entomological Society Newsletter

Volume 47, Issue 2 of New Zealand Entomologist is now available

The New Zealand Entomologist welcomes submissions of original research papers, review papers and short communications on insects and allied groups from New Zealand, Australia, and the South Pacific. The journal's subject matter encompasses taxonomy, phylogenetics, biogeography, biological control and pest management, conservation, ecology, and natural history.



As additional incentive, the Entomological Society of New Zealand will waive membership fees and provide a conference registration discount for the first paper that students publish in New Zealand Entomologist as a first author. If you are a student author that has published recently, but you did not receive a membership waiver or registration discount, please contact Jenny Jandt (jenny.jandt@otago.ac.nz) so we can sort it out.

Entomological Society Newsletter

2024 Conference Report

Text and images provided by Johnno Ridden

72nd Entomological Society of New Zealand Conference



Ōtautahi Christchurch
28 - 30 August 2024
Christchurch Town Hall

A great entomological conference was held in Ōtautahi Christchurch at the Town Hall during 28th-30th August. Across the conference 107 delegates enjoyed two and a half days of great entomological research and networking. The conference was headlined by three fantastic plenaries.

Wednesday morning began with a memorial for Stephen Thorpe, with Assoc Prof Steve Pawson and Assoc Prof Greg Howell talking about the massive contribution Stephen made to entomology.

Entomological Society Newsletter

Conference Report (cont.)

Forest and Bird Chief Executive Nicola Toki was the first plenary to kick-off the conference. She talked about mobilisation and advocating for the natural environment and how important it is for people who care about te taioio to actively make their voices heard. The scientific programme for the rest of the first day included talks on Conservation, Outreach and Collections and Ecology.

To cap off the first day a public poetry night was held at Little Andromeda, headlined by a poetry plenary by Dr Robert Hoare! A range of local poets read poetry on the open mic session, with fantastic, featured poets Gail Ingram and Robinne Weiss. Robert gave an amazing set of poetry that really got the crowd going. This was an engaging and entertaining evening with many attendees dressed in insect attire, as this photo shows!



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Conference Report (cont.)

Dr Andrew Barnes, a Senior Lecturer of Ecology at Waikato University gave the Thursday morning plenary focussing on food webs and energy flux. He highlighted the complexity of soil invertebrate food webs and how they can be used to understand ecosystem function and stability in response to degradation and change.

Two more ecology sessions were followed, with an extended lunch during which the poster session was held. A wide range of interesting posters were presented. Attendees were able to vote for their favourite poster with the popular vote going to 'The *Porrhothele* Project' by Shaun Thompson, Laura Montes de Oca and Phil Sirvid! The final sessions of the day were Taxonomy & Systematics and Biosecurity.

The conference dinner was held at The Distinction Hotel. The organising committee members who brought the dinner together also delivered exciting entertainment with a quiz and word puzzles.



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Conference Report (cont.)

The final day saw one more session of Biosecurity and two Physiology and Behaviour sessions. For the conference goers that could not attend the poetry night, Robert Hoare gave another poetry set. This culminated with full audience engagement, splitting the room into two halves and helping Robert recite the poem, with actions!

At the conclusion of the successful scientific programme of the conference the last event took place, a bioblitz in the Ōtautahi Christchurch Residential Red Zone at the Brooker Ave restoration site.

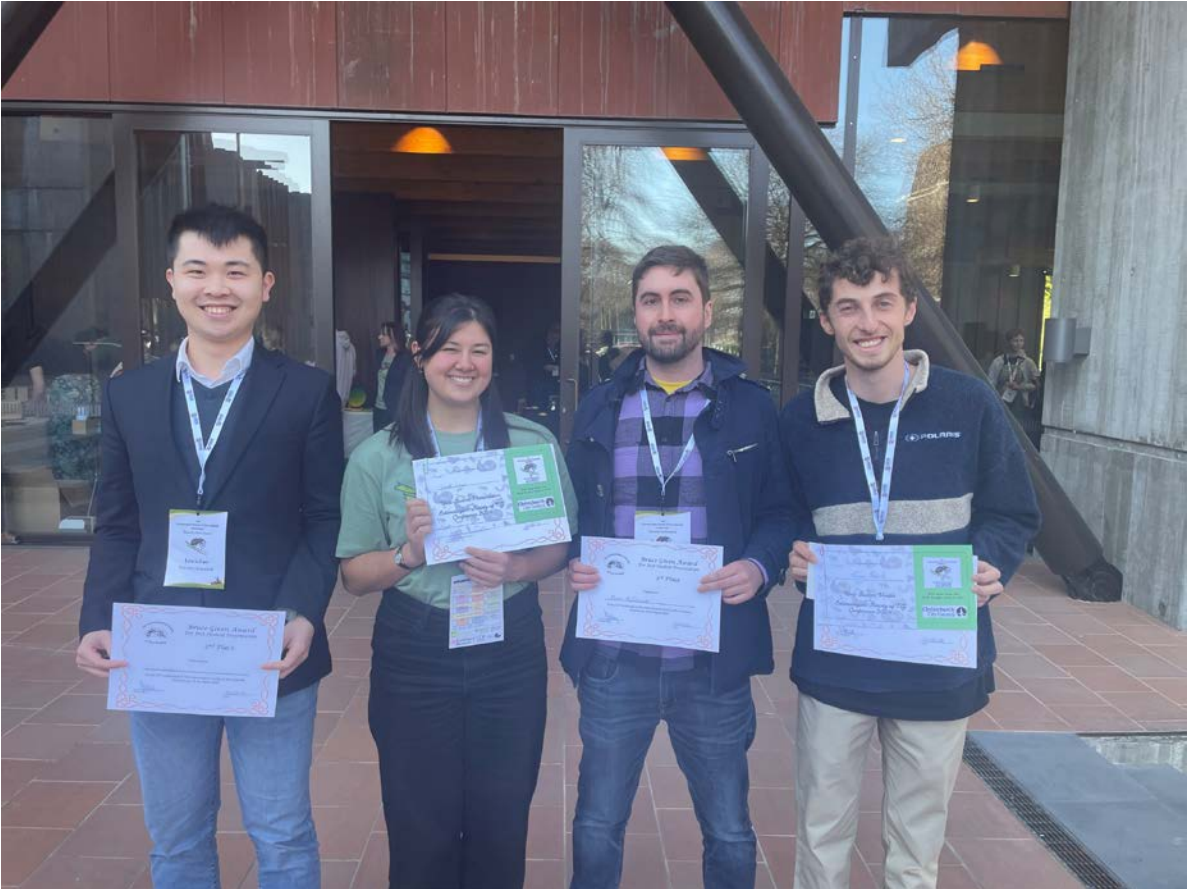
Forty people, including local residents and conference attendees, took part. A wide range of observations were made, and a fun time was had by all.

With this successful conference behind us, we look forward to the next one.



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Conference 2024: Bruce Given Award Winners



(L to R)

- Lewis Luo - Bruce Given 2nd place presentation
- Janelle Evans - Bruce Given 1st place presentation and Christchurch City Council best talk
- Mark MacDougall - Bruce Given 3rd place presentation
- James Roberts - Bruce Given 1st place poster and Christchurch City Council best poster

Photo by Morgane Merien

Entomological Society Newsletter

Conference 2024: Forster Prize Winners



(L to R)

- Reshnu Raj Rajan Sheela
- James Croft-Bennett
- Kate Curtis
- Zita Roithmair
- Cara Revell Thomson

(Forster Prize judge Phil Sirvid 3rd from right)

Absent: William Fu-Allen

Photo by Morgane Merien

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Conference 2024:

KJ Fox and 21st Anniversary Award Winners



(L to R)

- Julia Palmer - KJ Fox
- Alan Flynn - KJ Fox
- Cara Thomson - KJ Fox
- Janelle Evan - KJ Fox and 21st
- Reshnu Raj Rajan Sheela - KJ Fox
- William Frost - 21st

Absent: Greer Sanger (21st) and Pablo Lopez-Carretero (21st)

Photo by Morgane Merien



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Conference 2024:
A Note of Thanks and a Poem
by Alan Flynn

The national conference in c was excellent in so many ways, such as the fantastic programme of plenaries, science sessions and posters as well as the dinner, artworks and meeting old friends and making new ones. The conference was full of interesting talks, and it was encouraging to see the high standard of student presentations.

The organising committee really did a top-notch job and I wish to thank ENTSOC for allowing me to attend via assistance of the KJ FOX award.

The first day of conference finished with a Poetry evening at Little Andromeda. The event was well attended, not only by conference attendees but also members of the public who wanted to rub elytra with poetically inclined entomologists. The evening started with an open mic where the audience presented a selection of their poems followed by invited poets and culminating in a performance reading by EntSoc's own poet laureate, Dr Robert Hoare. Wonderful!





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Conference 2024: Alan Flynn contribution (cont.)

TODAY

(a poem reflecting the conference talks of the first day)

Fizzing at the Bunghole, giving zero planktons.

Grubbing down in grub-land with my magic spork.

The world is burning, we're all going to die.

We must tell the tales of the critters in decline.

Chironomids tell their stories, while stoneflies lose their wings.

So deficient in the data; and the chafer needs its sand.

The hedgehogs on the rampage scoffing all inverts at hand.

Mt Arthurs Giant wētā gets 17 thousand likes and Wallace's

longhorns in old cabinets leap to life.

A wonder-house of insects, Colenso's wētā returned at last.

Amica and Annulata fighting for their space.

The solitary bee loves it underground, but hates it most where

'Neonics' are found

And up and down the red beech they like it near the ground.



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21st Anniversary Award Report:
Investigating Nest-Marking Scents in New Zealand
Native Bees (Ngaro huruhuru)
Text and images by Angelique Tavera

Bees are flying insects known for their role in pollination, with certain species also producing honey and beeswax. However, New Zealand Native Bees (Ngaro huruhuru) remain relatively unknown as the term 'bees' is often associated with honeybees and bumblebees. While these species also support New Zealand's local ecosystem through pollination, native bees may be underappreciated, and much is yet to be known about these hard workers.



*Nest entrance
volatile collection*

Entomological Society Newsletter

Native Bees (cont.)

In contrast to honeybees and bumblebees, New Zealand's native bees are solitary and nest individually. They create underground nests where they care for and raise their young. Depending on the species, females either dig new tunnels or repurpose existing ones to form a nest. These nests feature a long entrance tunnel, with individual chambers carved into the soil to hold larvae and the pollen and nectar that the female bees gather for them. Native bees often gather in aggregation when nesting, typically choosing bare ground and is close to flowering sites. They create similar-looking nest entrances, making it challenging to distinguish which nest belongs to which bee by sight alone – though this is not an issue for the bees themselves.



Bee collection using an emergence tent and single pottles to catch the bees that are coming out of their nest

Entomological Society Newsletter

Native Bees (cont.)

Observations in the field have shown that native bees can reliably identify their own nests when returning from foraging. My research question explores how *Ngaro huruhuru* identifies its own nest among hundreds of nearly identical entrances. Other solitary bee species have been observed to be using nest-marking scents for nest recognition. Could *Ngaro huruhuru* also rely on such scents to find their way back to their own nest?

To address this question, I begin by examining the chemistry of the native bees' Dufour's gland and body extract. Literature suggests that nest marking scents may originate from the Dufour's gland and since these scents could transfer onto the bees' bodies as they enter and exit their nests multiple times, analysing the body extract is also essential. Together, these screenings provide a valuable starting point to answer my questions.



Lasioglossum sordidum bee foraging in a dandelion

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Native Bees (cont.)

The chemical extracts were analysed using Gas Chromatography-Mass Spectrometry (GC-MS) to identify the compounds present. Additionally, pooled extracts were tested for olfactory responses in bees through Gas Chromatography-Electroantennographic Detection (GC-EAD) which reveals antennal responses to individual compounds in the extract that elicit a reaction from the bees' antennae.



GC-EAD of a female Lasioglossum sordidum

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Native Bees (cont.)

To carry out these techniques, I collected multiple bee samples from various sites across Canterbury. Gathering as many samples as possible is a crucial step in my research. I am grateful for the support from the 21st Anniversary Awards, which helped fund my fieldwork and travel expenses to Plant and Food Research in Mt. Albert, Auckland for Scanning Electron Microscopy (SEM) of the bees' antennae. Thanks to this funding grant, I was able to conduct SEM analysis using the TESCAN CLARA at Mt. Albert. This technique strongly complements my GC-EAD analysis by enabling me to examine and analyse the olfactory receptors present in female native bees, which may play a role in their nest site detection.



SEM analysis using TESCAN CLARA at PFR Mt. Albert, Auckland



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Native Bees (cont.)

I am currently processing the data I've collected to conduct statistical analysis on the chemical profiles of the gland and body extracts. Statistical analysis of each sample and site will reveal the differences and similarities in the chemical profiles across samples. The GC-MS analysis so far has identified hydrocarbons, alcohols, aldehydes, ketones, several unknown compounds and some unsaturated acids in the extracts. Additionally, the GC-EAD results have highlighted a few compounds that elicit antennal responses.

While these findings are promising, more data needs to be analysed to confirm whether these compounds constitute the nest-marking scents that native bees detect upon returning to their nests. My next step involves conducting behavioural bioassays to see if the compounds triggering antennal signals in the GC-EAD also prompt nest-marking behaviour in native bees when exposed to them.



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Neil Birrell Awarded Mana Tūāpapa Future Leader Fellowship

Congratulations to Neil Birrell (pictured) who has been awarded a Mana Tūāpapa Future Leader Fellowship.



The official announcement can be found here:

<https://www.royalsociety.org.nz/what-we-do/funds-and-opportunities/tawhia-te-mana/mana-tuapapa/mtp-recipient/neil-birrell/>

Neil has kindly provided some information on what he will be doing during his fellowship. Neil would also love to hear from anyone interested in the project or *Anagotus*:

Neil's *Anagotus* Project

Anagotus, a genus of giant flightless weevils, are endemic to Aotearoa New Zealand and include the well-known flax weevil. With 18 described species, three protected under the Wildlife Act 1953, and several yet to be described, these weevils exhibit diverse life history traits and habitats.

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Neil Birrell Fellowship (cont.)

Over the next four years, this study will provide insights into the taxonomy, natural history, and population dynamics of these charismatic beetles.

Most *Anagotus* species are only found in sub-alpine and offshore island areas, however there are a few historical mainland lowland records suggesting this was not always the case. From taphonomic and historical records, several species were much more prevalent across the mainland until becoming range restricted, likely due to the impact of introduced mammals.



Anagotus, Lower Buller Gorge. Photo by Sebastian Doak. <https://inaturalist.nz/observations/201887568>

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Neil Birrell Fellowship (cont.)

However, other factors may also be influencing the present range of *Anagotus*, as forest clearance, land use change and loss of host plant species have been suggested as drivers of range restriction for other large-bodied weevil species. Whilst some species have been marginalised to offshore islands, others are not, which presents an interesting model group to assess how lineages cope with environments in flux due to anthropogenic pressures, such as invasive organisms, climate change, land use change.



Ecological modelling presents an opportunity to explore the impact of different biotic and abiotic factors on the distribution and dynamics of *Anagotus* populations.



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Neil Birrell Fellowship (cont.)

Species Distribution Models (SDMs; correlative) and Spatially Explicit population Models (SEPMs; process-based) can be used to understand the spatiotemporal distribution of living organisms. Typically, invertebrates have been under-represented in ecological modelling, with studies focussing on charismatic or commercially important species with a bias towards Europe and North America. Recent advances allow the black box which are SDMs to be opened and the ecological processes and drivers underpinning range shifts to be identified and explored through the integration of explainable artificial intelligence (xAI) in SDMs and pattern-oriented modelling (POM) in SEPMs.



Key Objectives:

Taxonomic Revision: Comprehensive revision and cataloguing of the *Anagotus* genus, including the description of undescribed species.

Comparative Analysis: Study and compare the life history traits and behaviours of a selection of *Anagotus* species to understand their adaptability and survival strategies.

Distribution Modelling: Use Species Distribution Models (SDMs) to predict the past and present distribution of *Anagotus* species.

Range Shift Drivers: Investigate the factors driving range shifts of *Anagotus* using Spatially Explicit Population Models (SEPMs).





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Neil Birrell Fellowship (cont.)

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Entomological Society Newsletter

Claire Butcher Award 2024

This year's winner of the Claire Butcher Award is Jett McColl (pictured).



Congratulations to Jett, who has sent this note of thanks to the Society:

My name is Jett McColl and I'd like to say thank you for choosing my project 'Fight the Mites' at the recent NIWA Auckland City Science and Technology Fair.

I really enjoyed working on my project throughout the year so was really happy when I was awarded this prize. I have had a passion for bees since I was 8 years old and have had hives in my garden since then. I have just turned 15 and still really am fascinated by them. I plan to continue on with my project that I started as part of the Science Fair.

Thank you again for sponsoring the Science Fair.

Cheers
Jett McColl

Entomological Society Newsletter

Claire Butcher Award (cont.)

FIGHT THE MITES

By Jett McColl

AIM

Find out if honey bees could adapt to using smaller cells, to help in the global fight against Varroa mites.

INTRODUCTION

I have been a beekeeper for six years and have had 12 hives, but none are alive today, primarily due to Varroa mites. These mites are a significant threat, having contributed to over half of my hive losses.

It's a global problem too, with Varroa mite diseases costing the Apiculture industry \$100 million dollars per year.

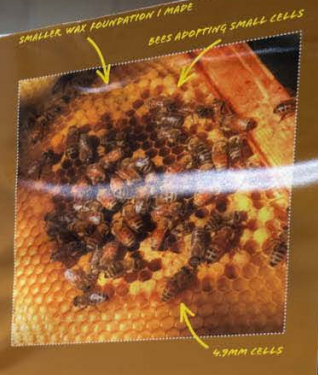
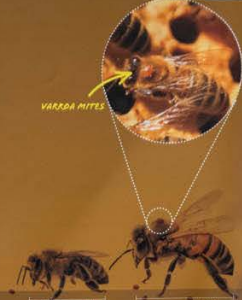
While short-term treatments exist, I am to find a long-term solution that allows bees to survive without human intervention. Inspired by my without human teacher, Miss Kuster, I learned that Varroa mites prefer larger drone cells, so I decided to test if smaller cells could help smaller bees resist mites better.

HYPOTHESIS

I do believe that the bees will be able to at least somewhat adapt to smaller cells as the same egg that can grow into an ordinary worker can also grow into the queen. However, I think that the bees will struggle to learn to only build small cells.

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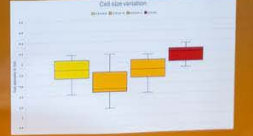


METHOD

- 1. Preparing the frame mould**
Start by building a wooden frame with a flat bottom that has a removable lower panel to lift the base frame away from the wax. Measure the width of the frame and the foundation you'll be using to make the mould.
- 2. Creating the base mould**
Next, I used some food-grade silicone that is flexible enough to bend and release the wax once it's poured. I used silicone with a viscosity of 100, which worked well, but I eventually used a lower viscosity of 50. I used a 100mm x 100mm x 10mm sheet of the silicone and cut it into a 100mm x 100mm square. I used a 100mm x 100mm x 10mm sheet of the silicone and cut it into a 100mm x 100mm square. I used a 100mm x 100mm x 10mm sheet of the silicone and cut it into a 100mm x 100mm square.
- 3. Positioning the foundation (1st half)**
Place your foundation in the mould so that it is flush with the sides and the bottom. The top of the foundation should be level with the top of the mould. The top of the foundation should be level with the top of the mould. The top of the foundation should be level with the top of the mould.
- 4. Adding the silicone (1st half)**
Carefully pour the silicone over the exposed part of the foundation, making sure to cover it evenly. Fill the mould with approximately 100g of silicone or enough until it is about 10mm deep. Use a syringe to get the silicone into the corners. Use a syringe to get the silicone into the corners. Use a syringe to get the silicone into the corners.
- 5. Creating the base mould**
Once the first half of the silicone is set, carefully remove the top from the mould. The foundation should be level with the top of the mould. The top of the foundation should be level with the top of the mould. The top of the foundation should be level with the top of the mould.
- 6. Adding the Silicone (Second half)**
Now pour about 100g of silicone or enough to cover the exposed part of the foundation. The top of the foundation should be level with the top of the mould. The top of the foundation should be level with the top of the mould. The top of the foundation should be level with the top of the mould.
- 7. Letting the silicone set**
Allow the second half of the silicone to set completely. Once it's set, carefully remove the wax foundation and trim the edges of the foundation. Use a sharp knife to trim the edges of the foundation. Use a sharp knife to trim the edges of the foundation. Use a sharp knife to trim the edges of the foundation.
- 8. Finishing the two-part mould**
Finally, separate the two halves of the mould. You now have a two-part mould that can be used to create foundation sheets.
- 9. Preparing the wax**
Use the same amount of beeswax (500g) as you would for a regular frame, being careful not to overheat it.
- 10. Aligning the mould**
Align the two halves of the mould, ensuring the edges meet evenly. Secure the mould with a rubber band.
- 11. Pouring the wax**
Pour the wax into the mould, using enough to create a solid foundation with the desired thickness. Trim the wax to the desired thickness. Trim the wax to the desired thickness. Trim the wax to the desired thickness.
- 12. Cooling and setting the wax**
Let the wax cool and harden in the mould for 20-30 minutes until fully set.
- 13. Removing the wax foundation**
Carefully open the mould and gently remove the wax foundation.
- 14. Installing the foundation in the frame**
Place the wax foundation into your wooden frame. If needed, leave it with a small gap to allow it to expand. If needed, leave it with a small gap to allow it to expand. If needed, leave it with a small gap to allow it to expand.

RESULTS

I ended up with multiple data sets. When compiled and mapped onto the two most important graphs it shows us: 1- Cell occupancy over time and 2- Cell size variation.



DISCUSSION

The results suggest that smaller cell sizes could help bees resist Varroa mites, but the varying adaptation between Hive A and Hive B shows that this process is complex.

Hive B, which contained only 4.9 mm cells, initially had lower occupancy but gradually increased, whereas Hive A showed more variability with its mixed cell sizes.

The natural variation in cell sizes built by bees indicates their adaptability, which is promising for beekeeping. However, it remains unclear if these size variations directly affect Varroa mite infestation rates.

Future research should investigate how smaller cells impact mite reproduction and colony health. Comparing mite infestation rates could provide valuable insights into effective long-term pest management strategies.

This project involved a lot of trial and research for making these smaller foundations as these are not a common foundation size. This meant I had to make a lot of the parts for this project. This has been a lot of fun and I would like to continue this experiment more in the future. I will be able to show more findings next year.

If anyone wants to know more about this experiment or would like to contact me and I would be happy to help.

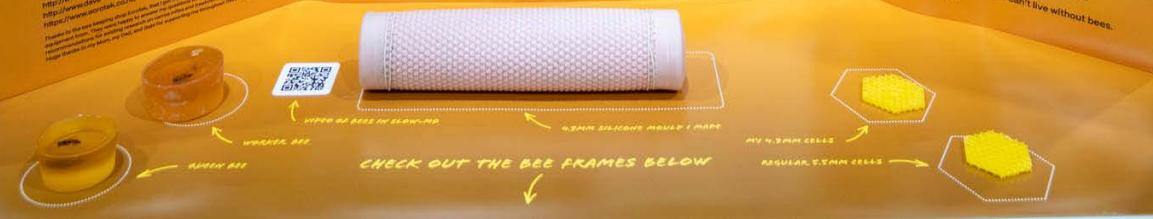
CONCLUSION

The experiment shows that honey bees can adapt to using smaller cell sizes, which might help in combating Varroa mites.

The "Cell Occupancy over Time" graph indicates an increase in the use of 4.9 mm cells in Hive A by early spring, suggesting bees can use smaller cells for brood rearing. Hive B, with only 4.9 mm cells, had lower and more variable occupancy, indicating that bees can adapt but may face challenges based on hive conditions.

The "Cell Size Variation" graph shows that even within the 4.9 mm category, there was some variation. Note that this was drawn out by the bees, suggesting bees are flexible in their cell construction.

These findings support the hypothesis that bees can adapt to smaller cells, although the degree of success varies between hives and environmental factors. Bees are endangered. Humans can't live without bees. Let's save the bees!



Jett McColl's award-winning project

Entomological Society Newsletter

Auckland Branch Report

Text and images provided by Alan Flynn

The Tāmaki Makaurau/Auckland Branch had a very dynamic and exciting year. We had an excellent series of eleven guest speakers at our monthly meetings, visited schools to talk about all things insects with excited children and had a full programme of field trips. We are thankful to Landcare Research for letting us continue to use their meeting room for our evening meetings. We started the year in February 2024 with a celebration of world wetland day at Matuku link restoration project in West Auckland, where the AK Branch had an information stall and led insect forays for visitors. The day was well attended, though the windy weather made it challenging to hold our stall together at times. We returned to Matuku Link later in April for an evening insect hunt and light-trapping fun.



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Auckland Branch Report (cont.)

Guest speakers: We learnt about NZ entomologists of old from Robert Hoare; Termites from Shaun Bennett, Elmids with Rich Leschen, the peril of Fall Army worm from Ben Boyd, recent insect arrivals from Joanna Mackisack and many other interesting talks including a special guest talk from one our long-standing AK Branch members who lives in the mainland, Ruud Kleinpaste.



Field trips: Our field trips have been well attended over the last year with five trips to various places of interest including a foray south into the Waipa district to visit Sanctuary Mountain Maungatautari, now home to Mahoenui giant wētā. We also visited Karamatura streams at Huia, Pūkorokoro (Miranda) Shorebird Centre and Chelsea Heritage Park on Auckland's North Shore.

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Auckland Branch Report (cont.)

School Visits: We undertook three school visits this year to talk to enthusiastic young children about amazing insects and their importance to the environment. A very memorable visit was made to Riverhead primary school where Dave and Alan spoke to ~ 120 students aged 7-8-year-olds



Looking ahead: The Auckland Branch has been a registered charity since ~ 2008. New reporting requirements mean the branch will be reviewing its constitution, which is long overdue, to make sure it is still fit for purpose. We have our AGM in February 2025 to discuss and plan our programme for the year ahead and our first few guest speakers for 2025 are already locked in.

Merry Christmas and happy holidays to all our Entomology Society friends across Aotearoa.

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Wellington Pepeke Branch Report

Text and images provided by Julia Kasper

Wellington's invertebrates group evening meetings for members and visitors are usually held on the last Wednesday of every second month and the AGM on the first Wednesday of December. Branch financial year runs from 1 January to 31 December. The venue is Te Papa's collection building, 169 Tory Street. Last year we had 12 paying members.

Our hybrid meetings are visited by approx. 25 people, with 12 people regularly attending. We offer zoom links for their talks to the other branches. Here are some highlights for 2024:

14 February - Valentine's Day: Open day at Te Papa's reopened Entomology Collection Store and the BUG OF THE Year announcement.



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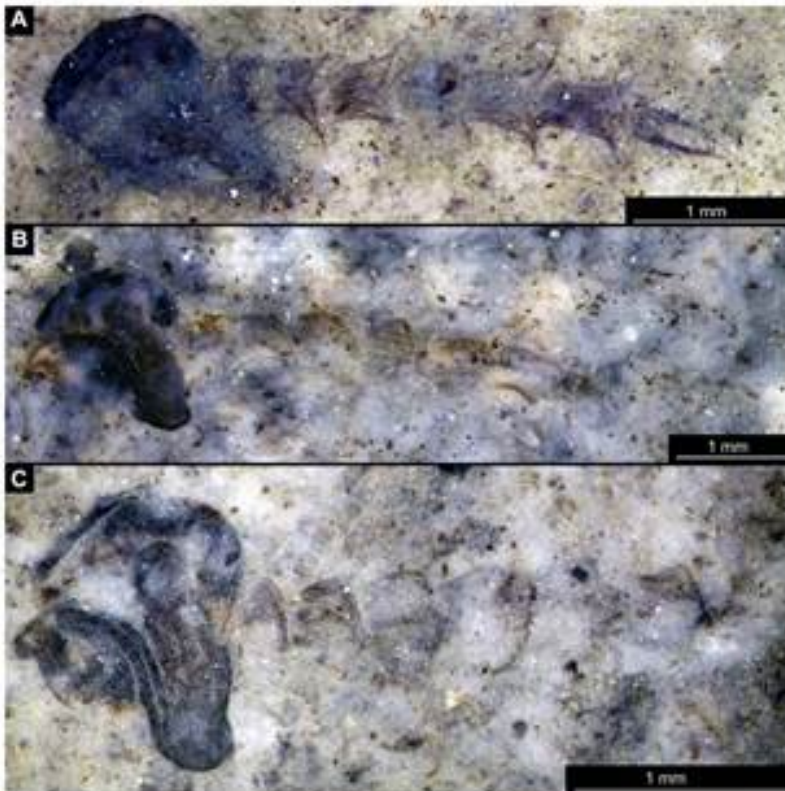
Wellington Pepeke Branch Report (cont.)

28 February:

- Maare Möttus presented: “Hibernating mosquito population in Estonian caves and possible infection of the dog heart worm *Dirofilaria immitis*”.
- Anton Hovius presented: “The mosquito census – a citizen science project analysed”.

27 March:

- Jean Roger - “Lots of stunning invertebrate pics from New Caledonia”
- Viktor Baranov - "Uncovering climates and environments of the ancient past with true flies (Diptera) fossils"



Aquatic diptera fauna from the Miocene Unesco fossil site of Foulden Maar with Chaoboridae found in New Zealand for the first time ever!

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Wellington Pepeke Branch Report (cont.)

•26 – 29 April Special Event:

City Nature Challenge, coastal fieldtrip event (only 2 members) and iNaturalist identification clinic (9 members).

30 May (Online only):

- Will Brockelsby gave a debrief on the results of the 2024 City Nature Challenge
- Marc Pollet presented a talk to introduce the Dolichopodidae (long legged flies) family and inform us about our endemic New Zealand species. Marc also discussed his various collection methods for finding these flies.

4 July Ants Dance:

- Antoine Felden “From all fours to upside down: my journey in entomology”

• Young member Rumi Lourie shared his love of Formicidae in NZ and showed is live colonies of several native ant species.



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Wellington Pepeke Branch Report (cont.)

30 October:

- Julia Kasper provided a tour of the Te Papa entomology collection to members and talked about her time in Costa Rica attending fly school.
- Olivia Tidswell presented “From brains to bodies: Did insects repurpose a neural gene network for axial development?”
- Rory Little presented “Natural products from arthropod bacterial symbionts.”



And last, but definitely not least, Will Brockelsby is now the father of a future entomologist!!



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Wellington Pepeke Branch Report (cont.)

Projects:

100 years moths Zealandia/Otari: We are still running regular moth light trapping sessions, organised by Will Brocklesby. After three years at Zealandia, this is now happening at Otari-Wilton's Bush. An iNaturalist project has been setup to harvest observations and store our species count. You can find it on the site.

<https://inaturalist.nz/projects/100-year-moth-project-otari-wilton>

The first 3 years of results from the 100 years moth project have been published:

<https://www.tandfonline.com/doi/full/10.1080/00779962.2024.2377201>



Report from Field trip officer – William Brocklesby:

We finished up the last of the Otari light-trapping sessions trips early this year for the 100-year moth project, next steps are now wrangling historic data to run some comparisons. Also:

Jim and the Wairarapa team ran a couple of moth light trapping sessions in Mt Holdsworth and Pukaha/Mt Bruce, with more planned for summer.

A group from Wellington Pepeke ran a small invertebrate survey in support of the Glenside Progressive association at Glenside Reserve.

Outreach activities: several Otari bug walks, Zealandia Volunteer Day: mosquitoes and glow-worms, 19th March Seminar talk at Otari Wilton's Bush about the 100 years moth project.





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Canterbury Branch Report

Text provided by Johnno Ridden

2024 was the first full year programme since the Canterbury Entomology Society branch relaunched. It began with a light trapping night at Travis Wetland, hosted by Denise Ford. A great time was had, with many cool observations made and a large population of stick insects (which excited Morgane!).

The first talk held in March, at University of Canterbury was given by Dr Mike Dickinson, highlighting insects in the world of Wikipedia / Wikidata and other Wiki projects. Our next talk was held in May, at Lincoln University, by Dr Cassandra Edmunds. The topic of this talk was the fascinating world of forensic entomology, in all its gruesome and enlightening detail. The final talk of the year was given by Dr Carolin Weser, who presented her PhD research on Eucalyptus beetle control, highlighting a range of neat techniques and tools to manage Eucalyptus pests.

A range of members were also involved in the organising of the NZ Entomology Society conference, which you can read more about in the conference report. We look forward to engaging and exciting entomological events in 2025!



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Otago Branch Report

Text and images provided by Sheri Johnson

Our executive for 2024 included Jenny Jandt (President), Danilo Hegg (Vice president), Sheri Johnson (Secretary) and Xuhong Chai (Treasurer). We have had 29 paying members in 2024 and we held two main events in 2024 – a Bug of the Year trivia quiz and a field trip to Quarantine Island, to conduct an arthropod Survey. Jenny Jandt also led some Wild Dunedin events. Jenny and Luna Grey also hosted regular insect identification workshops throughout the year.



The Bug of the Year quiz was held at Fugue, St Clair and was well attended (21 people). Photo: S. Johnson

Entomological Society Newsletter

Otago Branch Report (cont.)

The trip to Quarantine Island included 7 attendees (4 adults and 3 children). We had excellent weather, and the kids had so much fun exploring around the island, learning different ways of sampling and staying up till midnight! We will repeat the trip in February 2025. We recorded observations of 50 different species.



Photos: S. Johnson and G. Rocco.

Entomological Society Newsletter

DOC Update: Increased Resources for Insect Conservation

Tara Murray – DOC Science Advisor – tmurray@doc.govt.nz

At the August conference I summarised the Research Gap Analysis that DOC undertook in 2020/21 to help determine the most urgent research gaps that need to be filled for threatened species in Aotearoa. This highlighted the significant gaps, and potential multi-species benefits of undertaking research to better manage threatened invertebrates. The report is now available as [DOC Research and Development Series # 371](#). On the DOC website you can find a link to all publications as a button under the big ‘Haere mai’ on the homepage – took me a while to find it!

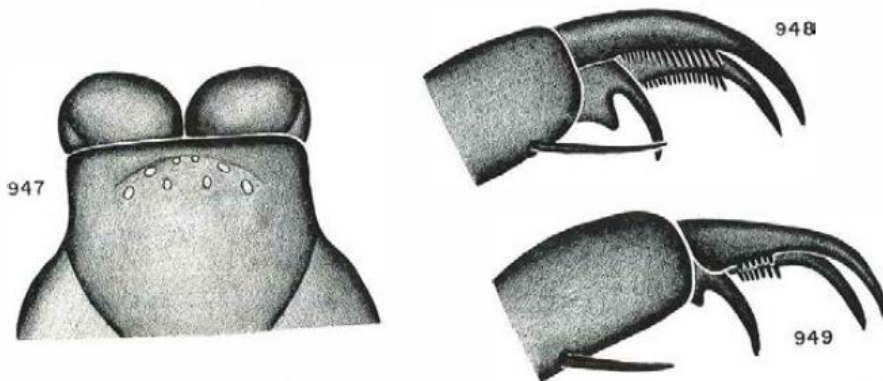


Mahoenui giant wētā.
Photo by Tara Murray

Entomological Society Newsletter

DOC Update (cont.)

At the conference I also introduced DOCs new approach to improving how biodiversity work is planned and delivered; these changes provide an opportunity to get the most urgent invertebrate management plans updated and properly resourced. I'm excited to be able to report that this has resulted in resources being allocated to several new research projects and increased funding for management of multiple threatened invertebrates. The research gap analysis, which many Society members helped with, was integral in the selection of research and species that most urgently need action. Species benefitting immediately include the threatened stag beetles, the carabid *Mecodema strictum*, Māhoenui giant wētā (pictured on the previous page) and the Canterbury knobbed weevil. Next year, Chrystall's beach boulder butterfly, Stephen's Island weevil, Stephens Island ground beetle, Paparoa giant wētā and the cave spider *Maloides cavernicola* are also in line for increased management resources.

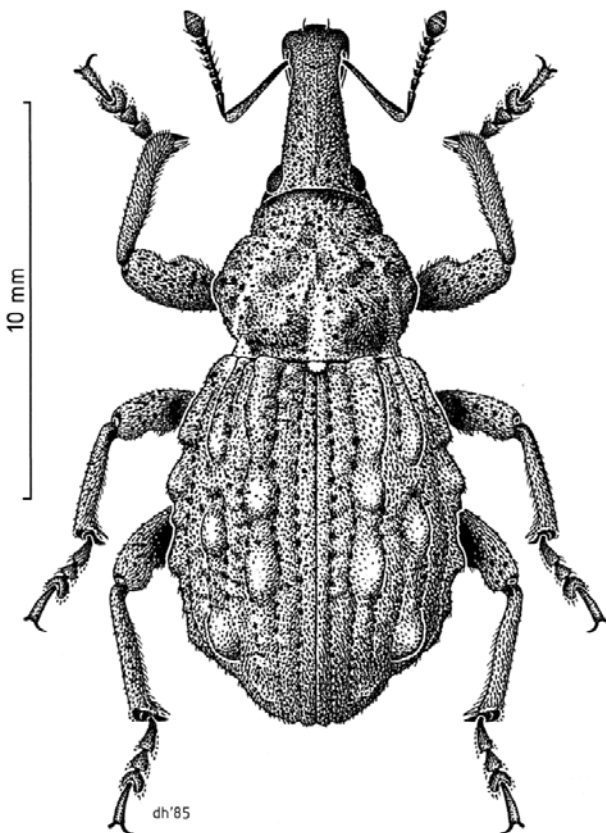


Maloides cavernicola (from Forster & Wilton 1973,)*Otago Museum Bulletin IV.*)

Entomological Society Newsletter

DOC Update (cont.)

Some of these species have not been seen for several years and the rest are hanging on by a thread. The extra resources will allow the right set of management actions to be put in place to find and preserve these species into the future. Research projects funded include developing detection and rearing methods for Canterbury knobbled weevil, developing monitoring methods for threatened carabid and stag beetles, and continued work on compiling location records for Data Deficient and Data Poor invertebrates so we can work strategically to undertake the necessary surveys to properly assess their threat status in the near future. In addition, threats focused research on hedgehog and mouse control is underway, and this has the potential to benefit a huge number of invertebrates in the longer term.



Canterbury knobbled weevil illustrated by Des Helmore.



Entomological Society Newsletter

DOC Update (cont.)

As part of these new research projects, I hope to advertise soon for a 1-to-2-year fixed Science Advisor role to help implement several projects, especially the development of monitoring methods. This will be suited to a recent PhD graduate or early career researcher who is skilled in behavioural assays or has a solid understanding of insect conservation and ecology and wants to make a real difference for invertebrate conservation in Aotearoa. In collaboration with Lincoln University, I'm also looking for a PhD student to support the research on the development of detection and monitoring methods specifically for the Canterbury knobbed Weevil – please get in touch if that might be you!

And finally, applications for DOCs annual postgraduate scholarship are now open. These are one year \$15,000 scholarships. Check out the DOC website to see this year's priorities and criteria. Applications close 3 March 2025.

<https://www.doc.govt.nz/our-work/research-and-development/postgraduate-scholarship-programme/>



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New Publication:

Grey, L., Trewick, S.A. & Johnson, S.L. Introduced mammalian predators influence demography and trait variation of a New Zealand stag beetle.

J. Insect Conserv. **28**, 725–736 (2024).

<https://doi.org/10.1007/s10841-024-00593-0>

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Entomological Society of New Zealand contacts:

President

Tara Murray: president@ento.org.nz

Vice-President

Cor Vink: vice@ento.org.nz

Immediate Past-President and Newsletter Editor

Phil Sirvid: pastpres@ento.org.nz

New Zealand Entomologist Editor-in-Chief

Jenny Jandt: editor@ento.org.nz

The Wētā Editor

Rudi Schnitzler: theweta@ento.org.nz

Treasurers (for monetary contributions)

Julia Kasper and Mateus Detoni: treasurer@ento.org.nz

Membership

NB. Please update your contact information (especially your email address) to receive notices and the newsletter.

Johnathon Ridden: membership@ento.org.nz

Society Secretary

Sheri Johnson: secretary@ento.org.nz

Outreach Officer

Morgane Merien: morganemerien@gmail.com

Website Editor

Aaron Harmer: website@ento.org.nz

Officers

Sam Brown, Grace Hall, Neil Birrell

EntoSoc on Facebook: <https://www.facebook.com/nzentosoc>



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