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Apiarist's Advocate

News, Views & Promotions – for Beekeepers – by Beekeepers

Return from Apimondia

The tiny, but mighty, Kiwi contingent report back from the world's largest beekeeping event.

Kiwi Crew Report Back from Apimondia

With 3800 people in attendance, the 48th International Apicultural Congress – or 'Apimondia' as it is colloquially known – was a proverbial 'hive of activity' in Santiago, Chile, September 4-8. Among those taking in the sprawling trade displays, 230 expert speakers and informal conversations were about a dozen Kiwis, who report back for us on the sights, sounds and even tastes, of the world's biggest gathering of beekeepers.

BY PATRICK DAWKINS

In an event as large as Apimondia it's nice to have a fixed point to congregate, and for many of the New Zealand contingent that was the silver-medal winning booth of Mānuka Orchard, the only New Zealand display at the global apicultural showcase.

Owner Logan Bowyer took a team of four to spread the word about the range of honeys produced in New Zealand – including, of course, that for which is the business is named – and not only has he deemed the trip a success on that front, but judges awarded their display a silver medal.

"We got 'secretly shopped' three times in the five days, apparently, and our story was bang on," Bowyer explains.

"A silver award for that is not too bad, I think. A lot of the companies that go there have been doing so for years, whereas this was our first display."

There is also hope that one of his team, Bay of Plenty Beekeeper Cameron Jefferies', JBees Honey may win an award in the World Honey Awards, with it progressing from the judges table to final lab testing which takes place post-event.

Regardless of a medal there or not, Bowyer says the suite of New Zealand honeys they offered at their display were very well received.

"We didn't know what we were getting into or who would walk through the door, but we had everything from a guy who has never

The silver award winning display of Mānuka Orchard was a good meeting spot for the New Zealand contingent at Apimondia in Santiago. Ralph, at left, and Jody Mitchell, far right bookend the Mānuka Orchard team of, from left, Christian Cadenas, of Almighty Honey, Sally Ross and Logan Bowyer, plus Cameron Jefferies of JBees Honey.

touched a kg of honey, but is building a 5000-tonne processing plant, through to all the Chilean beekeepers who had heard the name mānuka but knew nothing about it. They didn't know whether it came from a flower, a bush or a kiwi. So, we were able to educate a lot of people," Bowyer says.

They went through about 5000 tasting sticks, with southern rata proving a popular taste for the South Americans. The antibacterial properties of mānuka were highlighted in a couple of case studies too, with one American beekeeper now looking to order in a consignment for sale in the USA after twice daily application of some Mānuka Orchard product cleared up an ear complaint, while a Canadian booth holder used some mānuka hand cream to alleviate lasting pain from a recent bee sting.

"Both of them were happy to stand in front of the camera while we filmed. We had three camera crews come through to film and talk to us, one from America, Chile, and a couple of Instagram influencer ladies who were all about the hand creams," Bowyer says of the exposure they received.

HONEY ADULTERATION

On the topic of honey, once again adulteration was a major talking point.

"Not so much about 'fake' honey, but the blending of Chinese honey with other types of honey from other regions, to make it seem like they are producing more," explains Comvita's head of apiary Carlos Zevallos, who, as a fluent speaker of Spanish, took more from the event than many others.

Chilean beekeepers play host to the 48th Apimondia, in Santiago, September 4-8.

"A major complaint seemed to be the Ukraine honey in Europe which was being allowed greater entry to the EU because of the war, but beekeepers are saying there is more Ukraine honey entering the EU than what they are producing in the Ukraine. So, there is probably a lot of blending of it with Chinese honey to flood the markets in Europe."

With adulterated honey driving down honey prices globally, all legitimate producers feel the flow on effect. There is also the longstanding issue of New Zealand honeys and questions of adulteration as they struggle to gain market access due to issues like high C4 sugar levels, elevated HMF, and low diastase, despite those characteristics potentially being naturally occurring. Therefore, Bay of Plenty beekeeper and first-time World Bee Awards judge Jody Mitchell took the opportunity of Apimondia to make some headway in her pet project of alleviating those global concerns regarding New Zealand honeys.

"I was able to gain assurances from some major global labs that they would let us submit New Zealand honey libraries to validate authenticity," Mitchell says.

"The UK is working on some new honey profiling and told me that, if we submit them some honeys, they will add them to their profiling."

Now the New Zealand honey industry needs to work together to pull together an appropriately accurate and representative honey library to make any such submissions count, she believes.

Jody Mitchell, fourth from right, was a rookie judge at the World Beekeeping Awards where she sipped the world's best meads and ran her eye over leading innovations.

"The issues we are having seem to be coming up with a lot of tropical honeys from around the world. We are not alone and different scientists are looking at different things going on in honeys. It means, if we can get our ducks in a row and sort out what our profiles are, then we can present that to the world with analysis behind it. Instead of us having to fit into a European honey box," Mitchell says.

THE KIWI JUDGE

While it was not her, or husband Ralph Mitchell's, first experience of an Apimondia, it was a long-awaited opportunity for Mitchell to attend as a judge of various classes. While the organisation of the competitions could have been better, Mitchell says it was a privilege to be able to judge the world mead competition, as well as the beekeeping innovation and invention class, while also running her eye over the honeys, media section and beeswax competition, among others, as an interested attendee.

"The meads were incredible, there was some amazing stuff there. The Europeans are the experts and a Slovakian won World's-Best. There were some amazing honey wines too, including a brilliant Rosé honey wine," she says.

It wasn't just a judge's hat Mitchell was wearing either. She also attended as the New Zealand representative to the Apimondia international federation's official meeting, which she calls "like the League of Nations". There it was decided that Tanzania will host the 2027 Apimondia (beating out UAE, subject to their completion of an appropriate venue). That will follow the bi-annual event's Norway experience in 2025.

BEE HEALTH

On the topic of other Apimondias, Santiago was the fifth event New Zealand Beeswax general manager Nick Taylor has attended.

"It was great to get back out into the world again and see beekeepers, suppliers, researchers and customers on the global level. The event itself was very good, but wasn't quite 100 percent polished," Taylor says.

The expo was a little smaller than events he has attended in the northern hemisphere.

"That is testimony to the style of beekeeping in South America. It's a bulk honey producer, cooperative, low-cost model part of the world. High-end products out of North America and Europe don't fit that market as well as others."

With bee health products a staple of the New Zealand Beeswax catalogue, that is where Taylor's focus lay and varroa was once again a hot topic. In terms of new varroa control products there doesn't appear to be anything revolutionary on the horizon for New Zealand beekeepers and Taylor says some of the scientific presentations were just confirmation of what beekeepers knew or assumed, especially around the pros and cons of oxalic acid use.

Carlos Zevallos (left), Comuita head of apiary, meets Californian scientific beekeeper Randy Oliver, who presented some of his research.

A new term 'unhealthy brood odour', or 'UBO', was floated by the scientific community as a way of bees detecting varroa infested brood cells, and there was some focus on breeding for varroa resistance, Taylor says. That is a report confirmed by Zevallos who put his understanding of Spanish language to good use for a presentation on success being had in Bolivia allowing Africanised bees to self-select resistance to the mite.

"We could do that in the European bees too," Zevallos believes.

"The solution to varroa for beekeepers around the world is in genetic selection, not trying to find a silver-bullet treatment. South America is showing us that it can be done."

Troubles managing varroa was a constant for beekeepers from around the world that Zevallos spoke to. Pike Stahlmann-Brown, author of New Zealand's Colony Loss Survey, was also in attendance and was taken by talk of amitraz resistant mites, something that has not been widely reported in New Zealand.

"I saw a presentation that stated amitraz resistance was widespread in France and they were asked 'what do you treat varroa with in France?' and their answer was 'we only treat once a year and we only treat with amitraz.' Everyone sort of said 'well…'," Stahlmann-Brown says.

That is a warning for Kiwi beekeepers not to abandon integrated varroa management plans.

"The temptation is to only use one treatment because it is so successful, but that will only breed mite resistance. In Europe they have flipped from flumethrin use to only amitraz and haven't been mixing it up, so now they are getting resistance," Stahlmann-Brown warns.

MEETING THE LOCALS

SJA Honey owner Jason Marshall is another who has attended several Apimondias and says they are a good opportunity for Kiwi beekeepers to expand their understanding of the world of beekeeping, because we can become insulated in our thinking in New Zealand. With that in mind, he called in on a beekeeping friend and met several Chilean beekeepers.

"It reinforced to me that the industry, globally, is driven more by pollination than honey," Marshall says.

"The industry is pretty upbeat over there. The Chileans are very labour-intensive in their beekeeping and it reminds me how we might have kept bees 100 years ago. There is a lack of systemisation. It is a commercial industry, but not very efficient from what I could see."

That is driven by a lower wage economy making labour more affordable. The visit did put our problems in perspective too.

"The only thing that is not going good in New Zealand is mānuka honey. I think we need to remember that everything else is going well. We see all the mānuka in the shed and focus on that, but there is a lot to be positive about" Marshall says.

With that in mind, Honey New Zealand head of apiculture Adam Rundle's attention was caught by presentations from two honey producing areas trying to replicate the value-add that mānuka has achieved. One was a small Greek island, but the other was a much larger area, the host country of Chile, touting their 'Active Patagonia Factor' or 'APF'. From what Rundle could see they had no anti-microbial properties greater than any other honey to fall back on though.

"The studies they have done, they stacked them up against mānuka honey, which goes to show we are an international benchmark for other countries trying to derive more value for their honeys. I don't think Kiwi beekeepers should be concerned there is a great threat out there, but they are trying," he says.

THE WRAP

All up, those with knowledge of several Apimondia events say the Santiago experience, while still very rewarding, lacked some of the scope and structure of previous events. Despite that, the Kiwi contingent took plenty from the visit to Chile.

"We haven't saturated the world with mānuka honey and there is plenty of people who want to learn more about it," Bowyer says, following their myriad of conversations at the award-winning Mānuka Orchard stand.

"There was only a small group of us, but we worked really hard to promote New Zealand beekeeping," Mitchell concludes.

Already the thoughts of several of the Kiwi contingent are moving towards the next Apimondia, in 2025.

"It was a joy to be there," Taylor says, adding "It's a great event and I'm already really looking forward to the next one in two years' time in Copenhagen."

Beekeepers Amongst the Moai

Jody and Ralph Mitchell couldn't let the opportunity to visit Rapa Nui (Easter Island) pass during their visit to Chile so, prior to Apimondia, they took the six-hour flight from Santiago, 3500 miles west, to the Chilean territory. Of course they checked out the Moai statues which the remote Polynesian island is renowned for, but also mixed in some beekeeping.

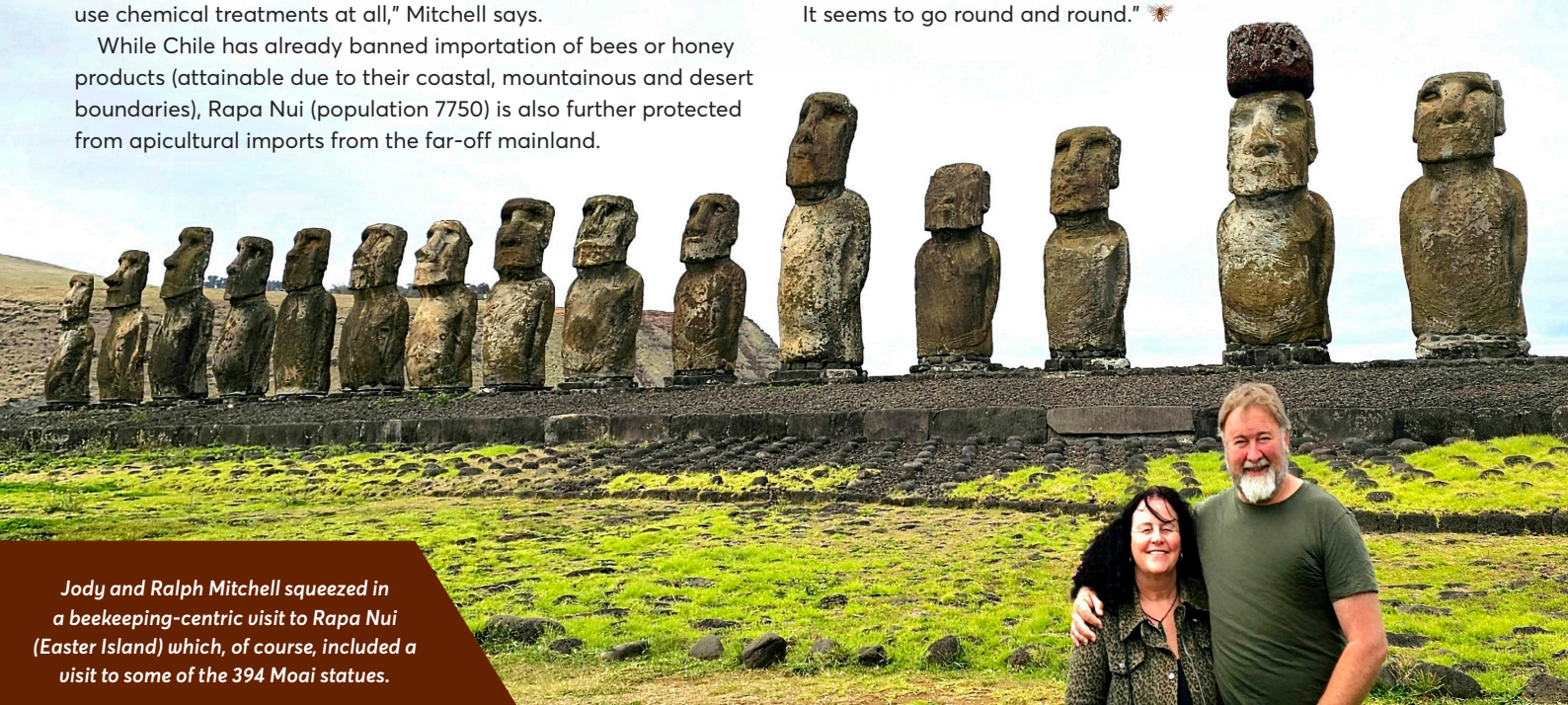
"We got to open up some beehives. They have no pathogens, no diseases, no AFB, no varroa, just nothing. They are not having to use chemical treatments at all," Mitchell says.

While Chile has already banned importation of bees or honey products (attainable due to their coastal, mountainous and desert boundaries), Rapa Nui (population 7750) is also further protected from apicultural imports from the far-off mainland.

"Their crops are all tropical fruits and the bees can collect honey all year round. So, they can get crops of 90 or 100kg, if the hives don't swarm."

It's delicious tasting honey too, according to Mitchell's well-educated palate, with bees foraging on flowers such as banana, guava, mango and passionfruit.

"They are a good little team promoting beekeeping and honey from their environment. They have a good sustainable thing going. Sometimes they lose some hives, sometimes they run a few more. It seems to go round and round."



Jody and Ralph Mitchell squeezed in a beekeeping-centric visit to Rapa Nui (Easter Island) which, of course, included a visit to some of the 394 Moai statues.

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Aussies Throw in the Towel on Varroa Eradication

Despite a bill of AUD$132 million and more than 30,000 hives euthanised, Australia's 15-month fight to eradicate *Varroa destructor* from their shores has ended, with the decision made on September 20 to move to a management plan as new detections across New South Wales emerged. So, what's the plan now?

Until June 2022 Australia was seen as the last major land-mass on Earth where varroa mites had not taken hold, but that is no more. Now beekeepers and officials are hoping they can slow the spread of the parasite across the country, giving them time to prepare and avoid the negative impacts to hive health and business finances for as long as possible.

Varroa was initially detected at Port of Newcastle and, while it was hoped to have been contained to nearby areas, recent detections, including a significant outbreak further north in Kempsey, mean further eradication efforts are no longer deemed practical. The National Management Group who were overseeing the response say beekeepers moving hives within containment zones has contributed to the spread.

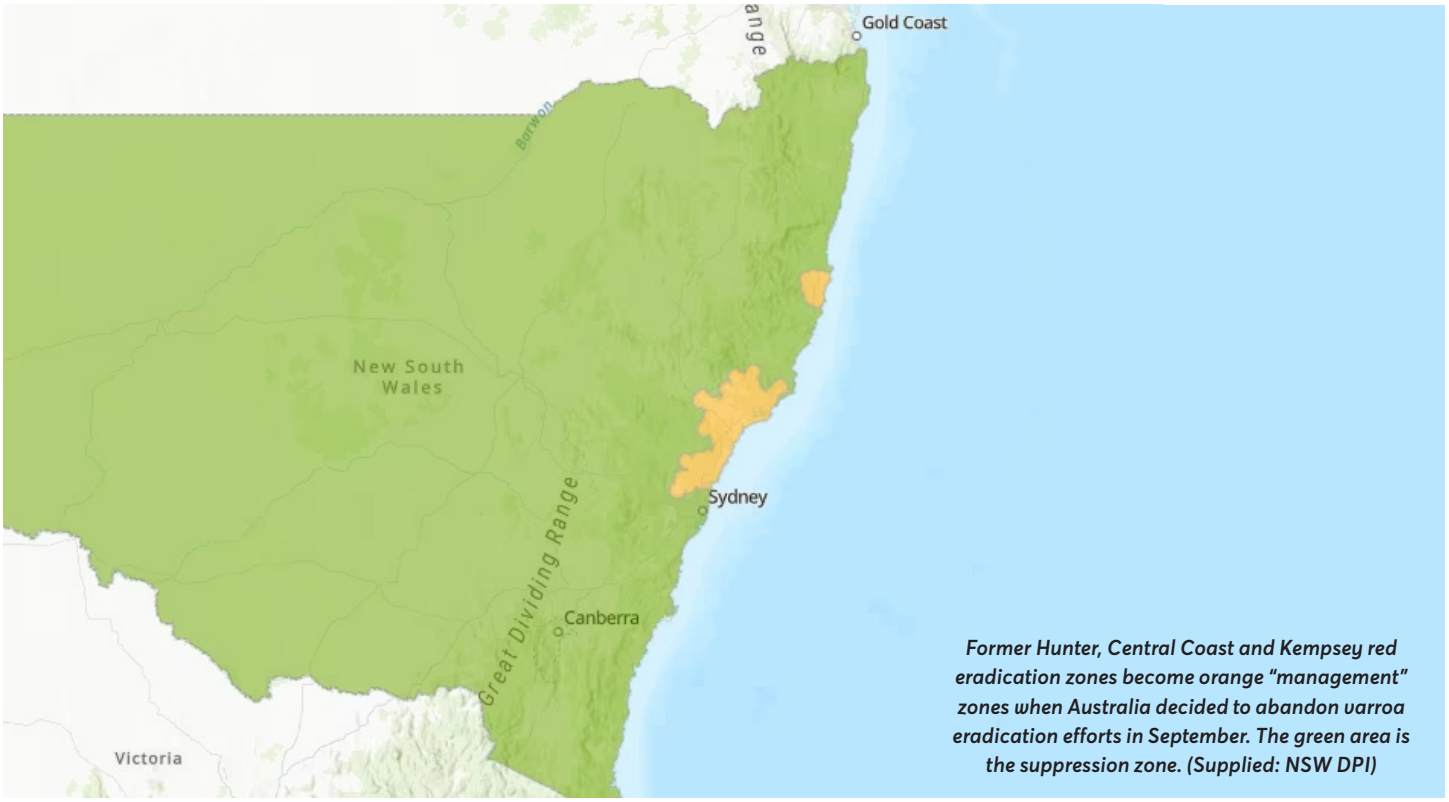
While Australian Honey Bee Industry Council chief executive Danny Le Feuvre – who spoke of the eradication efforts at Apiculture New Zealand's national conference in June – is disappointed at their failure, he says the final decision that needed to be made was clear.

"If we were to continue down that (eradication of hives) path, it would have killed the industry," Le Feuvre admits.

The response to date has been one of the largest biosecurity incursion responses ever made in Australia and Le Feuvre says it was "worth having a red hot go at it".

A mix of both managed and wild colonies had been euthanised during the 15-month response, with fipronil laced bait stations used to take out the significant feral bee population in some areas. Some beekeepers have had all their hives destroyed too, and Le Feuvre is disappointed the huge financial and emotional toll has not paved a way to eradication success.

"We need to acknowledge and respect the sacrifices those beekeepers have made, but now we need to look forward and



Former Hunter, Central Coast and Kempsey red eradication zones become orange "management" zones when Australia decided to abandon varroa eradication efforts in September. The green area is the suppression zone. (Supplied: NSW DPI)

think about how we are going to manage and deal with the mite," he says.

"The compensation packages offered to many beekeepers haven't fully made up for their loss of income. It has been devastating to businesses, some of which were inter-generational."

Even those beekeepers who have not had hives destroyed, but who have been unable to visit their hives or move them, might be able to opt for voluntary euthanasia of them and, with it, compensation.

"Those hives have been sitting without food, without forage and the beekeepers have not been able to make money from them. So, we have advocated for those beekeepers to be able to now get an allowance to elect for euthanasia of them and a compensation package. We don't want to be giving back hives that are not healthy or fit for purpose," Le Feuvre says.

There are 26 stakeholder groups weighing in as a full management plan is considered. In the meantime an interim plan is in place which separates NSW into 'suppression' and 'management' zones to define movement allowances. A full and final plan is likely to take some time to get agreement upon.

"We are not expecting varroa to move through the landscape like a wildfire, it will be slow and we do have time, but we do need beekeepers to continue to monitor for mites to keep a check on the mite numbers moving forward."

Beekeepers are therefore being asked to conduct mite washes every 16 weeks and report results.

Danny Le Feuvre, chief executive Australian Honey Bee Industry Council.

Educational resources on managing bees with varroa will be made available, but Le Feuvre says, as evidenced in New Zealand, colony losses are inspected to increase.

"Previously our bees have been able to sustain themselves with very minimal intervention from the beekeepers … The way we keep bees is going to change."

A New Manager in Town

After five and a half years of stability at the head of the American foulbrood (AFB) Management Agency, September saw a new general manager take control of the beekeeper-funded agency tasked with eliminating AFB from managed beehives in New Zealand. Niharika Long stepped into the role on September 11, taking over from Clifton King and bringing with her 10 years of experience working with the Ministry for Primary Industries (MPI) in a range of roles, most lately biosecurity response. We caught up with the Masters-level trained marine scientist just weeks into the job to find out what beekeepers can expect from the new Agency GM.

"I'm a bit of an adrenaline junkie really," Long says of her motivation to apply for the AFB Management Agency's top job.

For beekeepers, tasked with navigating tough terrains in New Zealand's back country while carting heavy loads, sometimes for long hours, the connection between the almost entirely administrative role of national compliance manager for AFB and 'adrenaline' may not fit. However, for the purposes of Long's line of work, it does.

"The adrenaline hit comes from successfully solving a challenging or ambiguous problem. There's a certain ambiguity in this role that I'm quite drawn to. The other thing about it is, not only just looking at this problem as just an AFB problem, it's looking at other problems that beekeepers go through."

Niharika Long

She lists the current economic climate, inflation, export markets, climate change and weather events, as "a lot of pressure for the industry".

"AFB is only a tiny problem of all the other problems that the industry can face. As an ecologist, for me, it's about fitting in the different pieces of a puzzle, a jigsaw puzzle. That's what I'm drawn to."

Long takes over at a time when, as of the latest national annual report, AFB incidence increased from 0.31% of all registered colonies to 0.46%, 2526 total cases to 3422. King and the Agency board have put the increase down to greater vigilance from both the Agency and new, more compliant, owners taking over beehives.

Whether that rose-tinted assessment proves true or not, Long understands she and the Agency have their work cut out. She believes elimination of AFB in New Zealand is possible though, but it will require beekeepers working together, and the Agency and beekeepers effectively collaborating.

"Just like a honey bee colony, the apiculture industry does not exist because of a single beekeeper. It's the collective that makes this industry thrive. This means it applies to how you run your operation, share your knowledge, manage diseases, because what affects you will affect others.

"The Management Agency consists of a very experienced team who wants to help you eliminate AFB if you have it, and also assist you with keeping it away if you don't have it, or never had it. And the way you can help us do that is, you need to be responsible for your beekeeping operation. Not only for the health of the bees, but the wider industry. It means the basics, keep up with your paperwork, check your hives, or hive, treat them accordingly. Let us know when you're moving on from the industry."

Long says she will promote an open-door policy where beekeepers can come to the Agency at any time and communicate their needs.

"The other way beekeepers can help the Management Agency is to engage with us – whether that be for self-reporting, or if you are unsure about what you're looking for when doing hive inspections, if you want to upskill your staff, or report non-compliance, or even if there is a novel idea that you want to share with us."

She has experience in elimination of pests too, having worked in the post-border biosecurity response environment, including to fruit fly in 2019 in a public liaisons role and with the marine salmon farming industry for over four years on a very complex, long-standing pathogen which was affecting their stock, much like AFB does bees. Then there was her role as an operations manager for mycoplasma bovis, a response which required culling of hundreds of thousands of cattle. She helped make some of the decisions around depopulating farms of their herds as part of the role, so is familiar with making the tough decisions on the way to elimination or eradication of disease, such as AFB will require.

"I don't get flustered very easily and some of the things I have seen and pressures I have been under, you can understand why," she says.

Prior to her work in biosecurity incursion response, Long worked aboard commercial fishing vessels as an observer for MPI. So, how will beekeepers compare to fishermen? Long believes, regardless of the industry, it goes back to the solution of effective collaboration and partnerships.

"I get that some people think fish and bees are not the same. Well, no, they're not the same. But what we're trying to work towards is quite similar. Regardless of it being an agricultural, horticultural or aquaculture biosecurity issue – and I have worked in all those industries – they are quite similar because the underlying matter is about preventing onward spread of that pest or pathogen through best practices."

Her management style and Agency practices will differ from King's, she believes.

"The difference between Clifton and I is that when he came in, probably a lot of the systems that we currently have were not set up and he built it up from nothing. I have massive respect for that. My challenge is, based off what he has done, how do I take it forward. How do I put my own spin on it? People are going to find that he and I have very different approaches, but it doesn't matter. We're still trying to tackle it (AFB). There are many ways to skin a cat."

In practice, Long hopes to make communications succinct because "beekeepers are busy people, it's a seasonal job and making things more palatable is important" and potentially highlighting the practices of "champions" – beekeepers who have had success eliminating AFB.

Those changes will slowly roll out in the coming months, but in her first few weeks in the national compliance manager role Long has put a priority on meeting the current staff and being "a sponge" for information. After she has got her feet well under the desk (which is currently a work-from-home arrangement in Wellington as Apiculture New Zealand searches for a new office base) she plans to meet with King, so she can then ask the appropriate questions. While their management styles may differ, Long says her desire to achieve elimination of AFB from managed colonies is as strong as her predecessor.

"I don't know everything about honey bees, but it's about trying to achieve something that hasn't been done before," she says adding. "This is the New Zealand way – we try to achieve something that other people haven't done".

Varroa – A Warning from Experience in the Northern Hemisphere

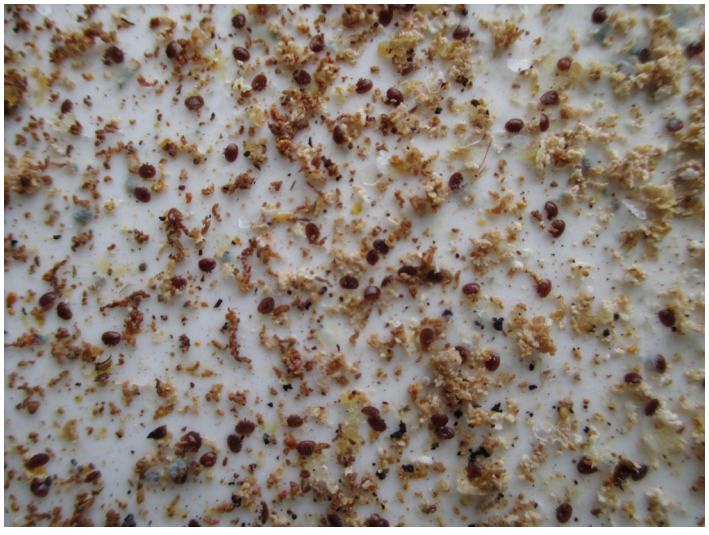
In the third and final article of his series, Sebastian Owen, commercial manager of Vita Bee Health, discusses the development of resistance in varroa mites and explains what beekeepers can do to help ward off such problems and enable treatments to continue to be effective for long periods.

Part One: Varroa: Managing the Scourge of Modern Beekeeping
Part Two: Advances in Varroa Control and How Beekeepers Can Help

BY SEBASTIAN OWEN

The varroa mite continues to spring surprises in the northern and southern hemispheres as weather patterns fluctuate and colony treatment regimes make an impact. It's quite a battle against the parasite as it exploits chinks in the defensive armour that beekeepers provide.

Since beekeepers in the northern hemisphere have had to deal with varroa for much longer than in the southern hemisphere, their experience shows what could be in store for New Zealand beekeepers unless preventative measures are taken immediately. Latest news from the northern hemisphere about colony losses are disturbing. Preliminary figures have been released in the USA indicating 2022/3 losses approaching 50%.[1] In Britain, the British Beekeepers Association has launched a survey following reports of serious unexpected and unexplained losses by experienced beekeepers.



Gaining successful varroa 'drops' is only attainable long-term with an integrated pest management plan, just take it from northern hemisphere beekeepers' experiences, warns Vita Bee Health's Sebastian Owen.

RESISTANCE RESEARCH

Ground-breaking work on varroa mites' resistance to treatments is being undertaken in France by Apinov, honey bee specialist based in La Rochelle with strong university connections. Apinov has been monitoring mites that have become resistant to different active ingredients and believe that it has developed as a result of repeated and possibly incorrect use of treatments. The multi-organisational research team has noticed an increase in resistant mites to different active ingredients that have gone from being mildly resistant to highly resistant in just five years, meaning that certain treatments are currently ineffective in particular areas.[2]

Unfortunately, different mutations may be responsible for resistance to the same treatments in other parts of the world, so it is vitally important to do everything to inhibit resistance appearing in the first place.

THE RISKS OF DIY TREATMENTS

As a result of the growing resistance, many French beekeepers have turned to other treatments, particularly oxalic acid. As yet there is no research into the development of resistance to oxalic acid. However, it is generally believed that beekeepers are buying raw materials and applying them – an illegal practice in many countries. Apinov hears regular reports of colony losses even after twice-yearly treatments that include oxalic acid treatment mid-winter.

As New Zealanders experience the effects of poor seasonal weather and beekeepers have faced an economic downturn, treating for varroa mites with the most effective products may not be deemed a top priority. However, poor or no treatment to control varroa populations seem already to be taking an enormous toll and adding to beekeeper and honey bee misfortunes.

A recent survey has shown that in New Zealand 13.5% (98,000) of all colonies healthy at the start of last winter were lost because of either wasp attacks, problems with queen bees, varroa mite infestations or suspected starvation.[3]

Reports also suggest that many beekeepers are using low-cost DIY oxalic acid varroa treatments. While oxalic acid can be an

effective varroa control treatment, it is essential that it is supplied in the correct dosage and following manufacturers' instructions precisely. As Rusty Burlew has pointed out it's a toxic product ("the dose makes the poison") and requires very careful planning before use because it kills only phoretic mites (not those in capped brood cells) and to be most effective application should be at a time when a colony is broodless.[4]

As the French experience indicates, treatment without following protocols is also likely to lead to resistance issues, although rigorous scientific resistance studies of this unregulated treatment have yet to be undertaken. Nonetheless, the sub-lethal effects of casual treatment regimes are already well known.[5]

THE WAY FORWARD TO INHIBIT RESISTANCE

For New Zealand beekeepers, permitted treatments to control varroa include fluvalinate (Apistan), flumethrin (Bayvarol), amitraz (Apivar, Apitraz), formic acid (FormicPro), thymol and other essential oils (Apiguard, ApiLifeVar, ApiBioxal).

However, alternating treatments is essential to inhibit the development of resistance. Treatments permitted for use in organic farming in the European Union, are increasingly popular in the northern hemisphere and are an ideal component of an integrated pest management programme (IPM).

Resistance develops not just to the active ingredients of a treatment. Mite behaviour can help develop a form of resistance and can be expressed in mutations, so applying different active ingredients in the same way (by strips or by fumigation, for example) can lead to mutations which can lead to resistance to different active ingredients. Therefore, leaving products inside a hive is especially bad because not only does the dosage of active ingredient fall and long-time exposure can lead to resistance, but also the very presence of strips for a long period can help develop resistance to products containing any active ingredient by changing mite behaviours.

As New Zealand beekeepers have found, the presence of varroa radically alters some beekeeping practices. However, readers can take advantage of lessons learned in the northern hemisphere where varroa has been present for much longer. The key message is to deploy IPM techniques: monitor mite populations to determine when to treat and use treatments with different modes of action to avoid, or at least delay, the development of resistant mites.

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Auckland Urban Apiarist a "Great Ambassador"

Auckland beekeeper Kim Kneijber has a major commitment to beekeeping education and has been prominent in the region inspecting hives as an Authorised Person 2 (AP2), earning herself the American Foulbrood (AFB) Pest Management Plan Agency's inaugural "Great Ambassador Award" for the Northern region this year. Maggie James chats with the hobbyist-turned-semi-commercial beekeeper about urban beekeeping, industry training, hobbyist-commercial beekeeper relationships and her beekeeping journey.

BY MAGGIE JAMES

Twenty years ago Kim Kneijber would have laughed at the suggestion she would become a beekeeper. Total knowledge at the time was that bees make honey and they sting. However, at the advent of *Varroa destructor* in New Zealand, there was much publicity that bees would die out due to the parasite and Kneijber didn't want to see that happen. That's when she found another "beekeeper" to assist her ideology.

Auckland semi-commercial beekeeper Kim Kneijber is also an avid wool spinner and 'her shed' houses all Kneijber's tools of the trade – bees and wool related. The soon-to-be great grandma, not only shears her own sheep, but uses some of the fleece to insulate hives. Plus "bee boxes are great to hide the purchases of my other hobby, spinning and knitting, from my husband!" she quips.

From this elderly beekeeper Kneijber got second hand gear and was given the opportunity to take over an apiary. She was thus thrown in the deep end and became a member of the Auckland Beekeepers Club (ABC) to extend her knowledge base in the quest to save bees and fight varroa.

The first year of beekeeping was followed by an AFB Recognition course. It then dawned on Kneijber that she needed to promptly inspect her colonies because she had AFB! Kneijber had been constantly swapping frames between hives, and this was not the best practise for a beginner. Consequently, six colonies and all her beekeeping woodware were burnt.

"However, I was stubborn – bees found me and since the burning event I haven't looked back," Kneijber says.

She trained as a hobbyist for four years, then, on an early recruitment drive for AP2s, her name was put forward by the ABC. Kneijber had the luck of working under the well-known and highly respected ex-commercial Auckland beekeeper Bob Blair during her early days as an inspector.

"Bob was delightful and he made me into a nice AP2 working alongside him. He was a good gentleman to learn from," Kneijber reflects on the time in the early 2000s.

"Bob had many anecdotes including – it is interesting that a bee's sex changes when it stings you, and suddenly it becomes a bastard!"

As a hobbyist Kneijber started out with nucleus colonies in the city to help occupy her free time, but once the beekeeping bug hit, she moved to semi-commercial numbers.

"I had to ask myself, 'are you ready to do that?'. Luckily, we already had a business which, if necessary, I could fall back on. This allowed me to concentrate on my passion of bees.

"Urban beekeeping is so rewarding, because there are so many flowers for the bees. Unlike a lot of commercial beekeepers, I don't have to rely heavily on artificial feeding. I try to get my hives to support themselves naturally."

Kneijber and husband Gill own a lifestyle block near Auckland, but she finds the home apiary very short on honey production. These hives require artificial feeding for colony stimulation to pollinate their fruit trees.

While urban beekeeping might not allow for some of the stunning vistas of the backcountry, her apiary locations are not without their rewarding features. Such as one being on the front

balcony at the top of the Auckland Town Hall, the same building in which Queen Elizabeth II and The Beatles waved to the crowd from. The royal connection doesn't end there either, with Kneijber having visited Her Majesty's bees at Lambert Palace and Hyde Park during a trip to England.

Kneijber has tutored beekeeping for several years post-Covid, when the government offered 'fees-free' Level 3 apiculture courses. For a period it was full-time work, taking five courses and providing five of her own apiaries as training sites for her students. The eight-month course for part-time students produces good hobbyists, the Aucklander believes, but recently they had a major setback.

"During Cyclone Gabrielle, this February, I lost a whole educational apiary of 17 full-depth hives – all new brood boxes with full honey supers prepared by my students for harvest. Gabrielle flooded the apiary, sweeping the hives into one lot. On the top of the pile, the only surviving colony consisted of a queen and bees. The silt covered all the frames, and there was a very fine film over honey frames. This was very demoralising for students," Kneijber says.

She worked hard to produce a new colony for each student, and by March they all had received an established strong nuc colony, most of which got through winter, building up nicely this spring. Students had to clean everything, rebuild frames, use remaining washed honey frames, and in this instance feeding syrup. Kneijber donated much of her own wares.

"I was proud that all these students passed their course, but it would have been very easy for them to completely lose interest," she says.

Kim Kneijber at honey harvest time in Auckland.

"With pride I can say that I have produced some good hobbyist beekeepers, some of whom went on to work in the commercial sector. When I am teaching, I always emphasise there is generally more than one way to undertake a beekeeping task, and each person or outfit must choose the best option for themselves.

"A student must be aware that they can read books and Facebook, but they need to read the bees in their hives and consider what support action is needed to take with each colony. It's imperative to know how to help, what happens between visits, how to prevent disaster and what action to take."

These days tutoring and sharing knowledge is currently only once a month at the Kaipara Coast Plant Centre with a small group using six to eight hives, some owned by the Rodney Bee Club and the others by Kneijber. The Plant Centre are very supportive in promoting which plants are good for bees and beneficial insects, plus promote Bee Aware Month. So, it's a win-win for all.

"When in an educational apiary with a number of hives, it is good for the group to see different things in each hive, and have discussion as to the differences in colonies."

Two decades later, Kneijber is still a supporter of the ABC, attending field days when possible, and willing to give the Club advice as The Bee Master as required.

"Personally, I also enjoy helping through club talks. It's great to talk with other beekeepers, learning and sharing."

Kneijber also loves tutoring classroom AFB Recognition Courses, which she believes are better learning environments for the beekeepers than the online training sessions now offered.

"By attending a classroom course participants get to see AFB in a frame. I believe, you can't beat the hands-on educational experience of sighting a frame with cells of AFB to make visual diagnosis," she says.

Kneijber, if called upon, can undertake Recognition Courses in the commercial sector. One such recent Course combined four commercial outfits, with some taking the exam and others the refresher. It's a good way of making staff feel part of the responsibility to train and work together as a team and to network to support the eradication of AFB in their area.

"My aim is to not make these courses doom and gloom. The reward of discovering AFB is destroying it and not seeing it again in your hives. I try to make it a day that you are glad you came to, and participants come away with good moral."

She has also undertaken AP2 work on the exotic Biosecurity NZ Apiculture Surveillance Programme and has been a member of Apiculture New Zealand's Biosecurity and GIA Focus Group since 2017 – having taken her fight against bee diseases to the governance level.

Kneijber's work for the AFB Agency was recently recognised with the Great Ambassador Award for her area, which takes into consideration positive feedback received from all beekeepers whose apiaries were inspected by an AP2.

"I am always trying to prevent some old mens' tales that hobbyists are responsible for all AFB. I see this as a huge misnomer. Hobbyists make a big investment in hives and wares that are not cheap. There has been amazing improvement in hobbyist skills because of varroa, as compared to pre-varroa."

However, whilst hobbyist skills have improved, Kneijber has noticed big changes in equipment e.g. every year there is a new type of feeder, new bottom board, a multitude of entrance reducers and so on. All of these latest crazes are aimed at the hobbyist market and in terms of costs, this is a fact that hobbyists must be aware of.

Kneijber recognises that hobbyist bee clubs are great for beginners, but as beekeeper knowledge increases individuals outgrow the club scene, and to expand knowledge requires further networking. At the same time, she gives respect to the hard work commercial operators undertake.

"I would love to get back to bringing beekeepers together in Auckland. Maybe twice yearly, but unfortunately – for a variety of reasons – the atmosphere in the industry has changed."

If you wish to discuss any aspect of this story with Kim Kneijber email kimk_bees@hotmail.com

More than a Store: The Comvita Wellness Lab

The Comvita "Wellness Lab' in Auckland's CBD is nestled between Prince's Wharf and the Viaduct Harbour, surrounded by restaurants, ice-cream bars, and a souvenir store. The setting is a far cry from the farms, forests, and honey sheds that most beekeepers are used to. More than just a store, the Wellness Lab is a flagship project by New Zealand's largest honey company. West Auckland beekeeper Chris Northcott took a trip into the city with his daughter to find out what it is all about.

BY CHRIS NORTHCOTT

The Lab is managed by Comvita's "Bee and Nature Advocate", Noelani Waters. Waters hails from Big Island of Hawaii, where she previously worked as an apiary inspector and queen breeder. Now employed with Comvita, her role focuses on education within the company for new employees, and for community and business partnerships.

This is where the Lab fits in. It combines a retail store with a range of experiences for visitors and assists with Comvita's marketing goals. When Covid-19 closed New Zealand's borders to international visitors, it was an opportunity to "reset and reimagine" what can be done with a retail precinct that is targeting the higher end of the honey market.

The descriptor "Lab" was a nod to its relationship to science, and the mission to protect and heal nature. Comvita aims to be more than a business. Its mission is outlined in its "Harmony Plan", whereby 1% of profits are directed into charities and partners that foster biodiversity, bee welfare, forest regeneration, community education, and decarbonization. Aspiring to plant one mānuka tree for every pot of mānuka honey they sell (currently nearing seven million), Waters explains that Comvita is "one of the largest private managers of native forests in New Zealand".

There are two spaces that make up the Wellness Lab. The first part is the store – although it might be mistaken for an apiculture-themed art gallery combined with a museum. Looking around there is a lot to take in. The first thing to catch the eye is a wide and tall "honey wall" displaying spherical bottles of different coloured honeys. A display cabinet exhibits artefacts from the history of the Comvita business (founded 1974), beekeeping tools and products, and Māori culture as it connects to apiculture. Above there is ceiling décor with the appearance of metallic chainmail fashioned to represent the comb of a wild beehive—built by the company that made the armour for the Lord of the Rings films. On one wall are hand-blown glass globes which hold different scents to take a whiff from. Honey tasting is available too, and visitors can sample the difference between UMF 5+ and UMF 25+ mānuka, as well as compare tastes with clover and rewarewa honeys. My daughter was pleased to take home some mānuka honey lollypops for her and her siblings.

A small, but plush, theatre allows Comvita to take visitors to the Auckland Wellness Lab on an immersive experience of bees and honey.

Comvita's "Wellness Lab" in downtown Auckland is a world away from your typical New Zealand apiary, but designed to bridge the gap between those who produce honey, and those who eat it.

Everything is specially designed by New Zealand artists and sourced locally from natural materials. The floorboards are recycled matai, while the countertop is a Far North swamp kauri slab, and a holding bench is Timaru bluestone. The purpose of all this is to facilitate interaction and experience. "We want people to feel something", Waters explains. The store part of the Wellness Lab is designed to draw out natural curiosity and engage the senses.

Behind the store, in a separate room, is a very different kind of space. This is fitted out as a very small cinema, comprising eight

single-seater armchairs and a 180° wrap-around screen powered by multiple projectors. Waters explains there is a 15-minute session and a 45–60-minute session. During our visit we experienced the shorter show. In it we are introduced to Comvita co-founder Alan Bougen and Noelani Waters in her role as the Wellness Lab manager, and taken on an animated journey that begins in outer space above New Zealand and descends toward Mt Taranaki before traversing the King Country to Mt Ruapehu. Viewers are shown animated bees in a hive, foraging bees at a clover field, and more bees foraging among mānuka scrub. During these floral vistas we are invited to sample both clover and mānuka honeys, provided for each viewer on a small arm-tray of each chair, complete with glass tasting rod, sparkling water, and wafer crackers for palate cleansing. The presentation invites us to visualize and describe the tastes of each honey (a difficult act of creativity!) before providing its own artsy take on the taste experience.

The 15-minute session is free and ideally should be booked in advance. The longer session is reserved for VIP guests and is designed for building connections with stakeholders such as business leaders and overseas delegates. This session showcases mānuka honey, focussing on the health aspect of the honey together with the research and the marketed information such as the UMF rating system. Both presentations aim to introduce the story behind a pot of honey on the supermarket shelf, and to educate people about beekeeping, as well as the flora that produce some of New Zealand's famous honey varieties.

The Wellness Lab is designed to provide experiences for everyday visitors as well as more engaged stakeholders, such as business leaders and international delegates.

The Auckland Wellness Lab is the only retail space that is fully owned by Comvita, and the only of its kind in the world. There are plans for opening similar stores in the USA and China. The Auckland store trials the viability of Wellness Labs abroad for promoting Comvita's brand and mission. It is a small but impressive outfit, and well worth a visit for beekeepers, who find themselves in downtown Auckland, to see how Comvita is bridging the gap between those who produce honey, and those who eat it.

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A Very Special Honey(bee)...

The battle against varroa is ongoing and getting more challenging, so some beekeepers and scientists are exploring how harnessing the right genetic attributes in our bee stocks might aid resistance to the mite. Science writer Dave Black explores varroa sensitive hygiene (VSH), explaining what it is, how it is measured, and learning of some research in our own backyard which hints at its worth.

BY DAVE BLACK

There is plenty of evidence that honey bee colonies react differently to varroa mites and are therefore better or worse at surviving. Crudely, some live and some die. As the difference is likely to be hereditary, selecting the better ones and using these to reproduce more resilient colonies is an obvious strategy for preserving the stock. While it would be good to know just which feature confers a degree of protection, people have been selecting and breeding plants and animals effectively for a long time without that kind of knowledge. Even when we do know what the feature is, the odds on it being a combination of things determined by complex and possibly conflicted characteristics is pretty good. Stock improvement can take a (very) long time.

One of the traits that seems to allow some measure of tolerance for varroa has become known as 'Varroa Sensitive Hygiene'. It's actually a collection of 'skills' enabled by 100s of genes regulating chemosensory perception, behaviour, cognition, learning, and memory, something everyone is still struggling to understand after years of work and not something you can easily 'see'.

Plant and Foor Research scientist Dr James Sainsbury co-authored a paper in 2022 which found, by selecting for specific genetic markers, honey bee colonies' varroa infestations were reduced by 28.5%, a "promising" finding the authors say.

MEASURING VSH

Finding the characteristic is based on measuring population growth of mites, do the mites increase in number (bad) or decrease (good)? Worker bees do not display VSH characteristics until at least 10 days past eclosion (that's emerging, so 31 days since the egg was laid). To see evidence of VSH you examine brood for mites after the (capped) 3-day pre-pupa stage, 4-6 days post capping. It's important to have enough bees and brood at the right age, so in a newly established test colony it's about six weeks before you will see (or not see) signs of VSH behaviour. It requires careful counts (generally with a microscope) lots of colonies and diligent attention to the composition of the colony, the timing of manipulations, and standardised methods. There have been attempts to streamline the work, by introducing infested brood of a specific age, or looking for uncapped and recapped cells, and it's been quite common (but not ideal) to be looking for signs of general hygiene (dead brood removal) as a proxy for the VSH behaviour itself.

NOT MEASURING VSH

Although we can't yet say what *causes* VSH and mite tolerance, or how it might work, scientists have been able to find some, usually non-functional, genetic features (let's call them 'markers') that always seem to be *associated* with a VSH outcome. We're at the point where the infrastructure for identifying these markers exists and is relatively cheap and quick (at least in 'developed' countries). That way we can screen colonies (really just the queens) for the marker and safely assume the ones that have it are in the 'better' and not the 'worse' category. We should also be able to screen drone-rearing colonies to maximise the probability of the marker appearing.

MARKER ASSISTED SELECTION IN NEW ZEALAND

The principle behind Marker Assisted Selection (MAS) in breeding has been understood since the 1930s, but the real value began to be realized in the late '80s as our knowledge of genomes and DNA improved. It has been successfully applied to crops, livestock, arboriculture and aquaculture, and 'maps' of molecular markers have been published for lots of species. There is still debate about the kind of marker to use in different circumstances. The initial iteration of

Ashburton beekeeper Rae Butler has been prominent in breeding for and promoting the value of VSH in honey bee stocks in New Zealand for decades, including recently launching the New Zealand Bee Breeders Association to aid sharing of information.

the honey bee genome (Amel_v1.0) was published in 2003 (by Gene Robinson) and chromosome maps completed in 2006 (Amel_v4.0)[1], and potential candidates for markers were being sought from about 2010.

Last year Dr James Sainsbury (from Plant & Food Research), with a number of co-authors, published an Open Access paper describing the use of one marker identified by an American team in 2012[2]. It described a method to improve stock at Coast to Coast Bees in a apiary near Hamilton. The idea was to see if using that marker, also found in New Zealand bees, to select queens would result in an appreciable reduction in varroa mite levels.

Forty colonies were all set up in December 2017, treated with Bayvarol, checked (alcohol washes), and equalised. They were requeened with queens that had been genotyped (so their 'marker status' was known) by testing wing clippings and formed into a 'control' group (marker absent) and a 'treatment' group (marker present). In January 2018 a monitoring round determined their initial mite status and ten weeks later the test was repeated. After that final assessment the colonies were treated with Bayvarol and Apivar for four weeks (one brood cycle) while the mites were monitored with sticky boards (Hive Doctor floors).

While initial mite levels were low at the start of the experiment the study reported a 28.5% drop in mite levels compared to the 'control' colonies, and no difference in colony size. The study does not, and was not intended to, show the reduction was due to VSH; it does indicate it was co-related with the marker, and no bees or researchers were harmed in the process. The marker was shown to be present in about half of 179 New Zealand queens tested. There is a lot more to do, multiple, better, markers, selected drones, perhaps markers that can be identified in the apiary, and figuring out how to select the queens without promoting in-bred stocks.

Even if the marker proves useful, we are still a few years away, and using it requires a bit of organisational rigour, but, if nothing else, speeding up the VSH selection process has the potential for many more beekeepers to reduce the number of treatments that must be applied, or to use a more benign medicine.

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Book review – Bumblebee Keeper

BY ROGER BRAY

Bumblebee Keeper: A personal story of pollinator management. Author: Nelson Pomeroy

I have read a number of beekeeping books, including some very old books that are now historic. When asked to review Bumblebee Keeper I initially thought, 'another insect book?'

Reading the preface of the author, Nelson Pomeroy, suggests this book is more than just an insect book. It is documentation of learning about bumblebees by Nelson from a childhood fascination to a lifetime of employment developing the keeping of bumble bees. The book covers how Nelson developed the types of bumble bee nests and overwintering of queens that provided bees to be used for specific pollination purposes.

When we look at the history of honey bee keeping, a large amount of the discoveries relating to beekeeping have not been recorded as it had been a simple process to rob bees of honey from their natural homes in hollow trees and other cavities. A destructive process that generally ended with the death of the colony. The beekeeping that developed 5,000 years ago in ancient Egypt, and other places in the world, relied on natural swarming with the beekeeper providing a container that had a cavity bees could occupy and fill with their honey and brood.

It wasn't until people like Huber and Langstroth developed moveable frame hives and made advances in the extraction of honey that beekeeping really progressed from the mid-1800s. Then too, Dadant, Root and others started a written record to spread information on development of equipment and spread knowledge of beekeeping through their books and magazines. A fair amount of the development of beekeeping and the spread of knowledge had been completed within 100 years. In recent beekeeping history there have been few substantial industry developments since Von Frisch worked out the secrets of the bee dance.

There it is in a nutshell, much of the beekeeping industry of today has been as a result of some key developments that have been conveyed for others to build upon as changing situations provide.

In Bumblebee Keeper I saw a publication similar to those that have been written describing the development of the honey industry as we know it today. I consider Nelson's contribution to bumblebee keeping and the documentation of his work with the same respect I have for the pioneers of early honey beekeeping already listed.

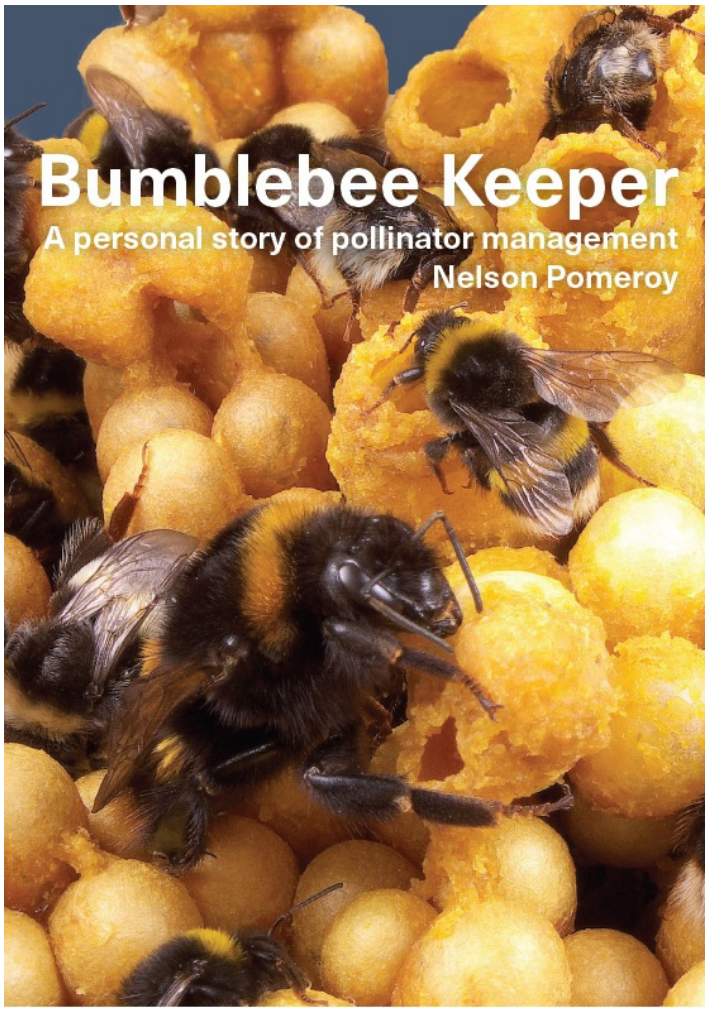
What struck me with Nelson's book was the devotion he had to learning about bumble bees and the developments he, and a small group of his colleagues, made to domesticate, and commercialise a species of animal that offered all sorts of hurdles to successfully being able to breed numbers of bumblebee colonies on demand.

Nelson describes how luck, and a childhood obsession if you like, played a part in being in a position to be able to observe the life cycles of bumble bees as they went from overwintering as a queen and starting a nest, to be populated by her offspring as the colony developed. He describes the opportunities he accepted that allowed him financial return while developing his passion.

This book would appeal to anybody that has an interest in insects. Its text is in everyday language with pages generously stacked with photos and diagrams that show the inner workings of bumble bee colonies. I see the book invaluable to those growing crops needing insect pollination in situations that honey bees may not be able to sustain. The development of netted orchards and indoor horticulture poses all sorts of hurdles for honey bees, therefore consideration must be given to bumble bee pollination. Bumble bee pollination has been successful in glasshouse growing of high value crops. The book also provides reference material for scientists to further develop bumble bee keeping, perhaps into a hobby that people can enjoy in their back yards.

I thoroughly recommend Nelson's book. It is a great read which I believe will one day become a historic (bumble bee) book.

The Bumblebee Keeper by Nelson Pomeroy is published by Northern Bee Books, UK. It is sold in New Zealand via https://bumblebeekeeper.com/ $48.30 incl GST.



In his new book, Bumblebee Keeper, Nelson Pomeroy provides a candid account of his career as a student, scientist, businessman and teacher, as he details most aspects of working with bumblebees.

Wind, Wind, Go Away

Welcome to October's look inside Marlborough commercial beekeeping business Pyramid Apiaries, where operations are already near full-noise still early in spring.

BY PATRICK DAWKINS, OWNER

In September and October we pray for 'good' weather. Hoping for supportive weather conditions is nothing new for farmers of any variety and as beekeepers we all turn our eyes to the sky first thing in the morning during honey season. However, for many – Pyramid Apiaries included – the spring months are just as important. That's because September and October are the alluringly titled "mating season", and pollination season too (which is the trees' kind of mating I suppose).

I spent September caging around 300 mated, over-wintered queens over three weekends for our beekeeping clients all around the motu, and replacing them with queen cells destined to follow similar travel itineraries as spring-mated queens in a month's time. That is, if the weather plays ball. Like much of New Zealand, spring can be gusty in Marlborough. While we put everything within our powers in the virgin queen's favour for a successful mating – such as mating-yard locations, ensuring the presence of mature drones before cells go out, and strong, healthy mating units – we still rely on warm enough weather to get both drones and virgins flying, and still enough conditions to get the female half of the equation home safely.

The weekend of September 16-17 saw gale force winds batter much of central New Zealand and it made getting the consignment of queens caged and ready for sending on Monday challenging, but we got it done. Luckily, not many of our virgin queens would have hatched by then so we are hopeful it won't impact matings too badly. What it has impacted is one of the two cherry orchards the Pyramid hives pollinate.

We have around 120 hives across the two orchards, of which there is now only a handful in this wine-dominated region. During the winter months I met with both orchardists and stressed the need for us to maintain hive strength by providing gaps in their nets nearby to hives, to allow better orientation by the bees. It followed setbacks to the hives' strengths in recent years and also

research conducted by Plant and Food Research which indicated that gaps in nets were beneficial to improved pollination success. Luckily for us the growers were receptive to the idea, but at one orchard the work was done for them…

I started this column with talk of beekeeping prayers, and I guess mine were answered when the huge wind gusts destroyed over half of one orchard's nets just days after our hives started to move in. In all seriousness, it is a terrible situation for the owners who are now on the clock to get the old nets off, have replacement nets arrive, and get them up before the birds move in later in October. It's a labour-intensive process and they too will be hoping for wind-free days to make the job easier.

Open sky where nets should be. Cherrybank Orchard in Marlborough has a race on their hands to get new nets up after the old covers were destroyed by wind.

A consignment of caged queens gets a last drop of water before hitting the 'road'.

We need the temperatures to rise to assist the forager bees to get out and pollinating too. I've spent the last two months getting around the hives and preparing them for their September and October work and they are strong and ready to go to work, but it will be all for naught without decent weather windows.

Many beekeepers and orchardists around the country will be in the same position and beekeepers in the far north are already hoping for conditions receptive to a nectar flow on the early-flowering mānuka. In Southland there's recent flooding to contend with too. Wherever you are and whatever your bees are doing, here's hoping Mother Nature plays ball…

The Withering Away of the State

The public service has been a key talking point for political parties in the run up to the national election this month. Ian Fletcher has sat atop various public service departments across several countries. He weighs in on an issue that is far more complex than some politicians are making out.

BY IAN FLETCHER

Classical Marxism talked of the 'withering away of the State' as socialism inevitably advanced (the actual phrase is from Engels, and is a translation from German). But the idea was common to the writing of Marx and Lenin too. Looking around the world, it's an idea that hasn't really worked out (to say the least). Yet it's an idea that seems to resonate in New Zealand.

In our current election, both National and Act talk boastfully about the size of the cuts they will make to the public service. No one is seriously defending the public service (and anyone who reads what I write will know I think there's a lot wrong with it). But – unless National and Act are really Marxist – then talk of big cuts is just showing off, and avoids the hard questions that need to be asked about the way the public service should work.

Any government needs a public service to actually do stuff, to implement policies, create and enforce laws, look after beneficiaries, manage the health and education systems and so on. So just cutting the public service thoughtlessly harms the community. It's as sensible as a runner asking for shorter legs. It also assumes all public servants are equal – comparing a statistician to a call centre worker. Both are valuable, but in different ways to different people. Try explaining why one should stay and the other go?

But there are obviously things that need fixing. What should the public service look like? Here, it can be good to think about capability and capacity. Capability is the ability to understand

and solve problems. Capacity is having enough people or resources to make solutions work at the scale needed to be meaningful, without dropping other important jobs. One without the other is useless.

What does that mean for New Zealand? Some jobs need a combination of judgement and efficiency (managing benefits, collecting most taxes, issuing most visas, managing most of the stuff going through the courts). Here we need folk, probably supported by AI and other online and self-help systems, who can manage cases fairly and consistently, and who know when to raise their hand and escalate the difficult cases. An incoming government should think about getting the right people, supporting them for long-term careers that don't change too much, and buying the IT systems to give them and their customers the best support.

Over time, if this works, we should expect staff numbers to fall, productivity to rise, and customer/taxpayer satisfaction to be high. This is not to underestimate these jobs: anyone who has sat for a couple of hours listening to callers in a government call centre (I've done it in the UK and Australia) knows that it takes a lot of skill, empathy and humanity to deal fairly and calmly with our fellow citizens in need, or even just doing business. And this is core work for the public service. Slash and burn by an incoming government is just what they don't need.

Other people are needed to help politicians deal with the new, unexpected or just complicated problems governments face. Everything from tax policy to disaster response. Governments face complex trade-offs, a shifting media landscape, and "events, dear boy, events" as Harold McMillan (then UK Prime Minister) replied when asked what would blow a government off course. The key point here is that experience and acquired skill helps: politicians are perhaps professionals at politics, but they're amateurs at actual government. As taxpayers we all get a better deal if we ensure they are supported by skilled professionals.

That means our public service also needs a group of people who can tackle a range of complex problems, and are organised flexibly enough to be responsive. This isn't an argument for 'generalists' or for gifted amateurs. It means having people with proper skills – lawyers, statisticians, engineers, biologists, climatologists and so on, and making sure their skills are current, and they can be used effectively.

Two things follow from that which go against New Zealand's current public service system and culture. The first is the erroneous belief that a single Chief Executive can be responsible for a whole department. It's fanciful, magical thinking. The actual result is that Chief Executives don't really know what's going on, and they either take credit for others' work (when things go well), or become the fall guy or girl (when things go wrong). I've been a public sector Chief Executive in three countries, and believe me, this is the truth. We need genuinely collective management of complex organisations and tasks.

The second erroneous belief is that you can just appoint people to jobs without really investing in their long-term career and skills. For better or worse, the public service should be a career service with centralised career management.

Of course, this all means more middle managers. So, let's also deal with that myth. Middle managers make the coordinating decisions and hold the institutional memory that knits any organisation together over time. Eliminating them (as is happening is Te Whatu Ora now) is like giving yourself a lobotomy. You will

Public services commissioner Peter Hughes will depart the role in February and Ian Fletcher believes the choice of his replacement will be the most consequential decision of the incoming government.

forget stuff. Things will go wrong. Just watch. Middle management is also the place where more senior managers get trained and learn, in a supportive environment. It takes time.

All this is an argument to reform the public service, not just slash it. Marx and Co were wrong: the state won't wither away, but it can shrivel into incompetence. A good public service makes any government more effective, delivers routine services humanely, and responds to the unexpected effectively. That means the most consequential single decision for the new Government will be the appointment of the new Public Service Commissioner (the job comes vacant in February). It's a decision that won't get anywhere near the scrutiny it deserves.

And if I were the new Commissioner, where would I start? Biosecurity. Our biggest point of exposure. Beekeepers are in the front line. Just watch.

Ian Fletcher is a former head of New Zealand's security agency, the GCSB, chief executive of the UK Patents Office, free trade negotiator with the European Commission and biosecurity expert for the Queensland government. These days he is a commercial flower grower in the Wairarapa and consultant to the apiculture industry with NZ Beekeeping Inc.

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