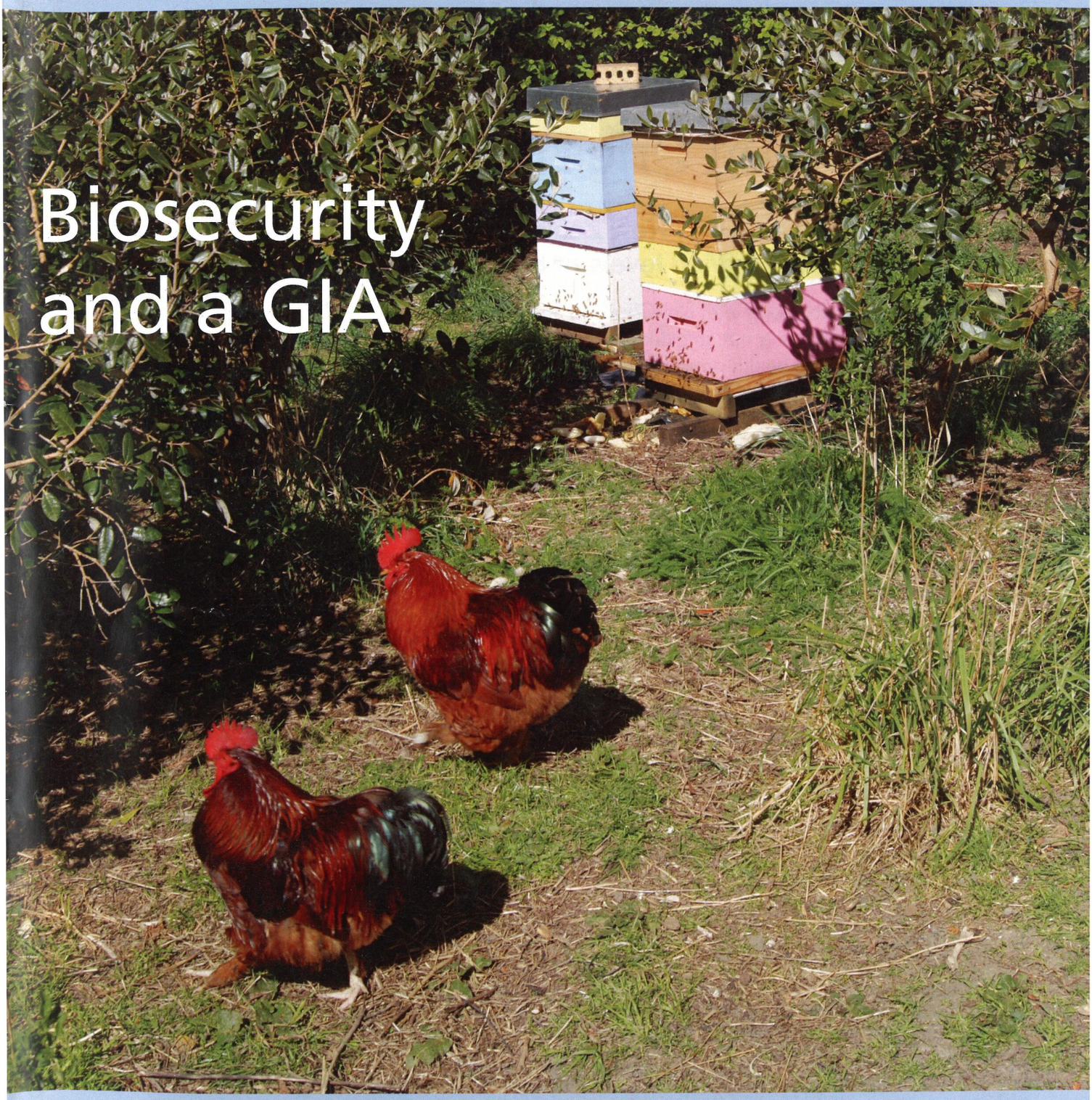
May 2014, Volume 22 No. 4

The NEW ZEALAND BeeKeeper



Biosecurity and a GIA

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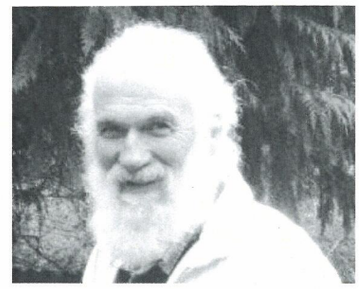
Contents

Front cover: Hives with roosters, taken by Marina Steinke near Little River, Canterbury. Marina remarks, "chooks don't seem to eat bees—unlike guinea fowl, who love them".

Biosecurity and a GIA

By Ricki Leahy, NBA President



Sometimes I find it quite difficult to decide what I should write about each month. I'm staring at another old coffee mug and its humorous message *'I used to be indecisive but now I'm not so sure....'*

I do know that I need to make some further remarks about the Government Industry Agreement (GIA). Some alarming comments have been made regarding the cost of GIA to beekeepers that seem to emphasise discouraging any further involvement. We must work with hard facts rather than opinions and guesstimates.

GIA may be good for our industry. It may simply be unworkable. But at this stage it's too early to tell with any certainty because we don't know enough. That's why the Executive Council (EC) is proceeding slowly and cautiously to suss out what's in GIA for us. It's very important, in my opinion, for us to focus on the systems and to analyse benefits, probabilities of success, etc. Then we can follow the threads through the industry sector that connect us to other stakeholders. We may be pleasantly surprised as to how much financial support that beekeeping actually has.

Remember that one in every three spoonfuls of food we eat depends on our bees, and five billion dollars of produce in New Zealand is directly dependent on our bees for pollination. That is a lot of dependent potential. Biosecurity holds hands with our bees' health.

As you may have read in last month's journal, the NBA work plan lists biosecurity and bee health as two of the key issues facing the industry. One of the strategic pillars is for us to co-ordinate and lead activities that protect the health of our bees. One of the key supporting goals is for bee health to be prioritised as a work stream. Another key supporting goal is that biosecurity measures are to be considered satisfactory by the beekeeping industry.

Of course, we will need to continue with our ongoing activities, and costs undoubtedly will be involved.

For instance, incursion surveillance could be one of those activities, but surely a way could be found for that to be managed as an in-kind industry contribution. I have no idea at this stage how incursion surveillance would work, but surely it presents a great deal of scope for various ways and means. Incursion surveillance could, however, involve beekeepers in certain strategic places contracting their services to the industry, either to manage sentinel hives or to have their own hives on sites to monitor and check or take samples as required.

Also, we could utilise high-tech gadgetry that lets us know when a swarm arrives in a swarm box. Apparently something similar using cellphones is done in Australia. We as an industry need to focus on how we can make our biosecurity work with a GIA and put our energies there, rather than giving up at the first hurdle. The small hive beetle exercise coming up later this month looks to me to have a comprehensive and very well documented plan that will increase our understanding of how a response will work under a GIA.

> **"Biosecurity holds hands with our bees' health."**

We beekeepers should sit up and notice that the world is changing. If we thought that our business plan of 20 years ago was still relevant today, think again. All things have a desire to survive, whether it be a plant, a creature of the sea, an animal of the jungle: even an organisation like our NBA or perhaps your own business. If anything in this changing world wants to survive, it has to cope with change.

You may have started your beekeeping ventures years ago and cornered enough apiary sites to satisfy your growth intentions. But you might now be affected by new pressures, such as other beekeepers looking for sites that encroach on your area. That is a fact of business life. You can't expect to live your whole life being dependent on that business plan of 10 or 20 years ago. You have to be prepared to adapt and change.

It is the same with our biosecurity: things are changing and we need to get over it. Even if we disagree with some elements, surely there is a positive way of suggesting how we could make it work so that we achieve our goal of satisfactory and affordable biosecurity.

Conference update

The New Zealand Apiculture Industry Conference is creeping up so if you intend to go, register early so the workload doesn't all come piling in at the last minute for the organising committee.

Tuesday, 24 June is devoted to industry issues, which will give us the opportunity to discuss how we can work together to find ways to resolve our industry's pressing needs. Hopefully there will be some good solid direction from the floor to encourage industry unity and to achieve greater beekeeper input from those who at present choose not to participate. Perhaps we will find ways to raise sufficient funding for research and, at the same time, to maintain robust biosecurity and protect our bee health. There is a lot to think about but if we all choose to row the boat in the same direction, then no tide will stop us.

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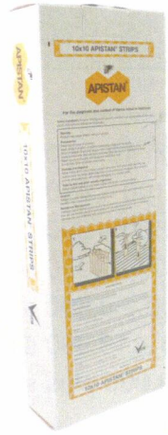

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The costs of surveillance

The Canterbury Branch report in the April 2014 journal (pages 39 and 41) estimated that a GIA levy would cost between $8–14 per hive. Following is an explanation of this estimate written by Branch president Brian Lancaster, and a response from Southern North Island Branch secretary Frank Lindsay.

How did the Canterbury Branch get to the conclusion of an estimate of $8–14 per hive for a GIA levy? We have only to look at the South Island Varroa Pest Management Strategy for the answer.

The strategy was designed by the best minds in the country to detect varroa at a level that was possible to eradicate. The feasibility study presented by MAF stated, from memory, that it was economically feasible and government was prepared to make an attempt every 10 years if required.

Now the cost of that strategy to beekeepers was $2 per hive; however, what everyone is forgetting is that beekeepers only picked up 25% of the cost of the strategy. The other 75% was paid for by South Island regional councils. The real cost of the strategy, expressed in hive terms, was in fact nearer to $8 per hive in 2002 dollars. If we take the price of honey as an arbitrary indicator of inflation, the cost of the strategy would be nearer $15 in today's money.

Remember that MAF wouldn't recommend eradication to the then-government, stating, among other things, that it was "No longer technically feasible". This is technical-speak for 'we didn't find it soon enough'. This is tantamount to admitting that their matrix was wrong and more surveillance was required than the experts had thought. I'm surmising 50% more surveillance may have worked, which would have made our strategy much more expensive.

The Ministry for Primary Industries (MPI) is keen to do a small hive beetle (SHB) response this winter, so I guess this is where they see our next major threat.

Varroa eradication, in my opinion, would be a walk in the park compared to SHB. I say this because varroa cannot live away from a hive for more than a few days and its only host is honey bees. SHB can survive away from a hive for weeks, even months and fly or crawl by itself, and complete its life cycle without using honey bees.

Considering that SHB also is likely to travel on fruit, plants, silage and soil at any stage of its life cycle and still be viable, the beetle would be next to impossible to eradicate, even if other industries, or our fellow beekeepers would let us.

According to an Australian expert, to have any hope of early detection of SHB, we would need to be sampling our hives at least four times per year, and at least 20–40 miles from a likely point of entry. Take into account outdoor-type international travellers and we would need to be surveilling nearly the whole country.

Even on the most conservative terms, testing twice a year would be $15 x 2, or $30 per hive for one pest. Anything less than this is a total waste of money and resources (that is, unless you have the contract for administration of the levy and/or surveillance work; then it doesn't matter, as long as the levy rolls in). This is what our leaders are considering on our behalf.

Other diseases that are of a large concern to us are European foulbrood (EFB), Israeli Acute Paralysis Virus (IAPV), and maybe tobacco ringspot virus (TRSV). While the costs of sampling for viruses would not be quite as expensive (there would be some economies of scale, assuming there was already surveillance for SHB), it would still be a significant cost on a per-hive basis to detect it at a point where eradication could even be considered.

The champions of GIA will inform you that we have the ability to sign up to GIA, strike a levy at zero, do nothing and when a threat is realised our industry can take out a loan from the Government, mount a delimiting survey and then attempt to eradicate or contain. What is not mentioned is that a maximum levy (of say, $40) will be struck and all beekeepers will be levied up to this rate until the response is paid in full. As an industry it would be despicable if we committed ourselves and future beekeepers to having to honour a blank cheque. Imagine how hard it would be to sell your business during an ongoing eradication attempt with unknown GIA levies attached.

What has shown up in the stats is that government has spent $20 million on varroa between 2005 and 2009. I'm not entirely sure what this money was allocated for, but under GIA we could be facing a bill of up to $40 per hive. For what? And how much say would we have had on how that money was spent realistically?

Suppose we are talking about paying for a small hive beetle response from MPI that requires a levy struck at $40 for three years. Assuming the response is unsuccessful, which we all believe it would be, the average beekeeper running 800 hives has just shelled out $96,000. I'm sure in every case that this money would have been better spent on chillers to control the bug. I don't know what our leaders make from bees each year but I do know that I couldn't pay the levy and buy the chillers. Please ask yourselves, "Can my business afford to do both?".

A report by Kim Van Vurren was commissioned to determine the effect of varroa on South Island beekeepers as background for the South Island Varroa PMS. That report stated that if varroa was endemic in the South Island, beekeeper numbers would dwindle and beekeeping would become unviable. MAF implied during

the roadshows that they were doing us a great favour by charging us only $2 per hive, because they could protect us from varroa. We all know what happened.

On the bright side, we no longer have a Varroa PMS levy; the downside is we have the costs of treating varroa. My question to MPI (as you are still the same department) is what has changed so that the South Island beekeepers can now afford another levy on top of varroa treatments. While it is laudable that our leaders want to attempt eradication to protect our industry, we beekeepers who make our living managing bees must be able to keep some of the dollars we make. Nothing will destroy our industry quicker than excessive taxation, and to make matters worse, taxation that we have agreed to!

The GIA champions will also tell you that we need to be at the table to have any say future responses/policy regarding our industry. This is a poor argument that holds no merit. The Deed Governance Group has no idea which diseases stand a chance of being eradicated, and which industries will stand aside and let us attempt eradication. We have asked these questions several times in this debate but to date have had no response. Obviously they have put no thought into the cost the average beekeeper is looking at. With regard to having a say about future policy, perhaps MPI, as a gesture of goodwill and as an expression of wanting to 'partner industry', will agree to a precautionary approach regarding protocols for imported bee products. It's a big ask to believe that MAF/MPI have suddenly had a change of heart and want to be our partner for a brighter future when their current actions indicate otherwise.

P.S.: While I understand our president stating that we need to be "sitting around the table to be part of the decision-making process", I fear we are being steered towards the wrong table. We need a say in import health standards and border control: GIA is not where this is going to happen in its present form. One only needs to read the first paragraph written by Andrew Coleman, MPI's Deputy Director General Compliance and Response, that "The Government Industry Agreement for Biosecurity Readiness and Response (GIA) provides the framework that will guide us in defining the detail of how we will work on both being ready and responding to biosecurity threats". There is absolutely no mention of having a say in import health standards.

- Brian Lancaster, Branch President

Reply from SNI Branch secretary Frank Lindsay

There is merit in what the Canterbury Branch says and I'm not totally convinced about GIA yet, but the costs will depend on what beekeepers want to fund. Yes, beekeepers are stretched financially, especially following a poor production season.

I was disappointed to learn that if beekeepers wanted extra surveillance, we would have to contribute to it. I believe we need greater surveillance around our ports and airports, and other places seen as possible threat sites (such as container storage areas), which is similar to the Australian set-up.

If beekeepers decide that additional surveillance is necessary, then it may involve an extra levy (different from the GIA component). Once-a-year surveillance is carried out basically to tell other countries that we 'haven't got' exotic pests or diseases.

If we don't increase surveillance, GIA isn't necessary, as the chances of finding anything early is reliant on a hobbyist in a city close to import facilities noticing something unusual in the hive. We will find an exotic pest or disease well after it's established and apart from defining its distribution, it's unlikely that we will be able to do anything except establish a no-go line between the North Island and South Island. The Government could also levy us for the cost of defining the outbreak even if we are not part of GIA.

The cost of increasing surveillance will possibly be four times what Government contributes now but not necessarily, and the surveillance wouldn't include every hive throughout the country. This surveillance is already undertaken by every beekeeper, every time they open a hive. Most check one or two frames in the brood chamber; otherwise, they have no idea of what's going on in the hive. If beekeepers saw a beetle (especially one that moved very fast), or spied some yellow-coloured larvae in a hive, they would investigate.

Look across the Tasman and see what the Australian Honey Industry Bee Council (AHBIC) is proposing as a cost for their levy. Commercial beekeepers produce between 100 and 300 kg per hive in a good year (and, like us, next to nothing in a drought year). But Australian beekeepers receive only half of what we do for their honey, so they are facing the same financial pressures.

AHBIC is looking at increasing their levy to raise an extra $460,000 ($380,000 for their National Biosecurity Strategy—the equivalent of our proposed GIA—and $75,000 for their pest surveillance programme). AHBIC already collects about half this amount for research and development (which the Australian Government matches dollar for dollar), and for their residue programme. This increase is the equivalent of $4 to 12 dollars per hive by New Zealand hive numbers standards.

Australian beekeepers pay their levy on production. Anybody producing more than 600 kilograms (six hives' worth of production) pays this levy, which is collected by the packer. The levy rate is currently 2.3 cents per kilogram (and is to be increased to 4.6 cents per kilogram). AHBIC also is lifting the 600-kilogram threshold to 1,500 kilograms per annum because the collection costs imposed on them are not cost effective for small producers.

Costs for New Zealand beekeepers also need to take into account the levy that we pay for the AFB National Pest Management Plan, so the total cost would be somewhere between what Canterbury Branch is suggesting and what I'm suggesting.

I consider the production levy to be a better system as beekeepers are not tempted to underestimate their hive numbers. If you sell honey, you pay a levy collected by the packer at a percentage fee, so packers wouldn't be out of pocket.

When you compare the cost to every beekeeper of an Apithor trap ($5.00) for small hive beetle (SHB) control, which will be required in every hive once we get SHB, surely it's better to put money in at the front end at a lesser rate so we can detect something coming into the country early.

A production levy would be on top of your varroa costs, which could be reduced substantially when we get tolerant bees, whether it be via our breeding programmes or importing 'virus-free' semen from some of the USA and Canadian programmes. Such an import could jump our tolerance technology ahead years.

We also badly need to set up a funding system for research and need to look closely at what we are spending money on. Has reducing AFB worked? Yes, but perhaps we should we give it a timeline and if it doesn't work in that timeframe, we should look for alternatives. Should we just live with AFB? It might be more costly if we look at the alternatives and the consequent loss of markets.

This is basically what the first day of conference is set up to discuss. Think about what the Canterbury Branch has been saying and write all your questions down and bring them to conference. Hopefully with everyone's agreement, we will be able to set up a blueprint for the industry and funding options to see us into the next five to 10 years.

OBITUARY

John Dudley Lorimer: 18/01/1915–16/04/2014

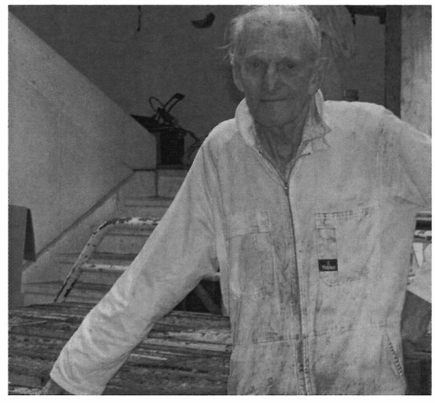
By Jane Lorimer, NBA Life Member

NBA Life Member Dudley Lorimer passed away in his 100th year on 16 April 2014. Sadly, he didn't quite make his goal of reaching 100 years old.

Dudley had been beekeeping from the age of six years old, when he boxed a swarm after seeing it when delivering food to harvesters on the family farm.

Beekeeping, however, was not his only interest. He had a strong belief in "community" and spent a large amount of time giving to others. He saw active service in WWII, although he was invalided out early with a shrapnel wound.

Dudley became a founding committee member of the Hamilton Junior Naturalist Club, based at Te Kauri Park on the way to Kawhia. The club teaches natural history to 11- to 17-year-old children, as well as snorkelling, kayaking and other adventure experiences.



Dudley standing by his 2006 honey crop after a hard day's work. Photo: Tony and Jane Lorimer.

Dudley also spent many years as Chairman of the Hillcrest School Parent Teachers Association. Other interests included Rotary, delivering meals on wheels to the "oldies" who were 20 years younger than he was. In later years, playing bridge became his most-beloved pastime–often playing at least two nights a week.

In the last few months of his life when he was wheelchair bound, Dudley lived for the days when his bridge-playing friends would visit him for a game. His brain was still sharp even though his body had failed him.

Each time I visited him, either the first or second question would be: "How are the bees doing?"

Dudley had and always will have a "love of the honeybee".

[Editor's note: We will publish a fuller tribute to Dudley in the June journal. If you would like to contribute your own memories or anecdotes, please email editor@nba.org.nz by 6 May.

We extend our condolences to Dudley's family. Correspondence can be sent to Tony and Jane Lorimer at 258 Tauwhare Road, RD3 Hamilton 3283 or via their email hunnybee_wave@ihug.co.nz]

Send us your burning questions!

Do you have a burning question about beekeeping? Are you worried about your beeswax? Mystified about moths moving in? Need help dealing with varroa and other pests? Well fear not, help is at hand.

Every keen beekeeper has a list of questions they'd love to know the answers to. Luckily, the NBA has local beekeeping brainboxes on hand to answer any beekeeping-related queries, from giving your hives a helping hand to sussing out your swarms. Whatever your question, simply email it to editor@nba.org.nz and we will post the answers in a future issue of *The New Zealand BeeKeeper.*

New website for Eva Crane Trust

By Richard Jones, Chairman, Eva Crane Trust

The Eva Crane Trust was formed by Dr Eva Crane herself. It was enhanced by the residue of her estate bequeathed to the Trust on her death in 2007.

Dr Crane's research was meticulous and she felt that the recording of information—so that original material could be traced and used by succeeding generations—was a vital part of her work. In her lifetime she had over 300 papers and articles published, and she contributed many learned tomes to the shelves of bee lovers worldwide.

The aim of the Trust is to continue Dr Crane's work in the way she would have liked it to evolve. This includes advancing the understanding of bees and beekeeping by the collection, collation and dissemination of science and research worldwide, as well as recording and propagating a further understanding of beekeeping practices through historical and contemporary discoveries.

The Trust, as well as being Dr Crane's way of ensuring her work continues, is a memorial whereby it may be possible to help fund others who can build on the foundations of sound academic research laid down in her many publications. Grants may be made to individuals and organisations that might otherwise find funding difficult in this specialised field. Applications will be considered from anywhere in the world but must be made in writing in the English language, preferably using the form on the website.

Dr Crane doing that at which she excelled: cross referencing material (circa 1978). Photo courtesy of the Eva Crane Trust.

The website, which will be developed and expanded in the coming months, can be found at: http://www.EvaCraneTrust.org

Similar information can be obtained by writing to: The Eva Crane Trust, c/o Withy King Solicitors, 5-6 Northumberland Buildings, Bath, BA1 2JE, UK

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Good news and spin doctoring

By Don MacLeod, Committee member

This article summarises recent Committee activities regarding pesticide use and labelling.

Good communications can protect bees

This case study is a very good news story.

On Friday, 28 March, I was contacted by Andrew Patullo, Forestry Manager for AGPRO NZ Limited, New Zealand's "biggest direct to end-user herbicide manufacturer" (http://www.agpro.co.nz).

Andrew was enquiring about the risks to honey bee hives from the use of an organosilicone surfactant which would be used in some gorse spraying.

The background is that Kintail Honey had a number of hives on a block of manuka on the East Coast this summer. This farm also has plenty of gorse. The plan was to aerial spray the gorse with a herbicide plus an organosilicone surfactant and eventually allow this land to revert to manuka for future honey production.

Andrew had been talking to the beekeeper (Damien Ward of Kintail Honey) and they had discussed the risks to the foraging bees on the property. As a result, Andrew phoned me for further advice.

It was confirmed in our telephone discussion that the manuka flowering had finished and that gorse flowering had started. This meant the bees were most likely already foraging in the gorse country and therefore any spraying may harm the bees. The best option was to move the bees and then spray the gorse.

I understood from Andrew's discussions with Kintail Honey that they were prepared to move the hives on the property, and after discussion this was agreed to as the best practice to protect the bees. We finalised the discussion on 31 March with a long phone call.

What I could not tell Andrew and Damien is when it would be safe to have the hives brought back on to the property. The reason is that there is very little ecological information on surfactants and their effects in the environment. The AGPRO organosilicone material safety data sheet (MSDS) issued on 1 April 2013 states that "complete (ecological) information is not yet available". Very little data are available on invertebrate bee safety of surfactants. Most surfactants are used in consumer and industrial products where they are contained (EPA Group Standard HSR2503) and are not tested for wide and dispersive use in the environment, such as in pesticide spraying.

I would like to recognise the excellent communication amongst all involved (Andrew, Damien and me) to discuss the issues and agree to a solution that would best protect the bees. There was no rush to spray tomorrow; the major concern was to do the best thing for the bees on the farm. Great news, guys.

Always watch for when the spin doctor shows up

Dow AgroSciences in the USA has recently published a nice glossy pamphlet titled *Bees and Sustainability*. (Dow AgroSciences USA, 2014.)

It says all the correct statements about how Dow cares about bees and pollination and at the same time promotes their new insecticide Isoclast™, which has the active ingredient sulfoxaflor.

Overall it is a very good promotional document and it gives appropriate warnings such as a very wise caution against unnecessary pesticide use.

But experience always advises me that there will be a stuff-up in these documents. Dow states that *"the best time to spray is at night; but, if necessary, early morning or evening applications, or applications when temperatures are cooler (less than 55°F [13°C]), help to reduce exposure to foraging bees."* (Dow AgroSciences USA, 2014; item 5, page 6).

Unfortunately it appears that this pamphlet was not written with any assistance from the Dow ANZ (Australia–New Zealand) team, which is a pity.

During the New Zealand Environmental Protection Authority (EPA) public hearing to approve sulfoxaflor in New Zealand, Dow asked for a temperature limit of lower than 12°C. The proposed warning read as follows:

> *"For treatments made to crops in flower or upwind of adjacent plants in flower that are likely to be visited by bees at the time of application, spraying should not occur during the daytime if temperatures within an hour after the completion of spraying are expected to exceed 12°C". (Email from Carolina Ortiz Padilla, Dow AgroSciences, Regulatory Specialist ANZ, 16 June 2013.)*

At the New Zealand EPA public hearing held on 4 September 2013 for EPA application ERMA200886, the NBA Technical and Submissions Committee opposed this limit on the following grounds:

1. there was no documented evidence presented by Dow that would scientifically support this cut-off
2. the NBA presented photographic evidence showing bees actively foraging at 10.7°C, and documented scientific evidence that bees begin foraging at 8.7°C to 11.5°C.

As a result, the EPA did not accept a measurable temperature limit for spraying or no spraying as proposed by Dow. (EPA Decision ERMA200886, November 2013.)

Now we can probably accept that the temperature of 13°C is marketing creep, but I note that 12.6°C is the conversion of 55°F. We can possibly accept that Dow proposed the temperature of 12°C to the New Zealand EPA as a sign that it supports the precautionary principle.

But on the same page, Dow includes a picture of a bumble bee foraging in a flower. As we all know, bumble bees will begin to

actively forage earlier than honey bees when it is a lot cooler, between 5.2°C and 8°C.

Looks like the spin doctor got a little loose on this page of the pamphlet.

New US labelling recommendations

We are watching for this issue to come up in New Zealand.

The United States Environmental Protection Agency (US EPA) has introduced new mandatory labelling recommendations for foliar applications of pesticides containing clothianidin, dinotefuran, imidacloprid, thiamethoxam, tolfenpyrad and cyantraniliprole. You can reference the complete announcement document at this US EPA website: http://www.epa.gov/opp00001/ecosystem/pollinator/bee-label-info-ltr.pdf (US EPA, 2013).

We are concerned about some of the US EPA's mandated label warnings as they are clearly not appropriate for New Zealand's present regulatory environment and they are plainly just wrong.

The warnings that concern us initially are:

"• The application is made to the target site when the temperature is below 55°F."

The NBA Technical and Submissions Committee does not agree with this control at all (MacLeod, 2014). The temperature chosen is not supported by any New Zealand data.

We are aware that Dow AgroSciences tried to introduce a similar label warning for sulfoxaflor in New Zealand in June 2013, two months prior to the US EPA publishing their recommendations. Did Dow know about this proposed US EPA regulatory temperature limit in advance?

Note that these two US EPA label warnings were mandated as well:

> *"• The application is made in accordance with an active state-administered apiary registry program where beekeepers are notified no less than 48 hours prior to the time of planned application so that the bees can be removed, covered or otherwise protected prior to spraying.*
>
> *"• The application is made due to an imminent threat of significant crop loss, and a documented determination consistent with an IPM plan or predetermined economic threshold is met. Every effort should be made to notify the beekeepers no less than 48-hours prior to the time of the planned application so that the bees can be removed, covered or otherwise protected prior to spraying." (US EPA, 2013)*

The NBA Technical and Submissions Committee does not support the mandatory 48-hour warning period to remove hives. We believe it is wrong for the beekeeper who is in the locality of the crop being sprayed to be responsible for bee safety, due to the actions of a pesticide applicator.

To date, New Zealand law has stipulated that the applicator of the chemical is responsible for the results of their actions when applying pesticides. The US EPA, presumably at the lobbying of the chemical companies, made the beekeeper responsible for the actions of the pesticide applicator. We believe this is not fair to beekeepers.

In the US, all costs of lost time, transportation costs, lost honey production and potential loss of hives are to be costs for the beekeeper, not the farmer and not the chemical company. We cannot let that state of affairs occur in New Zealand.

Beekeepers in the US are protesting against these EPA proposed label warnings.

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Congratulations to Raymond Huber, whose book *Flight of the Honey Bee* (illustrated by Brian Lovelock), has been nominated in the non-fiction category in the NZ Post Book Awards for Children and Young Adults.

Get snapping

Autumn is upon us, so it's time to start taking some photos to enter in the sixth annual Ecroyd/NZAI photography competition, to be held as part of the New Zealand Apiculture Industry (NZAI) Conference, Wanganui, 22–26 June 2014.

Entries will be accepted in the following categories:

Class A. Close-up print. Subject must relate to beekeeping.
Class B. Scenic print. Apiary subject such as flowers, hives etc.
Class C. Portrait print. Person, beekeeping procedure, honey, hive by-product processing in appropriate setting, commercial frontage or beekeeping base.
Class D. Essay prints. A set of from 4 to 7 pictures depicting a beekeeping story.

The photo competition is open to all registered members of the **NBA and BIG.**

As an added inducement, winning photographs will be published in *The New Zealand BeeKeeper*, perhaps even on the front cover if taken in portrait format.

For more information, go to http://nba.org.nz/news-events/events/photo-competition

NZ's first beekeeper arrives home

By Bruce Stevenson

This article appeared in the Winter 1991 edition of the journal.

On Saturday March 9 [1990], beekeepers from the Northland Branch of the National Beekeepers' Association celebrated the 150th anniversary of the arrival of the first honey bee hives into our country. The celebration involved retracing the last stage of the sea voyage of the *James* with its two straw 'skep' hives which were landed at the Wesleyan Mission station at Mangungu on the upper Hokianga Harbour.

It is amazing to think that the bees actually survived the six-month sea voyage from England. The bees probably enjoyed a brief respite on land at Cape Town and again a much longer break at Hobart where the *James* stayed for five weeks before setting off for the last stage of the voyage to the Hokianga harbour. The *James* left Hobart on March 9 and 10 days later crossed the bar and anchored at Pakanae. On March 20 she sailed up the harbour, past Rawene and finally anchored at Mangungu.

The *Sierra*, the local Hokianga charter boat, was hired by the beekeepers for the occasion and a turnout of over 30 people enjoyed the trip. We viewed the splendour of the harbour and tried to imagine the impression it must have made on the missionaries arriving here 150 years ago. Early records indicate that all were on deck to view the strange new land and that there was much joking between the ship's officers and the large mission party as to whether they would find anything to eat on shore, or whether they themselves would be on the menu!

The story of Miss Bumby

Mary Anna Bumby was this country's first beekeeper. She arrived at Mangungu on March 20, 1839 with two honey bee hives which came from the Thirsk area in North Yorkshire. It is thought that the bees were the Black or 'German' type, or perhaps more accurately known as the north European bee. She had come to New Zealand to act as housekeeper for her brother the Rev. John Bumby. It is said that she brought the bees because of her brothers' *[sic]* fondness for honey on his toast! She was described as a vision of delight, with a complexion that entitled her to the name of "bonnie English rose".

Her job as housekeeper for her brother came to a rather sad end because in June 1840 John was drowned in a tragic canoe mishap in the Hauraki Gulf. She stayed on at Mangungu until she married in December 1840. The death of her brother was said to have had a devastating impact on Mary Anna and she was described as a much-changed woman from the one who arrived four years earlier. As a point of historical interest, Mary Anna was hostess to Governor Hobson and his party when they stayed at Mangungu to get signatures from the local Maori chiefs for the now famous Treaty of Waitangi. Perhaps Mary Anna and Governor Hobson shared a common interest in bees because Lady Hobson is recorded as bringing stocks of black bees to the Bay of Islands in early 1840. Early eyewitness accounts of these bees arriving suggest that the straw hives were wrapped in wet blankets probably so the evaporation would keep them cool.

The bees were kept inside the fenced mission grounds at Mangungu apparently to "keep them away from the very curious Maoris". Quite how these new arrivals were perceived is now a mystery but an 1848 account claims that the Maoris called the honey bee "the white man's fly".

A framed picture portrait of Mary Anna was presented to Mrs Margaret Exton, who administers Mangungu Mission House for the Historic Places Trust. It will join portraits already on display of her brother and also her husband, Gideon Smales. Mr William Bielby, a former advisor in beekeeping in Yorkshire, spoke to the assembled crowd at Mangungu. In his research he found that there are still three Bumbys on the Thirsk district beekeepers membership. Mr Bielby sent samples of black bees from the Hokianga to Rev. Eric Milner in Ossett, Yorkshire. Milner, in association with Professor Ruttner, has just published an interesting book called *The Dark European Honey Bee*, the result of 40 years of research. The Hokianga bees get mention in this book because it appears that they are statistically identical with the dark European bee, on the basis of morphometric data, and even bees examined from an ancient York Viking archaeological excavation. That should be of real interest to our queen breeders. Fascinating to think that the original Bumby bees may still be found as a pure genetic line after 150 years.

The 150th anniversary of the first honey bees is an important milestone for the New Zealand beekeeping industry. From Mary Anna Bumby's two beehives the industry has steadily grown to the present day where we have over 6,600 beekeepers who look after something like 330,000 beehives.

For those sharp wits out there who have noted that we are actually one year late in celebrating this 150th: congratulations. The initial moves were made some time back but the wheels of democracy move slowly, like the rest of our industry! Chris Dawson from Timaru started the ball rolling some years ago but finally gave up because nobody seemed interested. Since then the Northland Branch, the Executive, the Historic Places Trust, and MAF have been involved. The picture was secured by MAF and paid for by the NBA and finally sent to the Northland Branch to organise a suitable presentation.

Portrait of Miss Mary Anna Bumby.

Source

Stevenson, B. (1991). New Zealand's first beekeeper arrives home. *The New Zealand Beekeeper*, Winter 1991, *210,* 10–12.

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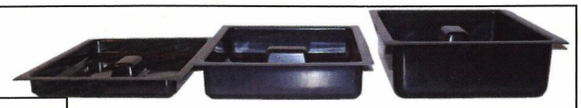

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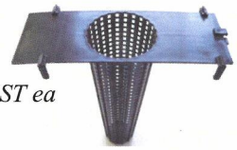

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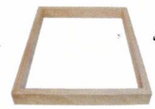

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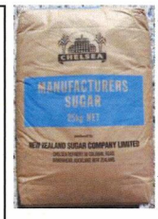

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Field day creates a buzz

By Nicky Elwood, Nelson Branch Secretary

In October 2013, the Nelson Branch of the NBA held a field day in Brightwater.

A group of 25 keen beekeepers headed to River Terrace Apiaries for a day of learning about queen raising and how to get their starters and finishers under way. It was a beautiful sunny day, and Cath and Gareth Ayers, along with Leonie Twin, held mini-workshops that everyone rotated through to see their techniques, ask lots of questions and have hands-on experience with the techniques being shown. At lunchtime a swarm passed through the property and settled, which added a bit of excitement to the day.

It was great to hear the buzz of conversation amongst those attending and the interesting questions and observations that arose. With lunch on the sun-kissed lawn and some more afternoon rotation it was a very successful and informative visit. At the end of the day the offer was made to the beekeepers that if any were interested, they could pick up a queen cell the following week to do a split on their own hives. Twelve beekeepers picked up their cell on the following Saturday morning.

Thanks to Cath, Gareth and Leonie for their time, wisdom, and enthusiasm to make this day happen. It was a great day out for all involved.

Cath, Gareth and Leonie wanted to make special mention how much they enjoyed the day, and a big thank you to all the beekeepers that came out and made the day worthwhile.

Here are some photos from the day, provided by Ian Henbrey of the Nelson Beekeeping Club.

Left: Cath Ayers explained about how they run queenless starter hives and finish them in queenright hives. Also shown was the different stages of the cell as it matures, which gave the attendees an insight into what queen raising on a commercial scale looks like.

Middle: Leonie Twin guided beekeepers through how to graft and choose proper-aged larvae to graft, as well as answering general questions on the life cycle of a queen. Conversations were had also on the benefits of pollen and royal jelly.

Right: Gareth Ayers showed how to set up a three-way nuc using an ordinary hive body. He also demonstrated a different style of nuc that they call a variable, which has frames around a quarter of the size of a full-depth frame.

Bee strikes on windscreens

By Dennis Hobbs, Taupo

This is an open letter to the NBA and all beekeepers.

I am a driver of a line haul unit, and travel North Island roads frequently. I have noticed and experienced a great number of bees striking the windscreen of the trucks I drive on a daily basis.

It may be of interest to keepers who place hives very close to our main highways that they are losing thousands of bees due to windscreen strikes daily. More consideration seems to be needed to the placement of hives to prevent such loss.

At a site on the Desert Road, bees cross the road at low level and also seem to use the road as a corridor to fly to and from the hives.

Due to recent news about bee shortages I felt it necessary to advise the NBA. Hopefully the information is useful.

Catch them when they're young

By Martin Toland

A schoolteacher and member of the Wellington Beekeepers Association writes about the benefits of schools keeping bees.

Wellington Mayor Celia Wade-Brown recently visited Te Aro primary school, the first Wellington primary school to keep beehives. As an ex-school teacher herself, Ms Wade-Brown was most at home among the children of the city centre school, where beehives have been a feature for the last season.

The mayor spent time suited up with the children amongst the bees before talking with school staff about the importance of nature-based education. "If you miss out as a child it's actually quite difficult to catch up," said Ms Wade-Brown, who went into the classroom following the hive inspection to chat with the children and sample some of the honey they had recently extracted.

Two hives, a top-bar and a Langstroth, were installed at the school last year. In October two swarms were introduced, with one producing a harvest of 16 kilograms earlier this year. During the mayoral visit, Te Aro Principal Sue Clement commented that after learning about the crisis around bee numbers, the children wrote to the school's Board of Trustees and parents about the possibility of bringing bees into the school. After positive feedback, they fundraised to buy a top-bar hive to go with the Langstroth hive loaned to the school by the Wellington Beekeepers Association (WBA).

Wellington Mayor Celia Wade-Brown with the children of Ruma Koromiko, Te Aro primary school. The pupils in bee suits are (left to right) Evie McGruddy, Anika Green (Winston Nguyen behind them), Isa Hunt, Nelann Kua.

Teacher Claire Tocher, whose classroom students care for the bees and maintain the hives, told Ms Wade-Brown, "The children were keen to build two hives because they wanted to compare and contrast the quantity of honey they produced, and whether there was a taste difference in the honey". Claire and her students carry out a weekly check of the hives, which are situated next to community gardens that are part of the school grounds. This weekly inquiry time has become a high point of the week for many in Claire's class. My own role has been that of mentor to Claire and the children, so that both the school and the bees gain maximum benefit from the arrangement.

Vidi Beaglehole, Marah Johnstone-Lee, Paris-Ann Horan and Roberta Griffiths try their hand at extracting.

How did all this come about?

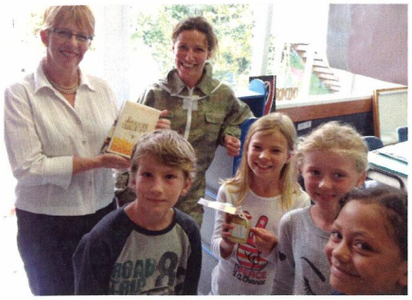
My involvement with the Te Aro school community in helping them to establish an apiary stems from the school's initial approach to the Wellington Beekeepers Association to express their interest and ask for advice and assistance. The WBA realised that the school had thought carefully about introducing bees and were prepared to make a serious commitment to establishing an apiary at the school. Principal Sue Clement, teacher Claire Tocher and other staff, parents, students and the local community were all supportive of the idea of making beehives part of the school.

Te Aro School teacher Claire Tocher, Celia Wade-Brown, and Martin Toland with unidentifiable Te Aro School children.

One of the roles for the WBA and me has been to assist in developing a risk assessment strategy with regard to keeping bees in the school. This is necessary to assist in clarifying any legal requirements of interested parties, and to establish any school, WBA, or individual responsibilities. A standard police check is another obvious prerequisite for anybody working with children, which all teachers go through as a matter of course anyway.

Apart from the loan of the Langstroth hive and bringing in a couple of swarms to help it get established, the WBA agreed to loan the school two adult and ten junior (suitable for seven to 10- year-olds) bee suits, and a few bits of bee gear to get them started. The WBA committee was aware that I had been running a beekeeping group for the last five years at Wellington's Onslow College, and as I was recently semi-retired from teaching there, the committee asked me if I would be interested in mentoring Te Aro School in the arcane and archaic craft of beekeeping. Subsequently, for the last six months, I have been spending an afternoon a week at Te Aro School, with Claire, the kids and the bees. It is huge fun—I enjoy it immensely.

Beekeeping and education: they go together, right? As someone who is both a beekeeper and a teacher I have never found any difficulty in combining the two. If students are learning about beekeeping, then they are learning a set of skills that can be applied across the curriculum. There are the obvious science learning opportunities that come



Celia-Wade Brown with Te Aro teacher Claire Tocher and pupils Matthew Harvey-White, Ruby Crowe, Mia Knight, Nani Tawhai-Mako-McKenna.

from nurturing a hive full of bees, such as bee metamorphosis and biology, their role as pollinators in the city's parks and gardens, indicators of local environmental health and well-being, and how honey and a range of other hive products can be manufactured, harvested and used.

Not so immediately obvious is the cross-curricular learning that Te Aro students get from this: they write about their beekeeping experiences, make models and paint pictures. They apply the design process by looking at a range of packaging and labelling options for the honey, before coming up with original designs of their own that reflect their unique locality and personal involvement with the school apiary.

"Learning opportunities abound."

There are opportunities for marketing that first require investigation into pricing and quality of similar products in local shops. Learning opportunities abound.

Budding film-makers

Te Aro teacher Claire Tocher has even involved her students in making a film about their beekeeping experiences. The children were involved in scripting and editing the film, which was then used to supplement a school entry for a competition initiated by Genesis Energy to supply and install solar panels that would provide for a school's energy needs. The huge amount of work that Claire put in to the school's competition entry eventually paid off when, despite a lot of stiff competition, the school won! Staff from Genesis Energy have recently come to measure up the roofs and the panels that will be installed soon. No doubt, the children's film of their beekeeping activities played a part in gaining what will be a significant upgrade to the Te Aro school infrastructure.

The students have also made a film documenting the whole honey harvesting process, storyboarding a script and adding in titles and music. The honey film was shared in a whole school assembly, and with families and the wider community through their class blog and school website.

Last month, Te Aro School was approached to run a stall at the Festival of Education. I joined Claire and 10 of the students from her class as 'bee ambassadors', sharing our knowledge with the public and members of other community and government organisations. We brought a display hive that I had created. The day was a huge success and a wonderful experience for the children to share their learning and inspire other educational facilities as to the benefits of beekeeping in children's education.

Other learning opportunities

At a secondary school/college level, I have found further abundant opportunities to bring beekeeping into student learning. Five years ago, as a teacher of Design Technology at Onslow College (where students learn in a multi-disciplinary workshop), I initiated a new course aimed at students who were more interested in acquiring practical skills than learning design theory. I called this course 'Pre-Apprenticeship Construction'. The students could learn building and manufacturing skills and gain a qualification recognised by the Building and Construction Industry Training Organisation. Manufacturing several two-brood and two-super Langstroth hives was one of the first projects I wrote into the course programme.

I broke the students into groups of three or four. Each group was asked to make a complete hive that would eventually make up the school apiary (my long-term strategy becoming apparent here!). The hives would have a double floorboard—the top one with five-millimetre steel mesh, the lower one with a pull-out varroa-count inspection board. Each of the four boxes would have 10 wired frames. A transparent acrylic inner cover would allow for inspection of the top super without the need for personal protection, and a telescopic hive lid would be covered with galvanised thin sheet steel. The boxes would be wax-paraffin dipped before being primed and painted (in the school colours, naturally).

The students used a wide range of hand and machine tools in the marking-out, cutting, shaping, and joining of components, which were checked against tolerances. Frame component cutting, assembly and wiring made use of batch-production techniques, such as jig construction and quality control checks. We even made our own hive tools, utilising the cutting irons from old and broken woodworker's planes, which were cut and shaped using a hacksaw and an angle grinder, then filed smooth. In my opinion the tools are ergonomically perfect, and more suitable than the bought ones.

I still work as a relief teacher at Onslow College, and run the school apiary and weekly "Bee Club", with hives made by the students. I also occasionally bring a display hive into classes and talk about bee biology, honey and other hive products and, more recently, bee pathogens and CCD.

Some of the Bee Club members at Onslow College. Left to right: Michaela Lawn, Laura Wilson and Alistair Chin with Martin Toland. Photos supplied by Martin Toland.

As beekeepers we have a responsibility to educate and to promote sound and sustainable beekeeping practices to those that come after us. As Frank Lindsay once said to me, "We have to catch them when they're young". You made a deep and lasting impression on me, Frank. Additionally, as Caspar Henderson writes in his wonderful *Book of Barely Imagined Beings*, "We are only fully human when we act as if the life beyond us matters".

It matters for the bees. And for all of us.

Martin Toland has made top-bar hives in the Kalahari Desert, several dozen Langstroth hives scattered over the capital, and a W B Carr hive that sits in his front garden. His master plan is to cover the city's parks, gardens, schools, and public building rooftops with beehives.

Waikato Branch

By crikey, the honey business is a hot one! Just about all the honey is off around here. I have seen honey trucks and bee guys going past with packaged bees, so guess that is in full swing now.

It finally rained on 3 April; actually, it poured down. I was in the middle of taking honey off and had totally ignored the weather forecast as we have heard it all before and no rain—damn! Hopefully it's enough to get a little grass up and growing for the farmers—it has become pretty desperate around here: water trucks coming and going, people cutting willows to feed their stock, cows standing in very hot temperatures, dust and cracked dirt, pennyroyal the only thing that looks like it is flowering.

The bees seem to be standing up though; still podgy, a few mites starting to show but otherwise kei te pai.

Not long now and we can all have a wee holiday, hopefully. Take care.

- Barbara Cahalane

Poverty Bay Branch

The dry, hot autumn has been good for beekeeping on the East Coast. Autumn queens have mated well and are now laying. The multifloral honey flow continued late into the autumn and has been a little compensation for a poor manuka crop.

The hives are heavy with honey; some doubles weighed recently weighed 80 kilograms so will go into the winter well. Mite numbers are generally low and under control. There are no signs of resistance showing up to date.

Time now to sell the honey crop and plan for next season and do a bit of fishing.

- Paul Badger, Branch President

Hawke's Bay Branch

After predicting rain for the last month, it has finally arrived and very welcome it is too. I have had several reports of badly granulated honey, with willow honeydew being blamed, but I have not seen this myself.

Wasps are very bad in some areas and absent in others. I killed a nest in early April and was told that 40 nests had already been killed in that area. Autumn honey flows have generally been better than normal and most hives have good stores for winter.

- John Berry, Branch President

Southern North Island Branch

We held our AGM on 14 April. Life membership for the branch was presented to Peter Ferris (PJ), a branch member since 1987, and Allan Richards, a branch member since 1988. Both have held many positions within the Branch, including several turns as Branch Chairman.

Peter (PJ) Ferris and Allan Richards with their certificates conferring life membership of the SNI Branch. Photo: Judi Ferris.

The weather has changed: the rain is very welcome. At least I got 10 days tramping in northwest Nelson in fine weather. I'm now back to work wintering down hives. Honey yields have been down, but most beekeepers seem to have gathered enough to keep their businesses going for the next financial period. The increased prices for honey also help.

NZ Apiculture Industry Conference update

A full programme has been planned for the Small and Hobby Beekeepers seminar on Saturday 22 June and the field trip on Sunday 23 June. Free parking is available at the Wanganui Racecourse for trucks, vehicles, and self-contained campervans. Registration forms were inserted in the April journal along with other conference information.

If you are intending to fly to Palmerston North and would like transport to Wanganui, please ring Neil Farrer on 027 457 9634 or email nfarrer@xtra.co.nz. The Branch intends to arrange a shuttle van or vehicles from Palmerston North to Wanganui and return after conference.

- Neil Farrer, NBA Life Member

Nelson Branch

The accounts of the season's honey crop have been rather underwhelming. Few other industries are susceptible to boom-and-bust production in the way that honey producers are, but there is at least the silver lining of likely high demand for the available supply.

There was a great turnout for the area's field day in March, hosted by Ricki Leahy. About 40 people attended, coming from as far as Marlborough, Kaikoura, Golden Bay and the West Coast. For one day, Murchison was a beekeeping epicentre, or, as Ricki put it, "Murchison—the middle of nowhere; the centre of everywhere".

Another upcoming event is the branch AGM, scheduled for 15 April. It is another reminder of how fast the year is going by, as are the shorter days and colder nights.

- Nahum Kelly

[Editor's note: Nahum is taking a break from the scribe's role. Thanks for your contributions, Nahum! And speaking of field days, please see page 17 for a report on the Nelson Branch field day from October 2013. Better late than never!]

Roy Paterson Trophy

Thinking of entering the competition for the Roy Paterson Trophy at Conference this year?

Go to http://nba.org.nz/news-events/events/the-roy-paterson-trophy for background information and an entry form.

SFF funding for two apiary projects

Information provided by Ronny Groenteman and Julie Varney

Two apiary projects have been approved by the Ministry for Primary Industries' (MPI's) Sustainable Farming Fund (SFF), from a total of 31 approved projects this year.

Wasp biocontrol

This project aims to "explore the potential of a new mite recently discovered in wasp nests as a sustainable biocontrol solution for Vespula wasps".

The Vespula Biocontrol Action Group was the successful applicant for this project, and Landcare Research will be the science provider. Landcare's Ronny Groenteman informed the NBA and others that SFF funding will be made available to the project from July 2014. The project committee plans to meet in late May or early June.

Ronny says the first step of the project is to identify why the mite is not already providing biocontrol and develop methods to ensure it can. Several possibilities will be investigated. Further steps will ensure the mite is damaging to both the German and the common wasps, and that it is not going to pose risk to honeybees, bumblebees and native bees.

Biocontrol is a highly desirable option for wasps because it is a long-term, self-sustaining and highly cost-effective solution, and because agents are active over large areas and in inaccessible terrains.

If you are interested in this project, contact Ronny Groenteman on 03 321 9904 or email GroentemanR@landcareresearch.co.nz

Further information is available in a media release from Landcare Research, which is posted to their website http://www.landcareresearch.co.nz

A sustainable biological control for varroa

This project builds on the selective breeding programme for the Varroa Sensitive Hygiene (VSH) Trait based at Rainbow Honey Ltd. The programme is in its second year, thanks to the support of AGMARDT and the Honey Trust. The Sustainable Farming Fund will provide funding for research into more efficient methods for instrumental insemination and VSH testing.

"We will work with Cawthron to adapt the scientific methods used in the aquaculture industry and apply these methods to bees", says Julie Varney, Project Manager. The overall aim is to ensure a sustainable bee population that has a combination of the VSH trait, along with other economically important traits. To achieve this, field trials will be conducted onsite in conjunction with commercial beekeepers. The trials will test the levels of VSH trait required commensurate with the reduction of chemical treatments needed to control varroa.

"This is clever science with a practical outcome. It has potential to be of great benefit to the bee and pollination dependent industries in NZ", says Julie. "We are thankful for the support of MPI and commercial beekeepers who have engaged as our research partners".

The two projects are valued at $936,000. Congratulations to all concerned.

Go to http://www.mpi.govt.nz/environment-natural-resources/funding-programmes/sustainable-farming-fund/sff-funded-projects-2014 for summaries of the 31 projects that will receive SFF funding during 2014.

Sources

Landcare Research. Wasp biocontrol project set to begin. Excerpted from a media release from Landcare Research, 17 April 2014.

Ministry for Primary Industries. $2.1 million boost for Māori in the Primary Industries. Excerpted from a media release from MPI, 14 April 2014.

Personal communication with Ronny Groenteman, 17 April 2014 (wasp biocontrol project).

Personal communication with Julie Varney, 17 April 2014 (varroa project).

Sustainable Farming Fund Funded Projects 2014. Ministry for Primary Industries. Retrieved April 17, 2014, from http://www.mpi.govt.nz/environment-natural-resources/funding-programmes/sustainable-farming-fund/sff-funded-projects-2014

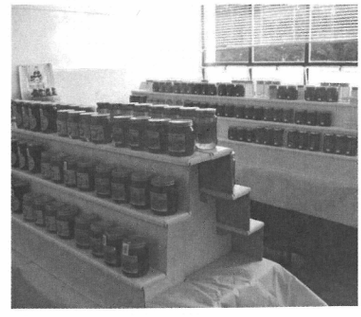
Plan to enter the National Honey Show

The National Honey Show this year will be bigger and better than ever!

The show will be held in Wanganui alongside the annual conference, and is open to all financial members of the NBA and BIG honey industry groups.

Put aside some of those perfect frames or samples now as you harvest. Remember that all entries are anonymous but if you win, you will get your name in lights!

For more info, see http://nba.org.nz/news-events/events/nba-honey-competition



Entries from the Scottish National Honey Show, Dundee, July 2009. Photo: Maureen Maxwell.

Recent publications from RIRDC

By Michael Hornitzky, The Rural Industries Research and Development Corporation

Establishing the disease status of the Asian honeybee in the Cairns region
Publication No: 13-082
Author: John Roberts and Denis Anderson
Published: 27 August 2013
AUD $25 (28 pages) or free download

This research is a key step in re-establishing trade of Australian bees with the United States and for maintaining other export markets under threat. The Australian honeybee industry and apiarists will benefit from this research through the identification of exotic pathogens that may affect the health of *A. mellifera*. There are also potential benefits to commercial beekeepers, particularly those based in Eastern Australia that are currently unable to export live bees to the United States.

The findings of this research showed that no new honeybee pathogens have been introduced to Australia with the establishment of *A. cerana* in the Cairns region. There is also no indication that novel pathogen strains have spread from *A. cerana* to *A. mellifera*, but at least one pathogen has spread from the local *A. mellifera* and is infecting *A. cerana*.

Use of a Sniffer Dog in the Detection of American Foulbrood in Beehives
Publication No: 13-080
Author: Sharon de Wet
Published: 27 August 2013
AUD $25 (28 pages) or free download

This report describes the training and validation of a sniffer dog for detection of American foulbrood (AFB) in bee hives. AFB is the major endemic brood disease in Australia. A detection method that is reliable and less labour-intensive than methodically scrutinising individual brood frames manually is desirable. The objective of this project was to develop a novel, quick and reliable way of detecting AFB that is user friendly and affordable. The sniffer dog (Baz) was trained successfully and was able to detect as little as one infected cell in a hive.

Source

Hornitzky, M. (2013). New RIRDC Honeybee-related Publications. Honeybee R&D News. No. 17, September 2013, 13/092. Australian Government, The Rural Industries Research and Development Corporation. Retrieved January 16, 2014, from https://rirdc.infoservices.com.au/items/13-092

Keeping hives fed and healthy

By Frank Lindsay, NBA Life Member

The bees have been making the most of the last flowering sources: lacebark, ivy and gorse for pollen, so the bees have been producing a reasonable amount of brood during the past month.

In the urban areas, there are still plenty of flowers providing good pollen and a little nectar. Bees also have been gathering propolis to seal cracks and crevices to prevent intruders and keep the hives dry.

Feeding bees over winter

Last month I mentioned that quite a few hives would need feeding following our dismal summer. A wet Christmas followed by drought means that honey production is down considerably for some. The drought a few years ago, both here and in the USA, caused higher than normal winter losses.

During a drought, brood production is reduced to match the amount of nectar and pollen coming in. Yellow bees will continue some brood production using up their honey reserves, but Carniolan bees will cease brood production altogether. Going into autumn, the hives looked strong in bee numbers but they had few 'winter bees'. The older bees gradually died off during winter, leaving fewer bees to maintain the cluster, which caused the hives to die despite having adequate stores.

A winter bee has a three- to six-month life span but this shortens to 30 days as soon as it starts feeding larvae. Hives situated close to the coast, where winter temperatures are more tolerable, are less likely to be affected. Bees can fly for a few hours most days and collect nectar and pollen which will keep the queen laying, so the need for winter bees is not as essential as those dying off are being replaced. In northern areas, the hive population will gradually increase during winter as the bees maintain brood in two to three frames.

It takes roughly one cell of nectar and one of pollen to produce a worker bee. The drawback is that bees producing brood for most of the winter can run out of honey, and will die from starvation (usually early in the spring) unless you keep an eye on the hives.

Inland, the queen ceases laying altogether about now and only starts again in a modest way in July, using stored nectar and pollen to feed the larvae. This is the start of the beekeeping season. These are the hives that could be in danger of dying off following a drought, as they have few winter bees.

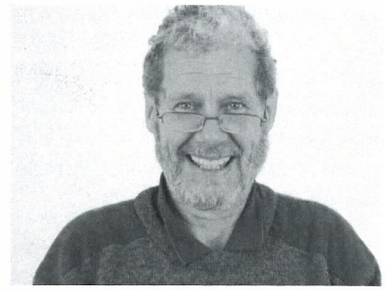
> "It takes roughly one cell of nectar and one of pollen to produce a worker bee."

So after a drought, we need to stimulate the bees into producing four or five frames of brood to build winter bees. To do this, we need to provide pollen as well as sugar syrup. This is something I didn't mention last month. Bees can build one generation from stored body fats when there is a dearth of pollen, but that generation of bees will not live long. What I'm getting at is that bees need both sugar syrup and pollen or pollen substitute to build up the hive.

If you have been hit hard by drought, you should stimulate hives and get them breeding before winter really sets in, or move them to the coast or near to a city where there's constant pollen and a dribble of nectar.

Nosema

Other things can happen to bees when they get stressed. Nosema builds up in the ventriculus of the bee, which eats the cells lining the stomach that are shed to digest the bee's food. With high levels of nosema,



a bee can't digest the food so has a shorter life span.

If you have a microscope, you can grind up the abdomens of 25 bees off the landing board and put the resulting paste into 25 millilitres (mls) of water. Stir well and place a drop on a slide, and with a 400-power lens, count the number of spores on the plate to determine the nosema levels.

Randy Oliver has written a series of articles on nosema (refer to www.scientificbeekeeping.com). An antibiotic is used in some overseas countries to control nosema but we cannot here as it's not registered. It's also an EU requirement for export honey that no antibiotics are used in our beehives. All we can do is to regularly replace brood frames. I was told in Australia that an indicator of nosema in the spring can be seen in the shape of the bee's faeces. Long indicates a healthy bee, big splats can indicate nosema. I haven't looked at bee faeces so haven't proved if this is on the level or just somebody having me on.

We can add a little thymol or 1% acetic acid to the sugar syrup to stop it fermenting, which may indirectly help to control nosema. I have a recipe for thymol but can't remember where it came from: 20 grams of thymol is added to 100 mls of surgical spirit. Dissolve and use 0.5 mls to every 1.5 litres of sugar syrup. Perhaps some of our more scientifically minded beekeepers could try these out to see if they have any effect as we now have the threat of *Nosema cerana* spreading, and by all accounts this nosema is more virulent than our existing *Nosema apis*.

Mite control treatments

Most will have finished their first set of varroa treatments and by now should have checked the level of varroa in the hives. Check all your hives for mite drop over five days onto a sticky board, or monitor bees with sugar

shake or an alcohol wash using bees off an outer frame containing brood.

Ideally we want hives with less than one mite dropping per day and less than one mite in a 300-bee wash, or at least reducing to that number before winter. If you still have drones, fork out 100 pupae in the pink-eye stage and count the mites. Hopefully there will be less than one per 100 cells.

I have been using formic acid so the effectiveness of this treatment can vary from hive to hive. During the last month I have been adding it on to a paper towel on the slide below my mesh bottom boards (20 mls to a single, 40 mls to a double and a little extra if the weather wasn't hot) once a week. I use paper towels to put the acid on and change them if not completely dry. Any reject paper and debris from the slides go into a poly pail for recycling into my garden.

For those with standard bottom boards, it's still possible to use the 'flash' treatment to treat hives from the bottom, as pictured on page 148 of the green *Control of Varroa* manual by Dr Mark Goodwin and Michelle Taylor.

However, the hives need to be sloped back to create a pool of gas on the bottom board and the entrances reduced to winter conditions so the bees can't expel the vapour quickly. It has to be at sufficient concentration for an hour to kill male mites in the cells, thus breaking the breeding cycle of the mites, as well as causing those on the bees to drop off into the pool of vapour. On the few solid bottom boards I have, I tend to squirt the acid towards the side so that bees on the bottom board aren't killed on contact. For the first few times you use this type of treatment, check your results an hour after administering the acid. Most of the bees should have left the brood exposed. Too much acid and you can kill the queen, so double is not better. A lot of bees will come up and sit outside the hive initially but should return within an hour. The treatment also stops robbing dead in its tracks, so that's an advantage. Another benefit is that it can kill the grass growing immediately in front of the entrance. I have used it as a weed killer for those persistent clumps of grass that are hard to weed-wack.

You have to be **extremely careful** when handling formic acid. If it contacts the skin, it will blister next day. You don't get a burning sensation that you do with some acids, so always wear chemical gloves. These get hot and sweaty and need to be turned inside out to dry between apiaries. For a while I tried working without a mask but I often got the vapour directly back in my face as the bees will fan immediately on application, so now I wear one religiously. Carry water to administer liberally to splashes on your clothing. The acid may not affect the material but it does affect the skin underneath. The last thing you do is wash your hands again to stop them smelling, as sweaty hands cause bees to sting.

Formic acid is a cheap form of treatment but takes time to master and a lot of running around with four treatments administered over a brood cycle. It's a lot more work but if undertaken with normal apiary work, it's cost effective. I administer it via a drench gun and have learnt a little about these also. The best ones I have found come with a Bomac cattle drench and are free from your friendly farmer. Formic acid tends to make the plastic brittle, so wash out by putting water through the gun immediately after use in each apiary. Some drench guns are not designed for heavy work and break at the valve and tube connection at the back. The Bomac drench guns don't have this 'design fault'.

The only problem with using the bottom slide is that it will only gas the bottom super, so is best suited with a single super brood chamber. Without a queen excluder, a frame of drone brood in the upper brood chamber can nullify the treatment, so it's important to swap out any frames with drone comb in favour of one empty frame that the bees can draw drone comb in, and perhaps remove before treatments begin.

But time has now run out for using this type of treatment as it works best above 15°C. With the onset of colder temperatures, it's time to swap to another alternative treatment. Oxalic acid dribble must be put on warm. Like most alternative treatments, it only works on phoretic mites so hives may need retreating at the end of the first brood cycle.

Thymol products work best above 15°C but if placed directly over the brood nest (provided you still have brood in them), can still be effective as the heat from the brood helps to evaporate the fumes.

All your treatments can be undone in a few weeks by your bees robbing a dying hive that hasn't been treated. Any swarm that got away (or perhaps someone else's hive that missed being treated) can affect all the hives in an apiary if they participate in the robbing, so coordinate your treatments with those around you.

Hives should also be checked for AFB once robbing season has finished. Check the brood nests of all hives. It shouldn't take long—just a few minutes per hive. Quickly glance over brood frames looking for a patch of emerging brood. Move the bees out of the way with your fingertips (bees are used to being touched). Any capped cells in amongst a group of empty cells, or those in a section of eggs, should be checked by flicking off the cappings. AFB ropes out continuously whereas sacbrood will rope out only once due to secondary bacteria. If you are not sure what you are looking at, consult another beekeeper after referring to your yellow AFB manual *(Elimination of American foulbrood disease without the use of drugs).*

Measuring moisture content in honey

Some of us are still taking off honey and extracting it. Partly filled supers and half-capped frames can be a problem for new beekeepers. Following a wet honey production season here in Wellington, a lot of honey came in with a moisture content around 19%. Export honey needs to be below 18.6%, so it needed drying before extracting and it's easier to dry while it's still in the frames.

I set stacks of supers slightly off their drip trays and put a fan on top to force air through them, then reduce the moisture using a dehumidifier. It takes about 24 hours to drop the moisture content by 1%. It makes for a longer, slower extracting season, but the honey stores well without any chance of fermenting, plus it's available for export.

As a quick guide to moisture content, I measure a few outside frames and middle frames in a few supers with a refractometer and average the moisture content, as this is what I'll see in the tank. Some cheap model refractometers are available. You need

one that reads the moisture percentage (between 12 and 27%). Some have a thin cover piece which makes the deviation line less obvious and therefore harder to read. But at least it will give you a guide to the moisture content, and gives you a choice as to whether to do something before extracting. An alternative would be to return the honey to the hive as food.

Honey competition

Conference is fast approaching and members should be collecting jars of honey to enter the National Honey Show. Go to the NBA website (http://nba.org.nz/news-events/events/nba-honey-competition) for the competition categories, entry forms and other information. The cost is $5 for each entry.

Allen McCaw always seems to win the creamed honey section. He just takes a jar off the packing line and enters it so has a very fine crystallised product. Perhaps he can tell us how he does it.

I granulate our honey naturally. Start with a very fine-grained honey (get a pot from the supermarket—perhaps one of Allen's if you live down south), warm slightly so that it's easy to spread and add this to a vat of honey. Stir it in with a spatula and turn on the pump so that it's recirculated for a few hours. Try not to introduce air bubbles.

If you don't have these facilities, start small and add the pot to five kilograms of honey and stir in, keeping it at a constant temperature if you can. When you start to see a whitish bloom appearing through the honey, add the honey to a larger amount (30-kilogram pail) and repeat the process until the bloom appears. This is the period where it can be easily packed before it becomes progressively stiffer. Pack and store in a warm room with the temperature set to 13°C and it should crystallise over a week without forming frosting (i.e., glucose oxide on the inside of the container: honey shrinks slightly as it granulates).

Don't wait until the last minute to get entries ready; it can take up to a week to prepare a sample. The more categories you enter, the greater the chance of taking the overall points trophy.

Things to do this month

Winter down, dispose of honey (prices have increased due to the shortage of honey). Grade and sort combs into brood, extracting and damaged. In fact, all frames these days should be as white as possible to prevent build-up of pathogens. Control wax moth for those that need to. A few beekeepers are shrink-wrapping pallets and freezing them for a week in the local coolstore. Check for wasps. Control the growth around hives. I use a weed wacker: it's slower than spraying but at least I don't get any residues in the hives, as noted by researchers in the United States when analysing brood frames to find the cause of CCD.

Start planning for the coming season. Drone production should start 50 days before they are required. Order plastic frames well ahead of time to give them time to air. This will also give our suppliers something to do during the winter.

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For any enquiries or orders, please phone 03 358 7498 or email: ecroyd@beehealthy.co.nz

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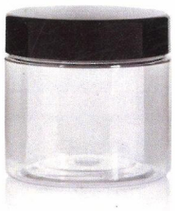
If your details have changed, please email editor@nba.org.nz and secretary@nba.org.nz so that we can update your details in the journal and on the NBA website www.nba.org.nz.

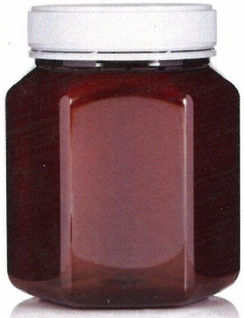


360ml Round Pot

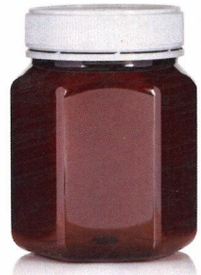
500gm Round Jar

340gm Round Jar
(coming soon)

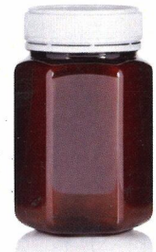
250gm Round Jar



2kg Hex Jar



1kg Hex Jar



500gm Hex Jar

250gm Hex Jar

2kg Square Jar

1kg Square Jar

500gm Square Jar

250gm Square Jar

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