

July 2012, Volume 20 No. 6

The NEW ZEALAND BeeKeeper



Sustainable practices

- How bees spread AFB
- Chelifers may control varroa
- Have you heard of COLOSS?

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Contents

- 4 Sustainability key to future success
- 6 Survey of beekeeping clubs
- 7 Trees for Bees initiative in Eastland
- 8 Government fund tops \$1 million for bees
- 9 Food Safety and RMP Awareness courses
- 10 How bees spread AFB disease
- 11 What's happening with varroa-resistant bees
- 11 NBA research priorities: have your say!
- 12 Chelifers may control varroa
- 15 NZ first to catalogue its species
- 16 Have you heard of COLOSS?
- 18 Letters to the editor
- 19 Drier winter likely for some
- 21 From the colonies
- 21 Battery maintenance tips
- 22 An interview with Neil Stuckey
- 23 Care, prepare and repair
- 25 Pig meat IHS has wider implications
- 26 Easy breakfast churros

Front cover: A 'Trees for Bees' initiative. This photo shows part of the proposed planting area on Peter Hair's property at Lake Repongaere near Gisborne. More info and photos on page 7. Photo: Willie Kaa.

Sustainability key to future success

By Barry Foster, NBA President

Conference is over and its theme was the future of beekeeping and the impacts on it, now and into the future. A far broader view is the notion of sustainability in our businesses, hobbies and in our environment.

Sustainability is being heard and spoken of more often, both globally and nationally. At its core is the imperative that by 2050 we will have nine billion people on the planet and with this in mind, how can humanity live peaceably and well and within the limits of the resources available to us. Sustainability is the key and will require a fundamental shift in how we do business, how we innovate, educate ourselves, develop new technologies and supply new products to a changing market.

No longer the last, loneliest and loveliest

We may have once described ourselves as the last, the loneliest and the loveliest of countries but this is no longer true as these changes wash over us now and into the future. Brand New Zealand and its clean green image have taken a battering.

From a global perspective it is timely to consider sustainability in what we do, and how. The Rio + 20 Earth Summit recently finished in June. Looking at New Zealand's record over the past 20 years since the first summit in 1992, our country has been reported in a recent World Wildlife Fund report¹ as having underachieved in many of our commitments. Greenhouse gases have risen, biodiversity on both land and in the sea has continued to decline, our fisheries have continued to decline, and our lowland fresh water catchments are further polluted—and in places overused. Yes, there have been some gains but the overall trend is downward.

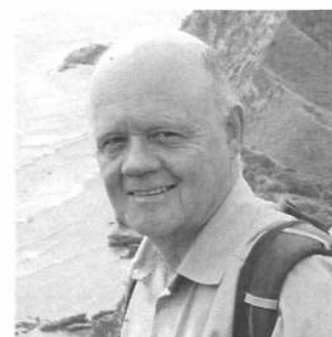
Sustainability is becoming an imperative, not just a nice to have or even something to put aside. It is not just an add-on to business as usual, as promulgated by the recent Green Growth Advisory Group's report that

is more of a green wash than green gain.² The report failed to deliver on a number of opportunities that we as beekeepers and other industries could adopt. Such opportunities as using cleaner technologies, using more environmentally friendly packaging, working with regulators to set standards and ratings around sustainable practices, and helping to work towards targets for carbon emission reductions. Instead it spoke largely on what Government should do rather than speaking to what business should or could be doing.

"Sustainability ... will require a fundamental shift in how we do business..."

From a practical beekeeping point of view, there are areas in New Zealand now where apiaries must be reaching the biological limits of bees' ability to collect sufficient nectar and pollen to sustain the hives and produce crops. The term 'green deserts' is increasingly used. In this respect we are still hunter-gatherers, only our quarry is a good site for nectar and pollen sources rather than game.

The step change logically should involve bettering the environment that our bees live in, rather than just taking what nature provides or what some landowner has serendipitously provided. Improving nectar and pollen sources by planting bee-friendly plants, particularly for times of dearth, might be one of the most sustainable practices you could adopt. The Trees for Bees initiative is surely one to expand on³. Others include urban trees for bees and bee-friendly



seeds, both available from our website www.nba.org.nz. In this context, the NBA having a collaborative dialogue with the Land and Water Forum may lead to substantive benefits.⁴

This past autumn I have heard reports of beekeepers feeding more sugar than usual to their hives than in previous seasons due to the poor seasonal weather that has been a feature in the North Island. Indeed I have fed more than normal myself. There are millions of dollars involved in supplying sugar to our bees, including the direct cost of producing sugar cane and refining it, plus transport, labour and machinery. If only a portion of this money could be directed each year to planting more bee-friendly trees in areas that our bees require in times of dearth, then over time we would save a considerable amount in costs associated with sugar feeding.

Educating business

The beyond Rio + 20 report⁵ mentioned education as a key to making the changes necessary. Schools have been given money for the Enviroschools initiative but not a lot has gone to business education. Private organisations like the Sustainability Council of New Zealand and Pure Advantage⁶ have begun to fill this gap, funded by some notable business people and companies.

In March, CEOs Daniel Paul, Pauline Downie and I visited Simon Terry and Stephanie Howard at the offices of the Sustainability Council of New Zealand in Wellington (see www.sustainabilitynz.org).

In discussion we covered some of the areas that logically the National Beekeepers' Association should support. Two of these are:

Continued on page 6

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Continued from page 4

1. Brand New Zealand is important in our export markets, as is country-of-origin labelling. Adopting more sustainable practices in what we do will undoubtedly help to reverse what has been a declining image
2. Being part of the review of the HSNO Act. Currently the Act provides a perpetual consent that can only be revoked under a very costly reassessment process. That process requires the taxpayer or an affected party to pay to prove that a substance is too risky, not the promoters to prove that gains outweigh the risks. Also, there is no independent testing of new and existing substances over all stages of the bee's life cycle, particularly at the time of application for registration of a new substance and there is a lack of protocols for this testing. The NBA Technical and Submissions Committee is working on this matter.

Stephanie said, "We need to decouple growth from environmental harm". In the

context of sustainability, we need to ask, 'What are the things that will make us resilient?'

In a wider context we need to know what our bees are worth annually to the economy. We have an outdated annual figure of \$5.1 billion, derived at least a decade ago. It needs to be updated (refer to recommendation 18, point 2 in the Green Growth Advisory Group report).

In terms of pollination, a glimpse of a worst-case scenario turned good can be found in journalist Pat Baskett's report in the July issue of *New Zealand Geographic* magazine, where she describes her time with Frans Laas and others on the Chatham Islands.

Sustainability brings in many topics and one that I cannot cover fully in this report. On 12 and 26 July the NBA will sponsor workshops on the VSH queens project and varroa in Christchurch and Hamilton, respectively. Details are on the NBA website (<http://nba.org.nz/news-events/news/varroa-workshops-information>), on page 11

and in the brochure sent out to all registered beekeepers. Sustainable varroa control is a cherished goal and one I hope to talk about in a future President's report, along with other elements of sustainability.

Notes

¹WWF New Zealand's environmental record since the original Earth Summit 20 years ago http://awsassets.wwfnz.panda.org/downloads/earth_summit_2012_v3.pdf

²Greening New Zealand's Growth. <http://www.med.govt.nz/sectors-industries/environment/pdf-docs/library/Greening%20New%20Zealand%20Growth.pdf>

³See Trees for bees website <http://www.treesforbeesnz.org/>

⁴Land and Water Forum. <http://www.landandwater.org.nz/>

⁵Beyond Rio+20: Governance for a Green Economy. <http://www.iisd.org/publications/pub.aspx?id=1417>

⁶Pure Advantage <http://www.facebook.com/pureadvantage>



Survey of beekeeping clubs

By the NBA Secretariat

The NBA recently conducted a survey to ascertain how it can work more closely with beekeeping clubs and add value to clubs' members.

Responses to the survey have provided the NBA with some extremely useful information as to how it can better progress its relationship with club members, particularly as only one quarter of survey respondents were current members of the NBA.

There are two predominant issues that surfaced from the survey. First, club members feel the NBA needs to improve its communication with club members. Second, respondents feel the NBA membership model is not well suited to their needs.

The NBA wants to work on these issues to ensure club members' requirements are met. The Executive Council is currently in the process of brainstorming how we can better communicate with clubs, as well as re-assessing the NBA membership model for clubs.

The Executive Council is aiming to come back to clubs with some ideas as to how to address these issues by the end of July.



Trees for Bees initiative in Eastland

By Barry Foster, NBA President



On 31 May Barry Foster, John McLean, Peter Hair, Paul Badger (left to right in the photo) and Willie Kaa (behind the camera) had a look at the proposed planting area on Peter Hair's property at Lake Repongaere near Gisborne. There are three sites to be planted by the end of June with tagasaste, flax, cabbage tree and other species. Peter's property also features on the front cover. Photos: Willie Kaa. 



Consider planting some bee-friendly plants this year. Refer to www.treesforbeesnz.org and <http://wildforage.co.nz> for some ideas.



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Government fund tops \$1 million for bees

By the Ministry for Primary Industries

Two new bee industry applications have been approved as part of the Sustainable Farming Fund's latest round, bringing its total commitment in the bee industry to \$1.1 million.

The Sustainable Farming Fund

The purpose of the Ministry for Primary Industries' Sustainable Farming Fund is to support the financial, environmental and social performance of New Zealand's land-based and aquaculture production sectors.

It is a "grass-roots" fund, with an emphasis on results and outputs that can be applied. As part of this, beekeepers and industry bodies are directly involved with projects to ensure the results are relevant and usable on the ground.

There are three existing Sustainable Farming Funding projects in the bee industry, "Sustainable control of Varroa", "Trees for Bees" and "Southern Beekeepers Monitor Project".

Following are the two new projects, which begin on July 1.

Reducing the threat of PAs in honey

(SFF investment is \$300,000 + GST, which is 66% of the total cash contributions. The Ministry of Science and Innovation is also providing financial support to this project. Project duration is three years.)

Plants containing pyrrolizidine alkaloids (PAs) are widespread in NZ and their distribution is increasing. These alkaloids can be incorporated into honey when bees gather nectar and pollen from certain plants.

There is international concern about PAs in the food supply because some are known to have toxic and long-term effects in humans and animals. In New Zealand, initial risk assessments have indicated that toxic effects are unlikely. However further research into this problem is necessary, particularly as the presence of PAs in New Zealand honey presents a market access problem.

Unless the potential risk is better understood and, if necessary managed, the honey industry would suffer, and export growth would be curtailed.

The Bee Products Standards Council (BPSC) is leading this project. BPSC is a pan-industry body with representation from every aspect of the New Zealand honey industry, ensuring that project outcomes have the widest uptake.

The project is also supported at the highest level by Food Standards Australia New Zealand (FSANZ) and MPI, which both have programmes on PAs in food.

This new SFF project will deliver information and tools to the industry, to enable decisions on managing and, if necessary mitigating, the risk presented by PAs. The project will also provide information to FSANZ and MPI, which will help these agencies play a leading role in setting international standards for PAs in food.

The project, and the wider programme on PAs that it sits within, will enable a proactive response and industry self-regulation so that New Zealand's honey industry is positioned to meet future international regulations and maintain market access.

Honeybee genetics

(SFF investment is \$142,970 + GST, which is 61% of the total cash contributions. Project duration is two years.)

The viability of our honeybee industry is under increasing threat from new pests like the varroa mite, new diseases, indiscriminate insecticide application and intensified land use.

A New Zealand-wide survey will be undertaken to determine the genetic composition of bees, and the resulting data made available to beekeepers to better inform their breeding decisions.

One problem is that honeybees are particularly sensitive to inbreeding, and with populations being reduced by varroa it is possible that inbreeding in New Zealand bees might be increasing. Using a set of genetic tests developed at the University of Otago, this project will identify bee populations at risk of inbreeding and identify breeding strategies to improve their genetic resilience.

Genetic tests will identify the sex-determining locus of the honeybee, a gene that determines if a bee is going to be male or female. The aim is to track the different versions of this sex-determining gene and see if there is enough diversity to maintain healthy bee populations.

Reduction in bee populations also affects pollination capacity. As part of this project, there will be a trial of a novel technique to identify bees with improved pollination performance, which can be used for breeding programmes.

This project uses the genetics expertise of the University of Otago in partnership with the Betta Bees Research Ltd and the wider bee breeding industry.

It will also use networks and communication expertise of the NBA and the Bee Industry Group in Federated Farmers, as well as two groups representing industry requiring pollination services, the Foundation for Arable Research and Beef + Lamb New Zealand.

For further details and how to become involved, please contact your industry organisation or view details on the SFF webpage of the Ministry for Primary Industries website: <http://www.mpi.govt.nz/environment-natural-resources/funding-programmes/sustainable-farming-fund.aspx>



Food Safety and RMP Awareness courses

Information provided by AsureQuality Limited

During 2011 AsureQuality ran several successful 'Honey Food Safety & RMP Awareness' training courses throughout New Zealand.

It is planned to run further courses this year, three courses in the North Island and two in the South Island.

These courses are specifically developed for beekeepers, to help them meet their health and food hygiene competencies under the Code of Practice (COP) for Risk Management Programmes (RMP). The courses are aimed at up-skilling RMP operators and their staff who are presently processing bee products.

Beekeepers will be given a better understanding of food safety and legislation relating to bee products. These courses will meet the training requirements in the COP and enable beekeeping operations to be far more effective in meeting their legal obligations under their RMP.

An AsureQuality 'Certificate of Food Safety and RMP Awareness in the Honey Industry' will be issued to course attendees at the completion of this one-day course.

Who can attend this course?

The course is designed specifically for beekeepers and honey processing staff. The course is, however, open to anyone associated with the beekeeping industry and will also be useful for beekeepers who may wish to set up their own processing plant at some future date.

What will be the cost?

The course is priced at \$295 plus GST. This cost will cover morning and afternoon tea together with lunch. All other meals, transport and accommodation are the attendee's responsibility.

What will the 1-day course cover?

- Food Poisoning and Food Safety
- Food Safety in the COP
- Background to Risk Management Programmes (RMP)
- What is HACCP?
- Becoming Familiar with the COP
- Understanding OAP & EU OMAR
- Tutin in Honey Standard
- Transport of Bee Products
- Eligibility Declarations (E-cert)

Who will run the courses?

Apicultural Officers and RMP verifiers from AsureQuality Limited, Tony Roper, Marco Gonzalez and Byron Taylor, will deliver the courses that were developed with assistance from Food Safety and RMP expert staff within AsureQuality Limited.



Where and when will the courses be held?

It is planned to run courses in:

- Whangarei: Tuesday, 31 July 2012
- Tauranga: Tuesday, 1 August 2012
- Masterton: Wednesday, 7 August 2012
- Christchurch: Tuesday, 14 August 2012
- Timaru: Wednesday, 15 August 2012

Places are limited and will be allocated on a first-in, first-served basis. Please ensure you return your registration form as soon as possible to secure your place. A copy of the registration form is available on the NBA website.



How to register

All attendees must complete the registration form as soon as possible and send it to AsureQuality in Christchurch. **Download the form from the NBA website and send it to:**

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AsureQuality Limited
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Fax: (03) 358 6222
Email: kerrie.fahey@asurequality.com

Once your registration form is received you will be issued with a course confirmation letter and an invoice. A signed course confirmation letter and payment must be received prior to the course.

For further information on the course, please see the advertisement on page 14 or phone:

AsureQuality 0508 00 11 22
Tony Roper 021 283 1829 or
Marco Gonzalez 021 951 625

How bees spread AFB disease

By Dr Mark Goodwin, Plant and Food Research, Ruakura Research Centre. Email: mark.goodwin@plantandfood.co.nz

It is quite difficult to infect a colony with American Foulbrood disease (AFB), although some beekeepers seem to be very good at it.

Under trial conditions you need to feed about five million AFB spores per litre of sugar or honey to infect a colony. Other bee diseases like chalkbrood (fungus) and nosema (protozoa) are very contagious by comparison. Nosema can be found in all colonies in New Zealand. When chalkbrood was first introduced to New Zealand in the early 1980s, it very quickly spread through the country in a couple of years.

American foulbrood disease can spread between colonies by a large number of mechanisms. These can be divided into two basic types: honey bee assisted and beekeeper assisted. This article describes the mechanisms by which bees spread AFB. Bee spread is much less common than beekeeper spread. Many examples of this can be seen where two beekeepers utilise the same area. One beekeeper's hives may have a very high AFB disease incidence while the other has a very low incidence.

Robbing

Probably the most common way bees spread AFB is by robbing other colonies that are weak or have died. In many cases, beekeepers have contributed to this problem by allowing colonies to become weak enough to be robbed.

Several years ago I was lucky enough to see what can happen when bees rob out a diseased colony. Eighty colonies were returned to the same site after they had been used for kiwifruit pollination. Twenty of these colonies were immediately moved to a second site. Two weeks later, a further

20 were moved to a third site again. Of the 40 colonies remaining at the original site, 35 contracted AFB and had to be burnt. None of the first group of 20 hives moved contracted AFB; however, 18 of the second 20 hives moved developed AFB. Sometime in the two weeks between removing the first and second group of hives from the site, the bees from the remaining 60 hives must have robbed out one or more diseased colonies.

As none of these 60 hives were robbed out the bees must have robbed a hive situated on a different site, or a feral colony. The most intriguing thing about the case was that at least 53 colonies had robbed out the same source. Unfortunately we were unable to find what they had robbed.

“Bee spread is much less common than beekeeper spread.”

Drift

Bees drifting between colonies is another way AFB spreads; however, it would appear to be reasonably uncommon. It would have been even less common before humans took up beekeeping because of the relatively large distance there is usually between feral colonies. The practice of keeping large numbers of colonies in close proximity increases the amount of drift and the chances of drift spreading AFB.

We carried out a trial with 24 pairs of hives. Each pair was as close together as possible to encourage drift. One hive had a low-level AFB infection (less than 50 disease cells) while the other was uninfected. When we measured the level of drift, the equivalent of 50% of the bees swapped hives over a 20-day period. The pairs were together for an average of 103 days. Only two of the uninfected colonies developed AFB. Drift is, however, likely to be a larger problem when colonies have more extensive AFB infections.

Anything that can be done to decrease drift will help reduce this source of spread.

Having hives in straight lines and all painted the same colour increases drift. Circles and U-shaped apiary patterns reduce drift.

Swarms

Swarms can carry AFB with them. The second colony I ever had was a swarm which developed AFB very soon after it was hived. For this reason it is better to hive swarms in old equipment so the loss is less painful.

Swarms are best hived on foundation rather than drawn comb. By the time the bees have drawn comb and the queen has laid eggs, many of the AFB spores they were carrying should have disappeared, which will decrease the chance of the disease reappearing. This is similar to the methods used for shook swarming (shook swarming is illegal in New Zealand).

Swarms occupying infected cavities

Swarms sometimes utilise cavities that have previously been occupied by another colony. This is probably how much AFB spread before humans started keeping bees. The AFB spores themselves suggest this mechanism was important. The spores are very resistant and are able to survive long periods of time, probably more than 50 or 100 years. They can, therefore, survive the relatively long periods of time that may elapse before a cavity is re-inhabited.

[Editor's note: This is the eighth article of a series that has been written for the Management Agency for the American Foulbrood National Pest Management Strategy. These articles were first published beginning in 2003, and have been reviewed and updated where necessary. The original title was 'How bees spread American foulbrood disease'.]

We will run these articles on a regular basis over the year. The articles will cover a range of aspects of American foulbrood control, including how to inspect for and identify diseased colonies, the management of colonies to prevent American foulbrood and a beekeeper's legal obligation with regard to American foulbrood.]



What's happening with varroa-resistant bees

By the NBA Secretariat

The National Beekeepers' Association is holding workshops to brief beekeepers on the results of the VSH Project, a major research project designed to develop varroa-resistant bees.

NBA president Barry Foster says the project, mounted with help from Sustainable Farming Fund (SFF), is one aspect of a sustained work programme initiated by the NBA to develop solutions to varroa resistance.

"While the varroa mite's resistance to chemicals is not unexpected, it is a serious threat to beekeepers and the agricultural sector," he says.

"The five year VSH Project was designed to breed a self sustaining population of bees with a varroa-sensitive hygiene (VSH) trait, giving bees an ability to clean their hives of varroa naturally."

Barry says the workshops are a must for all beekeepers interested in learning about the latest varroa control.

"The aim of the workshops is to show beekeepers the steps they can take to control varroa, now that resistance to traditional treatments is starting to spread.

"Varroa-tolerant bees will reduce the need for large amounts of chemicals to be used in the colonies, therefore slowing down the build-up of chemical resistance."

Barry says there will be a range of prominent speakers at the workshops, which are being held in the North and South Islands.

Dr Mark Goodwin and Michelle Taylor from Plant and Food Research, who have undertaken the VSH research, will brief beekeepers on the outcome of the project.

There will also be speakers from Betta Bees, which is spearheading bee breeding work to further develop the varroa-resistant strains, and Rainbow Honey, which is endeavouring to commercialise for New Zealand beekeepers the important VSH populations produced as a result of the NBA's VSH Project.

The Ministry for Primary Industries (MPI) and Federated Farmers' Bee Industry Group (BIG) will also be represented at the workshops.

There is no charge to attend the workshops.

The first workshop will be held on July 12 at the Hornby Working Men's Club in Christchurch. The second workshop will be held in Hamilton, at the McMeekan Centre at Ruakura Campus on July 26.

For workshop registration, please visit www.nba.org.nz, or for more information ring the NBA on 04 471 6254.



NBA research priorities: have your say!

By Kerry Gentleman, NBA Research Committee chairperson

Research is such a high priority for the NBA. We dedicate a budget to research every year because we know how important it is to you and to our industry as a whole.

Last year, we asked our NBA Branches for their views on the research project the NBA should prioritise. Now we are asking again, because we want to channel our research

dollars where members think they'll be most effective.

So tell us: what aspects of bee-related research the NBA should support or initiate? What issues are most important to you? What kind of research would help you most as beekeepers (big or small)?



Please email your thoughts and submissions (either individually or as branches) to me at fraser.kerry@clear.net.nz

Or you can post them to me:

Kerry Gentleman
176 Ward-Holmes Road
RD 2
Takaka 7182
NELSON

The deadline is 31 July 2012.

Thank you for your time.



Chelifers may control varroa

By S. Read¹, B. G. Howlett¹, B.J. Donovan², W.R. Nelson¹, R.F. van Toor¹ and G. Leung³

¹The New Zealand Institute of Plant & Food Research Limited, Private Bag 4704, Christchurch 8120, New Zealand. ²Donovan Scientific Insect Research, Private Bag 4704, Christchurch 8120, New Zealand. ³Faculty of Agriculture and Life Sciences, PO Box 84, Lincoln University, Lincoln 7647, New Zealand

Varroa destructor is the most serious arthropod pest of honey bees (Meikle et al. 2012), destroying bee colonies not only in New Zealand, but also worldwide (Donovan & Paul 2006).

Apiarists currently rely heavily on synthetic acaricides (Meikle et al. 2012), but increasing resistance of varroa to these chemicals suggests their long-term use is unsustainable (Meikle et al. 2012). The development of non-chemical techniques to control varroa populations within hives could provide a valuable and sustainable alternative to current management practices.

Chelifers, also known as pseudoscorpions (Arachnida: Pseudoscorpionida), have shown potential as a biological control alternative for varroa management (Fagan et al. 2011). If chelifers prove to be successful at controlling varroa populations, the reliance on chemical control could be reduced (Donovan 2000). Chelifers are arachnids that have eight legs, a body up to eight millimetres long, and a prominent pair of pincers projecting in front of them. Chelifers use their pincers to grab mites and small insects for food (Donovan & Hyink 2006). There are over 3,000 species of chelifers recorded worldwide, with at least 70 species recorded in New Zealand (Donovan & Hyink 2006). They are most commonly found in leaf litter and under loose bark of trees, but they can also be found in honey bee hives around the world including New Zealand (Fagan et al. 2011), South Africa (Donovan 2000), parts of Europe (Donovan & Paul 2005) and India (Donovan & Paul 2006).

At least a dozen species of chelifers have been reported within honey bee hives worldwide. The honey bee hive is likely to provide chelifers with shelter, protection

from predators and abundant food. It is thought that chelifers within honey bee hives prey on mites, and larvae of flies (Diptera), beetles (Coleoptera) and moths (Lepidoptera) (Donovan 2000). With the invasion of varroa the chelifers have potentially found an additional prey in honey bee hives. Studies have shown that the chelifers will not interfere with the honey bees, nor predate on them (Donovan 2000; Fagan et al. 2011). One chelifer can eat up to three varroa within a couple of hours (Donovan et al 2009). A modelling study calculated that just 25 chelifers may be adequate to prevent 1,000 varroa in a beehive from multiplying (Fagan et al. 2011).

Chelifers in New Zealand

In New Zealand, two native species, *Nesochernes gracilis* and *Heterochernes novaezealandiae* (previously named *Maorichernes vigil*), have been found in hives. They are commonly seen in hives within the Bay of Plenty region of the North Island (Donovan & Hyink 2006; Donovan et al. 2009). At Plant & Food Research, a project is under way to establish and maintain a breeding colony of these chelifer species. Chelifers from this colony can then be used in experiments that may lead to their use as a biological control agent for varroa.



Figure 1. A chelifer found in a nucleus honey bee hive. Chelifers have shown potential as biological control agents for varroa mites in hives. Research into their effectiveness for this purpose has begun at Plant & Food Research.

In March 2012, 263 chelifers were collected (227 *Nesochernes gracilis* and 36 *Heterochernes novaezealandiae*) from Katikati, approximately 100 kilometres southeast of Auckland, to establish laboratory cultures.



Figure 2. A native chelifer (*Heterochernes novaezealandiae*) holding an aphid given as prey. They feed by holding the prey with their pincers and then sucking out the body juices with their piercing mouthparts.

Of these, 29 individuals (27 *Nesochernes gracilis*, 2 *Heterochernes novaezealandiae*) were collected directly from polystyrene nucleus mating beehives while the remainder were collected from leaf litter and bark nearby. Very little is known about the biology of native chelifers (Donovan et al. 2009). Plant & Food Research is currently trying to establish the conditions required to develop a breeding population. This includes assessing the influence of climatic variables and diet on survival and fecundity. Our preliminary research has already found that chelifers readily consume a wide variety of insects including larvae of the Indian meal moth (*Plodia interpunctella*), *Drosophila* sp. larvae (fruit fly), small Noctuid moth larvae (*Helicoverpa armigera* and *Spodoptera litura*) and pea aphids (*Acyrtosiphon pisum*). Pea aphids appear to be the easiest food source to rear chelifers on, as they are easy to culture and maintain. Further feeding tests are under way to determine food preferences and consumption rate of prey insects.

Can you help?

The research team is also very keen to gather further information on the distribution of honey bee hives already containing populations of chelifers. Therefore, next time you lift up the lid of your hives, please look out for chelifers. They are most commonly seen around the wooden edges of the box

and also sometimes on the underside of the lid. If you do find any, please contact Sam Read (Sam.Read@plantandfood.co.nz).



Figure 3. Size comparisons: varroa (*Varroa destructor*) on left, chelifer (*Nesochernes gracilis*) in the middle, and worker honey bee on right.

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Acknowledgements

We would like to thank Mr Wouter Hyink who helped with collecting chelifers, Dr Roddy Hale (Lincoln University, Christchurch) for discussions on experiments, Dr Melanie Davidson for support and advice, and Mr Thomas Sullivan and Miss Delyse Campbell for assistance with the maintenance and collection of chelifer food sources.



Figure 4. A chelifer consuming a varroa mite. All photography by Samantha Read.

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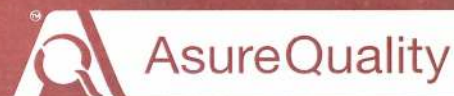
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NZ first to catalogue its species

NIWA media release, 18 May 2012

New Zealand is the first country in the world to catalogue its entire known living and fossil life.

The third and final book in the series *New Zealand Inventory of Biodiversity*, edited by NIWA's Dr Dennis Gordon, published by Canterbury University Press, was launched on 21 May at Te Papa in Wellington.

This work is the culmination of an international effort, led by Dr Gordon, involving 237 other New Zealand and overseas authors.

The *New Zealand Inventory of Biodiversity* is a comprehensive three-volume inventory that offers the first full review of New Zealand's entire known species of animals, plants, fungi and microorganisms—more than 56,200 living species and 14,700 fossil species—covering all life in all environments, from the Cambrian (around 530 million years ago) to the present day.

"This 1758 page review and inventory of all of life through all of time in New Zealand, involving specialists in 19 countries, has taken a decade to complete," said Dr Gordon.

Worldwide, approximately 1.8 million species of life have so far been described. In New Zealand, we have nearly half the number of marine species that are in the European region, even though Europe's marine area is five and a half times larger than our Exclusive Economic Zone (EEZ). This shows just how rich our marine life is, even though it hasn't all been discovered yet.

"We have done the stocktake now, and by bringing it all together in this work, everybody can see what we have and we can use that information in all sorts of ways. Before the inventory, the species names were scattered throughout the scientific literature," says Dr Gordon.

The three volumes are associated with the Catalogue of Life, a global scientific project that aims to record all named species on Earth in one online list. "Our species names are being given to the Catalogue through the New Zealand Organisms Register," says Dr Gordon, who is a member of the international project team of the Catalogue of Life.

This research work was done to support New Zealand conservation, biotechnology, ecosystem understanding, biosecurity, and sustainable ecosystem management.

"Prior to this, New Zealand had a vast reservoir of undiscovered and unrecorded species—so back in 1997, when I was project leader for marine taxonomy, I thought what I might do is review what we know about our marine life, and show the benefits of doing that," says Dr Gordon. The project grew from that point.

To mark the release of the final volume, Canterbury University Press is releasing the three books as a boxed set, presented in a specially designed slipcase.

"We are honoured to be publishing a work of such significance," says Rachel Scott, publisher of Canterbury University Press. "It is a huge milestone for New Zealand: once again this country is seen to be leading the way."

Volume 1 (2009) and Volume 2 (2010) covered the animal kingdom, while Volume 3 deals with the remaining groups of life—bacteria, protozoans, algae, plants and fungi. All volumes are illustrated.

Volume 1 catalogues the branches of the animal kingdom that include living and fossil sponges and corals, worms and shellfish and their relatives, and vertebrates – the fishes, amphibians, reptiles, birds and mammals.

Volume 2 mostly deals with the major branch of the animal kingdom known as Ecdysozoa (moulting animals), which includes arachnids, centipedes and millipedes, crustaceans, insects and related marine worms.



Varroa destructor, one of the illustrations in the third and final book in the series *New Zealand Inventory of Biodiversity*. Photographers: Eric Erbec and Chris Pooley.

One of the things Canterbury University Press hope to do is advertise this book to high school students. "I would really love to see students pick up one of these volumes and say 'Wow, I didn't know we had this in New Zealand', and for that to feed an interest," says Dr Gordon.

Publishing information

New Zealand Inventory of Biodiversity (Volume 3), edited by Dennis P. Gordon, published by Canterbury University Press, April 2012, RRP NZ\$89.95, hardback, 616pp, incl. 16pp colour, ISBN 978-1-927145-05-0.

New Zealand Inventory of Biodiversity (boxed set containing three volumes), RRP NZ\$180, ISBN 978-1-927145-28-9.

Background

Dr Dennis Gordon is a Principal Scientist at the National Institute of Water and Atmospheric Research (NIWA), in Wellington, and is one of New Zealand's leading biodiversity scientists. In 2005, he was the recipient of the New Zealand Marine Sciences Society lifetime achievement award. Dr Gordon is engaged in biodiversity activities both nationally and internationally, including serving on the international teams coordinating the production of the Catalogue of Life and the World Register of Marine Species.

Source

Adapted from a media release from the National Institute of Water and Atmospheric Research, 18 May 2012 entitled 'New Zealand: first in the world to catalogue all its species through all of time.'



Have you heard of COLOSS?

By Kerry Gentleman (Chair) and John McLean, NBA Research Committee

Four years ago, honey bee researchers in Europe established an international network with the aim of understanding the causes for honey bee COLony LOSSes (COLOSS) and to coordinate efforts towards improving the health of the western honey bee (*Apis mellifera* L.).

There were four main areas of interest:

1. developing standards for monitoring and research on colony losses

2. identifying the underlying factors and mechanisms responsible for colony losses
3. explaining and preventing large scale losses of colonies
4. developing emergency measures and sustainable management strategies.

The network has grown to more than 300 academic and government researchers, extension personnel, veterinary officials and students from 50 countries (Williams et al., 2012). The network has a stated objective of involving young researchers (less than 10 years post-Ph.D.) to ensure a strong honey bee research foundation for the future.

There are four working groups active at this time:


1. Monitoring and Diagnosis
2. Pests and Pathogens
3. Environment and Beekeeping
4. Diversity and Vitality.

The network is in the process of preparing a "BEEBOOK: standard methodologies for

Apis mellifera research" which will document research protocols so that results can be compared around the world. Topics currently being prepared are listed in Table 1 of Williams et al. (2012).

The NBA Research Committee has been invited to coordinate participation on behalf of New Zealand and will keep you informed. We invite you to visit the COLOSS website at <http://coloss.org> and see for yourselves the scope of this international coordinated effort.

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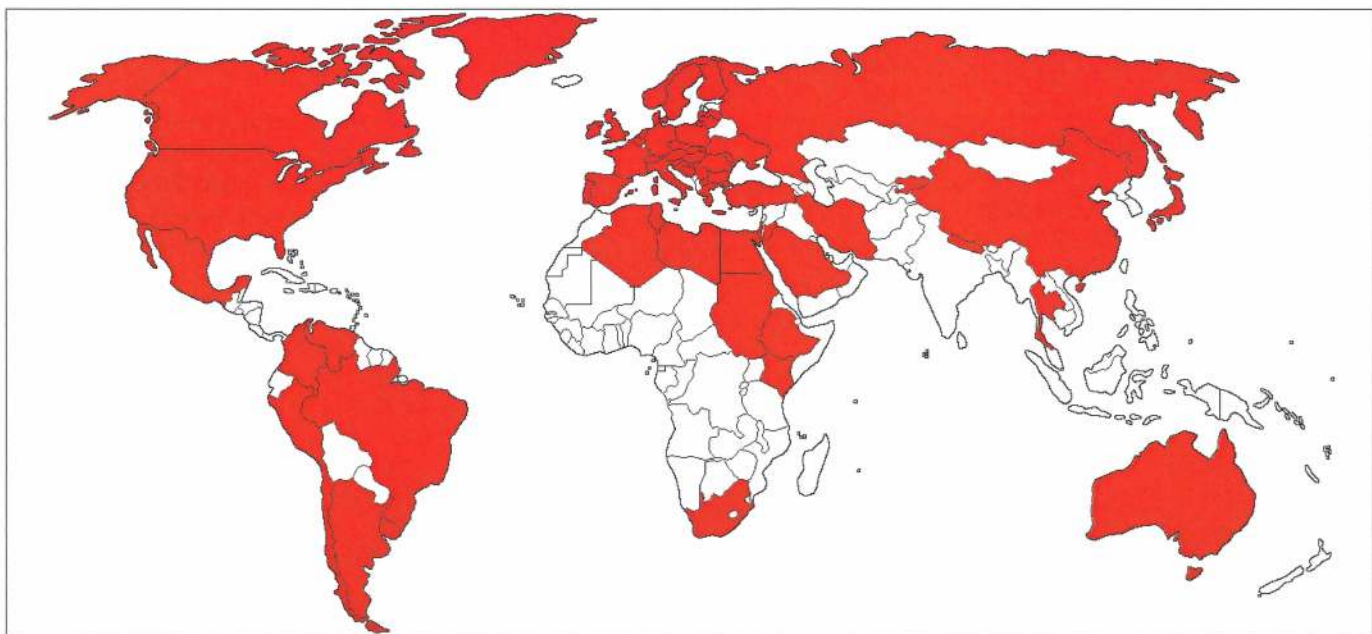



Table 1. At the beginning of 2012, the research network COLOSS (Prevention of honey bee COLony LOSSes) consisted of over 300 members from 59 countries, represented in red. (Source: Williams et al., 2012.)

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More correspondence on Tutin

By Gary Jeffery

I was interested in Jim Sim's comments on my letter. His comments lead me to a series of IFS and BUTS.

When the Tutin testing areas were proposed, IF Food Safety had tested honey from areas likely to have Tutin, for a start, the blanket coverage from 42 degrees north could have been avoided. I offered our honey for testing and Mr Sim said that Food Safety could not afford to do this testing. To safeguard an industry reputed to be worth \$5 billion to the New Zealand economy, surely funding to test would have been automatic. The present system leaves much to be desired scientifically.

BUT Food Safety cannot afford to test, and the beekeepers who must be rolling in money can? Yeah, right. What is the total cost of testing to the beekeeping industry? Mr Sim probably can obtain the number of tests done by the various laboratories and advise the industry.

Mr Sim says some of the positive results were not reported. As all honey exported requires a Tutin clearance, so indirectly he is actually obtaining the results he needs. If he worked with AsureQuality there would be no need for the additional complex paperwork supplying him directly. Time is money or doesn't Mr Sim know this?

Mr Sim says beekeepers are now remaining in the risk areas as they are relying on testing. If they make a mistake, what will Mr Sim's response be? "Oh dear, how sad" or another example of the big stick method he relies on? If in the same situation my sleep would be very disturbed.

Mr Sim thinks all members of the public are conversant with registration requirements.

If a new beekeeper does not even know he has to register, the system breaks down in many ways. I know ignorance of the law is no excuse. As a past Apiary Instructor, I was kept informed of all new beekeepers, through the grapevine but this only works when a field officer is actually in the field, not tied up with clerical work.

Mr Sim says it is the responsibility of every person selling food to understand the risks etc. Good in theory BUT not always in practice. He is assuming everyone is well versed in bureaucratic goings on, but he is also assuming everyone has enough intelligence to follow the rules. Some people are very good practically but hopeless in other ways.

Mr Sim's last point that Advisory Services are generally provided by the private sector rather than by Government. When the RMP plan was first proposed Mr Sim told the audience that Food Safety would not cross-subsidise the industry as had the local bodies with their health certificates. He has kept to his word and definitely has not held back on costs, direct and indirect, so there is little left to fund our own advisory service.

BUT if we had our own Beekeeping Act, these costs could be directed to actually fund quite an efficient Advisory Service. For instance if the Apiary Advisor supported his funding through the audits and at the same time looked at the actual beekeeping operations, disease control etc while in the area it would benefit the industry as a whole.

Then we could start again leaving out some of the unnecessary red tape imposed on us by being in the Animal Products Act; e.g., why on earth do I have to retain for 4 years a form asking was my truck clean when I took a drum of honey three kilometres to the local carrier's depot? We don't need Food Safety acting as MOTHER on such mundane things. "Yes I did wash behind my ears today, mother."

Hopefully when the Tutin Standard is revisited this year, common sense will

prevail for a change and much of the restricted area will be removed from testing, with corresponding cost savings for the beekeepers.

Response from Ministry of Primary Industries

I have read Mr Jeffery's letter and noted the points he's raised.

The reality is that data generally provides a much better case for change of a standard than opinion. These topics will be discussed further in the upcoming review of the Food (Tutin in Honey) Standard 2010. Beekeepers should take the opportunity to comment when the review document is released.

With respect to whether there should be an Apiaries Act again, the overall trend is towards "less and better regulation". This means that unless the industry as a whole wanted its own legislation, and could convince the legislators of the need to have a separate Act, it seems unlikely that this would occur.

- Jim Sim
Principal Advisor (Animal Products)



*This photo shows a deteriorated box rotting away with bees coming and going. The mystery: what's it like inside?
Photo: Frank Lindsay.*

More on manuka honey

By John Bassett

The article 'Belief and integrity in manuka honey' (John Rawcliffe, April journal) was, in my opinion, a good précis of the situation around the topic the article addressed.

A comment made in it regarding overseas research has caught the attention of Dr Peter Molan and prompted him to write a response in the June journal. In that he gives a list of continuing research in New Zealand that is heartening to hear about and I look forward to hearing more of the outcomes.

The response then goes on to extend the discussion surrounding activity definition and also medical claims. The former of these is of course subject to the "influence from the vested interests" that Mr Rawcliffe referred to and the efforts to stabilise the situation, including the sentiments expressed in the article, are to be commended. I note the support for this by Dr Molan in his call for "unambiguous labelling" although a noticeable omission was any comment on quality assurance.

The medical claims issue is a different problem in that there is a barrier between the research industry and the registration industry. Both sides in this equation need to complete their tasks to achieve a common goal. To do this usually requires funding and when that funding is sourced from vested interests then integrity becomes an issue. We are now back where we started.

Undoubtedly the manuka honey industry has been a huge success story even if much of that has resulted from both the strength of the combined purpose and the "synergistic effects" added by the competition amongst vested interests.

In his response, Dr Molan has challenged Mr Rawcliffe to provide details of the overseas research to which he refers. I hope these can be provided so that we can embrace it as complementary rather than "an affront" to the work of NZ scientists.



WEATHER

Drier winter likely for some

Neutral conditions (neither La Niña nor El Niño) presently exist in the tropical Pacific and should persist through much of winter, but there is a likelihood of El Niño developing by spring.

Circulation patterns over New Zealand this winter (June–August) are likely to be close to the seasonal norm—winter is the time of year when weather features are typically fast-moving and relatively active.

Winter rainfall totals are likely to be below normal in the eastern South Island, normal or below normal for Nelson/Marlborough, as well as the west and north of the North Island. Near normal winter rainfall totals are predicted for the South Island West Coast, and the eastern North Island.

For winter (June–August), sea temperatures around New Zealand are likely to be slightly above normal. Seasonal temperatures are likely to be near average overall for all regions of the country. Frosts and snowfalls typical of winter will occur from time to time.

Overall picture

Temperature: Seasonal temperatures are likely to be near average overall for all regions of the country. Frosts and snowfalls typical of winter will still occur from time to time.

Rainfall, soil moisture and river flows:

Winter rainfall totals and soil moisture levels are likely to be below normal in the eastern South Island, normal or below normal for Nelson/Marlborough, as well as the west and north of the North Island. Near normal winter rainfall totals and soil moisture levels are predicted for the South Island West Coast, and the eastern North Island. River flows are predicted to be below normal for the north and east of the South Island, near normal in the eastern North Island, and normal or below normal elsewhere.

© Copyright NIWA 2012 (National Institute of Water & Atmospheric Research, National Climate Centre), abridged from 'Seasonal Climate Outlook: June–August 2012'. See <http://www.niwa.co.nz/climate/sco/seasonal-climate-outlook-june-august-2012> for full details.



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FROM THE COLONIES

Auckland Branch

Nearly half of the year has passed and a lot of the jobs that should have been done are still to be done.

The Auckland Branch had a good attendance at a meeting where Jonathan Stephens from Comvita spoke about the difference between manuka and kanuka honeys and how they should be treated to get the finest quality to keep the goodness in the product. A meal provided by the Branch was greatly appreciated by all. A special thank you to Helen Sinnock and her team.

We were hosted by Neil and Audrey Stuckey from Waitemata Honey and were shown around their new plant, which is very impressive.

There seem to be some very active wasps this year that are making a nuisance of themselves around many beehives.

Looking forward to next season, which we hope will produce more manuka and kanuka; well, more than we had this year.

- Graham Cammell, Branch President

Poverty Bay Branch

Another season over and it is time to reflect. Two poor manuka seasons in a row, with this one even worse than 2010. Multifloral crops have been average to above average.

The weather has created a challenging spring and autumn with lots of rain. The summer was so wet that the district stayed green right through for the first time in decades.

As we work through our winter jobs, do a little planning for next season. Think about what you can do to spread the risk of another poor manuka season: spread hives into different geographic areas, leave some hives on multifloral sites (prices have improved in the last two seasons) or consider doing some pollination. Don't put all your eggs in one basket, as the saying goes.

May the bees survive the winter without too many mites chewing on them.

Looking forward to a good and informative conference.

- Paul Badger, Branch President

Hawke's Bay Branch

Winter is here and there is not much to report on. I could tell you about my fishing trip but my six-year-old goddaughter caught more fish than me, so we can't talk about that.

Generally wasps haven't been a huge problem this year but I got an enormous nest today that was really hammering the hives.

There has been a lot of talk about accountability and finances in the NBA and some people are not happy with the way things are going. Frankly, I think most of the problems are perceived rather than real: when you sit down and talk to the people actually doing the work, there is a huge amount being done.

At Branch level I thought we had a pretty quiet year but when we sat down and added up all the things we had done, it was actually quite impressive. We are now looking forward to the new season and hopefully a warmer summer.

- John Berry, Branch President



Battery maintenance tips

Generally motorists are reminded to check their batteries before winter because this is the time when they are most used (cold starting, light on, etc.).

But beekeepers with loaders generally have a high battery use from September onwards when pollination starts.

In the old days the 'Morris 1000' had a positive earth, and the lack of electrons (positive potential) meant that the body rusted away quicker. Nowadays we use negative earth but the positive terminal still tends to corrode quicker. Hence it's important that these are given the once over from time to time.

Check that connections are tight and free from corrosion. Clean corrosion off terminals with baking soda and a wire brush. Then apply petroleum jelly to the terminals. This is what we did 40 years ago when working for

the Post Office (telecom) and these batteries lasted over 20 years. No doubt the spray-on terminal protector products available are very good but I prefer those that I know will work.

When you purchase a heavy-duty battery, you get what you pay for; i.e., the more you pay, the better the battery life. Some of the expensive ones are wet cell with new plate technology. A common complaint with batteries is that they don't last long; well, they don't without electrolyte. Wet-cell batteries require regular checking of the electrolyte level if the battery is being used hard and regularly recharged. The positive plate end tends to gas more than the negative end; therefore the first cell's electrolyte gets slightly lower first. Hence it's important to check on this one on a regular basis, then check the rest and top up all cells with distilled water when necessary. I use water from a dehumidifier for this purpose but rainwater is just as good. Leave out a non-metallic container or collect

some roof runoff after the first shower has cleaned the roof.

Battery life can be extended if the battery load is assisted by leaving the truck motor running, but this can be expensive as this uses diesel. One beekeeper in New South Wales, Australia installed a small four-stroke generator under the tray to charge the battery when working hives. This proved far cheaper than running his big prime mover motor.

Calcium chloride batteries (the new cheaper 'wonder battery') charge at a higher voltage, and need a special 230v charger. In the words of one expert, don't even think of buying one for your car or truck.

Today 10% of the electrical faults are caused by broken/loose engine earth to chassis and or chassis to battery connections.

These are views of two dumb telephone technicians.



An interview with Neil Stuckey

Neil Stuckey has been the Northern Ward representative on the Executive Council since being elected at the AGM in June 2011. The Secretariat interviewed him about his role and experience in the industry.

What made you decide to become a beekeeper?

I began working for beekeepers when I was 15—a family who played tennis with my family owned an apiary called Waitemata Honey. They offered my sisters and I summer jobs, as my brother was already working for them. I had no intention of a career as a beekeeper, originally training in the field of plastics engineering. However, after completing my degree, I came home and the family offered me a partnership in their business. I took them up on their offer and here I am!

Tell me about your current business.

I'm still working at Waitemata Honey, but my wife and I are now the only shareholders. My brother and I bought the original family's shares in the mid-1990s, and we have since bought my brother out too. We now run about 1200 hives, with factories on two sites—one dedicated extracting plant and one packing plant. We export most of our product overseas.

Waitemata continues to be run as a family affair: one of my children works for me full-time and the other two both work part-time in the apiary. We still employ the grandson of the couple who offered me a summer job at Waitemata all those years ago.

What do you enjoy most about beekeeping?

I've always loved working for myself and making my own decisions—and it's always a plus that bees don't answer back! Nowadays I don't have nearly as much to do with the bees as I would like. I still do my best to get out there with them, but now I pick and choose when I go, generally going out on great weather days. For me, the country lifestyle has always added to the enjoyment of keeping bees.

Why did you decide to become an Executive Council member?

I've always been interested in the political side of the beekeeping industry, after being on a number of different committees. In my earlier days of beekeeping I was involved with the comb honey industry committee, working with government to put together rules and regulations regarding the export of comb honey. I was also part of the original marketing committee for the NBA in the mid-1990s, which was responsible for the promotion of New Zealand honey. This was around the time when manuka honey started to get some traction in the world. After being involved with beekeeping for such a long time I wanted to give something back to the industry, and felt the best way I could do that would be to join the Executive Council.

What issues and challenges do you see the beekeeping industry facing?

I'm a strong believer in the importance of promoting New Zealand honey, both nationally and internationally. As part of my work with Waitemata, I do a lot of travelling to market and sell our honey. In 1985 I attended a trade fair in West Germany, where I saw the US honey industry selling their products. I was amazed to see the united front put up by numerous American producers and distributors of honey, and the way they all banded together to sell their honey. I see the individual-mindedness and lack of unity as a real issue facing the New Zealand beekeeping industry. It would be great to see kiwi beekeepers come together



and work as a team, as the US honey industry did in '85.

When you're not at work or attending a Council meeting, where will we find you?

I'm a keen bridge player, playing once or twice a week and occasionally in tournaments locally and overseas. In fact I'm preparing for a week in Cairns for a bridge tournament and some diving on the reef! 🐠

We want your photos!

The Publications Committee welcomes photos for the journal. Pop a camera in the truck and snap away when you find something interesting. Please provide a caption and the name of the photographer so we can credit them.

If you're thinking big (such as a potential front cover photo, which we always need), these need to be as large as possible (3MB or larger if possible), in portrait format (vertical rather than horizontal), and ideally 300 dpi (dots per square inch). Regular digital photos are only 72 dpi, so are not suitable for the front cover.

Care, prepare and repair

By Frank Lindsay, NBA Life Member

Inside the hive a new season has begun.

Our yellow bees will have warmed the middle area of the cluster to 35°C and the queen will have started laying in about a 100-millimetre section in the centre of the frame with the bees using stored pollen and honey; that is, for those in the colder areas of New Zealand.

Along the coastal fringe where the bees have had access to gorse, tree lucerne, Spanish heath, kohekohe and wattle, the bees would have continued brood rearing in the middle of the cluster.

Monitor and treat for mites

With brood rearing comes mites. They will have been reproducing also (although at a reduced rate), but numbers can easily multiply in a few weeks if your bees have been out robbing a collapsing hive.

On a warm day when the bees are flying, observe the landing board for small bees or bees with deformed wings. An alternative (and perhaps more reliable) way is to put a greased coreflute (an old piece of real estate sign) insert on the floorboard and leave it for three or more days. Those with mesh floors only need to slide in the insert and read the mite fall. Divide the number of mites falling by the days the insert was left in to give the daily mite fall. It should be under one mite falling per day. If it's higher, you will have to keep an eye on the hive or perhaps treat it again for a month.

If another treatment is required, take the treatment strips out after a month and seal them up, then refrigerate them so they can be reused for another month in the spring. If, however, you have used Apivar®, then leave this treatment in longer as it takes a month or more to reach full strength (the active ingredient has to come out of the strip and spread from bee to bee to give control).

Heft and feed

Also check the hive's weight by hefting. Stand alongside the hive and try to lift the

front of the hive off the stand using the top handhold. Any hive that comes up easily will need to be investigated for honey reserves. Puff some smoke into the entrance, leave for a minute or so and then open the hive, wafting a little smoke across the top bars to discourage any bees from flying out at you.

Look at the honey frames beside the cluster. Are the frames still capped, indicating there is honey in the frames? Often the bees will use the outside frames first as these have a higher moisture content and are therefore easier for them to use so they could be empty. Replace these with honey frames you have put aside as reserves, or consider feeding thick sugar syrup if the hive is light.

"Divide the number of mites falling by the days the insert was left in to give the daily mite fall."

Use a pail feeder immediately over the top super or if you haven't got a feeder, fill a re-sealable zipper storage bag, lay it flat over the frames and put a few small holes in the top surface. Press down slightly so the syrup forms a pool. Dribble a little syrup down on to the bees to encourage them up to find the syrup. A strong colony should take a couple of litres down overnight. Weaker colonies will take a day or two longer. Place an empty super on top to protect the feeder and replace the roof.

Just before doing this, check for condensation under the hive mat. Some around the outside is OK but it should be dry immediately above the cluster. If not, add a matchstick to the top end of the hive to give a little more ventilation.

If your hive is in your garden and it's a little shaded during the day, you might find a lot of dead bees with full pollen baskets just short of the landing board. They have been out gathering pollen but landed short and

have become chilled before being able to crawl into the hive. Place a piece of timber in front of the hive to create a longer landing board and then the bees can crawl into the hive. I found this to be a problem with hives on the south side of a shelterbelt. When moved to a sunnier position, these losses stopped and the hives built up more quickly in the spring.

Making up gear

Commercial beekeepers will be making replacement supers, bottom boards, roofs and frames and next month will be starting to stimulate their bees with their first feeding round.

Most commercial beekeepers paraffin wax-dip their woodware at 130°C for five minutes to preserve it and while it's still hot, spray or paint a water-based paint on the outside that is drawn into the surface of the timber as it cools. Of course, a lot of hobbyists don't have a dipper and have to use alternatives to preserve the timber.

Metalex® (green copper naphthenate) is an alternative preservative but the process takes four to six weeks before the woodware is ready for assembling. It can be purchased from most hardware stores and is mixed with mineral turps; five parts turps to one of copper naphthenate. The woodware is then submerged for 24 hours (or until air bubbles stop coming out of the wood) with a tiny wood fillet between each piece to keep the wood apart so you get good coverage.

After 24 hours the timber is allowed to drip dry for half an hour before being placed into plastic bags and filleted so that it dries evenly, without warping drawing the chemical into the timber as it dries. This can take three or four weeks to achieve. Then the woodware (supers, roofs, etc) is assembled and allowed to air for another week or so.

Supers can be put together using screws or 75-millimetre decking nails. Three are evenly spaced on each end corner and another two are screwed or driven into the end board from the side so that there are five nails or screws in each corner of the super. →



Example of an Australian hive minus the paint, etc. Photo: Frank Lindsay.

Caution: before fixing together, make sure the ends have the top bar groove and the handholds are facing in the same direction (up), and that the sides have the end grain (tree rings) to the inside of the super. That way, if the sides warp (the tree ring will tend to straighten), the top and bottom of the board will stay flush with the end boards of the super.

Nail the ends first and then check that the super is assembled correctly before hammering home the nails in the side boards. This makes it easier to take apart and correct a mistake (and yes, we do make mistakes: even when making up a hundred supers I have assembled the odd super incorrectly).

When nailed or screwed and aired, the woodware is primed and undercoated with oil-based paint and then top coated with gloss coat. Any colour will do except red—red paint can contain lead. In our climate I prefer pastel colours as they warm up quicker in the sun. Mistints are cheaper than normal paints or check the recycling area of your local dump for paint. Some councils allow this to be taken away for reuse. Provided that they are all the same kind (water or all oil based), they can be mixed together to lighten the colour.

Do you paint the inside of the super? I was taught to leave this unpainted as timber breathes but if the timber is completely dry, I would paint the inside to seal in the

copper naphthenate. Australian beekeepers do this and they get 20 years out of their supers before they need attention again. One beekeeper I visited maintained his boxes by sanding down the painted surfaces, recoating with Metalex®, allowing them to dry, punching the nails then sealing the nail holes, cracks and joints with Bondall BondCrete, and repainting again.

Most commercial beekeepers in Australia have 50 x 25 mm wooden Lipton cleats that are screwed along the top edge on the ends of their supers so they can use a lifter rather than handholds. Even without a lifter, this makes the supers easier to lift as less pressure is put on the finger joints, but the disadvantage is that they take up more storage space. Any sort of preserved timber can be used for these cleats, as the bees do not come into contact with them. The only thing to watch is that there is a seal between the cleat and the super timber so that water is kept out, as this is where a super will rot first.

I still have a few supers that were preserved and painted this way. They have lasted more than 30 years but were made from heart timber, which lasts considerably longer than the 25-year-old timber milled today.

What sort of grade of timber do I buy? A few knots in timber don't bother me so I usually purchase a middle-grade timber. The lower grades are OK but require more work sealing

in knots or sanding so all sides are the same height, as some timbers tend to shrink even after kiln drying.

When I first started out I broke up wooden pallets and purchased boxing-grade timber to make my woodware. Most boxing-grade timber is OK if you cut out the knots, which means there's a bit of waste.

Should you repair supers or just replace them? If it's just a hobby and have access to a saw bench, then repair them by cutting out the area that's rotting and put in a new piece. But if time is money, it's far cheaper just to replace the super and use the old one as firewood.

Things to do this month


Continue to render down old comb and make up new equipment. Most woodware only lasts 10–12 years and brood frames should be replaced every three to four years (most beekeepers do this by replacing a third of the frames each year). Larger-scale beekeepers are cleaning up supers, paraffin wax dipping and repainting them, ready for the coming season to extend their working life.

Assemble and wire wooden frames but don't embed wax into them yet. Cold wax is brittle and will expand slightly when warmed, which means it could sag in the wire. If you are buying plastic frames, purchase them early and let them air for three to six months. The bees will build them out quicker once they have lost that initial 'production' smell.

Check mite fall. Late-treatment mite strips should be out of all hives.

Do a quick check of apiaries after storms. Make sure they have adequate stores. Starvation is beekeeper neglect.

If you haven't already done so, order your spring queens. You should be able to get queens in November as most of the early spring queens have been ordered by commercial beekeepers. Anyway, the later the better as they will have had better mating conditions.

On a really cold day, sit in front of the fire and read a few books. One I would recommend is *The Beekeeper's Handbook* (fourth edition) by Diana Sammataro and Alphonse Avitabile. It contains 310 pages of good information for new and not-so-new beekeepers. 

Pig meat IHS has wider implications

Many primary sector industries have been sent the following letter from the Pork Industry Board.

1 June 2012

Dear Primary Sector Colleagues

Pig Meat Border Standards to manage the risk of PRRS

As you will have heard, the High Court recently turned down NZPork's application for a judicial review of new import health standards for pig meat from PRRS-infected countries. NZPork had challenged the Ministry for Primary Industries' (MPI) process because its decision means that imports of untreated pig meat from countries infected by the Porcine Reproductive and Respiratory Syndrome (PRRS) virus will enter into New Zealand, greatly increasing the risk of PRRS becoming established in our pig herd through the feeding of infected pig meat to pigs.

NZPork's application for judicial review related to the process that MPI's Director-General is required to follow when considering an Independent Review Panel's report. In essence, the High Court held the Director-General could consider the Panel's report as just another piece of advice to be accepted, rejected or ignored, and for the Director-General to follow whatever process he considered appropriate in response to it. In NZPork's case, it was unclear to what extent the Director-General considered the Panel's findings and recommendations on the scientific issues in dispute.

While we accept that setting border standards is MPI's role, and that it is for the Director-General to accept or reject Panel recommendations, NZPork believes that Parliament's intention in introducing the provision for an Independent Review Panel (under s 22A of the Biosecurity Act 1993)

reflected its desire for some transparency regarding the treatment of scientific issues in dispute. The Independent Review Panel process is the only opportunity for a review of the scientific issues in an import health standard. There is no provision for any appeal or review of an import health standard, either within MPI, or to an independent body. NZPork's view is that the Director-General should be required to state whether he accepts or rejects the findings and recommendations of a Panel, and to give reasons for that decision.

Under the WTO Sanitary and Phytosanitary Agreement (SPS), New Zealand is entitled to set policies which protect its animal life, provided these are based on appropriate scientific evidence. The scientific concerns of NZPork's experts were endorsed by the Independent Review Panel, but surprisingly the Director-General proceeded to approve the new import health standards notwithstanding these findings.

We believe that the approach adopted by MPI in this case sets a very dangerous precedent for other primary industries. These new standards will enable the importation of unknown amounts of pig meat cut into pieces up to 3kg with major lymph nodes removed that will be distributed right throughout New Zealand. This pig meat is acknowledged to contain the highly infectious exotic PRRS virus, with very sparse science around the extent to which infectivity persists. NZPork's concern is that this pig meat will end up being fed to the many thousands of pigs farmed outside of the commercial industry. MPI's own analysis recognizes that the current regulations around waste feeding to pigs are ineffective in ensuring compliance and in deterring offenders.

This case could set precedents for other primary industries, as the WTO requires protections under SPS to be set at a consistent level across all industries within a country. As you will be aware, the feeding of meat infected with FMD to pigs is also an acknowledged risk pathway for FMD to enter New Zealand (and was the actual pathway



in the UK FMD outbreak in 2001). I can only imagine how the red meat industry would react to a similar approach that allowed imports of meat from countries infected with foot and mouth disease, so long as each piece of meat was less than 3 kg with major lymph nodes removed.

We also suggest that other primary industries should be concerned at MPI's move to shift risk management away from being an activity that takes place at the border, to occurring once a product has been widely dispersed throughout New Zealand. Pork is not the only sector where biosecurity could become dependent on regulations which are acknowledged to be ineffective and unenforceable. Even if the regulations could be strengthened, questions remain over whether this would allow for the most effective use of very scarce biosecurity resources.

We are at a loss to understand why MPI is so determined to disregard the advice of the independent panel, and to press ahead to issue the new standards given the significant risks to our industry in doing so. At the very least, the primary sector needs an explanation of why the implied benefits of such a course of action can be justified, and measured against the risks involved. We believe this is highly relevant to industries' acceptance of government – industry agreements: industry needs confidence that MPI will maintain established risk management of relevant exotic risk organisms if industry is to commit to the sharing of resources and decision making in regard to response activities.

We are so concerned to protect our pig herd from PRRS that unless and until MPI can →

put in place mechanisms which effectively manage the risk within New Zealand, we have had no option but to appeal the Court's ruling. Our legal advice is that we have a substantive case.

KPMG's 2012 'Agribusiness Agenda' highlights the need to maintain a world-class biosecurity system as the primary industry's most urgent priority. It states that "an uncompromised biosecurity environment should be a top priority for both government and industry" – a proposition with which we fully agree, but we do not feel we are being supported by government.

We would be happy to give you a more in-depth briefing. Please feel free to contact me directly by phone, or the NZPork office on 04 917 4750 or info@pork.co.nz.

Yours sincerely
Ian Carter
(phone 03 439 4440, 027 420 0026)

Comment from the NBA Executive

The NBA supports the Pork Industry Board in its opposition to the proposed import health standard (IHS) for pig meat because of the biosecurity risks it imposes, including the risk of bringing in PRRS virus plus the potential to be a pathway for foot-and-mouth disease.

The case with the Pork Industry Board seeking a judicial review in the High Court, and now an appeal to its decision on this IHS, in many ways parallels our case over the import standards proposed for honey imports.

Yours sincerely,
Barry Foster, President



Robbers thwarted

Following a burglary in Ashburton, the NBA Library needs a new lock. All books and other library holdings are secure.

BEE INSPIRED

Easy breakfast churros

By Maureen Maxwell, President, Apimondia Oceania Commission
Wild Forage Limited: www.wildforage.co.nz, Honey Ambassador for the NBA

Churros are the Spanish answer to doughnuts.

They are usually a long, straight and crinkled fritter that are served sprinkled with sugar and cinnamon and can be dipped in hot chocolate, dulce de leche sauce or drizzled with honey. Eat whilst still warm from the pot.

This is a quick, easy and economical recipe.

1 cup white flour
¼ teaspoon baking powder
1 cup water
1 tablespoon vegetable oil
½ teaspoon salt
1 teaspoon sugar
Oil for frying
Sugar (and ground cinnamon if you like to sprinkle)
Honey to drizzle
Juice from 1/2 lemon

Yield: This recipe makes 2–4 servings, depending on how hungry you are and how many teenage boys you have in the house!

Pour oil for frying, such as canola oil into a heavy pan or deep fryer and gently warm. You need about 5 cm (2 inches) of oil, enough so that the churros can float as they cook.

Into a medium-sized heatproof mixing bowl, measure 1 cup of flour and stir in baking powder.

Into a medium-sized saucepan, pour 1 cup water (using same measure), add oil, salt, sugar and stir. Bring to the boil.



Once the water has boiled, pour onto the flour and stir quickly to combine into a stiff sticky dough. Immediately pack into a heavy-duty piping bag with a star nozzle or a cookie press whilst the dough is still warm and fresh.

Bring the cooking oil up to 175–185 degrees C (350–375 degrees F).

Once oil is up to temperature, carefully pipe long pieces, pinching off to cut into lengths, at about 100–125mm long (4–5 inches). Drop carefully into oil and fry, turning until they float and are golden all over.

Remove with tongs or a slotted spoon and drain on kitchen paper. Sprinkle with sugar or ground cinnamon and sugar mixed together. Serve immediately with warm honey and lemon syrup.

Honey and lemon syrup

To make the syrup, gently warm 1–2 tablespoons of honey until just runny and blend in juice of ½ lemon to taste.



When determining whether mites are present in an area for the first time, it is important to use a technique that has the sensitivity to detect very small numbers of mites.

Choose a varroa detection method that fits with your workload and will provide the sort of information you need to make good decisions.

Source: Control of varroa: A practical manual for beekeepers (revised edition), by Mark Goodwin and Michelle Taylor, pages 38–39.

NATIONAL BEEKEEPERS' ASSN OF NZ (Inc.) EXECUTIVE COUNCIL

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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.



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