March 2013, Volume 21 No. 2

# The NEW ZEALAND BeeKeeper

## Our science challenge

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- The honey opportunity
- Differential field diagnosis of exotics

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*The New Zealand BeeKeeper* is the official journal of the National Beekeepers' Association of New Zealand (Inc.)

ISSN 0110-6325

Printed by South City Print, PO Box 2494, Dunedin 9013, New Zealand

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**JOURNAL SUBSCRIPTIONS:**
— 11 Issues —
NZ $140.00 GST inc - incl P&P
Australia $165 .00+ NZ $25.00 TT fees and incl P&P
Rest of the World $176.00 + NZ $25.00 TT fees and incl P&P
Subject to review if postage charges increase

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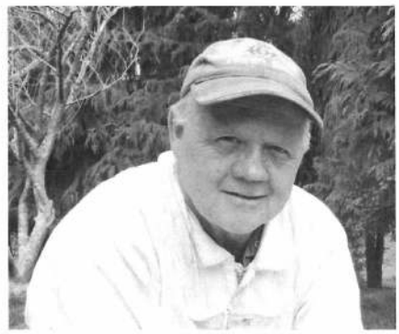
# Contents



Front cover: Barry Foster took this photo while walking at Beach Loop, located south of Gisborne. Young Nick's Head, Poverty Bay and the coastline are to the north. Note the manuka in the foreground.

# Our science challenge

By Barry Foster, NBA President



## I've gone on a bit over the past four editions of the journal about the need for more research into the challenges that our industry faces. This month's report will be no different.

Although it is easy just to focus on the issues of the day and our own businesses, there is a much bigger picture. Arguably, of all developed countries, New Zealand would be the most dependent on the health of its natural environment. This dependency affects not just our economy but also our quality of life and the way others see us with 'Brand New Zealand'. Within this bigger picture, our bees have a major part to play.

In December 2012, the Research Committee of the National Beekeepers' Association submitted its bid to the National Science Challenge. The title was 'Security of New Zealand's ability to export high quality agricultural products with special reference to the health of New Zealand honey bees, our major pollinators and only manuka honey gatherers.'

The bid was largely compiled by Research Committee member Dr John McLean, with help from the other members where possible at a very busy time of the year. In saying this, I gratefully acknowledge and thank John in his efforts in getting this bid together and submitting it on behalf of the NBA.

In November 2011, Prime Minister John Key announced the establishment of a new $60 million science fund that would be directed towards "national science challenges", the funding of which would be spread over four years and encompassing up to 10 different projects. The aim of this initiative was to seek answers to questions of national significance to New Zealand by focusing effort and providing additional focus on key areas.[1]

Mr Key said, "challenge funding would be proposed by the Minister of Science and Innovation in consultation with the relevant science community and the Prime Minister's chief science advisor, Sir Peter Gluckman". At that time, the Prime Minister gave three examples of the types of questions that could be suitable for funding under the science challenge. They were:

1. how could New Zealand intensify its primary industries in an environmentally sustainable way—increasing production while at the same time protecting the environment, particularly water quality?
2. how could New Zealand develop cost-effective technologies for sustainable energy production?
3. how could New Zealand produce a new generation of high-value foods; for example, food or food-derived products that have demonstrated health benefits, designed for the Asian market?

Numbers one and three sound a lot like what the beekeeping industry does and is capable of.

> "... the [NBA has] submitted its bid to the National Science Challenge ... to seek answers to questions of national significance ..."

On 7 February 2013, an 11-person panel was appointed and tasked with identifying the biggest science challenges facing New Zealand, chaired by the Prime Minister's Chief Science Advisor, Sir Peter Gluckman. Called the Peak Panel, it will recommend, by the end of February 2013, options for Cabinet to select up to 10 National Science Challenges for New Zealand. This panel will then consider possible challenges submitted by research providers, research users and the public, develop them further where necessary and select a number of challenge options.

Our science challenge covers four themes briefly described as:

1. ensuring the genetic diversity of our bees with the development of VSH stock and disease resistance. This stock would be adaptable over a range of climatic zones to produce bees that are good pollinators and nectar gatherers
2. developing an independent evaluation of the risk that new and existing systemic pesticides pose to our bees when incorporated into pollen and nectar
3. conducting a disease survey of New Zealand honey bee populations. We do not know the level and frequency of other pathogens (excluding AFB) found in our hives
4. meeting the needs for adequate honey bee nutrition. The current Trees for Bees project is focusing on protein analysis in pollen. Further analysis is needed on levels of lipids and amino acids to pick the best non-weedy candidates.

By the time you read this, we will know the top 10 science challenges selected. There are plenty of good reasons to support our challenge that stem from reports both here and overseas. The government's primary growth agenda[2] is about lifting exports from 30 percent of GDP to 40 percent of GDP, with much of that effort focused on intensification of agriculture through more irrigation. Having healthy pollinators is essential in achieving any goal like this one. Meanwhile, the topic of pollination security that the NBA submitted on in 2011 to the Local Government and Environment Select Committee languishes after it was dropped from its agenda last year.

One of the greatest spins of all is to presuppose that there is some illusionary 'sweet spot' in a balance between growth and environmental harm. It is a delusion, but if this challenge is accepted New Zealand may begin to address some of the harm from a pollination point of view.

*Continued on page 6*

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*Continued from page 4*

## A tribute to Eva Wilson

I spent a day in Takaka on 8 February representing the NBA at the funeral of Eva Wilson, the 14-year-old daughter of Kerry Gentleman and Frazer Wilson, who died as a result of anaphylactic shock from a bee sting. It was a big funeral with approximately 600 people celebrating her life.

I was very impressed with the wonderfully supportive community that rallied around to help Kerry, Frazer and their elder daughter Tullia get through a great ordeal. Having said that, Kerry, Frazer and Tullia showed great courage and strength of character in actively participating in remembering Eva's life. It was a beautiful celebration of her life that was well lived but tragically cut short. Both Kerry and Frazer were very appreciative to see me there, as were other beekeepers that I met, many of whom are helping the Wilsons out in practical ways with their beekeeping while they go through a very difficult time.

The NBA has donated $200 to the Nelson Marlborough Rescue Helicopter Trust in lieu of flowers.

## Footnotes

[1] See http://www.msi.govt.nz/update-me/major-projects/national-science-challenges/
[2] See http://www.beehive.govt.nz/speech/business-growth-agenda---building-natural-resources-launch

*What to wear at field day, Ruakura, 1932. The original caption read: FIELD DAY DEMONSTRATION. Mr T. Winter shows how bad weather interrupted the honey flow. (This photo is from The New Zealand Smallholder.)*

# The honey opportunity

As part of the Food and Beverage Information Project, a report was released in May 2012 looking at investment opportunities in the New Zealand honey industry.

This information was collated by Coriolis, a strategic management consulting and market research firm. It is extremely important for our industry, not only to identify the strengths but to improve upon what are seen to be our weaknesses both nationally and globally. Following is an extract from the report's summary (page 7), and the SWOT analysis conducted by Coriolis (page 45).

New Zealand manuka honey is an attractive, high growth industry with solid fundamentals; it offers participants a defensible base platform that can be extended into a wide range of products.

## Overview

New Zealand's honey exports are on a roll and growing rapidly. Exports have grown at a 30% compound rate for the past decade, reaching US$70m in 2010. Exports are strong to Europe (in particular the UK and Germany) and Asia.

New Zealand's manuka honey is the most expensive in the world and receives a significant premium over other suppliers. The on-going international success of manuka honey is driving the growth of the total New Zealand honey industry.

In the past decade the NZ honey industry has transformed from a small sleepy sector focused on the production of honey for domestic consumption into a fast growing, innovative, science based, high value export focused sector, with firms more akin to pharmaceutical and biotech. For example, in 5 years Manuka Health has grown from nothing to an almost $20m company with 50 employees. It aims to double turnover in four years with a range of wound dressings.

## Drivers of growth

Active manuka honey has scientifically proven health giving properties which are driving global demand across a range of outlets, from pharmacies through to hospitals.

The activity in manuka honey is unique to NZ*, creating a highly defensible barrier to competition (and it is not economic to farm manuka trees**).

Manuka is the "perfect product"—sweet, natural, guilt-free, convenient, health giving and scientifically proven—wrapped in the clean imagery of New Zealand and packaged in a wide range of forms (from lozenges to shampoo to medicine).

## Opportunities

Manuka is a scalable platform with the potential for a full range of product line extensions. Once developed, strong brands can be leveraged into food, beverages, nutraceuticals and the HBC (health & beauty care) space.

The recent aborted attempt by Suntory/Cerebos to acquire NZ listed Comvita demonstrates the success of the NZ honey industry has not gone unnoticed globally.

Experience of other sectors suggests the industry is likely to be on the crux *[cusp]* of a number of waves of consolidation, leading to a small number of large players rather than a large number of small players. This consolidation will be driven by economies of scale and scope, increasing investment required in R&D and NPD+ and the need for in-market sales forces.

The real opportunity for investors in this point in the industry's life cycle is providing capital to the emerging winners to facilitate those winners driving scale through industry consolidation. Investments in the sector would have a wide range of available exit strategies in a 3-5 year time frame, including sale to a global nutraceutical/pharmaceutical company, sale to a competitor or listing.

## NEW ZEALAND HONEY – SWOT ANALYSIS

Manuka honey has strong potential for continued growth; however, major emerging issues need to be addressed swiftly

| Strengths | Weaknesses |
|---|---|
| - Unique/defensible product<br>- Strong position in a handful of countries (UK, AU, HK & Singapore)<br>- New Zealand trusted country and products with secure food source<br>- Able to leverage favourable opinion of New Zealand in key markets (e.g. China, Korea, Japan)<br>- Phytosanitary barriers protecting domestic market | - Fragmented; most NZ firms have low/no economies of scale<br>- Lack of industry cohesion; infighting<br>- Multiple standards creating confusion for consumers<br>- High cost of robust scientific validation of claims (e.g. clinical trials)<br>- Significant exports of bulk honey for repackaging elsewhere |
| **Opportunities** | **Issues/Threats/Risk** |
| - Huge pool of potential consumers (e.g. people with colds) who have not yet tried or been exposed to manuka honey<br>- Further scientific research building on medical credibility of manuka honey | - Bee diseases destroying bee population<br>- Counterfeiting<br>- Exaggerated claims (e.g. non-active being sold as active)<br>- False claims bring disrepute on the industry<br>- Increasing amount of regulatory restrictions; could be classified as medicine<br>- Backlash, negative publicity in sector with products with unproven claims (e.g. cancer)<br>- Other countries launching "active" honeys (e.g. Chile's Ulmo active honey)<br>- Scares/contaminations/disease damaging consumer image of New Zealand |

PAGE 45 | Source: Interviews; Coriolis | CORIOLIS

**Endnotes:** * and some regions in Australia ; **only on steep marginal land often retired from farming; + NPD = New Product Development

**Source:** Excerpt from Coriolis. (2012). *Investment opportunities in the New Zealand Honey industry.* Part of the Food & Beverage Information Project. May 2012 v1.01c. Reprinted with permission. For more information, please see www.foodandbeverage.govt.nz.

# Differential field diagnosis of exotics

By Marco Gonzalez, Apiculture Officer, AsureQuality Limited, Lincoln. Email: marco.gonzalez@asurequality.com

The New Zealand honey bee population has an enviable disease status by world standards, despite having to manage varroa mites, American foulbrood (AFB), and a small number of other beekeeping pests and diseases.

There are many exotic honey bee pests and diseases that, by exclusion from New Zealand, afford the beekeeping industry significant production and marketing advantages.

Keeping our country free of exotic bee diseases relies on effective border control and frequent hive inspection to ensure that anything that does arrive is identified and responded to quickly. The Ministry for Primary Industries (MPI) undertakes a comprehensive surveillance survey annually in the autumn. However, the best chance of detection depends on all beekeepers inspecting their own hives frequently and being capable of identifying potential exotic diseases or pests.

*Inspection for exotic pests or diseases needs to be incorporated into hive management on every visit to the apiary.* Beekeepers need to be aware of the process for reporting suspected signs of infestation or infection of anything unusual or not known to be in New Zealand. Due to the large number of people, machinery, goods and food items entering New Zealand from overseas, the possibility of finding an exotic honey bee disease or pest anywhere in the country should not be ruled out.

The purpose of this article is to describe clinical signs of exotic pests and diseases visible in and around beehives, and to supply some guidance on how to differentiate these diseases from endemic pests, diseases, disorders or syndromes. This is referred to as differential diagnostics.

The main exotic bee pests and diseases that we need to be able to recognise in the field in New Zealand can be classified into three main categories, as listed in Table 1 below.

**Table 1. Main categories of exotic pests and diseases.**

| Category | Scientific Name | Common Name |
|---|---|---|
| Undesirable bee species | *Apis mellifera scutellata*<br>*Apis mellifera capensis*<br>*Apis cerana* | Africanised honey bee<br>Cape honey bee<br>Asian bee |
| Bee parasites and pests | *Acarapis woodi*<br>*Tropilaelaps spp.*<br>*Aethina tumida (Murray)*<br>*Vespa spp* | Tracheal mite<br>Asian mites<br>Small hive beetle<br>Asian hornets |
| Bacterial diseases | *Mellissococcus plutonius* | European foulbrood |
| Viral diseases | *Aparavirus sp.* | Israeli Acute Paralysis Virus |

Some signs which would lead us to suspect a potential exotic pest or disease can be apparent before we open the beehive. For instance, unsettled, aggressive bees that attack anyone that gets close to the apiary may be an indication of the presence of an exotic undesirable strain of bee such as Africanised bees (*Apis mellifera scutellata* and its hybrids. 'Africanised' refers to hybrids of pure African honey bees and European honey bees as found in the Americas.). Refer to Figure 1.

This must be balanced with the knowledge that there are a number of situations, other than hybridised with Africanised bees, which could make a colony of European bees display extreme aggression. Severe robbing, hybridized colonies with other sub-species, intermittent nectar flow, and geographic location of the apiary can all contribute to create aggressive bees. Sub-species examples include some crosses between *Apis mellifera ligustica* with either *Apis mellifera mellifera* or *Apis mellifera carnica.*

**Table 2. Africanised bees' aggressive behaviour and other causes of aggressive behaviour in European honey bees.**

| Bee type | Differential diagnosis |
|---|---|
| Africanised bees | Are very defensive and can chase intruders for up to 1000 metres (one kilometre).<br>Most members of the colony abandon the hive to attack an intruder.<br>After being disturbed, remain aggressive for more than 24 hours. |
| European bees | During the robbing season, can behave more aggressively than usual.<br>During intermittent nectar flows or in the middle of a brassica nectar flow, bees can show unusual aggressiveness<br>Some crosses of *Apis mellifera ligustica* (Italian Bees) with *Apis mellifera mellifera* (European Black Bees) or *Apis mellifera carnica* (Carniolans) may show unusually aggressive behaviour.<br>Bees left permanently in forested or bush areas tend to requeen themselves with a more aggressive type of bee, compared to bees left permanently in agricultural land. This aggressiveness seems to be an advantageous survival trait for such geographic locations. |

→

Also note that colour alone cannot be used to identify Africanised bees as they can have similar colours as European bees. However, they are always smaller in size than European bees.

A sample of bees must be sent to the laboratory for a definitive identification.

*Figure 1. Africanised bees attacking Apiculture Officer Tony Roper (and the camera) in South Africa. Source: AsureQuality Limited.*

At the apiary, before any beehives are opened, look for unusual symptoms at the entrance of the beehives.

For instance, a large number of bees crawling and dying at the entrance could be a sign of bee poisoning, viral infections such as acute and chronic bee paralysis virus, deformed wing virus, severe robbing, chilling or a heavy infestation with the exotic internal parasitic tracheal mite or the exotic external parasitic mite *Tropilaelaps spp.* Table 3 lists some clues to help differentiate potential causes of hive entrance mortality. A sample of older bees sent to the laboratory is required to confirm the presence of the microscopic tracheal mite.

If we see dead decapitated bees at the entrance and large wasp-like insects, we may be looking at Asian hornets *Vespa spp.* attacking the hives. Hornets kill guard bees before invading the colony and robbing all larvae. There are several species of hornets, the giant hornet *Vespa mandarina* being the most dangerous. This is about ten times larger than the two endemic wasps (*Vespula spp.*) in New Zealand.

A sample must be taken to a laboratory for a definite diagnosis of hornets to be made.

When opening a hive, remove the lid and place it upside down on the ground in front of the hive, as this will allow easy inspection of the floorboard later. Inspect the lid for any sign of adult small hive beetle (SHB), which will run away from light and hide in corners,

**Table 3. Large number of bees crawling and dying at the hive entrance: differential diagnosis. (Adapted from Taylor, B., 2008.)**

| Possible causes | Differential diagnosis |
|---|---|
| Tracheal mites | Dying crawling bees, unable to fly.<br>'K' wings. This describes the position that the bee wings may adopt under severe tracheal mite infestation. Weak wing muscles, as a result of poor oxygen supply, due to heavy tracheal mite infestation are believed to be the cause of this symptom.<br>Symptoms of heavy tracheal mite infestation are more commonly seen in early spring. |
| Spray poisoning | The bees appear sticky as they will often regurgitate stored nectar or honey.<br>Sometimes bees will fight with each other at the entrance.<br>Large piles of dead and dying bees in front of and inside the hive. |
| Tanalised timber poisoning | Can be determined by checking woodware history. It is not usually severe but can last a long time (i.e.; a slow dwindling rather than a catastrophic event). |
| Nectar poisoning | Flowering karaka within flying distance in October–November |
| Severe robbing | Bees fighting with each other. Other signs of robbing are evident at inspection, such as wax cappings at the entrance. |
| Bee paralysis virus (chronic and acute) | Shaking and crawling bees at the hive entrance and on the combs. Some have shiny dark bodies.<br>Bees with deformed wings. |
| Deformed wing virus | Severe viral infections are usually associated with high levels of varroa mites. |
| Starvation | The most common symptoms are clusters of dead bees with their heads in empty cells, abdomens sticking out and no food reserves in the hive. Dead bees can be between combs and on the floorboard. |
| Chilling | A 'plume' of bees out the front of the hive can sometimes be seen. As the majority of these bees are returning from the field, bees may have full pollen baskets. |
| Asian mite *(Tropilaelaps clareae)* | Wingless adult bees may be seen crawling at the front of the hive along with dead and malformed larvae, pupae and adult bees, which have been cleaned out of the hive. |


*Figure 2.* Aethina tumida *dorsal, lateral and ventral view. Source: www.beetlelady.com*

crevices or among debris in the bottom board. Figure 2 shows adult SHB.
Remove the inner cover and inspect the top of the frames for beetles running off and down between the combs. Inspect the inner cover for any beetles and place to one side.

Remove the top super (if present) and place on the upturned lid. Remove the outside frames from the bottom brood box and inspect them for both SHB adults and beetle larvae (do not shake the bees off). Then, smoke the bottom brood nest heavily and place it on the other brood box.

Inspect the floorboard for both adults and larvae of the SHB. Larvae of the endemic wax moth pest may also be found on the bottom

board. The main differences between larvae of SHB and larvae of wax moth are listed in Table 4 below.

Now inspect each brood box. First, look at the bees on the frames. Do they look normal? If you see that they have a different colour and they are smaller than usual, it could be that the queen has been replaced, or it could be that an undesirable exotic bee strain such as Cape bee (*Apis mellifera capensis*) may have invaded your hive.

Cape bees are usually darker than Italian bees, but they could also be a lighter colour. They are very active on the comb and can be as aggressive as Africanised bees. More signs in terms of hive development and brood pattern could supply clues to support our suspicions about the presence of Cape bees.

Shake the bees off the frames and check the brood for unusual brood patterns or signs of sick or dead larvae. Signs of Cape bee invasion in the brood nest include spotty and abandoned brood, plus little foraging activity compared to the number of bees in the hive and dwindling colony strength. However, field identification is difficult and laboratory confirmation is required.

A spotty brood pattern could also indicate a series of bee diseases or syndromes. Table 5 (next page) shows signs to differentiate between the different brood disorders and diseases.

*Figure 3. EFB infected larvae exhibiting contorted position in cells and discolouration. Photograph by M. V. Smith.*

European foulbrood (EFB) is a serious contagious bacterial disease that is exotic in New Zealand. Unfortunately, most of its symptoms are similar to the symptoms we see with parasitic mite syndrome (PMS) and halfmoon disorder (HMD). However, EFB appears mainly in early spring when the nurse bees' open brood ratio decreases as a consequence of the colony expanding quickly. In contrast, PMS is more prevalent in the autumn.

PMS may disappear if varroa mites are brought under control, while HMD can usually be eliminated by requeening.

Also look for unusual looking mites, as the exotic Asian mite *Tropilaelaps spp.* could arrive in New Zealand. This mite has evolved with *Apis dorsata* (the giant Asian bee), and has jumped species recently, infecting *Apis mellifera* in different regions of Asia.

The Asian mite has a life cycle similar to varroa but, unlike varroa, cannot feed on adult bees. This limits the time that the mites can survive on adult bees. *Tropilaelaps* is about one third the size of varroa and has also a different body shape, as shown in Figure 4.

Once the brood boxes have been inspected, smoke each removed box and reassemble the hive. Before replacing the lid, inspect it again for small hive beetles.

*Figure 4. Varroa (left) and Tropilaelaps (right) dorsal view. (Source: Zach Huang, http://cyberbee.net)*

If you have empty gear at the apiary and a swarm has come in, we need to consider the possibility of this swarm being an exotic bee species. The Asian bees (*Apis cerana*), Africanised bees and Cape bees will all be attracted to empty supers.

The Asian bee can colonise standard Langstroth hives but will modify the cell size to be smaller. The comb drawn by Asian bees has smaller sized cells than the European honey bee, and is very brittle and easily broken because the wax does not contain propolis.

Asian bee workers look similar to European bees, but are smaller and the rings on the abdomen appear in prominent stripes. A simple way to identify them is by looking at the entrance of the beehive. *Apis cerana* will fan at the entrance of the beehive facing outwards, in contrast to *Apis mellifera* that will face inwards.

A close look at their wings shows one of the keys to differentiate *Apis cerana* from *Apis mellifera*, as shown in Figure 5 [on page 13].

**Table 4. Main differences between small hive beetle larvae and wax moth larvae. (Source: Stedman, M., 2006.)**

| SHB larvae | Wax moth larvae |
|---|---|
| Pair of prominent brownish dorsal spines present on each segment, including larger anterior and posterior pairs | No spines, but number of setae (hairs) on segments. |
| Three pairs of anterior prolegs only; posterior end in contact with the substrate. | Eight pairs of prolegs: three pairs of anterior prolegs, four pairs of abdominal prolegs, and one pair of anal prolegs on the last segment. |
| Walks with a motion not at all like caterpillars. | Walks with typical caterpillar-like concertina motion |
| Less than 12 mm long | Up to 25 mm long depending on age, food source and species. |
| Found throughout the hive in aggregations—often regardless of hive strength. | In active hives, usually only on the outer margins of the brood nest in stored pollen. In dead or weak hives the larvae can be found, often in aggregations, throughout the hive |
| Will tunnel through cells, even through frames with fresh honey. | Will tunnel through cells, but do not tunnel through frames of fresh honey |
| Free moving and never produces silken galleries as larvae but rather produces a slime on honey combs. | Almost always within silken galleries. Larvae will hang from a silken thread. No slime. |
| Mature larvae exit the hive to pupate in soil. | Mature larvae pupate within the hive in white cocoons. |

Table 5. Distinguishing features of EFB, endemic brood diseases and syndromes

| Features | European foulbrood | American foulbrood | Halfmoon disorder | Parasitic mite syndrome | Sacbrood |
|---|---|---|---|---|---|
| Age of dead brood | Younger than AFB.<br>Usually larvae die before pupation at the 'C' or pre-pupal stage. | Older than EFB > 3 days.<br>Larvae usually die at pre-pupal or pupal stages after the cells are capped.<br>Larvae never die at the 'C' stage. | Similar to EFB.<br>Curled (younger) larvae, including capped curled larvae in advanced cases. | Similar to EFB, from the 'C' stage to the pre-pupal stage. | Larvae usually from 4 days old.<br>Pre-pupal stage only.<br>Cells often capped over. |
| Appearance of brood comb | Patchy brood pattern with larval cells not capped over.<br>Sometimes sealed in advanced cases when there may be perforated, sunken cappings. | Pepper pot irregular cappings.<br>Sealed brood with sunken cappings, darker in colour, irregularly perforated.<br>Sometimes cappings completely removed. | Patchy brood pattern.<br>Multiple eggs in many cells, eggs attached in chains joined end to end.<br>In advanced cases, high percentage of drone brood in worker cells. | Pepper pot pattern with chewed cappings. | Sealed brood.<br>Cappings perforated or may be completely removed, sometimes sunken. |
| Colour and shape of dead brood | Larvae change colour from pearly white of healthy larvae to dull white, yellow then yellowish brown.<br>Body segmentation retained.<br>The tracheae (air tubes) are very white against the yellow bodies.<br>Larvae may be twisted up the walls of the cell (corkscrew) or lie in a halfmoon scale around the lip of the cell. | Off-white, then coffee-brown, then dark brown to black.<br>Loss of body segmentation and structure. | Off-white, yellowing to dark brown.<br>Body segmentation retained.<br>Tracheae may be evident as lines in larvae. | White/yellow colour.<br>Body segmentation retained. | Larvae change from white to yellow, coffee brown, grey, then black.<br>Heads are usually darker than body.<br>Body segmentation maintained. |
| Dead brood consistency | Recently dead larvae are watery to pasty in appearance and rarely show signs of ropiness.<br>Old infections are usually creamy or rubbery and can 'rope' up to 20 mm, but not to the same extent as AFB.<br>The ropiness is due to the presence of secondary bacteria *Paenibacillus alvei*.<br>Larvae collapse as if melting and eventually dry to form a loosely attached brown scale. | Sticky like glue when fresh and often ropes out.<br>Once it dries it forms a black scale and is difficult to remove from the cell wall. | Watery contents and can be removed from cell.<br>Doesn't rope out very well. | Scales can be removed.<br>Brood never ropes like AFB. | Plastic sac, skin remains intact with watery contents.<br>Pre-pupae easily removed from cell.<br>May rope a little but strand is not even coloured and is blotchy in appearance.<br>Not elastic like AFB. |
| Odour of brood | Varies from odourless to sour or foul smell depending on the secondary invading bacteria present. | Can have foul smell (rotten, fishy smell). | Sour, urine-like. | No evident odour. | None to slightly sour. |
| Appearance of dead larvae and scales (dried larval/pupal remains). | Larvae 'corkscrew' up the cell or are found lying across the mouth of the cell in an open 'C' or halfmoon shape.<br>Capped brood can rope out (secondary bacteria).<br>Scale dries out and is easily removed from cell. | Larvae slump down along the bottom 'V' of the cell.<br>Often rope out.<br>Tongue sticking up from front end of cell base if died in pupal stage.<br>Larval scale shaped like bullet against cell floor.<br>Scale dries out and is difficult to remove. | Larvae corkscrew up the cell or lie around the cell walls or the lip of the cell in a halfmoon shape similar to EFB.<br>Easily removed from cell.<br>Rubbery scale with no tongues present. | Larvae often slump along lower cell wall like AFB.<br>Larvae can also spiral up the cell wall or coil in a 'C' shape at the cell opening.<br>Doesn't rope out. | Can dry down to scale.<br>Rarely ropes out.<br>Easily removed in one piece from cell.<br>No tongue present, but larval head may be curled upwards and resemble tongue. |
| Tips for identifying | Very contagious disease.<br>Usually appears when there is a low nurse bee to larvae ratio in the spring.<br>Larvae die before capping and often twisted up the cell walls or in a 'C' shape at the entrance. | Ropiness test and presence of pupal tongue, scales hard to remove. | Drone brood in worker cells, multiple eggs in cells, eggs stuck end to end and often to the cell walls.<br>Some supersedure queen cells may be present.<br>Symptoms disappear with requeening. | Varroa mite is present.<br>Symptoms disappear after effective varroa treatment. | Disease can disappear by itself.<br>Requeening with a resistant strain will help remove the disease. |
| Sample to send to lab for identification | Diseased larvae. | Diseased larvae, honey from infected hive. | Whole brood frame. | Diseased larvae. | Diseased larvae. |

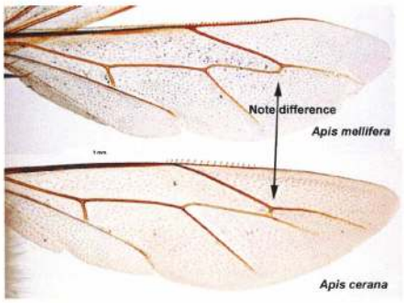


*Figure 5. Hindwing differences between* Apis mellifera *and* Apis cerana. *(Source: Ken Walker, Museum Victoria.)*

A sample of at least 10 bees is required to be tested in the lab to confirm a diagnosis of Asian bees.

To sum up, all beekeepers should treat any unusual signs in the apiary as suspicious and these should be reported through the 0800 809 966 MPI Hotline. An AsureQuality Apiculture Officer may be requested to investigate the report with the beekeeper and may get suspect samples sent to a laboratory to test for exotic bee pests and diseases, as appropriate.


## Acknowledgement

This article was funded by the Ministry for Primary Industries through the Apiculture Surveillance Programme.


## Further reading


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# NBA's new Executive Secretary

We would like to introduce Miriam Nicholson, the new Secretary for the NBA. She has a Bachelor of Commerce degree in Marketing and Management from Canterbury University.

Miriam was in Christchurch for the earthquakes and was on board as Sam Johnson's personal assistant for the Student Volunteer Army (SVA) during the crisis period. She has great organisational skills and comes with extensive experience in event management and customer service.

We are very pleased to have Miriam join the team.

# Are you going to Apimondia?

Apimondia's 2013 International Apicultural Congress, a biennial event, takes place this year in Kyiv (Kiev), Ukraine, 29 September to 4 October.

According to the organisers, "This Congress is going to be the biggest global beekeeping event in the history of the Apimondia International Federation of Beekeepers' Associations". The Congress sees over 10,000 attendees and over 1,000 scientific papers presented.

Beekeeping is big business in the Ukraine: history records one thousand years of bee products trading.

If you are planning to go to the Congress, please contact Maureen Maxwell on maureen@wildforage.co.nz. It would be wonderful to have a New Zealand contingent there. The NBA is interested in your feedback from the Congress.

*For Apimondia Congress registration information, go to http://nba.org.nz/news-events/events/international-apicultural-congress. If you register before June 1 you will save up to 30%.*

# Continuing 100 years of the NBA

By Apiarius Antiquary

The official magazine, *The New Zealand Beekeepers' Journal* ceased publication in 1922 and the magazine became part of the *NZ Fruit growers and Apiarist Magazine.*

The years 1923–1933 were particularly volatile for the beekeepers, as gross fluctuations in honey crops of the times created instability within the market. The Honey Producers' Association (HPA) had been set up to stabilise the markets and an emphasis to export honey to England had been placed in jeopardy by the financial collapse of their English agents.


The New Zealand
Beekeepers'
Journal.
SEPTEMBER 1st, 1922.

*Cover of* The New Zealand Beekeepers' Journal, *September 1st, 1922. The original caption was: Display of Honey at the Office of the High Commissioner in London. The words at the bottom are: ISSUED MONTHLY FOR THE NATIONAL BEEKEEPERS' ASSOCIATION OF N.Z.*

The HPA would ultimately suffer a huge financial loss further down the track, but there was some resilience within the HPA. HPA representative Mr R. A. Spinley located a new agent in England, Messrs A. J. Mills & Co, who had branches in a number of cities in England.

Mr Spinley spent considerable time promoting honey in England, and a report by Fred Baines (as Editor) states:

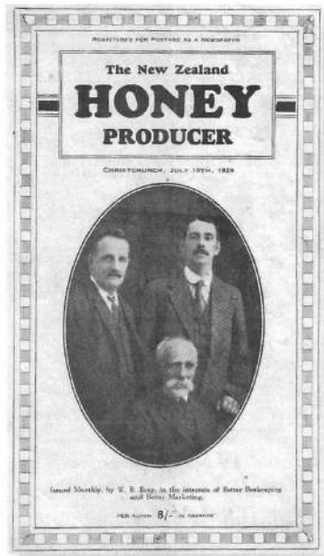
> *The show window in the High Commissioner's offices in the Strand is devoted to an instructive honey display arranged for at the most propitious time. No one who passes down the crowded London thoroughfare can help but observe it.*

The report also signifies that beekeepers were well ahead of the other agricultural producers in marketing their products. Fred Baines goes on to say:

> *Another thing that strikes me forcibly is that I have not read of one other body of producers in N.Z. that have had the courage to do a similar thing, and I feel pretty certain that if they did with the meat, butter, cheese, and other commodities, it would mean millions of pounds gain to this country.*

There was sometimes a boom-and-bust situation with honey marketing in those early times, and the words of F. Baines state the trends:

> *There was a time when the export market paid so well that the local trade was neglected by the Association, and those who were not in the Association reaped a big benefit. This policy was changed and a vigorous advertising campaign instituted, the immediate result being that the sales of Imperial Bee Honey went up splendidly and our success seemed assured.*
>
> *I am exceedingly sorry now to state that the number of competitors has steadily increased with the inevitable result- the sales of Imperial Bee being considerably lessened. The Association was quoting to merchants 24/- per doz. less usual discounts, but a large number of 2lb tins were being disposed of by outsiders at 22/-. To meet this the Association is reducing to meet competitors, when a third party comes along offering the same package at 20/-. Whilst these are being sold, another competitor is offering at 16/6 per doz. So we are now going strong in the wrong way. The immediate result of this competition is that years of hard work, thousands of pounds spent in advertising, organising etc, is to be swept away, and there is nothing any buyer has to his greater advantage than competitors in the same line; he can put one against the other until he gets the commodity at his own price, to the loss of both producers.*


The New Zealand
HONEY
PRODUCER

The New Zealand Honey Producer, Vol 1, No 1, 1929. *Seated is Isaac Hopkins, Government Chief Apiarist and 'father' of beekeeping in NZ. At back left is Robert Gibb, Government Inspector, North Island; and at back right is William Bray, Government Inspector, South Island.*

The affairs of the National Beekeepers' Association (NBA) were largely related to the marketing of honey during these years. Whilst the *NZ Fruit growers and Apiarist* magazine covered NBA affairs, W. B. Bray (Barrys Bay) decided to publish a magazine dedicated solely to beekeeping and called his publication *The New Zealand Honey*

*Producer.* The first magazine was published in July 1929 in the interests of Better Beekeeping and Better Marketing and this became the motto of this publication. It also later became the motto of the NBA but it is unclear, at this stage, how this evolved.

More on beekeeping and relevant at this time of the year has been a report of 'honey poison' by A. Luke (Awakeri) who was a builder turned beekeeper and recounts his experiences with poison honey. First, he describes that six years previously he was demolishing a building in preparation to build a new residence when he came across a swarm that had established itself in the side of the building he was to demolish. He smoked the bees out and obtained some rather 'black-looking' honey.

*I said "Honey for tea, boys!" as I took the dish to the cook: but the cook, an old resident here, told us yarns of honey poisoning, which appeared to me at that time very stretched, so when tea-time came no one wanted honey; but I said, "Here goes, I am going to risk it, and have some anyway," and as I lived through the night and no sign of poisoning, every one had honey for breakfast.*

*Since that time I have heard sufficient to believe that there is such a thing as honey poisoning with bush honey. The Bay of Plenty districts seem to be affected very badly at certain times with poison. I will relate a few of the many cases that have occurred within the last few years around my district.*

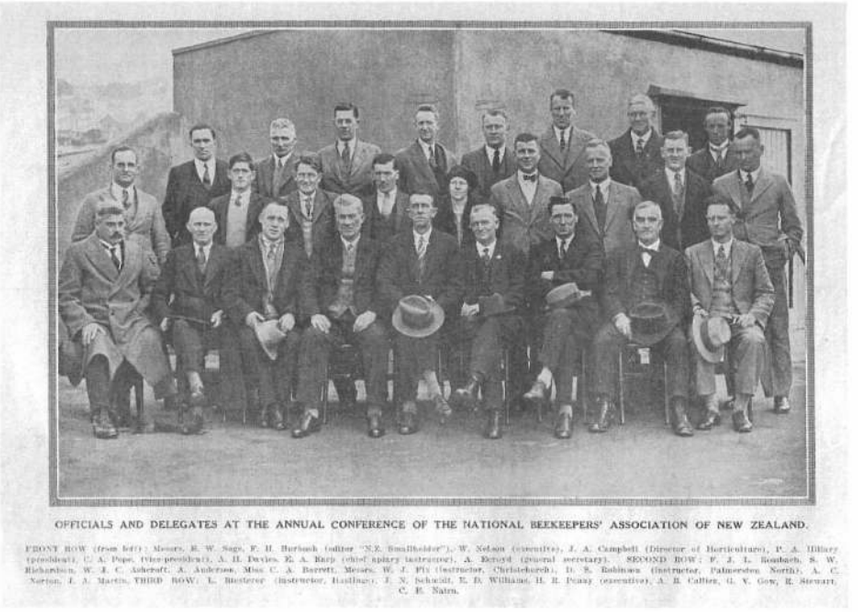
*A party of Maoris were plucking a field of maize close to Whakatane, when the owner of the field sulphured a box of bees, took the honey, gave some to the Maoris, and had some himself. In a short time they were all taken ill, and the doctor had to be sent for. The balance of this honey and comb was then thrown into the pig's barrel, and the next day three large sows were found dead.*

*I know of four different cases round here last season, and some of them were very serious. I asked the doctor what he thought of it, and he said he was quite sure that the patient he was attending was poisoned through eating bush honey.*

*It is very amusing to hear the different opinions as to why and how the honey is poisoned. I remember seeing in a Bay of Plenty paper a few years ago an article that I think was written by a priest, in which his opinion was that the poisonous honey was gathered by the bees to kill off the drones!*

*A Maori once assured me that the bees along the coast gathered salt water to poison the honey to keep the pakeha and the Maoris away. Very few of the Maoris here will touch honey in any form. Last year I was putting a load of honey in the wharf shed to be shipped to Auckland, and there were some Maoris looking on anxiously. At last one of them says "What you got here, Ruka (Luke)?" I replied "Honey." "By golly, for the Germans, eh?" "No," said I, "for the British." "By golly!" says he, "you poison them all!"*

*Last season a gentleman in Whakatane gave me a dog. As he would accept no payment, I thought I would take him some section honey, so I picked out some nice fancy white sections, and took them to his house and said "I have here some of the nicest honey you have ever saw or tasted" and held up a good section for his inspection. "Well," he said, "it does look very nice, but really, Luke, I am very prejudiced against honey." "But," I said, "this is really good." "Well," he said, "I will call the wife; perhaps she will like it," but when she came in she shook her head, and said "Mr Luke, I would not risk eating that for £50." The gentleman of the house then told me he had seen eight Maoris as stiff as a post through eating honey.*



OFFICIALS AND DELEGATES AT THE ANNUAL CONFERENCE OF THE NATIONAL BEEKEEPERS' ASSOCIATION OF NEW ZEALAND.

FRONT ROW (from left): Messrs. R. W. Sage, F. H. Burbush (editor "N.Z. Smallholder"), W. Nelson (executive), J. A. Campbell (Director of Horticulture), P. A. Hillary (president), C. A. Pope, (vice-president), A. H. Davies, E. A. Rapp (chief apiary instructor), A. Bebyd (general secretary). SECOND ROW: F. J. L. Rombach, S. W. Richardson, W. J. C. Ashcroft, A. Anderson, Miss C. A. Barrett, Messrs. W. J. Fit (instructor, Christchurch), D. S. Robinson (instructor, Palmerston North), A. C. Norton, J. A. Martin. THIRD ROW: L. Blesterer (instructor, Hastings), J. N. Schicidl, E. D. Williams, H. R. Penny (executive), A. R. Cullen, G. V. Gow, R. Stewart, C. E. Sairn.

*This photo was published in the 'The Apiarist' section of The New Zealand Smallholder, August 16, 1932.*

We certainly know a lot more about the potential for honey to be contaminated with toxic honeydew from the tutu plant. But imagine the time when there was little knowledge of the causes, and the only way to know if honey was safe to consume was by the 'taste test'—if one survived, it was safe!

At the end of this decade, the marketing of honey was in disarray. Despite the efforts of a new 'Honey Control Board' being set up in 1925, the HPA went into voluntary liquidation in 1932 and a new company, NZ Honey Ltd, was formed. It was a producer cooperative and probably operated in a similar manner to the HPA.

In 1932, Mr P. A. Hillary (Sir Ed's father) from Tuakau was President, with C. A. Pope (Springburn) Vice President. The executive comprised G. L. Hight (Hororata), W. Watson (Geraldine), W. Nelson (Otorohanga), and H. R. Penny (Taranaki).

## Sources

Quotations from *The New Beekeepers' Journal* published 1918–1922.

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*The New Zealand Honey Producer*, published 1929–1930

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# FROM THE COLONIES

## Auckland Branch

Wow! What a hot, dry January we've had. And more to come.

Reports are that there has been a big crop of kanuka which, to a certain extent, was mixed with the pohutukawa flow in some areas, and there has been a reasonable crop of manuka.

By the end of January the drought was affecting the honey flow, but the rain we've recently had could reactivate it, especially as there seems to be plenty of pennyroyal and lotus major in evidence. With a bit more rain over the coming weeks there may be more honey to be had. Pollination in the region has been good, and kiwifruit growers are happy with that.

We were in the hills behind Thames last weekend, and couldn't find a single passion vine hopper on any of the tutu we looked at, but with the hot, dry weather, we wonder if it is going to be a tutin year. Are there going to be any hoppers hatching and making a nuisance of themselves? Be aware and do the right thing. Get your honey tested.

**- Helen Sinnock**

## Waikato Branch

What can I say EXCEPT all the beekeepers I have seen are smiling! And the ones I haven't seen are way too busy to talk!

**- Barb Cahalane**

## Bay of Plenty Branch

Grant Stanley from the Eastern Bay of Plenty has provided an interesting account of his season.

"Wow, what a season! It was the most unusual spring, running round every hive, everyday, checking for swarming cells that never happened. Cold, day after day. The hives that needed to supersede never did for weeks; too late, it seemed.

The rewarewa never flowered, due, I believe, to the heavy frosting suffered to the immature flowers in early August when the bud is 2 to 3 cm long. This was the case last season when a very heavy frost on 1 August killed all the punga leaf in the greater area, right to the coast. The spring produced little or no honey. The entire season was unusually late.

One thing I am sure of is when there is a rough spring you can guarantee a great summer crop; such was the case this season.

Beekeepers boast of the great crops of honey they have gathered. The question we must ask, when lifting the lids of hives to find chocka supers under every lid, is, how much honey did we miss?

I often leave a hive or two at each apiary site with a box or two on to see how much honey I may have missed, and have been surprised sometimes at the potential missed. This season was one of those. I ran out of supers, harvested then chucked a sticky back on 90% of them and found them full again.

The few days they sat there without a box must have been a box missed, and the rest. How many tonnes have you got, and how many tonnes have you missed? There is no other creature that creates such an excess to requirement that compares, even a cow would normally have its excess gobbled up by a calf; the bee, is truly a gift to this world and man from God. I have come to an understanding that there will always be a time in the season for the bees to prosper; the keeper's gotta catch it.

Some hives produced 70–100kgs of honey, yet averaged out 39kgs per hive overall. A cracker still. And a wonder, at the magnificence of the beehive and its perfect picture, and its abundance. No hives stolen for a change either. No varroa seen yet, touch wood."

Reports of the honey crop from the Western Bay of Plenty have been a bit more variable. The very low rainfall in this area has had an impact with nectar sources drying off in early January. That said, I expect a big improvement on last year's poor yield.

**- Greg Wagstaff**

## Poverty Bay Branch

The district has had a good honey crop this season. Clover continued on into January when things did finally dry up. Even squash crops were suffering from the dry conditions. Normally squash can be relied on to get a late flow, with five or six bees being seen in individual flowers at times.

Rain arriving in early February as I write this should freshen things up again.

Queen rearing has started again for autumn requeening.

**Trees for Bees project**

This project is aimed at improving the bee forage for bees on a demonstration farm. The very hot and dry conditions in January finished off a lot of the last surviving plants on the very bank we are trying to establish. A smaller, damper area is faring much better. We will replant this autumn but may need to look at more drought-tolerant plants.

**- Paul Badger, Branch President**

## Hawke's Bay Branch

As I write this we have just had 10 mm of rain. That we can get excited over 10 mm shows just how dry the Bay has been getting. There have certainly been worse droughts in Hawke's Bay and many areas north of Napier are not too bad, but the more severely affected areas have been suffering from late spring. It is a bit soon to tell, but I would expect clover honey production to be average to above average, while all bush sources have been well below average.

As a branch we have nothing planned at the moment but we hope to run some more activities when things settle down a bit. If there is anything people want us to run, please let me know.

**- John Berry, Branch President**

## Southern North Island Branch

We've had good reports on honey harvesting in our area. Some non-local beekeepers may have missed out on the manuka harvest as it stopped suddenly.

There have been several comments in the journal about being responsible beekeepers in transporting hives, etc. We had an example in Wanganui the other day.

A beekeeper from the Bay had come down to remove honey from hives. I got called out around 6 pm with a complaint about two trucks parked in the main street (Victoria Avenue). A lot of people walking around on the footpath were concerned about the bees flying everywhere around the trucks.

The beekeeper had wrapped the boxes well and had covers on the top, but parking

*Continued on page 19*

*Continued from page 17*
overnight in the main street is not a good idea. The drivers were staying at a motel about 50 metres from their trucks. It would have been better to have left the trucks about one kilometre away where people were not walking around shopping or going to restaurants, but the beekeepers did not seem to be concerned. They did not know that there were also a couple of hobbyist hives not very far away, which added to the problem.

Unfortunately it is the local beekeepers who get the backlash from the public, police and local body authorities from this type of behaviour. There was no identification on the trucks or honey supers as to who they belonged to. Very poor PR.

**- Neil Farrer, NBA Life Member**

## Canterbury Branch

This might be another year to forget, as we have had a season of frustration with respect to bee health, weather and honey production.

Chemical treatments for the control of varroa have been used for three and a half years, and I suspect this is now starting to have a negative impact on our queen mating, longevity, and drone health. The mating this past summer has been the worst I can recall; whilst some blame can be directed towards the inclement weather conditions we had to endure through October and November, I do not believe this to be the only contributing factor. We have had these weather conditions in past years, but not resulting in the severe mating problems and quick supersedure responses noticed this season.

Consequently honey production is down and could be below average for this region. Whilst some apiaries have provided two or three boxes of clover honey, there are just as many where half a box could be considered a good crop. However, this could always change for the better, as we always know that a crop cannot be fully evaluated until it is in the drum.

There has also been a suggestion that the clover root weevil is having a major impact in some regions of Canterbury. We know that the weevil is in Canterbury but not the particular regions or population levels; we also lack knowledge of the likely impact on honey production. **Attend Conference 2013 for an AgResearch presentation on clover root weevil.**

Weather conditions for December and January had a negative impact on honey production, with the end of year being cloudy and cool and January providing us with record-breaking rainfalls. February has finally provided us with heat, but a little late for some clover crops.

Farmers I have spoken to are pleased with the pollination set of the various radish and brassica crops we supply hives to, so that is a positive sign. It's too early to comment on carrot pollination, as this is still under way.

An item of interest perhaps for Canterbury beekeepers is the forthcoming South Island Agriculture Field Days on 20–22 March. More info at www.siafd.co.nz

**- Geoff Bongard**

## Southland Branch

Until late January Southland's weather was not conducive to a good clover flow. It did improve in the final week, so the season ended up being that of two short intense bursts. As Frank Lindsay mentioned in his January 'About the Apiary' column, it is amazing how much a strong hive can gather when conditions are good.

We still hope to end up with an average crop if the weather allows some late catsear nectar to flow. Southern beekeepers also targeted the few small patches of manuka in Southland this season and have been rewarded by an incredibly long and profuse flowering.

**- John Stevenson, Branch Secretary**

## From the Chatham Islands

I'm writing this on 5 February and thank goodness it is raining steadily. For the last month or so we have had hot, dry and still queen-mating weather conditions on Chatham Island. As a result, the bees have been collecting copious amounts of nectar from clover, pohutukawa, dandelion and other sources.

For island beekeepers this year honey production volume has increased threefold, and the amount of pollen coming in to the hives is up as well.

We have received lots of positive comments and feedback from both locals and visitors regarding the amount of clover currently flowering. Of course it's a non-DCD approach to a clover nitrogen fix. We say it is the bees that have made this difference. The island is smiling.

We think the current situation reflects the impact on pasture of increasing hive numbers during the last five years, combined with the unprecedented weather conditions, due perhaps to changing global weather patterns. This, in turn, may signal longer honey retrieval periods for the island in future. That would be good.

We have heard of a couple of swarms but generally island beekeepers are working their hives well. We also have a couple of new beekeepers taking up the brush and hive tool and taking on the many other challenges as well; e.g., father and son dashing across a paddock chasing a swarm!

Last year we bought quite a few packets of 'wildflower' seeds and have distributed them to local 'bee-support' people. As a consequence we have seen some magnificent displays of flowers with bees all over them. The gorse is just starting to flower and we are collecting lots of pollen to store for queen rearing at the end of this year.

I wonder if there are some suggestions out there about underplanting vast gorse patches so that over time, the bees will get nectar and pollen. I have suggested manuka seeds could be spread under the gorse. Manuka does grow well here but we do not have large stands of manuka and would like to source a 'free-ish' supply of seeds. The lower hill seed would be good. We look forward to your comments.

Our queen rearing and mating is going very well and so island beekeepers are enjoying vigorous queens and hives. Our managed bees are mainly Italian and Carniolan. The British black bee still exists in feral colonies. In the interest of maintaining diversity, we keep hybrids of all those strains as well. Basically the bees are strong, vigorous and yet calm and easily manipulated.

**- Mana Cracknell and Michele Andersen**
**Email matahu@xtra.co.nz**

# Interview with Paul Badger

Paul Badger is the president of the Poverty Bay Branch of the NBA.

The Secretariat interviewed him about his role and experience in the industry.


### *How long have you been a beekeeper?*

Twenty-five years as a hobbyist; 10 years as a commercial beekeeper.

### *How did you get into beekeeping?*

When my daughter started high school she wanted to get a beehive, so we decided to get one each and learned beekeeping together. It is not always easy for a father to share a common interest with his daughter—this was a thing we did together.

I had also had some exposure to beekeeping doing AFB inspection work while I was working for the government.

### *What do you enjoy about beekeeping?*

Many things but the main ones are working outside, working for myself, producing crops of honey, keeping my bees healthy and producing my own queen bees.

### *Tell me about your current business.*

I produce manuka, citrus and multifloral honeys and do some pollination. Up until now it has been a one-man business, but this season I have employed a worker for one to two days most weeks. I also sell a few queen cells and do a little beekeeping consultancy.

Another thing I get involved with is running various beekeeping courses such as the AFB Disease Recognition course and introduction to beekeeping courses.

### *What made you decide to become Poverty Bay Branch president?*

We have a very small branch and I felt I had something to offer.

### *Tell me about your priorities as branch president.*

We do not hold regular meetings but get together for special issues such as organising our annual AFB diseaseathon, a remits meeting and other meetings as the need arises.

### *How can a beekeeper contact you if they are interested in a course?*

For an AFB course, all registered beekeepers that have not passed the course get an invitation letter.

I am easy to contact, being the only Badger in the Gisborne phone book.

### *What courses do you have coming up?*

- AFB Disease Recognition Course September/October 2013 (date not yet set)
- No general beekeeping courses planned at present.
- The next AFB Diseaseathon will be held September/October 2013 (it is held in spring each year).

### *What do you think your branch does well?*

Keep members informed on important issues.

### *What do you think the Poverty Bay Branch could improve on?*

We need to attract new members and should start to hold a few field days. There is currently a lot of interest in forming a hobbyist bee club in Gisborne and the local branch needs to encourage and foster this.

### *What important issues are you currently informing your branch members about?*

Not much at present but the conference Notices of Motion (NOM) will probably be next unless an urgent issue arises.

### *What do you believe to be positive about the beekeeping industry?*

There are a lot of positive, go-ahead beekeepers and marketers in our industry. There is a lot of innovation and research going on. The whole industry is on the rebound after taking a dive when varroa first arrived in New Zealand. It is great to be part of.

### *What do you believe to be negative about the beekeeping industry?*

Division is the biggest negative I see in the industry. I would love to see one united organisation representing beekeepers, marketers and suppliers. This would be a →

larger organisation with several speciality groups as members. I believe more beekeepers would voluntarily join an organisation like this. It would give us a stronger voice with government, and with a wider funding base we could achieve so much more.

### *What would you like to see improved in the beekeeping industry?*

A cost-effective, safe treatment for varroa, and varroa-tolerant bees being made readily available to the industry.

### *What do you enjoy doing in your spare time/what are your hobbies?*

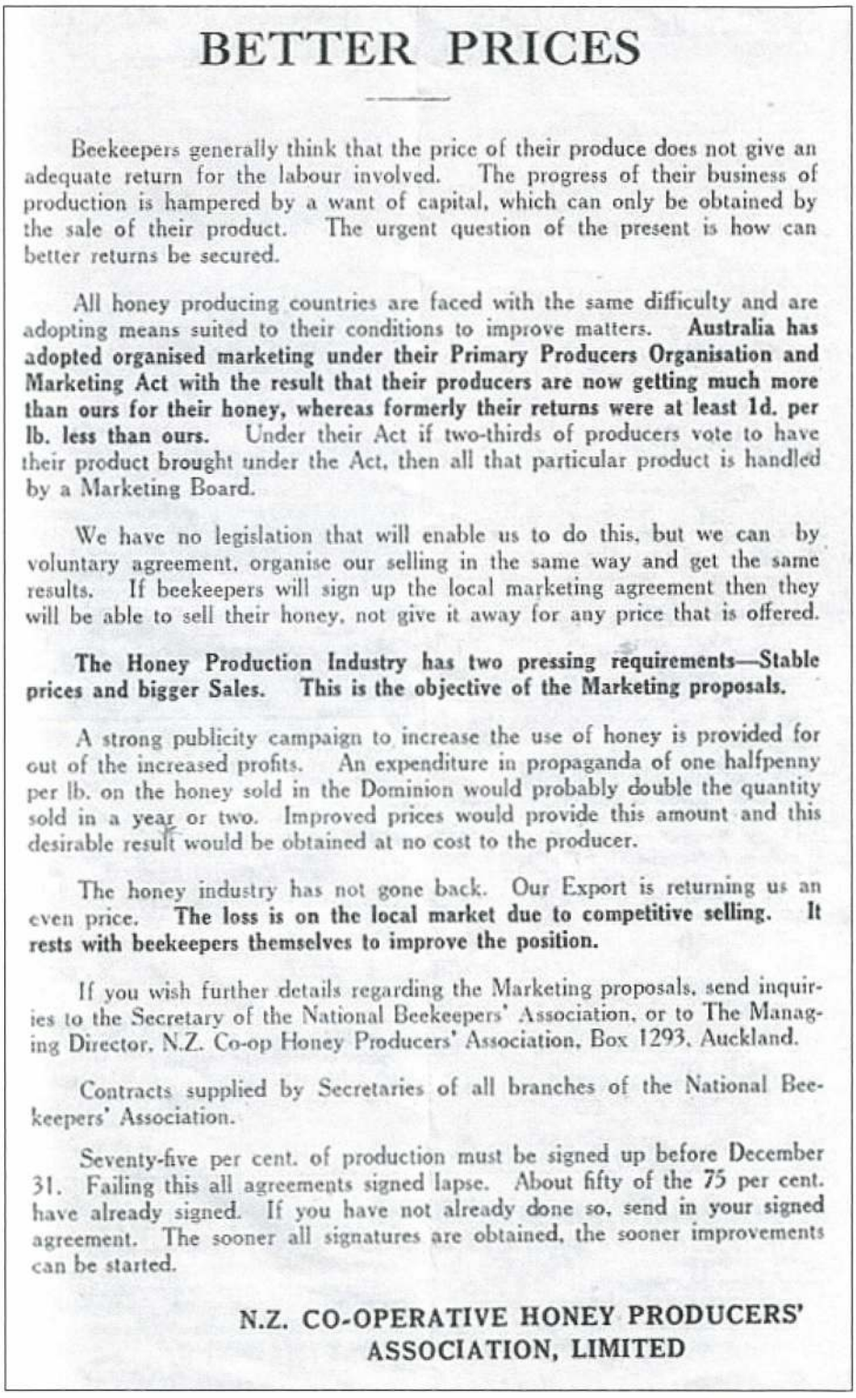
- Fly fishing for trout on a back country river, with flies I have tied myself.
- Putting a pack on my back and going tramping off the beaten paths for a few days.
- Camping at the beach with my family and grandkids over the summer break.
- One of my stranger activities is making and sleeping in igloos during winter.
- A recent highlight was a week's fly fishing for bonefish in the Cook Islands.

### *What is your number one tip for beginner beekeepers?*

Start off with two hives: if one dies out the other can be split to restock it. Keep hive numbers low for the first few seasons until the beginner has learnt how to manage them and to see if beekeeping is for them.

### *And for the more experienced?*

If the decision is made to increase hive numbers, go to 25 to 30 hives so that honey can be extracted commercially. Honey can then be easily sold by the 200L drum. Between 10 and 25 hives is no man's land: too much honey for most to handle privately and not enough to sell commercially.



# BETTER PRICES

Beekeepers generally think that the price of their produce does not give an adequate return for the labour involved. The progress of their business of production is hampered by a want of capital, which can only be obtained by the sale of their product. The urgent question of the present is how can better returns be secured.

All honey producing countries are faced with the same difficulty and are adopting means suited to their conditions to improve matters. **Australia has adopted organised marketing under their Primary Producers Organisation and Marketing Act with the result that their producers are now getting much more than ours for their honey, whereas formerly their returns were at least 1d. per lb. less than ours.** Under their Act if two-thirds of producers vote to have their product brought under the Act, then all that particular product is handled by a Marketing Board.

We have no legislation that will enable us to do this, but we can by voluntary agreement, organise our selling in the same way and get the same results. If beekeepers will sign up the local marketing agreement then they will be able to sell their honey, not give it away for any price that is offered.

**The Honey Production Industry has two pressing requirements—Stable prices and bigger Sales. This is the objective of the Marketing proposals.**

A strong publicity campaign to increase the use of honey is provided for out of the increased profits. An expenditure in propaganda of one halfpenny per lb. on the honey sold in the Dominion would probably double the quantity sold in a year or two. Improved prices would provide this amount and this desirable result would be obtained at no cost to the producer.

The honey industry has not gone back. Our Export is returning us an even price. **The loss is on the local market due to competitive selling. It rests with beekeepers themselves to improve the position.**

If you wish further details regarding the Marketing proposals, send inquiries to the Secretary of the National Beekeepers' Association, or to The Managing Director, N.Z. Co-op Honey Producers' Association, Box 1293, Auckland.

Contracts supplied by Secretaries of all branches of the National Beekeepers' Association.

Seventy-five per cent. of production must be signed up before December 31. Failing this all agreements signed lapse. About fifty of the 75 per cent. have already signed. If you have not already done so, send in your signed agreement. The sooner all signatures are obtained, the sooner improvements can be started.

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*This advertisement appeared in the Nov. 10, 1929 edition of The New Zealand Honey Producer.*

## Nelson Branch AFB Recognition and Competency Course and Test

| | |
|---|---|
| Date: | Saturday, 6 April 2013 |
| Time: | 10 am to 2 pm. Bring lunch (tea and coffee provided) |
| Location: | NMIT Richmond Campus, Queen Street, Richmond |
| Proctor: | Nigel Costley. Phone 03 548 3101 or email costleymarr@xtra.co.nz |
| Test & course fee: | $50 |
| | Course limited to 20 applicants. |
| Registration Deadline: | Friday, 22 March 2013. |

# The last of the summer flows

By Frank Lindsay, NBA Life Member

It's early February as I write this. The bees are out gathering the last of the nectar flows, which are mostly minor now.

In the rural areas of our region (Wellington), you can see the odd flowering scarlet gum (*Eucalyptus cinerea*), lotus major and pennyroyal in the damp areas and thistle on some farms. Along the railway line and on roadside banks, fennel is making quite a show, the honey being yellow and quite strong.

After the recent rains, catsear and clover are setting up to flower again, but whether they will produce nectar depends upon the ground temperature. The urban areas still have an assortment of flowers bees can visit.

Talking to other beekeepers, the honey crop is about average. Some of my hives have done well: the bees have stored four three-quarter-depth supers of bush honey for me in addition to ample winter stores, which have forced the brood down into the bottom super.

We recently had an overseas beekeeper visit us and he wanted to see manuka (the plant and the honey in the hives). The shrubs are easy to spot, but the honey was rather difficult to find. Most of the hives I'd put on to the manuka still had two supers of empty frames, and the bee numbers had dropped by a third. What a disappointment. The bush had just started to flower when I moved them in but that wet, windy spell after Christmas must have stopped either the flow or the bees from visiting the flowers. A check of quite a few bushes in different areas showed no seed set and plenty of growth. It's the third year in a row the bees haven't collected any manuka—bugger.

A little further up the line, a farmer told me it's been one of their best seasons for a long time. They received sufficient rain to make three cuts of hay and clover is everywhere. This has affected the hives, stimulating the queens into laying. Some have converted their winter stores in three supers of brood, with the odd hive producing queen cells. At first I thought they were simply supersedure cells, but the queens are laying well with beautiful brood patterns and the cells are of different ages. I have had to make splits with them in the hope that reduced bee numbers will stop them from swarming.

## Controlling robbing

In the bush areas the season is basically all over and the bees are in 'robbing mode'. The bees start probing the defences of their neighbouring hives and those within flying distance. Any hive that is queenless or has something wrong with it will be targeted. Initially the bees defend their hive but they are overwhelmed when bees from other hives join in the robbing. This provokes more fighting, and soon anything that moves within a short distance of the robbing hive is attacked.

Generally the best thing a commercial beekeeper can do is remove the hive and leave an empty super in its place. The robbing bees quickly realise there isn't any honey to rob and give up.

A hobby beekeeper may not be able to move the hive, but hobbyists have an advantage. Bees will not rob in the rain, so turn on the sprinkler and close down the entrance to the width of a couple of bees.

At the same time, order a new queen but don't release her too soon. Leave her in the hive for three days without releasing the tab. Open the hive in the evening, when most of the flight activity has ceased, and look at the bees on the queen cage. If they are feeding the queen and otherwise not taking any notice of her, you can release the tab and let her emerge into the hive. Any aggressive action by any bee (e.g., grabbing or trying to sting the queen) means either there could be another queen in the hive, or just that she is not yet accepted, so leave her in the cage for another three days and check again. Sometimes it can take up to a week before she's accepted.

## Autumn preparations

Autumn is not far away. Already the willow leaves are starting to change colour, daylight hours are shortening and dew has starting to appear each night on the vehicles. Our solar water heater is no longer producing temperatures in the 70ºC range.

Close down the hive entrances, block any holes or wide cracks between supers and check how your mite treatments are going. Fork out some pink-eyed drone brood and look for mites. Try to fork out 100 cells and work out the percentage of 'dark' mites you find. Just lately, another beekeeper reported that natural mite fall was low through the bottom board, yet there were lots of mites in the drone brood. Don't be lulled into a false sense of security by relying on mite fall alone. Use sugar shakes or an alcohol wash. These methods are in the manual *Control of Varroa. [Editor's note: this book is available for ordering from the NBA website. It is currently out of stock, but is being revised.]*

> "Never make any assumptions about mites ..."

In some of my hives I'm seeing the odd bee with shrivelled wings but I'm not getting a high mite fall, even though mite numbers are fairly low. I suspect deformed wing virus is around. Viruses take a lot longer to disappear after the mite problems are under control. And then I came across a hive that had PMS, which was much earlier than usual. Did my formic acid treatment fail, or have they picked up the mites from somewhere else? Never make any assumptions about mites as they can quickly destroy a hive.

*Continued on page 25*

*Continued from page 23*

## Maintenance work

Most beekeepers have been hard at it extracting their honey but I have been mucking around doing a little maintenance on the truck. Cow muck is very acidic and quickly eats away at any unprotected metal. My last ute started coming away under the radiator and this truck was starting to go in the same place, so I've blackguarded it to hold the rust and I'll give it a coat of paint during the next fine weekend.

The other major maintenance job was taking out the radiator to clear out the grass seed. My Nissan Atlas 150 has a ground clearance of seven inches with a scoop underneath to direct the air up on to the radiator. Off-road this works very well as a seed heater, resulting in a blocked radiator and an overheated engine. My truck has been overheating for some time so before it had to do some real work carting in honey supers, I felt it should get its annual overhaul.

At the same time we replaced the thermostat (which, incidentally, was the wrong one and partly caused the overheating problem) and the water pump. If you are going to the effort of removing the radiator (removing the driver's seat and cab floor above the motor), you might as well do everything else while it's out.

I played around forcing out the grass seed with an air hose for half a day, while a mechanic friend did the real work with the water pump. My vehicle now doesn't overheat under load, but it's not going to last very long like this. A kilometre of travelling over farm tracks coated the radiator with seeds again. I carefully vacuumed them off but you can't do that every day. The solution came from a fellow beekeeper, who had a small roll of stainless-steel flyscreen he was planning to use to filter cappings. I loaned him a strainer that fitted on a 20-litre pail, and he donated the mesh which fits perfectly over the radiator. I'll now put the mesh in position when I go off-road and hopefully this will save me removing the radiator again next year.

My most recent job was making up three-frame nucs to introduce 10-day-old queen cells into. I plan to winter over a number of nucs to replace any hives that go queenless during winter. Most will be wintered as five-frame nucs, with a small patch of brood in two frames and the rest will be honey frames. I'll also put aside an extra couple of frames of honey to replace any empty ones in August to give the bees a boost.

Speaking of boosting, I used bee-boost strips this last spring in a few nucs, and what a difference it made. These hives started as four-frame nucs in the spring and produced another box of bees going into the honey flow.

## Top-bar hives

Top-bar hives take quite a bit of work to get them through winter. Hives need a minimum of 10 frames with honey; i.e., the brood should be in the bottom of the frame with honey over the top. If your hive is not up to this standard, start feeding it internally with sugar syrup, and don't spill any outside the hive as this will only encourage robber bees. Bees naturally migrate up during the winter. With a top-bar hive they have to go sideways. If they don't have honey over the top of the cluster, they could starve. You have enjoyed your bees through the summer; now prepare them for winter. Too many of these hives die out in winter through neglect. They are not like a Langstroth hive that generally takes care of itself. You have to make sure the cluster is always in touch with the honey stores.

## Things to do this month

Remove all comb honey frames. Remove and extract surplus honey—those frames that are not fully capped should be shaken to make sure the honey is dry otherwise leave it for the bees. *Don't forget to do an AFB check before removing any honey.* If bees are robbing, mark the cover of the supers and stack the supers on your vehicle, then check the hives for disease. Return supers to the hive and burn those that are diseased.

Requeen hives. Now is the best time to get queens mated while it's still warm and there are plenty of mature drones in the hives. Queen producers should also have mated queens on hand if required.

In some areas it's time to winter down hives. Keep an eye out for wasps and close entrances down so the bees are better able to defend the hives against them and mice getting into your hives.

Combine any small non-producing hives or make nucs out of them, so that you have spring queens on hand when you want them.

Make sure your mite treatments are working. Keep an eye out for those hives that only have a few mites in them. Produce queens from these but check the hive thoroughly beforehand. I thought I'd found a hive that only had a few mites due to a hygienic queen and brood, only to find a strip in between the bottom frames of the super.

# Register now for Trees for Bees conference

The first annual Trees for Bees Conference will be held 26–27 April 2013 at Eastwoodhill Arboretum, Gisborne. This conference has a core focus on Trees for Bees research currently being conducted at the arboretum near Gisborne.

Dr. Linda Newstrom-Lloyd of Landcare Research will present preliminary results of her research into trees and shrubs which provide a high quality pollen source for bees. From the diversity of plants at the arboretum, she has identified many that have the potential to increase pollen supply during spring and autumn shortages. Dr. Newstrom-Lloyd will be supported by a panel of speakers from the bee industry (including the NBA), farm forestry sector, NZ Nursery Association and Landcare Research. Farm profitability is dependent on the health of our bees, both native and introduced. This conference presents an opportunity to show how all sectors of the community can improve bee health in a collaborative way.

Early registration is essential as space is limited.

For further information and registration forms: Visit www.eastwoodhill.org.nz
Call 06 863 9003 or
Email enquiries@eastwoodhill.org.nz

Conference flyers and registration forms also are available on the NBA website www.nba.org.nz

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