September 2013, Volume 21 No. 8

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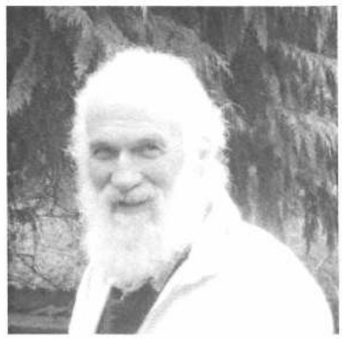
Front cover: A honey bee sits on Jody Mitchell's finger. This photo, taken by Jody's 13-year-old daughter, Zoe Mitchell, was the winning photo in the 'Close up' category of the fifth annual Ecroyd/NBA photography competition, held on 18 June 2013 at the NBA Conference, Ashburton.

Re-energising ourselves



By Ricki Leahy, NBA President

I always love the way I become reinvigorated at the start of each season. I take advantage of the winter holiday season to sneak in as many lie-ins in the morning as possible.

We beekeepers are busy enough throughout the year so we should find time to 'park up a bit'. That's just what the bees do anyway. Can you just imagine them sitting back on their couches, drinking tea and reading the paper in the warmth of their cluster, whilst keeping an eye on the weather?

For me, reality suddenly strikes and I wonder how on earth I'll get through another season and muster up all that energy required to keep up with the bees. How you describe it I'm not too sure. But it's that same churning, deep-down, anxious feeling that I remember so well as a schoolboy as I'd realise that the time had eventually come to go back to school after what seemed like endless summer holidays. Of course, it didn't take long to readjust once back amongst my friends and the familiar routine. I'm sure you know what I mean.

It's the same with the bees. Those first few warm hours, the hum of bees in the hazelnuts, and the sudden activity at the entrance of the hive, coupled with the infectious urgency the bees display, suddenly gets me energised and then it's all on. I love it. It's one of those treasured beekeeping experiences that thread the magic only beekeepers know.

Executive and Committee work

What's been happening on the Executive level? Heaps, actually and those cheeky little lie-ins, I assure you, would be more to do with late nights catching up on all the reading and bits and pieces that need to be thought through and then taken care of.

All of our 13 committees are now sorted and up and running. The newest is our Country of Origin Committee, tasked with exploring options and advantages for labelling our products in this way.

Members from outside the Executive with particular interests and expertise have been invited to participate in the appropriate committees and this is proving to be extremely beneficial for us to proceed with the aims of these committees. We should all be grateful for this voluntary work, which shares the workload undertaken on the members' behalf.

The Publications Committee covers topics associated with this journal as well as other matters. This work often is carried out under pressure (e.g., reviewing the final proof to meet deadlines).

> "So let's consider all these unaffiliated beekeepers out there as swarms."

The Technical and Submissions Committee, with its background of scientific and chemical expertise, writes well-regarded submissions for the Environmental Protection Authority (EPA) and others. This helps the EPA, for example, to become aware of potential dangers that may be imposed on our bees, therefore assisting them to come to sensible rulings on new licensing criteria, etc.

A full list of NBA committees and their membership is given on page 23. As you can see, there's heaps to do to improve the functionality of our organisation and also to continually protect our bees in this modern and changing environment.

It is intended to publish future reports from the committees in the journal to keep you more informed and so give a better indication of what is happening for your benefit. *[Editor's note: see the article from the Research Committee on page 8.]*

Executive Council meeting

The Executive had a very productive meeting in Wellington on 6 August. As well as other topics, we closely reviewed the NBA Strategic Plan summarising where we are up to with the 'Protect, Represent, Promote and Build' initiatives, redefining any priorities where we felt necessary. This plan is proving to be a very useful tool, enabling us to focus our energy and resources to the optimum advantage and keeps us all on the same page as to what we are endeavouring to achieve. It also helps us to rationalise the demands on our CEO and Secretariat by giving them positive direction as to what they can progress with on our behalf.

We need to understand that in this world of electronics, it is so easy to become overburdened with tasks and requests, which in all fairness do need attention. However, the important administrative requirements cannot be neglected, so again we need to understand that there is a limit as to what can be done.

Subscriptions

We are looking at further refinements in the subscriptions that our members pay. We realise our (high) subscriptions may have had an impact on our membership and we continue to explore ways to determine the subscription levels. We have a chicken-and-egg situation happening: in order that we can maintain and increase the benefits to members, we need to increase our membership income. We realise that reducing subs will not increase income, but we see a huge potential for this organisation to grow by encouraging those unaffiliated beekeepers to become involved and share the expenses of running the association, thereby

Continued on page 6

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Continued from page 4

maintaining financial security to continue with all that work.

So back to beekeeping. Surely if we found a swarm we would do our best to 'hive it', wouldn't we? And surely we could gain some production from that swarm and grow our hive numbers. So let's consider all these unaffiliated beekeepers out there as swarms. We need to go out and 'hive them up' by talking to them and explaining to them the big-picture stuff of how we all need to be in this thing together and how we all need to contribute. We must all know of some beekeepers in our area who should join. After all, in our own beekeeping outfits we don't tolerate passenger beehives. Do we?

Happy beekeeping.

Did you know that beeswax is used in bone surgery? During bone surgery the ends of the bones often leak marrow and blood, so some surgeons use sterilised beeswax to seal the end of the bone. Within a short time the bones will repair and the beeswax is dissolved by the body.

LETTER TO THE EDITOR

Our shaky times

By Roger Bray, Central South Island Ward representative

I've been thinking about this quote from the *Ashburton Guardian* on 7 August 2013 (APNZ) regarding the recent Marlborough/ Wellington earthquakes.

> *... as GNS Science has lowered the probability of a magnitude-6 plus occurring this week to 3 per cent, down from 6 per cent last week. The probability of a magnitude 5.0 to 5.9 quake this week has also been lowered from 47 per cent to 28 per cent, while in the next year there was a 90 per cent chance of a magnitude 5.0 to 5.9 quake and a 21 percent chance of a magnitude 6.0 or greater.*

I'm sure that most people will appreciate the fine work that GNS Science does to reduce earthquake risk. A 50% reduction in such a short time is astounding and I'm sure that if we put more scientists on the job, as well as a heap more funding, the risk of earthquakes would be reduced to almost zero.

I guess that they need to work on the high-risk areas first (and quickly too!) and I think that next year could be disastrous unless something is not done here. Could this become an election issue?

As an aside, while travelling to the Executive Council meeting on on 6 August, our plane was travelling quite smoothly until we reached a point roughly seven kilometres north-east of Seddon, when we were violently rocked by an earthquake for approximately 20–30 seconds.

Boy, I was relieved to get back on the ground as I realised that 'Drop, Cover, Hold' is not that easy in a plane with 150 people and various paraphernalia under the seat. It always amazes me that valuable space would be taken up with a 'buoyancy aid' rather than a crash helmet or parachute!

At left: Centennial cake and its attendants (150 mini cupcakes), which were as luscious as they appear in this photo. The baker was Leonie Rollinson of 'Fill the Tins', Ashburton. The mini cupcakes were served with afternoon tea, and the Skep cake was cut and served with tea and coffee after the Conference dinner. Middle column: Annette Berry and NBA Life Member Russell Berry; Elders of the industry. Left to right: NBA Life Members Bob Blair, Ian Berry, Kevin Ecroyd, David Penrose. At right: NBA Life Members Tony and Jane Lorimer. Photos: Jody Mitchell.

Honey industry on top

The following article was reprinted with permission from the *New Zealand Food Technology* journal.

According to Airborne Honey, the industry has faced more than a few challenges, including parasites and disease, alongside an economic downturn, but all the signs indicate that beekeepers and producers are overcoming the hurdles and doing better than ever.

In both New Zealand and internationally, hive numbers and profits from honey sales have increased in recent years, which suggests that beekeepers and honey producers are dealing with issues successfully.

"Of course, there are still problems but beekeepers and producers are responding to them admirably. It's not all doom and gloom," says Airborne Honey managing director, Peter Bray.

"All the trends are up. The numbers of hives, production per hive, and value per kilo and trade statistics have all increased. Internationally, hive numbers have increased from around 50,000,000 in 1960 to nearly 80,000,000 today. In New Zealand, the honey crop for 2011/12 was estimated at 10,385 tonnes, up 935 tonnes (10 percent) on the 2010/11 crop of 9450 tonnes. Hives increased by 32,205 or eight percent over the 2011/12 year."

Even though he accepts that the honey industry has faced some obstacles, Mr Bray doesn't believe that there is any concrete evidence behind the disappearing honeybees theory. He explains that it originated in the United States after people started noticing a dip in the number of hives.

"What many individuals don't realise is that the reason hives started to decline in places like the United States, compared to the rest of the world, was related to the increasing cost of labour, not a physical decline in honeybees," says Mr Bray.

"The country started importing more honey, as production simply wasn't profitable or cost effective enough for American beekeepers and honey brands. Recently, the increase in pollination rental values for almond orchards has stemmed the decline and the last couple of years have shown an increase. Our belief is that profits are a greater predictor of hive numbers."

Mr Bray feels positive about the next 12 months, both for Airborne Honey and the industry as a whole. However, he would like to see more celebration of the fact that the New Zealand honey industry is beating the odds.

"The honey industry is a New Zealand success story," he says.

"Our country is exporting increasing amounts of honey overseas – around half of total honey production – and New Zealand honey brands and beekeepers have seen record profits in recent years. Data shows that in 2010 our country was the sixth largest exporter of honey by value in the world. This is up from 17th in 2000. Last year's record exports of $128,139,000 would have put us in fourth place. On top of that, beekeepers in New Zealand now have an extra string to their bow as they are making money from pollination.

"There are some good people doing great things for the honey industry in New Zealand," he adds.

"This includes Federated Farmers Bee Industry Group who have supported the launch of the Trees for Bees campaign. They are encouraging New Zealand farmers to use plants that are attractive to honeybees, meaning they have the opportunity to gather sufficient pollen and nectar, providing the vitamins and minerals required to maintain optimum hive strength and a viable pollinating bee force. It would be great to see more recognition of the work groups like this are doing, and the positive direction the New Zealand honey industry is moving in."

Source

New Zealand Food Technology (2013, June). Honey industry on top despite recent challenges. Retrieved August 1, 2013, from http://www.foodtechnology.co.nz/content/honey-industry-top-despite-recent-challenges-0. Reprinted with permission.

Industrious little bee

By Mary Patterson

In and out the fragrant flowers
Zealously busy one can see
The little golden honey bee.
Fluffy stripey bottom up
Head in bloom to have a sup.
Buzzing a tiny happy song
Searching for nectar all day long.
The bumble bee is busy too
Spreading the pollen a task they do.

Sweet lavender seems a favourite bush
Long time flowering rather lush.
The clever harvesters start early each day
Not til dusk they fly away
One knows not from whence they came
Each day collecting just the same.

When cutting flowers for a posy some day
One rests on your hand don't move away
Feel the soft breeze from a fluttering wing
A wonderful moment in nature … feel your heart sing.
Each tiny industrious creature
The feeling of joy it can bring
Just be aware that this honeymaker
A gift from the Creator
Working in harmony with man
Is part of a wondrous thought out plan.

Members, be in to win!

By Russell Berry, Research Committee Chairman

Your new NBA Research Committee is all fired up to do research required by beekeepers.

Please make a list of 10 different ideas that you want researched, listed in order of priority, with 1 being the most important. Please fill the list out at the bottom of this page and enter your name, phone number, email and postal address, so we can communicate with you if we require further clarification on your recommendations.

Once we have established the areas for research that are most desired by beekeepers, your committee can concentrate on these areas. We will then go out and ask beekeepers to make donations to areas of their choice.

We will also ask other people who have an interest in the beekeeping industry to donate. For non-members of the NBA, we would like to encourage you to join the NBA to join in this survey and to be in to win. Please apply to the secretary of the NBA for membership: see page 3 for contact details.

Research areas will be listed in *The New Zealand BeeKeeper* journal so you can see the importance of the research that you have chosen. The amount of money in each area donated will be recorded and published monthly so that our members can see what is being contributed to each area. We believe those people or companies donating $1,000 or over should be listed in our journal, giving recognition to those who donate. This should generate a lot of income and interest. Donated income for the right project can be subsidised up to the rate of $7 for every $1 donated by the beekeeper.

Your Research Committee is going to take action on what you write below, so please think carefully before filling in the form. To promote the filling in of this form, **Ceracell Beekeeping Supplies Ltd and Arataki Honey Ltd, Rotorua Division have donated $500 each for spot prizes—10 prizes of $100 each, to be drawn 30 September 2013.** Please email this form to russell@arataki-honey-rotorua.co.nz or post to RD 3, ROTORUA, **so that it is received by 29 September 2013.**

Fill in the form—be in to win your prize and communicate your request for research projects.

Research Areas (ranked in priority with 1 being most important)

1	
2	
3	
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9	
10	

Name: _____ Postal Address: _____

Phone _____ Email address: _____

Varroa? Or bee viruses?

By Tony Roper, Apicultural Officer, AsureQuality Limited, Tauranga. Email: tony.roper@asurequality.com

In this article, Tony Roper explores the question of what is really killing your bees.

Varroa and viruses

Historically, viruses were considerably more difficult to study than they are today. Laboratory examination for virus diseases was difficult because virus particles are too small to be observed by light microscopes.

In recent years, advances in technology have allowed researchers to detect and classify many viruses that are new to science. Apart from serological methods (analysing antibodies), most of the known viruses can now be identified by genetic technologies such as polymerase chain reaction (PCR).

In the beekeeping industry, at least 18 (Sammataro & Yoder, 2012) virus types and strains have been recorded as disease pathogens of adult bees and brood. Nearly all are RNA viruses.

Bees are well protected against viral infection with their chitin body shell and gut coating; therefore, a virus particle existing on the outside body or cuticle is unlikely to infect the cells of the bee. However, parasitic mites can penetrate the exoskeleton and leave the bee vulnerable to infection from bacteria and viruses.

Varroa is especially harmful because it is an important vector in the spread of bee viruses (Martin et al., 2012). When the varroa mite pierces both the body of pupae and adult bees with its mouthparts, in addition to creating a site for the entry of infections, the mite can also introduce viral infection directly into the bloodstream. If viruses can enter the bee's cell structure via the bloodstream (haemolymph) or broken internal tissue (in the mid-gut), major damage can be done.

The damage caused to colonies by viral infection varies according to a number of factors including the type and strain of virus involved, the strength and health of the colony (including the infestation levels of both varroa mites and *Nosema sp.*), weather conditions, the season and food availability.

The author has recently been working in Fiji inspecting hives for bee diseases in that country. Fiji is presently varroa-free and it was very noticeable how healthy bees are without varroa. In fact, the only viral infection the author observed was a few cells of sacbrood in the occasional hive.

Similar to the arrival of varroa to New Zealand in 2000, Hawaii had been relatively free of pests and diseases of honey bees before varroa arrived there in 2007. Since then it has been associated with the spread of viral disease and the decline of colonies (Martin et al., 2012).

Although there are currently at least 18 well-known bee viruses (Sammataro & Yoder, 2012), it is likely that many more are yet to be discovered. Fortunately not all 18 viruses are present in New Zealand. Only 11 of the 18 viruses have been found in New Zealand bees (Allen & Ball, 1996; MPI, 2007); however, it has to be acknowledged that very little baseline work on bee viruses has been carried out in New Zealand.

Beekeepers may find some bee viruses very difficult to deal with. One reason is because viruses cannot be detected directly using low-cost techniques such as microscopy and many do not produce noticeable symptoms (unlike a bacterial disease such as AFB). An added complication is that for those viruses that do produce clinical symptoms, it can be extremely difficult to distinguish between these and the symptoms caused by varroa. The result is that viruses can have a significant effect on the health of the colony before the beekeeper is aware of the problem.

Honey bees are more likely to express an overt (acute) infection when the viral transmission involves varroa and the viral load in the infected honey bee is high (Martin et al., 2012). Studies have shown that the arrival of varroa in Hawaii had a profound effect on the number of colonies infected with Deformed Wing Virus (DWV). The prevalence of DWV in colonies in varroa-free areas was less than 13%, but in colonies from areas where varroa had established, the prevalence of DWV increased to between 75% to 100%. This increase in the prevalence of DWV was also accompanied by a million-fold increase in viral load that infected each individual bee (Martin et al., 2012).

Some viruses, in particular those with an RNA base, have an extraordinary ability to mutate rapidly, allowing them to evolve quickly into more diverse strains. This is because viruses can multiply rapidly in the cells of its host. Because viruses are mutating constantly, bees must also be evolving and developing resistance to new strains.

However, in some cases the presence of varroa may change things a little. The studies in Hawaii provided evidence that there is a strong selection in favour of certain DWV strains that can replicate inside the varroa mite's body, and that these 'varroa-adaptable strains' will displace other variants of the virus (Martin et al., 2012).

The high number of viral particles found per bee in varroa-infested colonies also suggests that the mite's introduction affects the amount of viral material to which each bee is exposed, thus amplifying physical signs of the viral disease.

What are the bee viruses?

A recent publication on honey bee health (Sammataro & Yoder, 2012) points out that approximately 18 distinct viruses have been identified that infect honey bees:

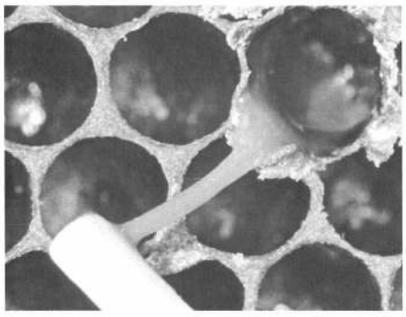
1. Acute Bee Paralysis Virus (ABPV)
2. Kashmir Bee Virus (KBV)
3. Israeli Acute Paralysis Virus (IAPV)
4. Black Queen Cell Virus (BQCV)
5. Deformed Wing Virus (DWV)
6. *Varroa Destructor* Virus (VDV-1)
7. Sacbrood Virus (SBV)
8. Slow Bee Paralysis Virus (SBPV)
9. Chronic Bee Paralysis Virus (CBPV)
10. Chronic Bee Paralysis Virus Associate (recently renamed Chronic Bee Paralysis Satellite Virus) (CBPVA) ➔

11. Cloudy Wing Virus (CWV)
12. Bee Virus X (BVX)
13. Bee Virus Y (BVY)
14. Arkansas Bee Virus (ABV)
15. Berkeley Bee Virus (BBPV)
16. Macula-Like Virus (Macula)
17. *Apis mellifera* Filamentous Virus (AMFV)
18. *Apis* Iridescent Virus (AIV)

Of these 18 viruses, 11 have been found in New Zealand bees; namely ABPV, KBV, BQCV, DWV, SBV, CBPV, CBPVA, CWV, BVX, BVY and AIV (Allen & Ball, 1996). It should be noted that very little systematic surveillance has been done on bee viruses in New Zealand and apart from the DWV detected in 2007 (MPI, 2007), the rest of the testing was carried out 25 years ago.

The most common viruses that New Zealand beekeepers are likely to see clinical signs of in their hives are BQCV, DWV, SBV, ABPV and CBPV. Most of these viruses are thought to have been present in New Zealand for many years.

Sacbrood (SBV) is a particularly common virus and is often confused with AFB, which is a challenge for the AFB Pest Management Plan. The main difference is that sacbrood is able to be lifted out of the cell and the 'sac' will have watery contents. In contrast, AFB tends to be ropy and once dried down, is unable to be removed from the cell.



AFB tends to be ropy. Photo: Dr Mark Goodwin.

Black Queen Cell Virus (BQCV) is relatively common amongst queen producers. It is characterised by a number of grafted queen cells dying and the pupae turning black in the queen cell. Acute Bee Paralysis Virus (ABPV) and Chronic Bee Paralysis Virus (CBPV) show up as hairless black bees and clusters of flightless bees crawling at the hive entrance.

Deformed Wing Virus (DWV) was discovered in New Zealand in 2007 (MPI, 2007) but may have already been in New Zealand for some time. A number of beekeepers throughout the country are reporting seeing symptoms of this virus in their hives. The typical clinical symptom of DWV is shortened and misshaped wings. This is quite a serious virus because it will destroy the colony in a very short time as almost all of the bees will become infected.

The other viruses that are affecting your bees in New Zealand are Kashmir Bee Virus (KBV), Chronic Bee Paralysis Virus Associate (CBPVA), Cloudy Wing Virus (CWV), Bee Virus X (BVX) and Bee Virus Y (BVY). It is important to remember that most of the viruses will shorten the life expectancy of your bees and therefore, the productivity of your hive!

Ways to protect bees from viruses

Randy Oliver, who was a popular guest speaker at the 2011 NBA Conference and the Waikato field day in February 2013, has published a number of suggestions to help beekeepers prevent bee viruses (Oliver, 2011). Most of Randy's suggestions (listed below in italics) could be easily implemented into New Zealand beekeepers' present management practices:

1. *Provide good nutrition by either stocking fewer colonies per site, moving hives to good pasture, or by supplemental protein feeding.*

2. *Maintain genetic diversity to minimise the chances that a virus will affect whole apiaries.*
   The take-home-message for New Zealand beekeepers is to use as many different breeders and sources of drones as possible.

3. *Minimise pesticide residues (miticides) within the hive as they appear to suppress immune function.*
   It is most important that you follow the label instructions of miticides, in particular to mitigate against chemical resistance of varroa.

4. *Make sure your colonies start each season with very low mite levels.*
   It is good beekeeping practice to test for mite levels in the spring and treat if necessary.

5. *Regularly monitor mite infestation levels.*
   Use a simple test like the Sugar Shake Method (refer to Goodwin & Taylor, 2007).
6. *Keep an eye on neighbouring beekeepers! Don't allow mite-ridden operations to continue.*
   Remember, no beekeeper is an island! It is important that you regularly talk to your neighbouring beekeepers, join organisations like the NBA, report abandoned apiaries to AsureQuality Limited, etc.

7. *Recognise when a virus epidemic starts brewing (generally in mid-summer) and spot check brood for signs of pupal death or bees with deformed wings.*
   If you can spot the signs of viral damage early enough, you may be able to fix the problem; e.g., treat for varroa, requeen the hive and transfer healthy emerging brood into the hive to introduce a number of healthy bees.

8. *Take action to prevent the mite-to-bee ratio from rapidly shifting upward immediately after the main flow.*
   Treat for mites if necessary as soon as honey supers are removed.

9. *Double check mite levels in the late autumn. Realise that during winter, mites move from bee to bee within the cluster, and if there are virus issues, then they will spread.*
   In some areas with a mild autumn, beekeepers may need to treat again.

10. *Colonies deal with diseases by out-breeding them! Sick bees must be replaced with healthy young bees. Give your colonies a fighting chance by stimulating brood rearing in late summer.*
    For New Zealand conditions, this could possibly mean replacing queens and simulating feeding in autumn to produce several cycles of healthy brood.

11. *Remove sick colonies, steer clear of operations with sick bees, and avoid large holding yards.*
    Remember, stronger hives will rob weak hives and pick up viruses.

Biosecurity measures

It is critical that beekeepers inspect their hives regularly. As a beekeeper you should be used to recognising healthy bees and should spot the early signs of sick bees or brood infected with viruses. Telltale signs of viral infection include slower colony build-up, poor brood patterns, a higher incidence of nosema or chalkbrood, small hive populations, decreased honey production,

increased queen supersedure or failure, poor wintering (Oliver, 2011).

If you see anything that looks suspicious in your hives and you think the cause could possibly be a newly introduced bee disease, please immediately call the Ministry for Primary Industries (MPI) hotline 0800 809 966. If possible, please also try to collect a sample of the unusual bees or brood in a jar that can be sent to the lab for identification. You will be contacted immediately after your call to the hotline by a veterinarian or official from MPI or an Apicultural Officer from AsureQuality Limited. The caller will ask for more details and make arrangements for a sample of bees and or comb to be sent to an MPI laboratory for diagnosis.

Acknowledgement

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

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NATIONAL OFFICE UPDATE

By Daniel Paul, Chief Executive Officer

This report summarises activities undertaken by the NBA Secretariat during August.

Key issues on the agenda have been:

Planning for the first post-AGM Executive Council meeting, the agenda for which was packed with AGM issues and the usual raft of Association organisational items. This meeting went very well, with another planned in October.

Following on from the AGM and Bee Aware Month branch meetings, we have been regularly updating branches with information to pass on to their members as they see fit. Hopefully this will ensure members get a better overview of the Executive Council's work plans.

Bee Aware Month has ensured the NBA has gained widespread national and international promotion and media. The campaign has been extremely valuable in terms of sparking interest in what's happening to bees, both here and overseas. The comparisons between the health of hives in New Zealand and internationally has been of much media interest.

Features include:

- live interviews on Firstline and Breakfast TV
- large feature write ups in the *New Zealand Herald* and *Dominion Post,* as well as multiple local and community newspapers
- the Video Competition prize giving: see winners at www.beeaware.org.nz
- live interviews on national radio stations and articles in blogs, magazines and international media such as *Food Magazine Australia.*
- features with De Winkel in *Next* and *Home and Garden* magazine.
- ecostore, Little and Loved and Palmers Gardenworld are raising donations through sale of their products
- you can donate to our research projects here: http://www.givealittle.co.nz/org/NBA or www.beeaware.org.nz
- Greenhaus agreed to write a massive 'Bee Good to Bees' on their well-loved hillside sign on SH1 in the lower North Island.

Our strategic partners De Winkel yoghurt, Palmers Gardenworld, ecostore and Annabel Langbein have been extremely active. You can see more about their activities on their websites or Facebook pages.

De Winkel is distributing 110,000 packets of wildflower seeds and creating a bee-friendly community garden in Auckland.

Palmers Gardenworld sponsored $3000 of prizes for the school video competition. The winner, Stonefields School in Auckland, is a new school and will be using their prize to establish a learning garden for the children. Auckland Beekeepers' Club member, Kim Kneijber, was very, very helpful and gave a wonderful educational presentation to media with her display hive. Thanks for all your help, Kim. Branches and clubs around the country have also been participating in school visits.

You can learn about how 'Healthy Bees Beat Disease' and see the gorgeous clip on our web or Facebook pages: https://www.facebook.com/pages/Bee-Aware-Month/155550234605563?notif_t=page_new_likes

Palmers Gardenworld, Little and Loved and ecostore are all selling products which include a $5 donation to our research projects or a percentage of profits from sales during August. All of our sponsors are running BAM competitions which you can enter on their websites/Facebook pages.

Annabel has been promoting bees as the NBA's Bee Ambassador. You can check out all she has been up to at http://www.annabel-langbein.com, including her new beehives and delicious Bee Month honey recipes! Our Facebook page will also be featuring delicious recipes kindly donated by Maureen Maxwell.

While BAM kept us busy, other things ticked on in the background. We had all the media attention around 'counterfeit' manuka honey and we spent some time with MPI dealing with issues around pest identification.

There is also work afoot, with East Coast Ward representative Deanna Corbett, to enhance the website so keep an eye out for that.

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. High-resolution photos preferred.

NBA CONFERENCE

Photos from the Conference dinner. Photos and collage: Jody Mitchell.

New Executive Council

The Executive Council met at the NBA Head Office in Wellington on 6 August 2013.

Left to right: Neil Stuckey (Northern), Vice President Stephen Black (Waikato), Deanna Corbett (East Coast), Roger Bray (Central South Island), President Ricki Leahy (Upper South Island), Dennis Crowley (Bay of Plenty), Russell Berry (Lower South Island). Inset: Mary-Ann Lindsay (Southern North Island). Photo: Miriam Nicholson.

Interview with John Berry

John Berry is the long-time president of the Hawke's Bay Branch of the NBA.

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

How long have you been a beekeeper?

I have been a full-time commercial beekeeper since the age of 15, which makes it about 41 years, but I was involved with beekeeping many years before that helping my father and grandfather *[NBA Life Members Ian Berry and Percy Berry, respectively]*.

I have four sons and three granddaughters and my eldest son currently keeps bees in Norway.

What do you enjoy about beekeeping?

As I get older I find myself going more and more back to the basics, making my own boxes and frames, concentrating on having healthy hives and producing honey. I still get a real kick out of full hives.

Over the last few years I have also really enjoyed being on the Research Committee and participating in many varroa trials. The knowledge I have gained by participating has been worthwhile and fascinating.

Tell me about your current business.

I currently run 1000 hives with my brother Peter: 500 hives each.

There's not much I haven't done with bees and beekeeping except for marketing. Marketing is a vital part of the industry that I'm happy to leave to other people.

Tell me about your priorities as Branch president.

I suspect my main priority as president of the Hawke's Bay Branch is to find someone else to take over the position as I have been doing it for a long time, but I still enjoy most of what we do.

It can be quite hard to balance the needs of different disparate groups within the industry. My main focus is on education, especially AFB and varroa.

What do you believe to be positive/ negative about the beekeeping industry in New Zealand?

There is a tremendous amount of goodwill between farmers and beekeepers based on their symbiotic relationship but this is increasingly being damaged by the 'goldrush' mentality and impossible expectations, not to mention the lack of ethics shown by some segments of the industry.

What do you do in your spare time/ what are your hobbies?

Running 500 hives each is a bit like a hobby compared to what Peter and I used to do but it gives us time to do other things, in my case gardening, running a few sheep, hunting, tramping and fishing. Above all, I enjoy doing voluntary conservation work with our native flora and fauna, especially birds. I have even wrestled a few tuatara this year.

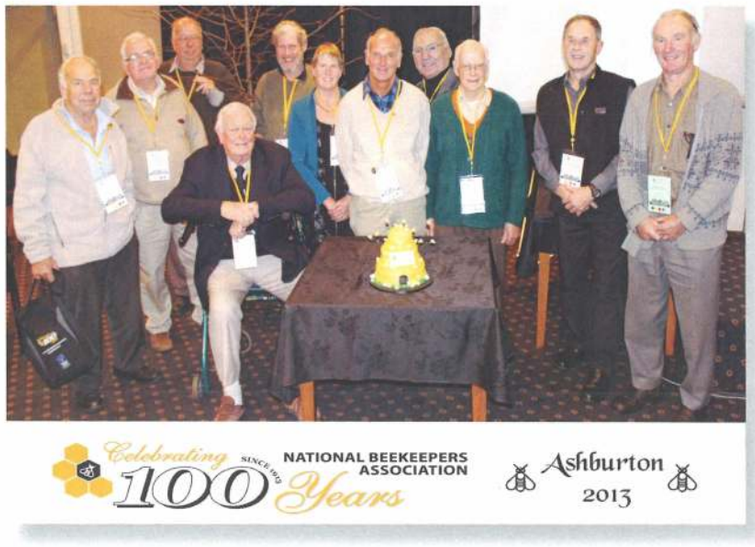
What is your number one tip for beginner beekeepers?

Look at your brood every time you open a hive until you know intuitively what healthy brood looks like. Until you can recognise healthy brood, you will always have trouble recognising disease.

John with a swarm he found beside a public road, estimated at "about 100,000 bees. It took five full-depth swarm boxes to put them all in". Photo: Karen Berry.

And for the more experienced?

Get behind those who are working on ways to control varroa. Unless we can overcome this problem, preferably by breeding resistant bees, this elephant in the room will sooner or later become a stampeding pachyderm.



NBA Life Members. Left to right: Ian Berry, Graham Cammell, Russell Berry, Kevin Ecroyd, Frank Lindsay, Jane Lorimer, Tony Lorimer, David Penrose, Bob Blair, Allan McCaw, Neil Farrer. Not pictured: Pauline Bassett, Trevor Cullen, Terry Gavin, Dr Mark Goodwin, Dudley Lorimer, Murray Reid. Photo: Jody Mitchell.

FROM THE COLONIES

Waikato Branch

Spring has sprung! The daffodils are coming out, calves are being born and the lambs are bouncing around. The winter has been pretty mild—some cold and rainy days but on the whole, a fairly easy run so far.

The bees are pootling about and bringing in quite a bit of pollen already so I guess they are gearing up for the coming season.

Frankly, it would be good if they held off for a couple of more weeks as I feel like I haven't had quite enough of a holiday!

In saying that, most beekeepers around here have had a holiday. Those who made the trip down south to the conference thoroughly enjoyed it and all are looking forward to a great season. Good luck to everyone for the coming season.

- Barb Cahalane

Bay of Plenty Branch

Spring is showing signs of arriving early. With many days of temperatures in the high teens, the plum trees and daffodils are in bloom and bees in the home apiary are buzzing. I'm trying to ignore all this while I am busy ticking off as many of my long list of winter jobs as I can before spring apiary work starts.

Not much to report from the region. The branch has scheduled another 4WD driver training certificated course this month and has plans to organise a First Aid course for members later in the year.

I have just read the Kiwifruit Vine Health (KVH) Protocol: Pollination with BEES, released August 2013. With the science now showing that Psa-V can be transferred between flowers and foraging bees, KVH now requires beekeepers providing hives for kiwifruit pollination to adhere to the new controls for hive movements.

The protocol document is open to some interpretation, but I fear that if followed strictly it would be impractical to implement. I've no idea of the actual numbers, but the KVH Tauranga West and Katikati Recovery regions would contain hundreds of spring apiary sites and thousands of hives, most intended for use as pollination hives. Geography suggests that most, if not all, of these sites will be within five kilometres of a kiwifruit orchard.

The protocol states, "Any hive leaving a Containment or Recovery region to go to a Containment of Recovery region, must be removed to an area at least five kilometres from a kiwifruit orchard". Now this might only be a requirement for hives moved after pollinating an orchard, but I can't see the difference between that situation and a permanent site located in a paddock over the fence from the same orchard. KVH now requires that "Records must be maintained for all hive movements" and presumably these may be audited.

It would be prudent to confirm with your pollination customers what their expectations and requirements are as the logistics and extra cost of complying with this protocol, as I understand it, might be considerable.

- Greg Wagstaff

Poverty Bay Branch

What a strange year we have had so far. A great summer, very dry autumn and one of the mildest winters on record. Hives have come through the winter in excellent condition with minimal winter losses. Normally I expect up to 10 percent in most yards; so far there have been less than one percent.

The hives are very heavy with honey and very few have needed feeding. With the willow about to flower, I think there will be a lot of swarming this season unless hives are given plenty of room to expand.

Trees for Bees project

The tree lucerne that was planted in May is off to a good start. We are presently going through the list of high-protein pollen-bearing plants looking for draught-tolerant ones to try replanting.

An AFB Training Day and test will be held in Gisborne on Saturday 28 September. Send applications to Paul Badger by 10 September.

- Paul Badger, Branch President

Hawke's Bay Branch

We are definitely not suffering from drought any more but overall it has been a lovely winter. You can definitely feel the cold coming off the snow in the mornings but most days have warmed up quickly, at least for a while.

Nothing much to report, except perhaps that early stonefruit pollination will be quite a bit later than last year when some hives went in at the beginning of July. I have not heard any reports of varroa resistance but I have seen and heard of many, many cases where the varroa was not treated until far too late in the autumn or early winter. Most of these hives have died.

We will be running a refresher course on varroa treatments soon to try and prevent this happening again.

- John Berry, Branch President

Nelson Branch

It has been an unusually warm July and with the days getting longer, we can expect those busy bees of ours to ramp up their activity levels. With the promise of spring around the corner, it will be pleasing to abandon the shed and get back out in the field.

What effect the warmer weather will have had on the hives should be interesting to see. Will we have to top up stores more then usual? Might we be in for pollination-strength hives by mid August? We will have to wait and see if there's a cold snap around the corner, or if things will continue to heat up.

Congratulations must also go to our very own Ricki Leahy. Good luck Mr President, I'm sure you'll do an excellent job.

AFB course

Date: Saturday, 12 October, 2013.
Start: 10am to 2pm.
Bring lunch. Tea and coffee provided.
Location: NMIT Richmond Campus, Queens St.
Proctor's Name: Nigel Costley, contact: 03 548 3101 or costleymarr@xtra.co.nz

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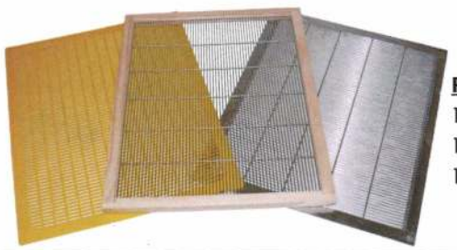

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Continued from page 17

Contact Nigel Costley for an application form.

- Nahum Kelly

Canterbury Branch

Conference is over. While it takes both attendees and speakers to make a conference work, I would like to remind everyone out there that it is thanks to the sponsors that we were able to put on the event that we did.

Please consider these businesses that supported us when you next make any buying or selling considerations.

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-Brian Lancaster, Branch President

Otago Branch

The Lower South Island Ward election meeting was held in Gore, and we congratulate Russell Berry on his election. Reece Adamson was gracious in defeat. The result was close; just four votes separated them. Approximately 60 percent of ward members voted, either by attending the meeting or sending in postal and email proxies.

Central Otago: a good winter so far for bees, but no inspections yet. Everything stood up to the snow and wind OK.

Coastal Otago: a mild winter with the exception of June snowfalls. Hives have a few frames of brood now in warmer areas at least.

Otago Peninsula: bees seem to have come through the very strong winds and some snow; hardly any frost as yet. Spring seems to have arrived early with mild and still days. The bees are out collecting from tree lucerne and gorse and there's lots of brood in checked hives.

The Otago Spring Field Day will be held in Outram on Saturday 28 September. We look forward to an interesting programme with updates on management of our newish varroa, bee genetics, and viruses. We plan to invite beekeepers who are not members of NBA or the local beekeeping club, to build links. Details will be circulated later.

- Tudor Caradoc-Davies

Southland Branch

The South has had one of the warmest Julys in a number of years and I am told the Otago ski fields are now dependent on artificial snow. Afternoon temperatures so far in August are hovering in the mid-teens so southern beekeepers will be thinking of opening some hives to gauge their strength and stores. After the mild autumn and brief wintery spell in June, I suspect they will open with brood rearing well advanced.

Varroa continues to spread quickly around the province so that those hives that needed an autumn treatment hopefully received it. With Fonterra food safety issues in the news and the Hong Kong Consumer Council's report on New Zealand honey still being analysed, the industry will face the new season with some unease.

- John Stevenson, Branch Secretary

Pictured is Ivan Steenhuis of Jacob's Well Honey Ltd., Coromandel Peninsula. The photo was taken by French WWOOFer and keen photographer, Jean-Baptiste Gaillet.

Erratum

There was an error in Frank Lindsay's 'About the apiary' column in the August journal, page 23. The third paragraph in the second column should read:

"Non-starting can also be caused by condensation pooling in the bottom of the carburettor. Remove the bung and drain the carburettor, then replace the bung. While the motor is running the trick is to turn off the fuel and allow the carburettor to drain, stopping the motor. The next time the motor is used, fresh fuel flows into the carburettor."

The decade 1983–1993

By Apiarius Antiquary

The NBA entered this decade with secure funding via a hive levy of 15 cents per hive.

Hobbyist beekeepers (those with fewer than 50 hives) were exempt from the levy. The assets of the Honey Marketing Authority (HMA) were in the process of being realised and a new co-operative honey processing and marketing organisation, the New Zealand Honey Producers Co-operative, had begun trading. Exporting of honey by individuals had been provided and there was some optimism that the fortunes of beekeepers would be improved.

This period also coincided with a period of changes within the country: probably the most notable were the introduction of GST and the fiscal policies of government at the time. Calls by government for a 'user pays' economy appeared to be a desire for government to reduce services and/or increase taxation.

There were 6,445 beekeepers running 269,043 beehives on 23,644 apiaries in May 1983. Honey production was estimated at 5,053 tons, a very low crop compared with the average. Some beekeepers surveyed had no crop for the season and applied to the Rural Bank for disaster relief. The government funded an extensive 'beekeeper support' package through the Advisory Services Division of the Ministry of Agriculture and Fisheries.

Part of the support was the AFB education and monitoring carried out by the regional officers: AFB was detected in 3.5% of apiaries. The overall rate of AFB in beehives was 0.56%. Attempts to impose a registration fee of $15 per beekeeper to maintain the apiary register (user pays) were rejected by the Minister of Agriculture and Fisheries; however, the Minister also signalled government's wish to reduce government involvement in the industry. By the end of the decade the hive levy had increased substantially and beekeepers were concerned at the suspected level of avoidance by some beekeepers.

By 1993 there were 5,622 beekeepers running 298,982 beehives on 25,124 apiaries. Estimated crop for the year was 7,086 tons.

Industry training

Telford Farm Training Institute (Balclutha) was established in 1963 to provide training to agricultural students. In the spring of 1983, the institute purchased 200 hives with the intention of conducting a beekeeping course. In February 1984 the first intake of three students enrolled for the year-long beekeeping course under the direction of Paul Marshall, manager of the Bee Unit. Beekeeping courses were also conducted through the Tauranga Polytech under Nick Wallingford as tutor.

The investment in the kiwifruit industry was creating increased demand for pollination hives. Whilst the beekeeping industry was spending money on gearing up for the demand for hives, the researchers were conducting trials on pollination of flowers (including artificial pollination). MAF initiated and coordinated a visit by Dr Cam Jay from Manitoba, to carry out research work on kiwifruit pollination. While in New Zealand, Dr Jay spoke to 26 groups of growers and beekeepers.

The discussion at conference regarding biological control of noxious plants had the beekeepers firmly in support of the benefits of 'weed' plants to beehives. One speaker estimated nodding thistle to be worth 500 tons of honey ($750,000) and another estimated the value of gorse at $1,000 per acre. Whilst conference delegates supported a remit, a letter to the editor from the Canterbury Branch appeared two years later in which the branch was concerned that not enough was being done to create awareness of the economic benefits of gorse.

Biological control and pesticides

An interesting article on biological control appeared in the autumn 1986 journal, where

Workshop training at the Telford Farm Training Institute. From left: Beekeeping Manager Paul Marshall with Gary Glasson, Bruce Wardle and Tim Hansen, 1984 beekeeping students. This photo appeared in the Autumn 1985 journal.

Dr Ron Sandry (DSIR) suggested:

> *So long as all reasonable steps are taken to ensure the insects are host specific, introducing biological agents to control gorse is economically efficient. Those who gain could possibly compensate those who lose and still be better off. Further decisions become political, not economical.*

Beekeeper representation to the Pesticides Board was ongoing; an important step for the protection of bees was the introduction of bee toxicity warnings to be clearly marked on labels. The warning labels related to the 'control' placed on the chemical, such as ***Toxic to Bees***—*spray must not contact plants in flower if they are likely to be visited by bees.*

The enforcement provisions of the pesticide regulations were clarified in the regulations and as the NBA representative (Ian Berry) stated in the journal:

> *I feel publicity and education must remain our main thrust for reducing bee mortality from pesticides, the new laws should be a big help in dealing with this difficult problem.*

Exotic disease

The decade was marked with two exotic disease responses. Chalkbrood was discovered in a routine inspection of beehives in Kerikeri (November 1983). In a survey of the Northland area, it was established that 13% of apiaries inspected had chalkbrood disease. It was considered

that the initial spread of the disease resulted from shifting hives for kiwifruit pollination, followed by beekeepers moving the disease within other hives in the area. It was not established what had caused the outbreak and the disease was left to run its course throughout New Zealand.

European foulbrood disease (EFB) was suspected in the Nelson area in December 1991, prompting a full-scale response. Movement controls were imposed and many beekeepers as well as MAF personnel were involved in inspection work. A laboratory sample of suspect larvae had tested positive for EFB and the industry was on tenterhooks waiting for confirmation. Much relief was felt when after intensive investigation no further symptoms were found and the 'incursion' simply became 'laboratory error'.

Pork Board liaison

The secretarial services for the NBA were undertaken by agreement with the New Zealand Pork Industry Board. The NBA faced a significant increase in fees for the 1984 year (almost double that of the previous year). After further examination it was discovered that the Board had not increased its charges as a result of collecting the hive levy.

The association with the New Zealand Pork Industry Board was to last for all of the decade and the NBA's general secretary, Steuart Goodman, was indeed considered a good man for the industry. The editor of *The New Zealand Beekeeper* was Michael Burgess, who injected some pertinent editorial as well as the introduction of the *Footrot Flats* cartoons for a bit of humour.

Strategic planning

The NBA embarked on a process of strategic planning for the industry. The process throughout the decade was a series of meetings and interaction within the industry representatives, MAF and other organisations.

One of the factors behind the planning meetings was the notion that the beekeeping industry was getting signals from government that industry must assume greater participation in the direction their industry was taking, while the government slowly withdrew support for the industry.

Perhaps the greatest benefit of the strategic planning was the communication, interaction and pooling of resources for the mutual benefit of beekeeping. Several initiatives were progressed including some cooperation in marketing, particularly exports.

The process of liquidating the HMA assets took longer than first anticipated and the funds were available for use starting in 1984.

The Trust Deeds established a fund exceeding $800,000 to be used for industry benefit and administered by the NBA. Initially $600,000 was loaned to the New Zealand Honey Producers Co-operative at an average of 6% interest. The interest from the invested funds provided the grants to the industry projects. For funding applications, the closing date of 28 February was set with applications accepted by the NBA Executive Secretary and forwarded to the trustees with the recommendation of the executive.

The trustees had sole discretion on the investment and distribution of trust funds.

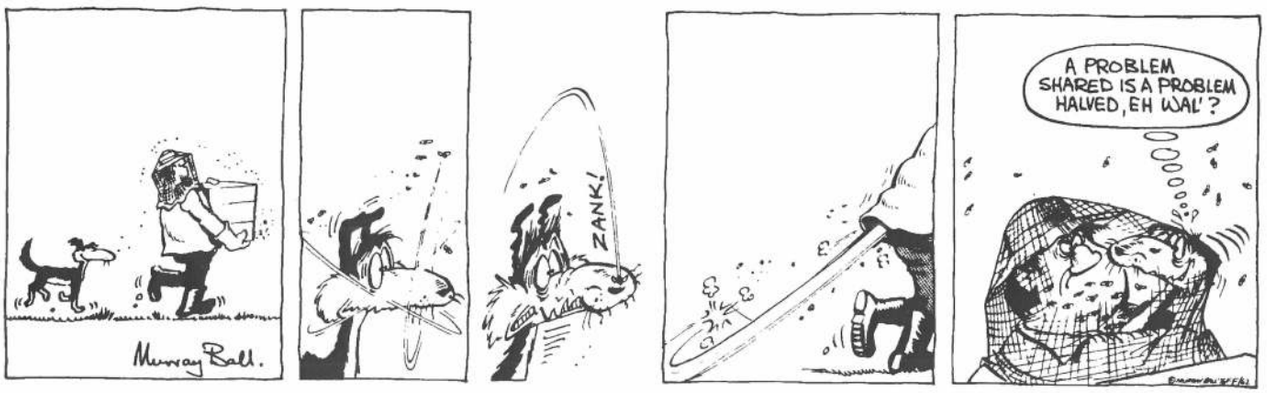
The demand for live bee packages in Canada as a result of the restriction of bees sourced from the USA created an opportunity for NZ beekeepers. An initial consignment of eight shipments of bees (total 3,500 kilograms) was organised by Arataki Honey, Haines Bee Breeders and Whiteline Queens, with Canadian contact John Craighead during April–May 1985. The logistics involved in the collection, packaging, feeding and transportation over huge distances could only be confirmed by the success of a trial shipment of bees and queens. The continued development of exports of live bees has provided another income stream for beekeepers.

Queen Bee Producers Association

This Association was formed in 1985 with the assistance of Cliff Van Eaton (Apicultural Advisory Officer, Northland). A major task was to foster the development and improvement of stock for the export market with the highest ethics in serving that market. The initial president was Terry Gavin, vice president was Gavin White and the secretary/treasurer was Malcolm Haines.

An article in the summer 1985 journal by Dr Peter Molan entitled 'Selection of honey for medical use' outlined initial testing of honey forwarded by various beekeepers for antibiotic properties. Manuka and kanuka were not the only honeys to show activity against the *Staphylococcus aureus* bacteria, with pennyroyal and nodding thistle

Continued on page 23



This Footrot Flats *cartoon by Murray Ball appeared in the Spring 1985 journal.*

Front cover of the March 1983 journal. The bee logo lives on as the marker denoting the end of articles in today's journals.

Continued from page 21

indicating the need for further investigation.

The appearance of marketing consultant Bill Floyd at the 1991 conference initiated a marketing push for our New Zealand range of unique honeys. Bill bounced around with an individual style imparting the virtues of our floral varieties which, to some, were considered 'bee feed' only.

As stated in the magazine by Allen McCaw:

> *The breath of fresh air which Bill Floyd provided at the Blenheim Conference during his marketing address has led to further developments of the ideas he presented through ongoing involvement with the NBA Marketing Committee. Evidence of their potential success has come in the form of a timely media release late last year detailing scientific research on the potential medicinal properties of manuka honey.*

Overall, the decade saw some new directions the industry was moving in with an expansion of different income streams. When considering the past, we have the benefit of hindsight and much of the success of the industry today was created with cooperation of beekeepers and a spark to get things going. We have always known the antibiotic benefits of honey but the investigation of the science behind antibiotic honey, as well as the cooperation behind marketing and joint ventures between groups of beekeepers, set up the next decade for productive times.

Sources

The New Zealand Beekeeper 1983–1993.

EXECUTIVE UPDATE

NBA Committees

Following is a list of NBA committees and membership as of August 2013.

Committee chairpersons and NBA Executive Council representatives to the Bee Products Standards Council (BPSC) and the AFB National Pest Management Plan (AFB NPMP) are listed in bold type.

PUBLICATIONS
Mary-Ann Lindsay, Frank Lindsay, Nancy Fithian, Trevor Cullen, Serena Richards, Tom Baty

TECHNICAL and SUBMISSIONS
Roger Bray, Barry Foster, John McLean, Don MacLeod

BPSC REPRESENTATIVE
Neil Stuckey, Fiona O'Brien, Pam Flack

AFB NPMP REPRESENTATIVE
Stephen Black

BIOSECURITY
Russell Berry, Roger Bray, Frank Lindsay, Dennis Crowley, Neil Stuckey

RULES REVIEW
Russell Berry, Jane Lorimer, Cameron Martin, Stephen Black

RESEARCH
Russell Berry, Barry Foster, John McLean, Graham Cammell, Jane Lorimer, Deanna Corbett, John Berry

POLLINATION
Dennis Crowley, Russell Berry

GIA WORKING GROUP
Ricki Leahy, Dennis Crowley, Stephen Black, Roger Bray, Daniel Paul

GOVERNANCE REVIEW
Stephen Black, Deanna Corbett, Kim Poynter

WEBSITE
Deanna Corbett, Mary-Ann Lindsay, Daniel Paul

SUBSCRIPTIONS
Ricki Leahy, Roger Bray, Russell Berry

COUNTRY OF ORIGIN LABELLING
Russell Berry, Neil Stuckey and Deanna Corbett

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Keeping hives from swarming

By Frank Lindsay, NBA Life Member

What's flowering? I was notified early last month that pussy willow was already flowering in the warmer areas.

This flowering will stimulate the queens into full brood production and if the colonies are strong, they may store a little honey if there are a lot of trees. The other flow that really stimulates production is the willow flow, which occurs a month after the pussy willow flowers. Unfortunately, in some regions the authorities see these as nuisance trees and have been cutting out this most valuable source.

Swarm control

By September the brood nest will have moved up into the top super following the honey reserves. Bees are reluctant to move down onto frames in the lower supers, so we reverse the position of the top and bottom supers to put the brood nest into the lower super. This provides empty frames above the brood nest for the bees and queen to move up into, thus relieving the first impulse to swarm.

I've just returned from an overseas conference where one of the recommendations for all hobby beekeepers is to have two hives and a nucleus box (either a four- or five-frame box). The reason for two hives is so you have a comparison to judge how the hives are developing, and the nuc box is in case one of the hives starts swarm preparations.

If the queen is marked, it's fairly easy to identify her on the face of a brood frame. Put her and the frame she is on aside so she is not transferred into the nuc box. The swarming urge can usually be negated by removing both brood and bees from the hive, thus reducing any congestion that has caused the bees to start swarm preparations.

With a nuc box it's easy to remove a couple of frames of emerging brood (one of honey and another of honey and pollen), along with the bees that are covering the frames. Cut out a well-developed queen cell and press it into the surface of the frame near the centre of the brood area where the bees will keep it warm. Remove all the other queen cells in the hive and with a reduced population, this should remove the swarming urge.

If you don't have a marked queen and can't find her, select the best frames to make your nuc and shake all the bees off them. Compact the brood nest and fill in the holes left with drawn frames. Place the selected frames (brood in the middle, honey and pollen on the outside) in the centre of an additional super on top of the original hive above a queen excluder. Close the hive and overnight, the nurse bees will return to the brood and honey frames. Now the selected frames are ready to be put into the nuc box along with a queen cell.

> "...your hives are reaching a critical stage in their development."

The nuc should be closed up with grass in the entrance if it's not going to be moved to another apiary. Put it slightly away from the existing hives so the new queen can find the nuc again after the mating flight. If it's a hot day, release the grass a little to allow the bees to ventilate the hive; otherwise, do this in the evening. If the grass is eased out too early, some of the field bees may fly out and go back to their original site, reducing the number of bees in the nuc. Provided there are enough bees in the nuc to comfortably cover both sides of the brood frames, this should be enough to maintain the brood temperature. This is critical as any reduction in brood temperature will result in the bees that emerge dying early. Hence I like to add another shake of bees to the nuc when it's made up.

Depending upon the age of the queen in the cell, you could be seeing eggs in the nuc within two to three weeks. Once the new queen is laying, the nuc can be developed into another hive if fed, sold to a new beekeeper or added back on top of the original hive when the main flow starts, using two sheets of newsprint so they merge slowly into one unit. Generally the bees from the nuc going down through the newsprint will dispatch the old queen.

Nuc hives can develop quickly. If starting with a full complement of bees, a nuc can soon find itself restricted for laying space or become overcrowded, and this in turn can swarm. I make my nuc boxes with at least a 25-millimetre space below the frames. This is how CC Miller made his nuc boxes. Instead of a single four-frame nuc box, he divided a full-depth super into three compartments: two four-frame nucs on the outside and a single-frame nuc in the middle. If the nuc gets crowded, the excess bees hang below the frames and may draw out drone comb, which delays swarming.

You can, of course, put a queen excluder under the newsprint. This restricts the new queen to her original super, which creates a two-queen unit. This works better if the new queen's bees have a separate entrance, made by sliding the crown board back a little or lifting one edge by placing a stick under one corner. This puts less pressure on the bees in the nuc (top super) to chew through the newsprint and both queens may survive and continue to lay, creating a bigger hive population and subsequently, greater honey production.

Time to feed your bees

The bees in your hives are reaching a critical stage in their development. For the last two months they have been developing on stored honey and pollen reserves, so honey reserves could now be running low. The →

usual 'hefting test' to judge the weight of the hive is not as accurate as it was a few months ago, as now half the weight could be brood.

A strong hive can chew through three frames of honey in a week if the bees are restricted to the hive by bad weather. Check the number of stored honey frames left. If the hive is down to three full frames of honey, it's time to start feeding it.

Commercial beekeepers stimulate queens into laying by feeding a two-to-one mixture of water and sugar. But we want to bring up the reserves, so feed a two-to-one mixture of sugar and water (by volume). A hobbyist can fill a tin or large screw-top jar 7/8ths full with sugar, then pour boiling water into the container, stirring all the time until the sugar is dissolved.

Punch half a dozen holes in the lid with a fine nail and upend the container over the top bars of the hive. A small amount will dribble out over the frames until the pressure in the container and the air pressure equalise.

Place a couple of twigs across the frames to hold the container proud of (slightly above) the top bars so the bees can get at the holes in the container. The small amount that dribbles out will alert the bees to the food supply. A strong hive can take down one to two litres overnight, so be prepared to refill the container in a day or so.

Once you start feeding a hive, you have to continue until the main honey flow starts. If there is a break in feeding and the bees run out of stores, they could cannibalise the brood, causing a brood break that will eventually lead to fewer bees to bring in the honey than there would have been if the bees had continued laying.

Supering

Generally when the bees occupy half the frames in the top super, it's time to add another (unless of course you live in the colder regions). If you have only foundation frames, encourage the bees to move up into the new super by lifting two fully drawn frames (frames two and nine) in the super below up into the new super. If there is a surplus of nectar coming in or you are feeding the hive, the bees will start to draw out the foundation frames beside the drawn frames. Once these are three-quarters drawn, move these frames out one frame so the foundation frames are again next to the two frames that were moved up into the super. Repeat this exercise as these get drawn out. Another cause of swarming is that nectar is stored in the top of the brood frames, restricting the queen from moving upwards into the next super. This upper super could still be full of honey. To give space and encourage the queen to lay in the next super, interspace empty frames between the full ones so that the super has one full/one empty; one full/one empty, etc.

Varroa control

Most will have started treating for mites this month. I will be removing drone brood as part of my mite control. Mark/paint (for easy identification) an empty unwired frame and place this beside the outside brood frame in the brood nest. The bees will start to draw out drone foundation on the frames that can be cut out 18–20 days later, thus removing a good proportion of mites (varroa mites prefer to reproduce in drone brood). These drone frames have another advantage also. With drone brood present, the bees will draw out your foundation frames fully as worker cells.

This technique of mite reduction by drone brood removal won't work if the hive has more than 10 percent drone cells on other frames. If you want to practice this technique, it may be necessary to cull the frames with excess drone brood cells in them. Some of these may already contain worker and drone brood. I tend to fork out or cut out this drone brood when I introduce the empty drone frame and move the now-worker brood frame to the outside of the brood nest so I can remove it from the hive on my next visit. By then the brood in this frame should have emerged, so there shouldn't be any loss of brood production.

Whatever method you use to reduce mite numbers, it's important to monitor to determine the success of the treatment. Sugar shake or alcohol wash are the best techniques to determine varroa mite numbers, but you can also monitor varroa drop over three to five days to determine numbers. If you can, get the numbers down to one or two percent so that your bees have a free run up to the honey flow.

Another way is to treat with organic acids once or twice a month to keep mite numbers below five percent. Above this figure, the mites will spread viruses that can debilitate the colony.

Things to do this month

AFB check: on a warm day, go through every frame in the hive, shaking off most of the bees to see the face of the comb clearly. Check the brood pattern: only a few missed cells per 100 cells indicates a good queen. If more than 15 percent are missed, consider replacing the queen.

If you find any AFB, notify AsureQuality Limited and separate the stored supers that came from that particular hive and destroy them. If you can't identify the individual supers but know which supers came from that apiary, put an apiary quarantine on that particular apiary for 18 months, using those supers only in that apiary. If you suspect disease but are not sure, consult another beekeeper.

Feed hives if necessary: hives should have a minimum of three frames of honey in them at all times.

Spray or weed whack the vegetation surrounding hives. This allows you to observe the ground surrounding the hive.

Check stored supers for wax moth. Scrape out any found or freeze frames to kill moth larvae. Cull old frames from the brood nest or work them gradually to the outside if they contain brood so they are replaced within a month.

Get the wax dipper going to dip new and reconditioned supers so that replacement hive parts are ready for another season.

Put in early mite treatments or check mite levels using a cappings fork, sugar shake or a strip in a jar for 30 minutes or natural fall over a week with mesh bottom boards. Check your varroa manual to calculate mite numbers and treatment options. Don't forget to rotate treatments to prevent resistance developing.

I have been away for a few weeks and haven't caught up with what's happening in my hives. Some had nearly three supers of bees before I left, so could be making preparations for early swarming due to the mild winter.

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