Volume 15 No. 2
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The New Zealand BeeKeeper

RINGING THE TREATMENT CHANGES

New Zealand
Permit No. 154506
Permit

Photo: Frank Lindsay

Absent: Oxalic Acid, Formic Acid—only until beekeepers use them in their arsenal to control varroa.

Apologies: Drone brood trapping, mesh bottom boards, breeding for varroa tolerance, Carniolans, pseudoscorpions—alternative natural mite control methods.

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Table of Contents

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(See page 2 for full details)

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President's Report

The last few weeks have been extremely busy for the Executive, with the preparation of applications for research funding from the Sustainable Farming Fund (SFF), as well as a few submissions.

I have also met with Richard Gasse, a student from Germany who is spending some time in New Zealand working for a beekeeper in the Taupo region. The reason I met with him was to discuss his Masters paper: he is looking to do a profile on the New Zealand industry compared with his homeland. He wishes to spend his time profitably doing something that will benefit himself and others, so is willing to share with us the information he gathers on our industry so that we can build up an up-to-date industry profile.

Executive Council meetings

We have just completed two days of meetings in Wellington on 17–18 February. The Executive Council had a one-day meeting, followed by a Management Agency meeting on the Sunday. We are extremely lucky that our Secretariat—Pam and Jim Edwards—and our Pest Management Strategy Manager, Rex Baynes are happy to have meetings in the weekend. This enables those of us on the Executive who only have one or two staff to attend meetings without hindering our beekeeping week.

The NBA meeting was lengthy (about 9.30 am–7.30 pm). The Executive's view is that we travel a long way to the meeting and spend funds received from members, so it is important to work through until the business on the agenda is completed to our satisfaction.

We spent some time discussing the Conference: looking at timelines regarding the calling for motions, and nominations for ward representatives. We also discussed how the Executive could be involved in workshops during the week, as well as during the seminar sessions. We have concluded that some of the timelines as specified in our rules are too tight, so the Executive will be preparing some rule changes for consideration at conference. To assist with the continuity of the Executive Council and Management Committee, the Council decided that they will propose a new rule to allow for the position of Immediate Past President to continue on the Council as an honorary member of the Executive.

Further discussion took place on what we need to do to progress the website. We have agreed to include a section on "Who do I contact if I want...?", more information on the American Foulbrood Pest Management Strategy, and a section on guidelines to beekeepers on Tutin and Karaka poisoning.

We also spent a significant amount of time considering the development of a Crisis Management or Emergency Response document. This may include not only bee disease incursion response procedures, but will cover other situations like a Foot and Mouth disease outbreak and its potential effects on the beekeeping industry, and also how natural disasters may impact on us and those who rely on pollination services.

Education and training were also discussed, with several ideas tabled for future investigation when time allows.

During discussions around the administration of the Association, Jim and Pam tabled a graph that outlined the number of hours they have been working for us over the past year. Both of them appear to be working in excess of their allocated hours per month: Jim's 35 hours, and Pam's 40 hours. They work fewer hours some months, but on the whole they are generally working more hours than we have contracted them to do. Jim and Pam work very well as a team and I believe that we are very lucky to have them in our employment.

High Court hearing

I stayed on in Wellington after the meeting so I could attend the High Court hearing on our claim on bee product imports. It was an enlightening process for me to witness, and one in which I would never want to be involved: standing in front of a judge, putting

your case for an hour and a half with the judge constantly interrupting with questions would not be my scene. Being able to interpret the body language displayed by the judge was useful, but at times was extremely difficult. The barrister in my opinion did an extremely good job on our behalf. We now await the outcome, which could be anything from two weeks to more than a month away. The Judge did say however that he would give the case priority.

- Jane Lorimer

To sample drones carry a capping scratcher in your vehicle as a worthwhile method of finding varroa.

Caught in the act ...

... of working

Arataki Honey staff, Hauraki Plains

Photo: Fiona O'Brien

Only pesticides that have been registered or approved can legally be used for varroa control.

Acids will burn if you splash in eyes, inhale or spill on skin.

Varroa populations increase faster in climate areas that support brood rearing all year round.

Don't put NZ beekeeping at risk by using non-approved chemicals to kill varroa.

Relocating bumble bees

I had a call the other day: "I started to shift some rocks in the garden; but found a nest of bumble bees. I don't want to destroy them, so can you help?"

Sure enough, there was a nest among the rocks but we discovered they were under the rim of a cast-iron bath that had been set flush with the ground and used as a fishpond. The previous owner, tired of keeping fish, had filled the bath with rocks and earth. After removing all this debris we then had to jack up the bath, complete with legs, with a mechanical toe jack that came out of the ark. This done, the bees were exposed and moved into a nuc box with some of the dirt.

Although we did not catch all the bees that were still flying late at night, the next day they were happily using their new home. The following evening they were relocated to a place where they could stay without being a nuisance.

Anyone can relocate bumble bees, given a bit of lateral thinking!

- Ron Morison

Read miticide labels carefully and follow all safety instructions exactly.

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Our Spring shipment sold very quickly so please reserve your requirements now to ensure supply .
Payment is only required just prior to delivery.

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10 – 90 strips	$3.75 each plus G.S.T.
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Dosage Rate: 2 Apivar strips per brood chamber.

Price includes delivery, except for Rural Delivery. Please add $3.73 plus G.S.T. for each 1000 strips or part thereof for Rural Delivery. Phone or email for an order form. Payment is required before delivery by cheque or electronic banking.

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BK236

INVITATION

2007 NBA Annual Conference and Seminar

When: Monday 2 July 2007 to Thursday 5 July 2007
Where: Dunedin City ("Edinburgh of the South")
Venue: Kingsgate Hotel and Dunedin Conference Centre

Programme:

Monday 2 July at Kingsgate Hotel
Specialty Group Meetings:
NZFSA E-Cert Seminar and Training session
Evening: Get together—Meet 'n Greet

Tuesday 3 July at the Conference Centre, Dunedin Town Hall
Seminar Day One: 1) Bee Research
2) Export Marketing
Evening: Sponsors Dinner and Demonstrations

Wednesday 4 July at the Conference Centre, Dunedin Town Hall
Seminar Day Two: 3) Varroa and Bee Disease Management
4) Technology and General Interest Items
Evening: Conference Dine and Dance

Thursday 5 July at Kingsgate Hotel
NBA Annual General Meeting and Conference

Accommodation: Kingsgate Hotel, 10 Smith Street, Dunedin
Phone: (03) 477 6784, Fax: (03) 474 0115
E-mail: dunedin@kingsgatehotels.co.nz
Room Rate: $100 per night—twin or double
Contact the Kingsgate Hotel direct for accommodation bookings.

A detailed programme and pre-Conference Registration Form will be included in the April issue of *The New Zealand BeeKeeper*—so keep an eye out for it, folks!

LOOKING FORWARD TO HOSTING YOU ALL IN DUNEDIN THIS JULY.

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VARROA AGENCY INC

Varroa Agency Incorporated News

Update from Varroa Agency Chairman Duncan Butcher

Consultation 2007

The Varroa Agency held a series of meetings in the South Island in February, to inform beekeepers of:

1. the Nelson varroa incursion and flow-on effects from that incursion
2. the outline of the Varroa Agency surveillance programme for this year, and
3. to gauge support for any further surveillance rounds.

The Agency invited Biosecurity New Zealand to also attend the Agency's Consultation Round, so that beekeepers got first-hand information on the Nelson results and the new control line, and the ramification of that line.

The Board is seeking commitment from the industry as to whether they wish a further surveillance round to occur in the South Island in autumn 2008 to spring 2008.

To be able to do this, the Agency would need to collect a levy, and also to convince the councils to support a programme. The Board feels the levy would have to be no more than last year ($1.38 + GST per hive), to complete a proper surveillance round. If the industry supports this further round of surveillance, we would then require council buy-in.

Feedback on this would be appreciated, and beekeepers can use the submission form available on www.varroa.org.nz to forward their opinions to the Agency.

Possible 2008 surveillance round

If a surveillance programme for 2008 is supported, it will be similar to that for 2007. However, it may be possible to reduce the scope of the surveillance for 2008. It is anticipated that Biosecurity NZ will contribute by contracting the Agency to survey hives south of the controlled area (CA), as well as hives operated by beekeepers either side of the CA boundary.

The Agency would require a levy of between $1.25 to $1.38 (plus GST) a hive to complete this surveillance.

Required Operational Budget 2007/2008 for a further Varroa Surveillance Round	
Movement control and auditing	$18,000
Awareness-raising measures	$50,000
Surveillance programme	
Management Contract	$69,000
Inspection costs (mileage, labour etc) plus Materials (sticky boards, Apistan, courier etc)	$270,000
Laboratory reading of boards	$65,000
Administration	
Strategy Manager plus support	$53,000
Board costs	$25,000
Legal costs	$10,000
TOTAL	$560,000

2007 varroa surveillance

The Board had decided to complete a surveillance round, starting in March and finishing in September 2007. The Agency has collected the levy to fund this surveillance, and also has a commitment for contributions from the South Island regional and unitary councils.

This surveillance round is going ahead to give South Island beekeepers some confidence that varroa is only in the top of the South Island, and to enhance Biosecurity New Zealand's exotic disease surveillance programme. Beekeepers, pastoral farmers and orchardists will also need to look at their business management systems if varroa is found close by, with the early indicator giving them time to adjust to a new management and treatment regime.

It is proposed to sample 17,894 hives in the autumn of 2007, with another 4,600 hives in high-risk areas in the spring of 2007. In addition, a number of sentinel hives very close to ports will be sampled by their owners up to three times per year.

Visual inspection of bees is not a good varroa detection technique.

Obituaries

Stuart Tweeddale (1915–2006)

Photo courtesy of Wanganui Chronicle.

Stuart Tweeddale, a dedicated husband, loving father and an inspiration to his many grandchildren, great- grandchildren and friends, passed away last December 2 at Wanganui Hospital, aged 91. Stuart passed away peacefully, leaving us with great admiration for the legacy that he left behind and the tremendous enthusiasm he found in all aspects of beekeeping.

The epitome of living life to the full, Stuart began his lifetime interest prior to the outbreak of the Second World War in 1939. He was working on a farm in the Manawatu when he saw a beekeeper extracting honey on the back of his truck. Out of curiosity Stuart approached the beekeeper, who in turn invited him to look at the workings of his hives and also to turn the handles of the extractor while the beekeeper kept taking the honey off. Stuart was fascinated, especially after tasting the free honey, and it was from that experience that he was convinced that he must become a beekeeper and soon thereafter collected his first swarm.

When the war broke out in 1939 Stuart volunteered to join the New Zealand Army. After six long hard years, three of them as a machine gunner fighting in the Middle East campaign, he was captured along with many other experienced New Zealand troops and spent three years as a prisoner of war. Stuart suffered greatly from starvation and disease like many others in the camps. After two failed escape attempts, he finally succeeded on the third attempt, arriving back in New Zealand six months later, in 1945. Shortly after returning he married Thelma, and 61 years in the beekeeping industry began.

With each year that passed experience was gained and mistakes were frequent, but success was not far away and Stuart felt he was turning the corner. He began to make progress: hive numbers increased and foulbrood reduced dramatically, so he decided to give up his secondary job and take up beekeeping full time.

During those early years, income from 500 beehives was a comfortable living. White clover honey was the premium honey and floral honey was the cheapest. Unfortunately at that time Manuka honey was valued only as feed honey. A honey shop was set up in our home with the purpose of trying to increase income and keep our heads above water.

Stuart's work ethics consisted of innovation and having respect for one another, combined with strong family values and above all, the support of his wife Thelma. He often said that without Thelma's unwavering support he would not have got off the starting block.

There were many special times in his life: he especially enjoyed sharing experiences and attending various beekeepers' meetings and conferences, where he made many good friends over the years. His sense of humour was never too far away. Stuart was known for his funny statements, which he always made when you least expected it. We are humbled by his never-diminishing optimism after 61 years of beekeeping, despite the unpredictable weather and the many problems the industry faced in the past and present. His confidence that the future of beekeeping is bright continues to encourage all of us today.

His presence will be sadly missed by the family and also by his many beekeeping friends.

- Don Tweeddale

[Editor's note: see also the article 'A salute to Stuart Tweeddale' (July 2005, page 20), celebrating his 90th birthday and Stuart and Thelma's 60th wedding anniversary.]

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Rita Myrtle Forsyth

On 15 February 2007, Mrs Rita Myrtle Forsyth passed away. Rita was the wife of apiarist Bruce Forsyth (deceased 1975). Bruce and Rita took over the Forsyth family business, Cairngorm Apiaries, which was based in Ohaupo. They had six children, Valerie, Christine (deceased), Jenny, Sheryll, John and David.

Bruce and Rita were both actively involved in the beekeeping association (their son David remembers the family going to beekeeping field days at Matamata, opposite the hot springs, some 30 or so years ago). Bruce also did his turn as chairman of the Honey Marketing Authority.

As a youngster my interest in bees was sparked in the Forsyth honey house; being a family friend I had the privilege of helping to extract honey one day and this got me hooked.

Rita once told me that she recalled going to Raglan on a family outing—a day at the beach and Bruce stopping to work hives along the way.

- Jeremy O'Brien

For Thymol to be effective in killing varroa, timing of application and outside air temperature are very important.

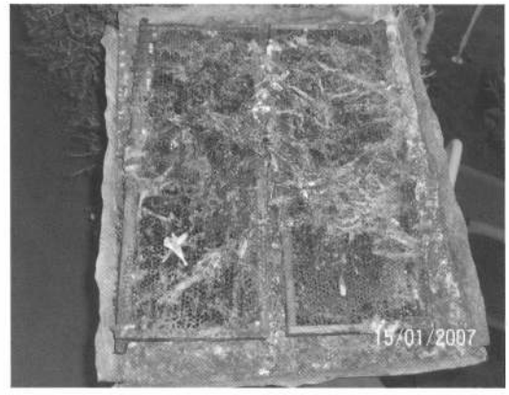
When to super up

It's a bit late in the season to write about adding boxes to hives, but here are some thoughts.

In the spring as the days warm up, bees gather more nectar and pollen to sustain the increased laying capacity of a good queen. It's time to add a box as soon as there is a build-up of burr comb under the inner cover. If there is a good flow on this box will be filled in a week or two and another box or boxes will be required. Failure to provide these will result in the bees becoming crowded, producing one or more new queens and swarming.

If you think about the foresight of your bees, you will appreciate that it is about three weeks before swarming that they decide that at least one new queen is needed. This is the time to go through the hive, looking particularly along the bottom of the frames in the brood boxes, and destroying all unwanted queen cells. These are larger cells, generally on the bottom of frames, although they may be anywhere. Don't remove any queen cells until you have identified that there are eggs present or you have seen the queen. The hive might be superseding or have already swarmed. Killing the queen cell in that case might be a backward step.

Then there is the other side of the story. If too many boxes are added to a hive that may be on the weak side, the bees will not be able to "service" all of the frames. This creates the ideal situation for the explosion of wax moths that are always present and generally kept under control by a strong hive (see photo of a couple of adjacent frames laid open).



The other way to find moths is to leave drawn combs in a warmer, darker situation. Moths love this. So if you are storing drawn comb and don't have the luxury of a freezer, keep combs in a cool place where the wind can whistle through. (Warning: using para-dichloro-benzene (PDB) is a **NO NO**. The European buyers have developed testing that will detect one part per billion of this chemical and 'contaminated' honey will be sent back to the exporter.) *[Editor's note: for more information about PDB, see the article 'Ready to sell your honey?' on page 9 of the February 2007 issue.]* An organic method is to spread through the stacked boxes a few leaves of Pennyroyal, a plant found in swampy locations. The better the stack can be sealed the more effective this is. Allow the air to circulate through before putting the boxes on hives.

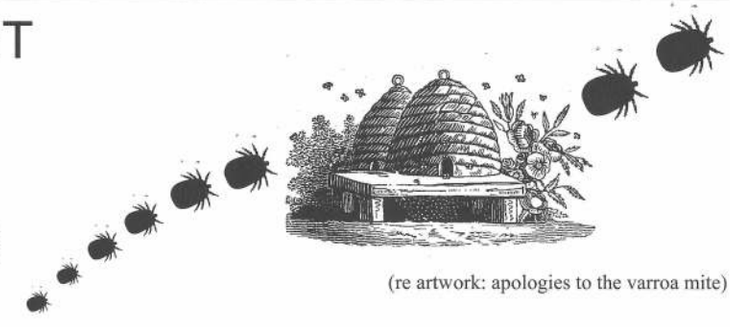
Most of this is better explained in *Practical Beekeeping In New Zealand* by Andrew Matheson, a booklet that should be in your bookcase and will be found in any library.

- Ron Morison

DON'T GET CAUGHT

WITH

RESISTANT MITES



(re artwork: apologies to the varroa mite)

ALTERNATE YOUR TREATMENTS

The National Beekeepers' Association strongly urges beekeepers to:

- Alternate between chemical family types of treatments for Varroa control
- Get used to managing the different types of treatments currently available—Synthetic and Organic
- Expect variance in results from different treatments
- **Monitor your hives before and after treatments**

The efficacy of current synthetic treatments used will be extended if beekeepers alternate between the different treatments available.

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New Zealand's No 1 organic product for mite control

Some very good reasons to use ApiLife:
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Current prices (1box =100pces / 1 pce = 2 wafers)
1 to 49 boxes, 100 to 4900 pces = 4.80 each +GST
50 + boxes, 5000 + pces = 4.70 each + GST

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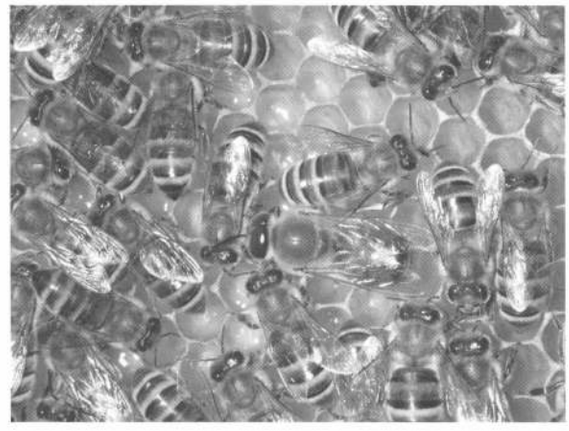
BK246

Beekeeping on the other side of the world—in the Czech Republic

I am enjoying my year-long stay in New Zealand very much. Three months ago I started to work in the apiary of Mary and Norm Dean in Tauranga. I would like to thank them very much this way for being so kind to me and giving me the chance to experience kiwifruit pollination, queen raising and soon also honey extraction. I have already written an article about New Zealand beekeeping in our magazine for beekeepers in the Czech Republic (CR), so then came the idea of writing about Czech beekeeping for your magazine.

My story is simple: I come from a beekeeping family—my granddad, uncles, and my two brothers are hobby beekeepers. My brothers gave me my first hive when I was 16, and even after 10 years of beekeeping I see there is still something new about bees to learn. We have two beehouses in the countryside in the south part of CR, each containing 10 hives to keep them protected during winter when there is plenty of snow and strong, freezing winds.

Although the Czech Republic is only one-third the size of New Zealand, it has 10 million inhabitants. There are about 50,000 beekeepers with 400,000 hives; most are hobby or sideline beekeepers with between one and 30 hives. We are breeding only Carniolans (*A.m. carnica*), as they are suitable for overwintering even in very cold winters when is freezing (-20°C).



The main honeyflow is from canola (*Brassica napus*), the lime tree (*Tilia platyphyllos*), which is our native tree, sunflower, clover, black locust (*Robinia acacia*), or honeydew from aphides on our forest trees (silver fir, blue spruce).

The geographical indication "Czech Honey" (in original language "Český med") has an excellent reputation because of the long tradition of its production on the territory of the Czech Republic and good quality of honey. In written documents we can find that honey has been produced in this area since as early as the fifth century AD. Apiarian privileges were issued for Moravia and Silesia in 1775 and for Bohemia in 1776 (three parts of actual territory of the Czech Republic).

Two problems that we share with the whole of Europe are the varroa mite and AFB. The use of antibiotics and/or sulphonamides is forbidden by curing bees in the whole territory of the CR. For the regulation of varroa the pesticide VaridolFum (amitraz) is used as fumigation or aerosol treatment in the beginning of winter. Infected hives by AFB have to be burnt.

- Ing. Jana Rybova
vcela@seznam.cz

[Editor's note: the term 'Ing' is a title for engineer of agriculture in the Czech Republic.]

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A single visit sugar syrup feeding system to enhance honey bee activity during the kiwifruit pollination season

Trevor G Bryant
Professional apiculturist
Blenheim

The practice of feeding sugar syrup to honey bees to enhance bee activity in the flowering kiwifruit canopy is well established, practiced by the vast majority of beekeepers for a known benefit to their grower clients. These benefits have a sound scientific base with production results that reinforce the science [1].

Sugar feeding will not, however hard one tries to juggle the figures, make poor colonies as good as well-presented units. A single large volume feed in a standard internal feeder is not as good as one litre per day or two litres every second day. Enhanced bee activity will not result in larger fruit if the male pollen resource is of unknown value and of a questionable quality, but may increase total yield usually at the expense of fruit size. Rarely will the fruit size profile be moved to a larger count if bees have to transfer male pollen at distances greater than six metres.

To feed syrup to bees while they are in the orchard is relatively simple. Bulk syrup is delivered either daily but usually every second day to the orchard and pumped into a top or a division board feeder in each hive to prevent robbing. The volume is predetermined: one to two litres of syrup concentrate, 30 to 60 per cent sugar/water or any concentration of these two—all are equally effective. Some beekeepers offer deals to enhance the value of their product to potential clients. These often comprise a feeding component (e.g., single feed seven litres at either a discount or free, or they have a special slow-release system that has all the benefits of a one- to two-day feed strategy. This allows them to offer their product at a reduced rate). Sorry, but research shows that slow-release drip feeders delivering small quantities over long periods may not work at all; i.e., that feeding up to three litres a day increased the total volume of pollen collected. Where more than three litres is fed, total volumes of pollen collected decreased. [1]

The downside to the regular strategic feeding of syrup in orchards are many. It is expensive, the price per tonne of sugar has risen $400.00 since November 2005, and fuel, labour and a host of other costs (such as interest rates) have impacted on everyone, not just beekeepers. With the constraints posed by *Varroa destructor* and the time that feeding imposes on a skilled staff, many beekeepers are looking for alternatives which retain the benefits of syrup feeding while holding or reducing the real cost of this important task, rather than taking a cost-plus approach.

For the past two pollination seasons SEEKA Kiwifruit Industries Ltd (Bryan Grafas, G M Orchard Operations), Apiflora NZ (Steve Weenink), with assistance from the author have been trialling a single delivery pail feeding system which can be managed on orchard by any appointed person, with a minimum of training and little or no knowledge of beekeeping, but wearing the appropriate protective clothing.

Method

The orchard selected was at mid-altitude in No 2 Road, Te Puke. This orchard required 24 beehives, which were sited throughout the orchard in groups of three. To avoid any influence that drift of worker bees between colonies may have had on the result, the composition of layout, two/litres every second day feed, pail feed, or no feed was varied. The 24 colonies thus provided eight replicates.

The colonies were audited and averaged 20 frames of bees. Total population was estimated at more than 40,000: 10 frames of brood, 60 per cent filled; total brood area more than 11,000cm^3. The colonies were uniform in composition, with the majority of brood in the lower brood chamber, and some empty cell space in the top chamber to allow for brood expansion and honey (sugar) storage. On the colony value chart where the recommended standard for a pollination unit is 100, the trial colonies rated 170.

The colonies were fed every second day with 1.5 litres of sugar syrup, 60 per cent concentrate. Each had a top feeder with bracken fern inside to prevent bees drowning.

The pails were the 10-litre plastic bucket type with a push-on lid which provided an excellent seal. A 10-millimetre hole was drilled in the lid, covered with 32–25 millimetre mesh which was heat-sealed in place. The pails were filled with six litres of sugar syrup, 60 per cent concentrate, the lid was put on and the pail delivered to the orchard. The colonies that were to be pail fed each had an inner cover beneath the lid, which had a 50-millimetre hole drilled through the centre. The lid was removed and remained at the back of the hive until the hives were removed. The pails were upended over the hole, which gave access to the syrup for the bees and the pail was held in place by a rubber strap. When upended, syrup rarely dripped through the fine mesh covering the aperture as a vacuum had been created.

Lid removed, exposing inner cover in preparation for feeding.

10-litre syrup pail on inner cover with access hold for bees as described.

Pail of syrup is held in place with rubber strap. The lid will remain at back of hive until the bees have completed their task.

Hive configuration with pail(s) in place compared with normal state on hive with internal division board feeder

Pollen traps were installed under each hive on day one. In 2004 the traps were sourced from Apiflora and another beekeeper. Unfortunately, the pollen traps were quite different and harvested significantly different volumes of pollen from returning pollen foragers. While trends were apparent, pollen traps were sourced from Dr Mark Goodwin at HortResearch in 2005 to ensure all data recorded from traps were of equal value.

Results

Year one results in the Te Puke orchard are not considered because of problems with the installation of the pollen traps. The trial was repeated in a later-blooming orchard on Oropi Road. Despite the problems the trends from the data were not too dissimilar from the original research [1], and a repeat trial for 2005 was undertaken with the variables removed.

In 2004 the bees were introduced to the crop on 5 December in a split delivery and all hives were removed on 29 December, a total period of 23 days. In 2005 the hives were delivered in a single shift on 21 November and removed on 5 December, a total period of 14 days.

Table 1: Percentage of pollen collected by bees in kiwifruit*, 2004

Colonies fed 1.5 ltr/2nd/day	36%	Avg/day 12 gm	**(26 gm @ 1 ltr/day)
Colonies pail fed/6 ltr	34%	Avg/day 13 gm	(30 gm@ 2 ltr/day)
Colonies not fed	30%	Avg/day 11 gm	(21 gm@ no feed)

*Organic orchard, Oropi Road.
**After Goodwin. [1]

Table 2: Percentage of pollen collected by bees in kiwifruit*, 2005

Colonies fed 1.5 ltr/2nd/day	33.3%	Avg/day 24 gm	**(26 gm @ 1 ltr/day)
Colonies pail fed/6 ltr	36.4%	Avg/day 26 gm	(30 gm@ 2 ltr/day)
Colonies not fed	30.3%	Avg/day 22 gm	(21 gm@ no feed)

* No 2 Road, Te Puke
**After Goodwin. [1]

Discussion

The feeding of well managed and prepared pollination hives utilising pails modified in the manner described to provide a single feed of sugar syrup during the bloom period of kiwifruit appears to achieve a comparable result as daily/every second day strategies recommended by Goodwin et al. to enhance the gathering and transfer of kiwifruit pollen.

The pails were specifically designed to replicate, as closely as possible, the requirements for strategic feeding to achieve the

desired outcome of enhanced pollen foraging. It is contended that a larger aperture in the lid, or a coarser mesh, would not achieve the equivalent result and would feed the bees rather than enhance pollen foraging.

The use of pails will assist beekeepers to significantly reduce the time spent on the road feeding bees in the orchard, provide more time in the field preparing colonies for delivery, and should go some way to alleviating pressure on the bottom line. A possible negative is that less time will be spent by beekeepers in the orchard where they have the opportunity to observe what is happening on the ground during the bloom period, a very important part of providing a pollination service to an industry which has distinctly different requirements to other horticulture crops.

Conclusion

When negotiating the hire of bees to pollinate the kiwifruit crop, start with the axiom 'bees pollinate flowers, not beehives'. The aim is to achieve maximum numbers of bees visiting flowers and to transfer male pollen throughout the female canopy during the entire bloom period.

- Use beehives that meet or exceed the standard recommended for pollination units.
- If a problem is apparent, have the hives audited.
- Feed 1 litre/day, 1.5/2 litres every second day, using the pail system as described.
- Feed between 9am–1pm (preferably between 9 and 11 am).

References

[1] Goodwin, R.M. 2000. *Kiwifruit Pollination Manual* 5:43–63.

Acknowledgements

Bryan Grafas, Bo Stapleton, Simon Cram, Mathew Wells of SEEKA Kiwifruit Industries Ltd., Te Puke, and Steve Weenink of Apiflora NZ, Lower Kaimai.

[Editor's note: this article was printed in the New Zealand Kiwifruit Journal, *September/October 2006, 177:33–35, and later submitted to* The New Zealand BeeKeeper *by the author.]*

Do not underestimate the risks to human health of handling agricultural pesticides, regardless of whether they are synthetic or organic.

Fieldays® 13–16 June 2007, Mystery Creek, Hamilton

The premier feature for Fieldays® 2007 is "Traceability: International Quality Benchmark". Leading organisations Livestock Improvement, Waikato Innovation Park and AgriQuality are sponsors of the Traceability feature. Fieldays in conjunction with the sponsors will raise the profile of traceability and demonstrate on-farm and end-product benefits to producers.

Traceability systems will allow producers to track products from farm to plate. Along the way they will reap the benefits of improved business systems and productivity, better breeding and cultivation outcomes and the better return on investment provided by quality benchmarked products in high-value international markets. New Zealand farmers and growers know that New Zealand products have a competitive advantage in the world market. The feature will highlight the importance of traceability across all sectors.

Key messages at the Fieldays® will be:

- benefits of traceability systems
- demonstrations including technology, methods and innovations
- fostering the postiveness around traceability rather than the negative view of compliance costs
- real examples of end product with traceable history.

Marking queens

Marking queens is a practice that has been carried out for many years. I've not usually bothered to do it, but a chance encounter with a rubbish bin at a friend's engineering workshop has changed my mind. He has a machine that punches small holes in sheets of thin steel used for the manufacture of fuse boxes etc, and the little white painted disks that are left behind are ideal for gluing onto the thorax of the queens. Unlike typist's correcting fluid, which sometimes wears out before the queen does, these dots should last practically forever but that is not the main reason we use them.

If at any time you wish to find the queen you only need to hang a thin fridge magnet in the middle of the brood nest: within 24 hours she will be found safely held in place for you to do whatever you wish with her. So far with the limited trials we have done we have had 100% success rate and the extra weight of the disk does not appear to affect the queen in any way except that they seem very reluctant to swarm. Although we had a very bad swarming season this year, not one single marked queen swarmed during the season.

- John Berry

From the colonies

Auckland Branch

We're halfway through getting all the honey off and are starting to see the light at the end of the tunnel. It's turned out to be a pretty good season, especially if you had some Pohutukawa sites. We didn't have any and still got some honey coming in. Doesn't crystallised Pohutukawa play havoc with spin flows? After weeks of trouble-free spin flowing we finally had to clean it out as the Pohutukawa crystallised and offset the balance.

As well as taking honey off we're also dequeening all our hives and putting in cells a few days later. We dequeen all hives every year so they lay more vigorously during spring build-up and hopefully reduce swarming as they'll all have young queens. We've started putting strips into hives that have had honey off. We're putting Apivar in now, having used Apistan last spring. Alternating treatments is really important to keep varroa resistance down.

When taking the honey off we leave them in two or three boxes depending on the amount of stores, which is what they'll be wintered into. This year we're leaving a bit more honey on compared to last, so the hives will need less feeding, if any, in the wintering down and early spring checks.

Anyway, early start tomorrow: packing a couple of tonne into the 500gm variety of pots. So off to bed.

- James Harrison

Waikato Branch

And still the clover continues to flower en masse! The honey flow, as predicted by some, has arrived late. Some areas have had patchy crops and other areas are doing well. This has meant juggling extraction dates and in some cases, beekeepers having to find another contract extraction plant to finish the last of their honey.

An e-mail circulating in the Branch has alerted beekeepers to be vigilant with varroa. With the later season, the emphasis will be on honey removal and getting the last of the crop. Beekeepers could then be caught with high mite numbers going into autumn.

From recollection there has been no substantial rain for almost a month in some parts and I have heard of at least two beekeepers who have run out of water, requiring the water tanker to come calling. That same water tanker has also been seen supplying water to fire crews for a scrub fire, on extremely brown hills, that got out of control.

A drive through the greater Waikato will reveal hives stacked high, beekeepers going about their business, "browned off" grass in the north and slightly greener further south. The temperatures for the month have been hitting the late 20s and early 30s (degrees C), with overnight temperatures ranging from the early to mid 20s. Talking with farmers in our local area many of them have passed last year's production. Some

wanting to flick to once-a-day milking have to wait a few more weeks as the drop in milk production is just a bit too big for this time of the year. It all relates back to the wet weather last year. A lot of hay is still being cut, and after … the clover continues to flower en masse!

- Fiona O'Brien

Hawke's Bay Branch

Despite indifferent weather most hives in Hawke's Bay have achieved at least an average crop, with some areas still doing well and others completely finished.

Varroa is very bad again in some areas and I am becoming more and more concerned about what will happen when resistance occurs. I recently attended a meeting in Hamilton where the subject was discussed and I am pleased to see that Dr Mark Goodwin and his team are starting to achieve some quite good results with varroa tolerance. However, to achieve the ultimate goal of hives that need no treatment, the beekeeping industry will need to give continuing moral and financial support for this endeavour.

At last year's conference there was a lot of interest in doing a course in artificial insemination. I personally believe that we need to do this sometime before resistant genetic material is available to us so that we can practice this difficult technique and be proficient when the time comes. The course would not be cheap, and you would have to also spend an estimated $2,000–$3,000 on the necessary equipment, but I believe that in the long term it will be very worthwhile.

If anyone interested in doing this course would like to contact me I will make up a list of names and apply pressure on the right places so that we can get things moving. Time is growing short.

- John Berry

Southern North Island Branch

The weather settled during late January and February so that most got a reasonable honey crop. Early Manuka sources suffered but the later-flowering areas did well. Now we are settling down to harvesting. There have been a considerable number of late swarms. I had one only last week (15 February) and others have reported similar experiences: many of the swarms have been huge.

Time to requeen and put in autumn treatments for varroa. Generally most members say that there is very little evidence of the varroa problems that we have experienced over the last three years. We are through the first phase and now into the "chronic" phase, but we must still keep on our toes as parasitic mite syndrome (PMS) will take over otherwise. A few beekeepers have found this out already.

As I write this, I and many others are looking forward to the successful NBA High Court case against honey imports from Australia. If we are successful it will give us valuable time while the Government departments work out how to reorganise their plans to open up the New Zealand honey situation. Our principal reason for going to court is the risk of the introduction of new diseases. The NBA Executive Council is concerned that a number of diseases or other pests could arrive at any time, so we need to think ahead and plan how we beekeepers at the coalface will be able to handle any additional problems. We live in interesting times and unfortunately the old way of beekeeping has gone. Both hobby and commercial beekeepers need to reconsider their beekeeping methods. New Zealand needs the pollination from the thousands of hives throughout the country for our agricultural and horticultural success.

Think ahead to Conference at Dunedin in July to learn more about successful ideas.

- Neil Farrer

Nelson Branch

The Nelson, Golden Bay, and Marlborough honey harvest will not go down in the records as one to remember. In fact there are many who would prefer to forget this year. The Manuka crop is very poor in volume and quality, and a lot of the usual monoflorals have turned up as polyfloral and so on.

For our own business, we have probably never had a worse honey crop. The weather continues to contain all four seasons most days; the proportion of each season is all that changes. We have had wonderful rainfalls and the grass is green and lawns want cutting twice a week. A good 'pastoral' year, but the warmth just isn't there to produce good consistent nectars. There's still a lot of wild blossom around. The pollen being packed into the brood chambers is phenomenal. I wonder if the bees know something that we don't: is it going to be an early and/or hard winter? This is the first thing that comes to my mind. The late Ron Stratford of Brightwater used to say that we must remember that the bees know more about beekeeping than we do!

In February, the queens are already shutting down with a lot of the later summer honey packing out the brood nests early due to the cold snaps, especially at night. The mice have already been looking for nice warm homes in hives for the winter. For those who haven't already taken off their honey, they will find that the robbing is unsurpassed, and I have talked with many beekeepers who are splitting up the task of the brood checks and taking the supers off, or else breaking yards up into two shifts. The good news is, there are very few wasps around this year.

An update on the varroa situation in Nelson: we are looking forward to an NBA workshop (hands on) for all beekeepers in the control area in early March.

Continued on page 19

Continued from page 17

VAI is going to continue its vigilance in the Marlborough area (using money from last year's levies) and depending on the findings, Biosecurity New Zealand could create a new permit line required for high-risk goods crossing the Pelorus and Wash bridges (both end points of entry to the Marlborough area).

As for me, I am still looking for that first varroa mite in our hives. It looks like there won't be any autumn treatments this year, but perhaps I'll be more convinced of its absence once the surveillance is completed before the end of May.

- Merle Moffitt

Canterbury Branch

Once again the clover season is almost over. This season has been uncharacteristically wet and cool intermingled with a few really hot days, enabling the bees to collect from all accounts a fairly meagre crop. This season would have to go down in history as the worst swarming season ever. Swarms started taking off in October and were still swarming at the end of January—incredible. This has at least taken the pressure off autumn requeening ;-)

New Zealand bureaucracy once again reigns supreme in Nelson. A lot of hard work and effort on the part of beekeepers seems utterly wasted because of administrative oversights and the lack of political will to give it a go. If as much effort was put into this incursion as the bureaucrats put into honey import protocols, varroa would not only been eradicated from the South Island but from New Zealand entirely! I guess it just depends what's important to whom and most importantly, salary.

- Brian Lancaster

Melbourne, Australia, 9–14 September, 2007

Information sheet no. 7

A visit to Apimondia would not be complete without a trip on one of the pre or post congress tours. Our website, www.apimondia2007melbourne.com, has a selection of tours available.

If you have been browsing the website in recent times, you will see that the company running these tours has now had a name change. It was previously Agtours and now is Quadrant Australia. Same people running the tours, just a name change.

The website address has been changed so if you have previously included the web address in your favourites, you will need to change it to the current address.

To date, there has been good interest shown in these tours. They are a good mix of beekeeping operations plus opportunities to see some of Australia's unique scenery and tourist attractions.

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For our overseas visitors to Apimondia 2007, when you book your flights to Australia make sure that you also start the proceedings to obtain your visa. All overseas visitors (except for New Zealand passport holders) must have a visa before they arrive in Australia.

Details are available on the website, www.apimondia2007melbourne.com, under "Travel Information". Don't leave it till the last minute to obtain your visa as any delay may mean you will miss out on coming to Apimondia 2007 and we do not want anyone to be disappointed.

- Trevor Weatherhead (Organising Committee)
queenbee@gil.com.au

The small hive beetle: another exotic invasive pest (part one)

Marco Gonzalez
Apiculture Officer
AgriQuality Limited

Introduction

The latest threat to New Zealand beekeepers appears to be the small hive beetle (SHB), which is now on our doorstep. It is most likely this will be the next exotic bee pest to arrive on our shores given it is so close in Australia.

What do we know about this pest so we can cope?

The small hive beetle is so called to differentiate it from the large hive beetle, another beehive parasite from Africa.

The small hive beetle (SHB), *Aethina tumida (Murray)*, Coleoptera: Nitidulidae, was first described in 1867, by Andrew Murray, using two beetles from the area currently known as Nigeria. However, no mention was made in this report of the beetle being associated with honey bees *(Apis mellifera)*. The first record of SHB being associated with honey bees was by Mr R.H.T.P. Harris from Durban, South Africa in 1920.

The small hive beetle has only been recognised as a significant pest of honey bees in Florida after its identification in European colonies by M.C. Thomas of the Florida Department of Agriculture, USA in 1998. Before that it was only considered to be a minor pest among beekeepers in Africa.

However, it is proving to be a serious pest in European bee colonies in the USA, and to a certain extent, in Australia. In its natural state in Africa, the small hive beetle is a strong scavenger, occupying the role that wax moth plays in New Zealand.

Geographical distribution

The small hive beetle is a native of sub-Saharan Africa. It was identified from honey bee colonies in Florida in June 1998 and has been expanding through the United States ever since. It is now likely to be in nearly all the states.

It was identified in Egypt in June 2000, in Canada in 2002, 2005 and 2006, although it is not established yet. It has been identified in Australia (October 2002) although it had probably been there for up to two years before being found. The beetle has now spread through much of southern New South Wales, parts of South Eastern Queensland and Victoria.

It has also being identified once in Portugal (October 2004), where it probably arrived with imported queens from the USA, but was quickly eradicated.

Ways of transmission and spread

There is a serious risk that the small hive beetle could be transported and introduced into New Zealand. This risk is even higher than of that of varroa mite, as SHB is not dependent on live bees for its survival. Import regulations and border inspections are our best defence against the introduction of the SHB from overseas to New Zealand.

SHB could arrive into New Zealand by any of the following means:

- in swarms of bees or feral colonies accidentally carried on container shipping or airfreight
- in used beekeeping equipment, comb, beeswax or queens smuggled into the country
- on imported fruits, such as ripened melons
- in soil material; for instance, with imported plants or carried on heavy machinery
- in containers or airplanes with hitchhiking adult beetles.

Once the beetle arrives into the country and completes its life cycle it usually spreads through one or more of the methods shown below.

1. Adult beetle flight: SHB adults are strong flyers and can cover more than 10 kilometres.
2. Swarms: it has been confirmed that SHB follows or accompanies swarms from infested hives.
3. Absconding: SHB usually follows the absconding colony to its new place.
4. Beekeeper-assisted colony migration: this is probably the most efficient and dangerous means of spreading SHB, particularly migratory beekeeping and pollination movements.
5. Adult beetles hitchhiking in cars, buses, trucks, boats or airplanes.
6. With feral hives being moved in logs or movable houses. The feral colony does not need to be alive as SHB can survive for a certain period in the abandoned hives by feeding on dead brood.

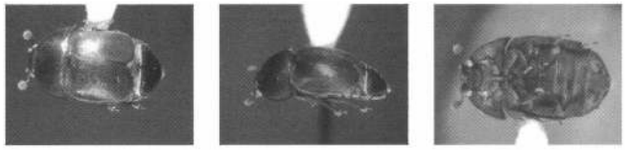
General biology

Understanding the biology of the small hive beetle allows identifying more efficient and effective methods to combat this pest. SHB biology has been a subject of much research since it was first reported in the USA.

Adult beetle anatomy

Adult beetles are oval in shape. Their size varies depending on larval diet, climatic conditions and the gender of the beetle (but on average they are about one-third the size of a worker bee). In general, male beetles are smaller than their female counterparts. However, size of both sexes ranges between 5–7 mm long and 3–4.5 mm wide.

Immediately after emergence, adult beetles are reddish-brown, but darken to dark brown or black when fully mature. They have characteristic club shaped antennae; their bodies are broad and compressed dorso-ventrally; i.e. top to bottom. Their wing cases are covered with fine hairs (which make them difficult for beekeepers to pick up by hand) and are short so that few segments of the abdomen are visible.



Aethina tumida dorsal, lateral and ventral view.
Source: www.beetlelady.com/?page_id=5

SHB uses chemical signals emitted from the hives to locate apiaries. These signals are currently being investigated, and potentially form the basis of future control methods, such as bait traps. SHB can detect stressed colonies due to disease or management techniques from a distance of about 13–16 kilometres.

Odours from hive products plus adult bees were found to be significantly attractive to flying adult beetles. The beetle has been detected in swarms and are thought to travel with or follow the swarms.

SHB can survive very low temperatures, much lower than New Zealand winter temperatures. The adult beetle can survive during winter, in the actual bee cluster, and can therefore survive in any location where bees are kept.

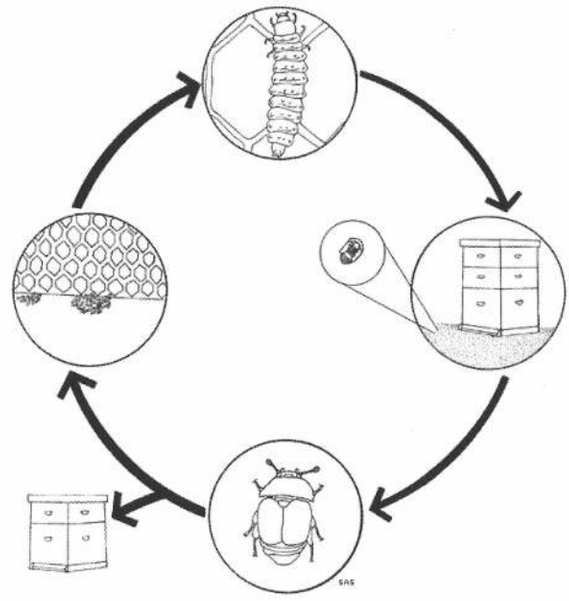
Life cycle

As with all beetles, SHB have a complete metamorphosis that includes egg, larva, pupa, and adult stages. Adults can survive for two weeks without food and water, 50 days on used comb and several months on fruit.

The beetle requires warm conditions (above 10°C) and sandy soils for pupation and completion of the life cycle. Therefore, it can be predicted that apiaries located in warmer areas and on sandy soils would be more affected than those from colder areas with heavy clay soils.

Under laboratory conditions, adult beetles feed on honey bee eggs, completely consuming all eggs, even in the presence of honey and pollen.

Under laboratory conditions the life cycle can also be completed on fruits and in bumblebee colonies. However, the level of reproduction and feeding on fruits in the wild has not been studied. Similarly, the ability of SHB to infest bumblebees' colonies in the field is unknown. These two areas should be investigated to evaluate these potential transmission pathways and the potential impact of SHB on wild bumblebee populations.

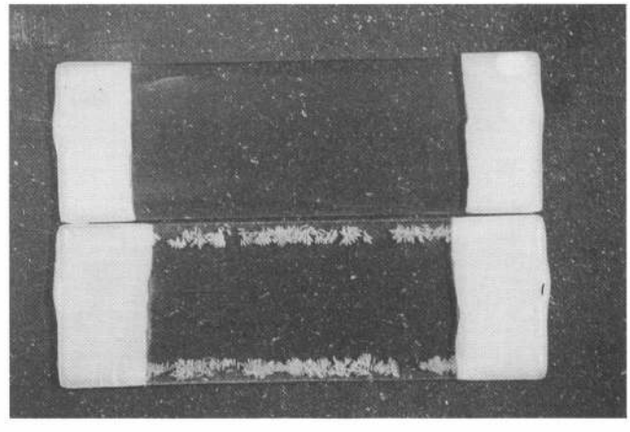


SHB life cycle. *Source: www.beetlelady.com/?page_id=5*

Egg stage

Adult beetles lay a large number of eggs in the hive. Egg laying is stimulated by hive disturbance. For instance, under lab conditions shaking the glass containing female SHB stimulates egg laying.

SHB eggs are laid in irregular masses in crevices or combs containing pollen or brood. The eggs are pearly white and about two-thirds the size of honey bee eggs. Each female is capable of laying up to a thousand eggs during her four- to six-month life.



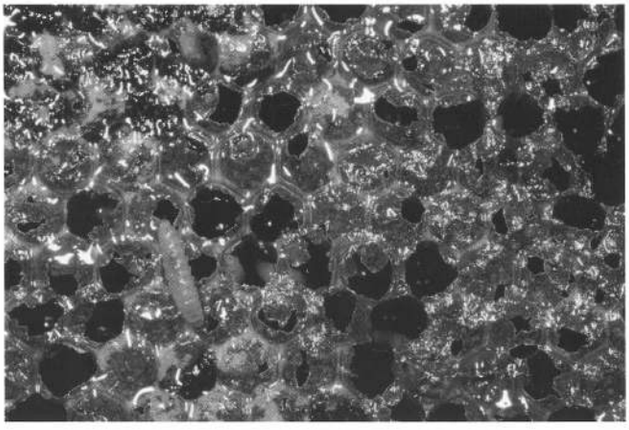
SHB hive beetle eggs on glass slides. Source: AgriQuality.

Larval stage

After two to six days, SHB eggs hatch and the young beetle larvae begin to feed. Beetle larvae eat brood, pollen and honey, tunnelling through comb and ruining stored honey with its faeces that have a repellent effect on bees and cause bees to abscond. Honey ferments and bubbles out of the cells. The fermenting honey is said to have the smell of decaying oranges.

After 10 to 14 days, the larvae have completed their growth and measure 10–11 mm in length. There is no webbing or

particles of comb debris as found with wax moth infestation; instead, infested combs have a "slimy appearance".



Larvae on honeycomb with slime. Source: AgriQuality.

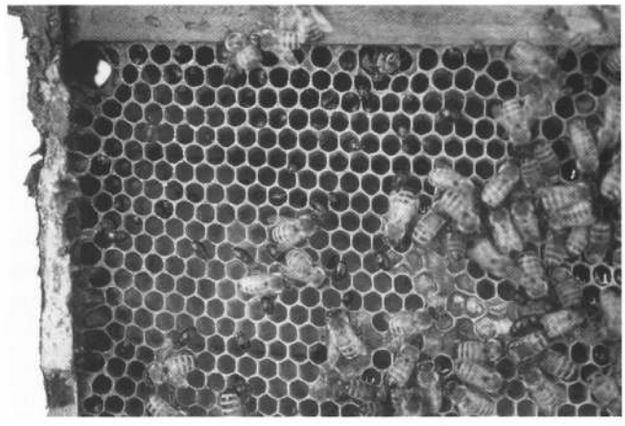
Pupation

The pupation stage lasts between eight to 60 days and takes place in the soil. Mature larvae will often mass on the bottom board and in corners of frames before moving outside the hive. They move towards the light at the hive entrance and then exit the hive and burrow into the soil close to the hive entrance. They pupate in smooth-walled earthen cells; pupae are white and darken as metamorphosis takes place.

Pupation is a vulnerable stage for SHB and there is probably a high natural mortality rate, such as ant predation. This stage is where beekeepers can attack the SHB by applying pesticides to the soil.

Adult stage

About one week after emergence adult beetles are attracted to bee colonies to mate and reproduce. They disperse rapidly over large distances. The adult beetle is attracted to the odours from disturbed hives, adult bees and brood. Field observations in the USA have noted a large influx of beetles the day following an apiary inspection, suggesting that colony odours released serve as a stimulus for beetles to locate apiaries. Also, opening the hive triggers beetles already present in the hive to lay eggs. Adult beetles lay large numbers of eggs in the hive and the cycle restarts.



Adult hive beetles on comb. Source: AgriQuality.

Effects of small hive beetle

Most beetle damage comes from the feeding habits of adults and larvae which eat honey, pollen, and, preferentially, bee

brood. However, as a secondary effect of adult and larval feeding, stored honey in a colony is rendered useless as it quickly fouls and ferments. Bees are likely to abscond at advanced stages of infestation.

SHB effects are even worse in colonies infested with varroa and some colonies can be completely destroyed within two weeks.

The major economic damage is done by larvae found in unprotected honey supers, when combs of honey stand for long periods in the honey house prior to extraction, especially combs containing pollen. Cappings set aside during the extracting process may also become a breeding ground for SHB.

Detection

If you find something suspicious collect as many samples as possible, put them in a plastic bottle and keep it in the fridge while you contact your nearest Apicultural Officer in AgriQuality, who can arrange a laboratory identification.

Scanning combs and boxes

Adult beetles are likely to be found on the corners of the bottom board running away from the light and hiding in crevices or under debris. In warm weather, adult beetles will be mostly on the hive floor and under the lid. In colder weather they hide within the bee cluster. Also, look for clusters of eggs in irregular masses, usually in cracks and crevices in the hive. Finally, look for larvae in the combs or on the bottom boards. Remove combs one at a time and carefully examine each of them for evidence of larvae or adults. The larvae will be attracted to light.

SHB larvae, adults and dross on the floorboard.
Source: AgriQuality.

Corrugated plastic board hive floor inserts

This method exploits the beetle's tendency to seek dark crevices in which to hide. A corrugated plastic board (with the plastic removed on one side to expose the corrugations) is placed corrugated side down on the bottom board towards the rear of the hive. Regularly examine the debris under this insert for evidence of adult beetles or eggs.

Light near the floor in the honey house

This method exploits the larvae's tendency to seek light. Regularly examine the floor around the light for evidence of SHB larvae or pupae.

Suggested reading and websites

- http://creatures.ifas.ufl.edu/misc/bees/small_hive_beetle.htm
- www.zeta.org.au/~anbrc/small_hive_beetle.html
- http://beebase.csl.gov.uk/pdfs/SHB_factsheet.pdf
- Field control and biology studies of a new pest species, Aethina tumida Murray (Coleoptera: Nitidulidae), attacking European honeybees in the Western Hemisphere. Elzen, P.J., J.R. Baxter, D. Westervelt, C. Randall, K.S. Delaplane, F.A. Eischen, L. Cutts, & W.T. Wilson. 1999. Apidologie 30: 361–366.
- Elzen, P.J., J.R. Baxter, D. Westervelt, C. Randall, K. S. Delaplane, L. Cutts, and W. T. Wilson. 1999. Field control and biology studies of a new pest species, Aetina tumida Murray (Coleoptera, Nitidulidae), attacking European honey bees in the Western Hemisphere. Apidologie, 30: 361–366.
- Neuman, P and Elzen, P., 2003. The biology of the small hive beetle (Aetina tumida, Coleoptera : Nitidulidae): Gaps in our knowledge of an invasive species.
- Ellis, James; Hepburn, R; Delaplane, K. and Elzen, P. 2003. A scientific note on small hive beetle (Aethina tumida) oviposition and behaviour during European (Apis mellifera) honey bee clustering and absconding events.

[Editor's note: part two of this article will appear in the April 2007 issue.]

Success in fighting varroa will depend on how well beekeepers are able to adapt to changes required in their beekeeping management.

All beekeepers in New Zealand should routinely check their hives for varroa whether or not mites have already been found in their area.

About the Apiary

Our beekeeping enterprise is based at our family home on a steep suburban section in Wellington, and there's not a lot of storage room around the house. As can be expected when you are working in the spring upgrading hives, a lot of clutter accumulates until the 'one who must be obeyed' says "Enough!" Well, we have spent most of last month cleaning up around our house—finally making decisions that those supers with the extra ventilation around the sides caused through rot that couldn't be cut down to three-quarter honey supers will go into the wood box instead of doing "just one more year". All this work and there isn't any real difference around the place as the space seems to get filled again with more redundant bee gear. In the basement, more work went into cleaning and a little painting and the honey room does look good.

In the meantime the bees finally had something to do. The weather warmed and settled, and with a week of hot temperatures, the pasture on the light country started to dry out. The clover got a shock and started producing nectar and hives quickly filled.

It is now a month since we have had any substantial rain in our area and it's drying out. Farmers have been cutting hay and on the heavier soils where the water table is still high, fields turned green again and more clover flowers are being produced where it's not heavily grazed. There are still a lot of nectar sources flowering that the bees can utilise, such as Catsear, Lotus major, Dandelion and Pennyroyal in the wetter areas. Along the railway embankments Fennel is still going and in the cities, numerous ornamentals are still flowering. The Scarlet Gum (*Eucalyptus ficifolia*) looks impressive. Most beekeepers don't realise that at this time of the year that Ribwort Plantain (*Plantago lanceolata*) provides most of the autumn pollen sources in their hives. Stock do not feed on this flower so it's the main one left after the paddocks have been grazed.

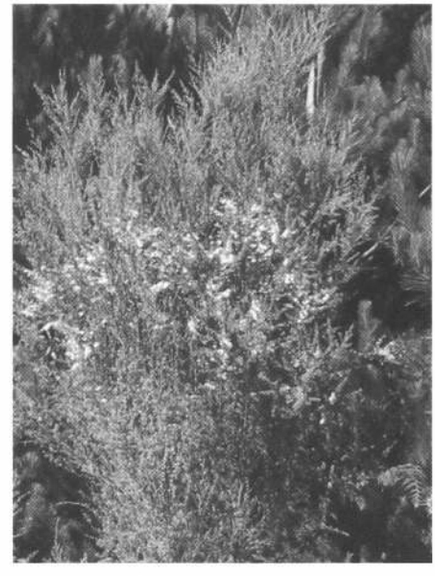
Two views of the plantain plant.

One of the real surprises this summer was that Whitey wood (*Melicytus ramiflorus*) began to flower again in February. You could smell it all through the bush and this stimulated swarming again. Swarms in February? Yes, reports came in that there were swarm calls from all over the region and most filled a four-frame nuc box. These had only a few mites, indicating that they mostly came from managed hives.

Whitey wood in flower: flowers from the stems of the tree.

Removing and extracting honey

We finally started bringing in honey to extract. Manuka is our main money earner and the first apiaries we target. Well, the hives were full of Kamahi with only a taste of Manuka in the bottom of the frames. This matched up with what I have observed in the apiaries: a lot of new growth on the shrubs above a smattering of flowers that the bees weren't working. Disappointing, but that's beekeeping.



Normally the whole Manuka tree would be covered in flowers. This photo shows the new growth above the flowers.

Photos: Frank Lindsay

It's a pleasure to remove honey supers while the bees are busy working a honey flow. They hardly take any notice of you and clear the super quite quickly. However this won't last. As soon as the last of the autumn flows finishes the bees will go into defensive mode protecting their hives. Any hives left open for a short time will induce robbing. Any honey left exposed is fair game and the hive bees will do their best to protect it so fighting ensues and everything around starts to get stung.

In an 'out apiary' away from stock and houses this doesn't matter so much but in the city, robbing can cause all sorts of complaints, resulting in an order to move your hive(s) from the local authority. If your bees get into this sort of situation, stop all work. Close up the hive(s), restrict the entrances and turn on the water sprinkler for half an hour. This will calm the bees and divert their attention from robbing. Those robbing will get wet and will generally dry out and return home before the end of the day. Leave the hives for a few days before working them again as there will be scout bees hanging around ready to take the message back that there's free honey available again. The next time you open the hives, cover exposed supers with cloth or split boards to reduce exposed frames.

The best time to remove honey is very early in the morning just as the sun is coming up. It's still cool and the bees are hardly flying. Smoke the hive, do something else for two minutes, smoke the entrance again, leave for another minute and then start working the hive. Too many beekeepers just smoke the entrance, lift off the roof and coverboard, smoke the top and start working.

The smoke turns back the bees guarding the entrance but not the rest of the bees in the colony, and these bees quickly become defensive. By allowing time for the bees to communicate that there is smoke coming into the hive to the rest of the bees, you will find that even aggressive bees are easier to work.

The key to keeping bees in an urban area is 'out of sight out of mind'. The second key is control. If there is a chance of disturbing your neighbours, don't work the bees. This may limit your beekeeping to late evenings. Well and good, because by morning the bees would have settled down again.

The same goes for putting on the wet supers. If you do this task during daylight hours, the bees immediately get excited and fly all over the place looking for the honey whose source is nearby. Put wet supers back on the hives in the late evening after bee flight activity has ceased so they can clean them out, and the hive will have settled by morning.

For these reasons it's often best to use escape boards to remove honey. Yes, you do have to disturb the hive to put on the escape boards, but if the evenings are cool and there are no brood cells along the bottom edges of the combs (for those who do not use queen excluders), the bees will clear the super almost entirely within 24 hours. If it's a really crowded hive, it might be advisable to put an empty super under the escape board; otherwise the bees may not all go down. One vital rule in using escape boards is to put on the board right way up; i.e., so the bees can exit downwards. Another is to block or tape any large cracks that allow bees to get in. It only takes a day for robbing bees to empty a super of honey.

And for those new beekeepers who started this year: should you take off any honey? Yes, you can. Take an outside fully capped frame for yourself, but remember that most two-storey hives require a full super of honey to winter over on. A single super hive requires a minimum of six frames but will need feeding in the spring to continue brood rearing. If your bees have not put on this much honey, you will need to feed a one to one ratio of sugar water until they have. It's best to fill a container 9/10 full with sugar and then pour in the boiling water to the top. Stir until all the sugar is dissolved. When it has cooled, put the syrup into a feeder in or on top of the second super inside the hive (again, do this in the late evening). Feeding from the outside only encourages robbing.

Using feeders

Feeders are easy to make or if you wish you can purchase them from your stockist. An inverted jar with a dozen holes in the lid will do, or a plastic container with a snap lid with tiny holes bored in the lid is equally as effective. Use a mat with a hole in the centre or a cover board with a hole in it. Place this on top of the frames. On top of the mat put a couple of sticks to rest the inverted feeder on, so the bees have access to the holes in the lid. A small amount of sugar will spill on to the frames and mat when it is inverted and this will encourage the bees to come up and investigate. They will soon start feeding and can put away a couple of litres in a day. If you are going to use a frame feeder, fill the inside with pig fern (bracken), polystyrene or gutter-guard so the bees will not drown in the liquid.

It's best to get this feed into the hive well in advance of winter as the bees use a lot of their body fats converting the sucrose into stores. If this is done late in the season when brood rearing has finished it can affect the bees' ability to survive the winter. However, brood rearing generally continues for another month or two so a new generation emerges after feeding is completed. These bees will be young and healthy and will winter well. A frame holds about three kilograms of honey so you will need to feed a third more in sugar to make up for the frame you removed.

Now's the time to requeen

March/April is perhaps the last opportunity to replace your queens. Hives should go into to winter with adequate stores, lots of bees and a young productive queen. You are now setting up the colony for next season so if the colony swarmed, didn't produce that much or has spotty brood, consider replacing the queen now. They are much easier to get now than in the spring when they are difficult to mate and when there's a huge demand for them from commercial beekeepers. I should imagine that most of the beekeepers will be putting in autumn queens if they have read Predict Weather, Ken Ring's online almanac. He has predicted that it will be a wetter, cloudier spring for most parts of New Zealand, not the ideal weather to get queens mated.

Things to do this month

Extract honey, requeen, winter down bees, reduce entrances, check for wasps, remove all comb honey off hives. Before doing any of these tasks, check that the brood is free from disease. Some beekeepers are now putting in miticides. In late February I was seeing the first severe signs of mite predation in one or two hives in each apiary—young emerging bees with stunted bodies and shrivelled wings.

- Frank Lindsay

Dispose of used varroa control strips properly.

Bee battle moves to Belgium

The argument over the excessive mortality of bees has broken out afresh, this time in Belgium. A professor from the university faculty at Gambloux has published research findings claiming that bees are not dying from poisoning by fipronil or imidacloprid, at any rate not in Wallonia. He said that the problem was bee diseases and parasites like varroa, which he described as "public enemy number one".

Belgium beekeepers were quick to react and the organisation Nature et Progress challenged the professor's conclusions, which are the same as those put forward by the defenders of Regent and Gaucho—the pesticides now effectively banned in France but desperate to make a comeback. The beekeepers pointed out that his findings showed the presence of imidacloprid used in orchards but the professor claimed that very small amount would not have killed the bees.

Beekeepers were not slow to mutter slanderously about the "real independence" or lack of it in the university types whose work is funded by the agri-business. The professor indignantly protested that his survey was unbiased and he was totally independent. This exchange of fire has gone unnoticed in France where beekeepers are concerned that the hugely powerful agribusiness involved will not just gracefully accept their surprising defeat at the hands of the apiculters. The agri-businesses are already putting big pressure on the Ministry of Agriculture to allow very similar products to Gaucho and Regent.

What stays the hand of the Ministry of Agriculture from giving in to them, as usual, is the contents of a trial dossier put together by juge d'instruction (examining magistrate) Jean Guary from Saint-Gaudens. So far, back stage manoeuvering has paralysed the case against the companies.

Guary is now exercising his considerable investigative talents in Mayotte, in the Indian Ocean. However the unpleasant fact remains that the real case against Regent TS and Gaucho is not the possibility they were poisoning bees—about which there is still much argument—but the altogether much more serious complaint that they were killing people, particularly those employed in the agricultural sector and their children. It was evidence of this that caused the judge to take the radical steps that eventually forced the ministry to ban the products.

(From the Scottish Beekeeper, *September 2006, page 242. Originally printed in* The French News, *July 2006. Typographical errors have been corrected where found.)*

Feral bees surviving in a Napier willow

I got a call to destroy a wasp nest about four metres up a willow tree. Turns out it was this pictured feral nest about 10 metres up. They are still there.

- Ron Morison

Photo: Ron Morison

NIWA's climate outlook: February to April 2007

Atmospheric circulation patterns for February to April are likely to feature higher than average pressures to the north of the North Island, with stronger than average westerly airflow over the southern half of the country. Temperatures are expected to be average or below average in the lower South Island, and average elsewhere.

Rainfall is expected to be normal or below normal in the north and east of the North Island, and normal in other regions. Soil moisture and riverflows are expected to be normal in all regions except in the north and east of the North Island, where soil moisture is likely to be normal or below normal and riverflows below normal.

Trees and Shrubs of New Zealand

Lophomyrtus bullata

Maori Name: Ramarama

Lophomyrtus obcordata

Maori Name: Rohutu

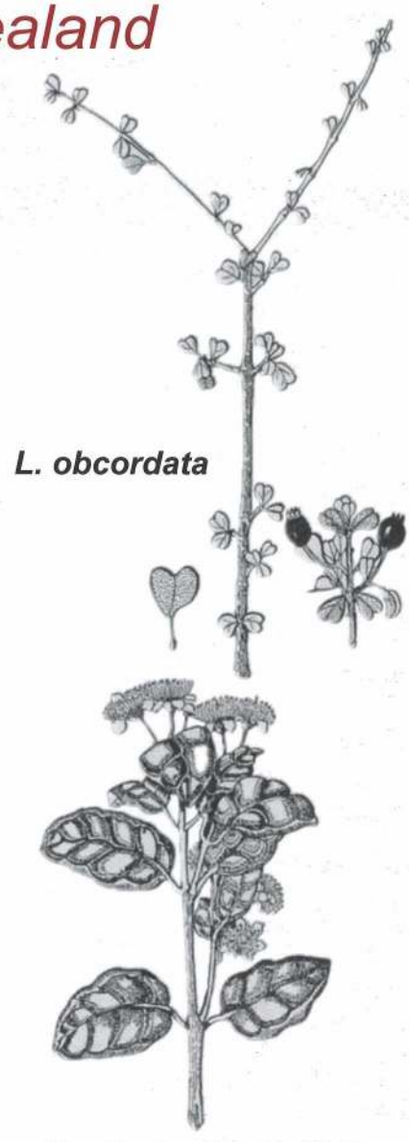
The Ramarama is a blistered-leaved shrub up to eight metres in height, flowering from November to January. It is found mainly in the North Island. The flowers are white followed by red berries. It grows well in damp places and is worked freely by bees for a pale yellow pollen and a little nectar.

The Rohutu is smaller with heart shaped leaves, and is found in both the North and South islands. It flowers at the same time as Ramarama and both plants have been known to produce a hybrid form.

The wood of this tree species is very hard and is said to be able to blunt any axe. The wood is reddish in colour and formerly was used for inlay work.

The Maori used the berries of both species to give to someone recovering from diarrhoea.

- Tony Lorimer



L. obcordata

Lophomyrtus bullata

Caught in the act ...

... of working

Simon at Cambridge Bee Products

Photo: Fiona O'Brien