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Photo: Peter Bray

Canterbury in the grip of a drought at the end of January. Ripe plums all over the ground, lawn dried crisp and bees foraging on the "nectar".

IN THIS ISSUE:

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NATIONAL BEEKEEPERS' ASSOCIATION OF NZ (Inc.) EXECUTIVE

President: Jane Lorimer
Hillcrest Apiaries,
"Kahurangi-o-Papa"
RD 3, Hamilton 2021
Ph: 07 856-9625
Fax: 07 856-9241
Mobile (1st) : 027 496 9889
Mobile (2nd): 025 294 6559
Email: hunnybee@wave.co.nz

Vice President: Don Stedman
Catlins Apiaries,
Pine Bush,
RD1
Wyndham
Ph/Fax: 03 246 9777
Email: dstedman@xtra.co.nz

Executive Secretary: Pauline Bassett
National Beekeepers
Box 234, Te Kuiti
Ph/Fax: 07 878 7193
Email: waihon@actrix.co.nz

Executive: Ian Berry
Arataki Honey Box 8016
Havelock North 4230
Ph: 06 877 7300
Fax: 06 877 4200
Email: ian@aratakihoneyhb.co.nz

Executive: Roger Bray
Braesby Farm, RD1
Ashburton
Ph/Fax: 03 308 4964
E-mail: birdsnbees@xtra.co.nz

Executive: Bob Blair
157 Carlisle Rd, Browns Bay
Auckland 1310
Ph/Fax: 09 479 4354

Executive: Philip Cropp
Nelson Apiaries, Motupiko,
RD 2, Nelson
Ph: 03 522 4130
(Wk) 03 522 4413
Fax: 03 522 4513
Mobile: 027 482 9143
Email: nectar@ts.co.nz

Hon. Librarian: Chris Taiaroa
43 Princes Street,
Waikari Nth Canterbury 8276
Ph/Fax: 03 314 4569
Email: chris.tony.taiaroa@clear.net.nz

www.nba.org.nz	**PHONE NUMBER FOR AGRIQUALITY 0508 00 11 22**	**Magazine subscriptions: — 11 Issues — NZ $55.00 GST inc Overseas Airmail US $55.00**

BRANCHES: The first named person is the President/Chairperson. The second is the Secretary.

NORTHLAND
Simon Peacey
76 Malone Rd, RD 9
Whangarei 0121
Ph/Fax: 09 434 6344
Mobile: 025 270 8922
Email: peacey@paradise.net.nz
Terry Gavin
PDC, Titoki 0250
Ph: 09 433 1891
Fax 09 433 1895
Mobile: 021 257 6457
Email: terry.gavin@xtra.co.nz

AUCKLAND
Ian Browning
1824 Great South Rd
RD 3, Drury
Ph: 09 236 0764
Bob Russell
101 Kern Rd
RD 3, Drury
Home Ph/Fax: 09 294 8656
Work Mobile: 027 284 8951
Email: bob.russell@paradise.net.nz

WAIKATO
Lewis Olsen
Ohaupo Apiaries
Great South Road, RD 3, Ohaupo 2452
Ph: 07 823 6706
Email: lewis.olsen@clear.net.nz
Annette Berry
Arataki Honey, RD 5, Rotorua 3221
Ph: 07 366 6111
Fax: 07 366 6999
Email:
annette@arataki-honey-rotorua.co.nz

BAY OF PLENTY
Ross Carroll
78 Laurel Drive
RD 6, Tauranga
Phone 07 552 4585
Email: rcarroll@clear.net.nz
Gerrit Hyink
271 Lindemann Road
RD 1 Katikati
Ph: 07 549 1223
Fax: 07 549 3290
Email: hyink@xtra.co.nz

HAWKE'S BAY
John Berry
46 Arataki Rd,
Havelock North
Ph. 06 877-6205
Fax: 06 877-4200
Email: jrberry@ihug.co.nz
Ron Morison
31 Puketapu Road, Taradale, 4001,
Hawkes Bay
Ph/Fax: 06 844 9493
Email: rmorison@clear.net.nz

POVERTY BAY
Peter Burt
27 Murphy Road, Wainui,Gisborne 3801
Ph: 06 868 4771
Email: pwburt@xtra.co.nz
Barry Foster
695 Aberdeen Road, Gisborne 3801
Ph: 06 867 4591
Fax: 06 867 4508
Email: bjfoster@xtra.co.nz

SOUTHERN NORTH ISLAND
Allan Richards
P.O. Box 287,
Marton 5460
Ph: 06 327 5039
Fax: 06 327 5078
Email: allan.serena@xtra.co.nz
Frank Lindsay
26 Cunliffe Street,
Johnsonville, Wellington 6004.
Ph/Fax: 04 478 3367
Email: lindsays.apiaries@xtra.co.nz

SOUTH ISLAND
MARLBOROUGH
Will Trollope
RD 3, Blenheim 7321
Ph: 03 570 5633
Tony Mulligan
Grazengrove
Hammericks Rd
RD 2, Blenheim 7321
Ph: 03 578 2317

NELSON
Glenn Kelly
PO Box 421, Motueka
Ph/Fax 03 528 8147
Email: glennkelly@xtra.co.nz
Michael Wraight
15 Titoki Place, Motueka 7161
Ph/Fax: 03 528 6010
Email: wraight@xtra.co.nz

WEST COAST
Lindsay Feary
3 Mawhera Street
Dobson 7852,
Ph/Fax: 03 762 5691
Email: sceniclandapiaries@clear.net.nz
Rod Buchanan
471 Main South Road
Paroa, Westland
Ph: 03 762 6863
Fax: 03 762 6864

CANTERBURY
Roger Bray
Braesby Farm
RD1, Ashburton
Ph/Fax: 03 308 4964
E-mail: birdsnbees@xtra.co.nz
Paul West (Pav)
Box 57, Ahaura
Mobile: 025 748 466
Email: Pav@badassbees.com.nz

OTAGO
Brian Pilley
45 Elwyn Crescent
Green Island
Dunedin
Ph: 03 488 0151
Fax: 03 488 0152
Email: beeline@free.net.nz
Peter Sales
"Te Ora", RD1, Port Chalmers,
Dunedin 9030
Ph: 03 472 7220
Email: foxglove@paradise.net

SOUTHLAND
Finlay Abernethy
5 Calder Street, Owaka
Ph/Fax: 03 415-8235
Email: finlay@ihug.co.nz
Don Stedman, Catlins Apiaries
Pine Bush RD1, Wyndham 9758
Ph/Fax: 03 246 9777

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Crown Kerr Printing Ltd
48 Stafford Street, P.O. Box 5002, Dunedin.
Advertising:
Allan Middlemiss:
Telephone: 03 477 8109 Fax: 03 479 0753
Email: ckp@xtra.co.nz
NBA membership & Magazine Subscriptions:
Pauline Bassett
National Beekeepers Assn
Box 234, Te Kuiti
Ph/Fax: 07 878 7193
Email: waihon@actrix.co.nz
Editorial/Publication
Fiona O'Brien
364 Wharepuhunga Road, RD 3, Te Awamutu
Ph: 07 871 1500 Fax: 07 871 1800
E-mail: beeline-apiaries@xtra.co.nz

President's Report

AFB PMS

This magazine is once again going out to all registered beekeepers as part of our requirement for the Management of the American Foulbrood National Pest Management Strategy. Therefore this magazine will have a large content with respect to the operation of the Strategy. In the magazine will be information about our new Manager for the Strategy as well as what is being planned for the next few months.

Also during this month, you will once again receive an invoice to cover the operation of the Strategy for the next twelve months from the 1st June 2004 to the 31st May 2005. You are reminded that it is a legal requirement that all beekeepers pay this levy. If it is not paid steps will be taken with those who are not compliant.

We have received several letters of complaint with regard to the collecting of the levy for the 2003-2004 year, as some felt that we could not collect levies retrospectively. This was put to MAF, and they have come back to us asking that we clarify this issue in the next communication to all beekeepers. Technically we had made an error on the invoice by not pointing out that the levy covered the period of time from when the Biosecurity Levy was put in place (20th November 2003) to the end of the levy year at the 31st May 2004. In the accompanying notes we had however pointed out that we were endeavouring to carry out all the years work in the 6 month period.

Magazine is available to anyone who wishes to pay the subscription

The magazine is the official magazine of the National Beekeepers' Association and it is used as one of our communication tools, as well as having other interesting articles. If on reading this magazine you find that you have enjoyed it, and found it informative, please consider joining the Association. The alternative is to pay a subscription just for the magazine. Membership and subscription enquiries should be made to our Secretary Pauline Bassett.

Questionnaire: Beekeepers and Genetically Modified Crops

By now most of you will have received a copy of the questionnaire sent out by Irene Parminter who works for MAF and has been talking with the National Beekeepers' Association as to how to mitigate any potential negative impacts on bee products arising from the release of flowering genetically modified (GM) crops.

MAF has suggested the use of a GIS based register so that beekeepers can find out where GM crops are being grown and move their hives away if they do not wish to contaminate their bee products. This is however the reverse of what should be happening. Our bees provide pollination services for a number of crops, and our bees should be available to carry out that pollination service without the beekeeper having to worry about GM contamination within the hive. The register should be used to enable those who want to grow GM crops to locate them away from our beehives. If this was done, we may then have the opportunity to maintain a GM crop free New Zealand, as there would be very few areas where GM crops could be grown away from beehives.

Certainly, I do not see that the beekeepers should have to pay anything for this register to be developed and maintained, because of our 'public good' value to New Zealand. Those companies who wish to grow GM crops should have to pay for its development and maintenance.

The National Beekeepers' Association has asked that it be placed on the list of interested parties to receive notification of applications. This is currently happening with several having been received and perused to see if it may affect the Industry. This notification also covers hazardous substances that companies wish to import. Most of the applications so far have been for pesticides. We have sought more information on some of the pesticide applications regarding their effect on bees. We should be notified of all applications received by ERMA to grow GM crops, so that we can respond with regards to the effect on bees and where applicable ask for specific conditions to be imposed on those growing GM crops.

Please note that the deadline for return of this questionnaire is Friday 21st May 2004.

Structure Review Committee

We have now had confirmation of the members for this committee. The members are Mary Anne Thomason, Mike Stuckey, Bruce Stanley, Michael Wraight, and Allen McCaw, with Ian Berry as the Executive representative. If any of you have concerns, or ideas that you feel should be considered – let this team know. This group will be having its first meeting after Easter. We hope to get some recommendations prior to conference.

Code of Practice – Risk Management Programme

There will be a meeting at the end of March with regards to this. Moira Haddrell, and Neil Stuckey have agreed to attend this meeting. From here the re-drafted code of practice will be distributed to a wider group for comment. We have many who are on this list who wish to be involved. Many of these are people who are supplying markets that are now asking for our Food Safety Programme. If you are one of these people, and have not expressed the wish to be involved but would like to be – get in touch with me. (Note: as at the 4th April, this meeting had not yet taken place).

Exotic Bee Disease Surveillance Programme

I have been informed that in early April, Roger Poland will want to meet with me regarding the findings and recommendations from the group that met to determine what is the best plan for future exotic surveillance. He wants to determine the best way to get a discussion document out with regards to the proposed programme and funding required – who will pay?

Conference 2004

Enclosed in this magazine is the registration form for conference 2004 – Hawkes Bay. I encourage you to register early and assist the conference committee in their organisation. There are plans "afoot" for a fabulous Art Deco Dine and Dance along with the normal high standard of international and national speakers.

- Jane Lorimer

Secretarial Snippets

Every day I receive at least one enquiry from NZ and further afield on a diverse range of matters. Often these relate to subscriptions for either the magazine or the NBA. The NBA subscription renewal notices were sent out at the beginning of the year. Unfortunately they did not note the Rule changes set at last year's conference – they are worth noting:

Rule 13(a) *The annual subscription rates for the ensuing year shall be set at the AGM.*

Rule 13(b) *Subscriptions are due on the 1st of January. If the subscription is unpaid by the 31st March, membership shall lapse.*

With this in mind I hope there will be a flood of subscription renewals to the NBA this month!

Other enquiries I have received in the past few weeks have included a request from a High School student for location of information on the processing of honey – he had found plenty of information on how bees gather honey but not beyond that point. Also a request for statistics on the quantity of Manuka honey harvested each year on a regional basis (I could not answer that one). I have also received various comments about beekeepers with uncovered loads of honey. This last issue I have brought to the attention of the Executive. The activities of beekeepers do come to the attention of others in our communities, in this instance roading contractors who are not impressed when they are stung by a barrage of bees.

Subscriptions for the NZ Beekeeper magazine have been coming in from all over the world, from countries as different as Mexico, The Cook Islands and even the North Pole in Alaska. Jerry Cain accompanied his payment with a letter and some photos, some of which I hope can be included here. In his letter he says "I had 4 hives of bees last year, which I combined to 3 this year. There are no beekeepers in Alaska anywhere as big as you. Several have 100 hives or more but most have just a few as I do. There are probably 2500 hives in the state, and about 500 or so in the interior. As you might imagine, Alaska isn't a real mecca for beekeeping. We do however produce excellent honey, mostly fireweed, but some clover and various wildflower. We get 50 – 70 pounds per hive in a good year. Very few bees are overwintered in the interior, but more down near Anchorage where the winters are shorter and milder. We rely entirely on package bees. We have no market for honey except local. Honey sells at a premium price to tourists, but there's not a huge demand. People that really want to market it seem to succeed, but most of us just give it away or sell it to people we know. The only bees sold are Italians (there is only one business selling bees), but I re-queen mine with Carniolan queens. The only disease problem we have is AFB, and it's not prevalent. The mites don't affect us unless we overwinter the bees."

- Pauline Bassett

My hives last fall - about mid September

One of the mushers in the Yukon Quest 1000 mile race a couple of weeks ago - Mid February 2004.

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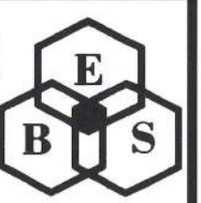

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Letters to the Editor

Dear Editor,

I am writing the life story of my father, Bill Haines, a beekeeper in Kaitaia 1944-76 and would like to hear from any one who remembers him, at conferences, or in the package bee business.

I am particularly interested in the 1973 (?) conference in Kaitaia and in the crisis over toxic Tutu honey in the sixties.

I would be most grateful if any of your members can help me.

Julie Ryan

Julie can be contacted at: 7a Preston Avenue, Mount Albert Auckland Ph /Fax 09 846 7917

Dear Editor,

I would like to tell beekeepers how much I enjoy reading Tony Lorimers articles on native trees. I thought I knew something about native trees but Tony's articles prove that I still have a lot to learn. Keep up the good work Tony.

Ron Mossop

Would you like to share a thought or comment with readers of the New Zealand Beekeeper magazine.

Perhaps a word or two on:

Branches

- How to attract new members
- How to retain long standing members
- What works for you and your branches
- Night time meetings verses day time meetings
- Social verses Political
- Beekeeping information verses Business information
- Monthly or irregular "As needed" meetings
- Field days
- Training for position holders – Passing on the President, Secretary and Treasurer role

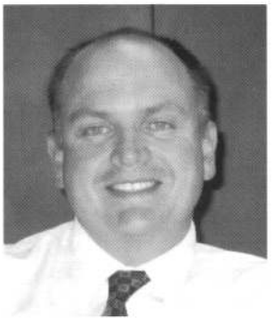
Send your letter to the Editor – Address inside front cover

The front cover has been sponsored by Airborne Honey Ltd, Leeston and Lorimers Honey, Hillcrest Apiaries - Tamahere.

Wanted

The New Zealand Beekeeper Publications Team, are looking for people to assist us with highlighting our industry. We currently are looking for "readers of local and regional newspapers" to cut, name and date articles and forward them to: Fiona O'Brien, 364 Wharepuhunga Road Rd 3 Te Awamutu. This will be an excellent opportunity to highlight, innovative beekeeping business and increase awareness of the industry across New Zealand. Any questions please contact one of the Team.

Nice to be back...



After a number of years absence, James Driscoll returns to the New Zealand Beekeeping industry keen to assist the industry move ahead positively in its desire to eliminate AFB from our industry. This is because James has accepted the NBA role of AFB PMS Manager.

In 1995 he joined MAF as an AAO, this advisory role taking him to 100's of apiaries throughout New Zealand. In 1998, when AgriQuality New Zealand was formed from MAF Quality Management James moved from the title of an "officer" to that of "consultant" and swapped the former "public service" role to one more commercially-focused. Skills learned when he was in the stock and station industry with Wrightson helped him to make the commercial transition. In 2002 James left AgriQuality and undertook a Masters of Business Administration (MBA) degree. Today he runs his own boutique and very successful business consultancy firm.

The NBA looks forward to working with James in the coming year as we work towards achieving our vision of a New Zealand without AFB.

The Use Of Quarantines To Eliminate AFB

Dr Mark Goodwin
Apicultural Research Unit
HortResearch

The most powerful tool for American foulbrood disease (AFB) control, other than adequate inspections, is the use of quarantines. Quarantines restrict beekeeper movement of equipment, and consequently AFB, between hives or apiaries. The effectiveness of a quarantine is dependent on how strict it is. They do however usually require more time and a higher level of organisation

Quarantines are effective because most AFB is spread by the movement of equipment between hives rather than by the bees themselves. We know this because there are many of examples where two beekeepers have their apiaries interspersed in the same district. One of the beekeepers may have a very high level of AFB where the other beekeeper has a very low incidence. If AFB was mainly spread by bees, rather than beekeepers, the incidence of AFB would be expected to be relatively uniform within an area.

Hive quarantine

By far the most effective type of quarantine is a hive quarantine. This is where equipment is not moved between hives so that the only way for a colony to become infected is through robbing a diseased colony or even less likely by drifting bees. As long as care is taken to ensure colonies don't die robbing, should be a reasonably rare event in most cases.

Those beekeepers with AFB problems who have initiated a hive quarantine have found it has been a great comfort to know that they will no longer spread AFB between their hives. The value of peace of mind when you are struggling with AFB cannot be over emphasised. Once a hive quarantine has been instituted, all a beekeeper usually needs to do to solve their AFB problem is to try and keep all hives alive and find the hives that are already infected with AFB and destroy them.

To be able to implement a hive quarantine it is necessary to individually number each hive. This can best be carried out by nailing a numbered sheep or cattle ear tag on the front of the floorboard (Fig 1). You can buy tags with printed numbers or blank tags that can be written on with a tag pen. It is important that the ear tag is attached to the floorboard rather than to a brood box. Even if the tag is attached to the bottom brood box, brood box positions get changed and the box may end up as a honey super. This will then be removed with the honey crop leaving the hive unnumbered..

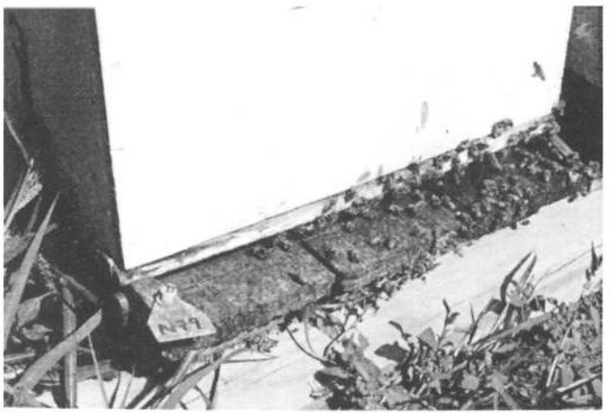


Fig 1 A hive marked with a cattle ear tag.

For a hive quarantine nothing should be removed from a hive with the exception of honey supers. These must be numbered with a felt pen, extracted and the frames returned to the same super. The numbered supers need to be dried out on the hives they came from or be stored where they cannot be robbed and then put back on to the same hives in the spring. Feeders, excluders and other equipment should only be removed from a hive if they are also numbered so they can be returned to the same hive.

Hive quarantines have the advantage that AFB inspections do not need to be carried out when the honey is being removed as the supers and frames will be returned to the hives they came from. A second advantage is that the AFB inspections need not be as frequent or as comprehensive. If an AFB hive is missed, unless the hive is robbed out, there is little opportunity for the disease to spread.

Hive quarantines require significant additional work, however, they are not as bad as they sound. You do not have to save burning many hives before they are worth carrying out. They can also be very effective. One commercial beekeeper we were working with had a 25% AFB incidence when the problem was detected. The beekeeper destroyed the infected colonies and instigated a hive quarantine. The next year the incidence was 10 %. These were almost all AFB colonies that were infected the previous year. The incidence the third year was only 2%.

Hive quarantines have the advantage that they can be easily used by migratory beekeepers or beekeepers carrying out pollination as the hives do not have to be returned to the same sites. Lists of which hives are at which apiary need to be recreated, however, so the boxes can be sorted in the correct order in the spring.

Careful thought needs to be given to stored equipment. If there is a high AFB incidence it might be better for it to be destroyed or wax dipped.

Apiary quarantine

An apiary quarantine is significantly less effective than a hive quarantine at dealing with AFB problems but very much easier to institute. It consists of keeping the equipment from each apiary separate. Although AFB will still be spread between hives in the same apiary it will not be spread between apiaries. Once an apiary is clear of AFB it should usually stay clear.

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Hives in an infected apiary may however still become infected until the disease is eliminated or all the hives have been burnt.

Apiary quarantines are also a good safety precaution. If an AFB problem does occur it will be restricted to a single apiary rather than being spread through an entire beekeeping outfit.

It is possible to carry out a hive quarantine at the same time as an apiary quarantine. The hive quarantine can be used in apiaries with AFB while the equipment from hives in apiaries without AFB can be mixed together.

Apiary quarantines are difficult to manage for pollination beekeepers as the hives need to be sorted and returned to their original sites after pollination.

Outfit quarantines

The third option is an outfit quarantine. This is where a beekeeping outfit is divided into two on paper rather than physically. All apiaries where AFB has been found are included in one half and the clean apiaries in the other half. As apiaries are cleaned up or become infected they are swapped between halves. The method is much less useful than a hive or an apiary quarantine but can have its place.

Again it can be used in conjunction with an apiary or hive quarantine. Uninfected apiaries can be managed together while an apiary or hive quarantine can be instituted for infected apiaries.

National American Foulbrood Pest Management Strategy (NPMS) Report.

Since the Levy legislation was enacted in November last year, the NPMS Operations committee (Ops-committee) has been in regular touch via three-way conference calls. We have been sorting out the priorities for the work to be completed before 31st May 2004 and have been working through the AgriQuality Limited (AgriQuality) and NPMS Manager contracts with the help of the NBA executive. The appointment of the NPMS Manager has allowed the Ops-committee to concentrate on the planning aspects of our work instead of having to react to problems as they arise.

Compliance is a big problem with 25% of beekeepers failing to fill in their ADR or COI's. Some think this paper work is a 'joke' and that the NPMS doesn't have any teeth, but this paperwork is necessary for the NPMS to work and failure to furnish these documents will cost them money.

The information and reports generated from ADR and COI returns are necessary not only for statistical purposes but also allow us all to form the big picture of what's happening in New Zealand. Therefore, we encourage all beekeepers to promptly report AFB or anything suspicious they see in their hives as soon as it's detected. There is no shame in reporting something wrong, and the quicker we know about a situation, the easier it is to handle. This is also in the regulations and those doing so have allowed AgriQuality to discover major outbreaks where they have found beekeepers that have either lost control or haven't been able to identify a disease situation.

It is the intention of the NPMS to assist all beekeepers to keep healthy hives and to clean disease from their hives. This is meant to be self-policing using the DECA scheme and audits are conducted to check that beekeepers are fulfilling their obligations.

Another form of audit is the sampling exercise that is underway at present. We ask beekeepers to promptly return their honey and bee samples for analysis. Apart from giving us an indication of what's going on, this sampling also gives valuable feedback to individual beekeepers as to the spore count in their hives or honey. Quite often these are at low levels and can be cleaned up with regular replacement of brood combs.

All registered beekeepers pay a NPMS Levy. Some consider they don't see any return for this money however we can assure you we spend the money strictly in line with the AFB NPMS Operational Plan. We spend it prudently, and we are frugal, keeping costs to a minimum. All Ops-committee members commit their time voluntarily. Where things get out of control through blatant disregard of the regulation, it is the intention of the NPMS Ops-committee to recoup all the costs associated with any compliance exercise so that non-complying beekeepers are not a burden on the rest of us.

A lot of cases come to AgriQuality's notice when larger beekeepers buy out smaller beekeepers. Some have been farming AFB and didn't know it. During the last eight months AgriQuality has been working with local beekeepers to clean up hotspots. Fifty-three hives were destroyed in the Bay of Plenty, six in Auckland, with others being found by the beekeepers themselves.

On-going inspections have found that beekeepers can get on top of disease issues if they have an effective control plan. Previous years (2002) saw 266 hives burnt in the Canterbury region. Thankfully this has reduced considerable this year with only low number of hives being found diseased.

Just a few general statistics: Since 1 July 2003 –

- 131 new beekeepers registered
- 97 DECA processed and approved,
- 499 beekeepers X coded (cancelled)
- 745 disease inputs (AFB)
- 2017 apiaries registered or Xcoded,
- 300 (approx) return to sender tracked.

Please help your fellow beekeepers. Report disease promptly to AgriQuality. Report unregistered or abandoned hives and keep an eye out for exotic pests and/or disease. We are the front line to detecting problems in our hives.

- Graham Cammell
Acting PMS Chairman.

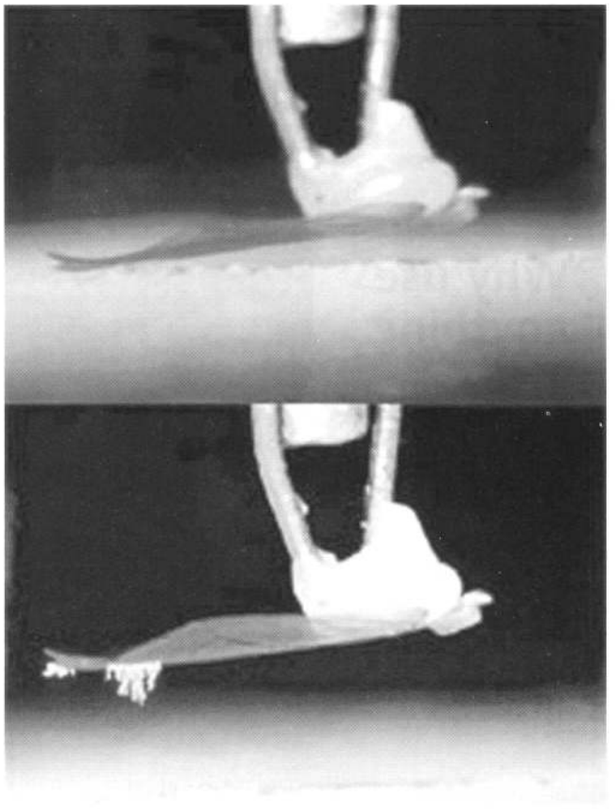
New Varroa product launched in the UK

Exosect Ltd, an R&D Company based in the UK specialises in the design of environmentally friendly insect pest control techniques. Exosect design products for a wide variety of insect pests, all of which are based on a natural wax powder called Entostat™, which has electrostatic qualities.

Exosect have developed an innovative new thymol based application for use with Varroa in beehives, which is inserted to the hive entrance. The bees distribute the preparation throughout the hive themselves. As the system is highly targeted, it uses 60% less thymol than other leading hive products.

WHERE DID IT ALL BEGIN?

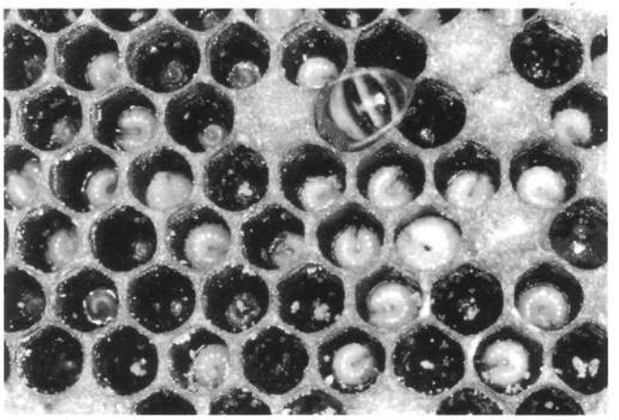
From studies undertaken at Southampton University, UK scientists found that insects carry an electrostatic charge on their bodies, the charge builds up as they move across different surfaces and as they fly through the air. As Entostat powder charges readily, it adheres to insects very strongly. The picture below demonstrates how the electrostatic properties of Entostat cause it to adhere to a fly wing. The significance of this is that Entostat powder can be combined with any number of ingredients; be it insect pheromones or small doses of essential oils and applied to insect pests using a number of novel, non-intrusive methods.



In 2003, Exosect completed a two-year trial of the Exomite Apis system in conjunction with the Meridian Beekeepers Association, headed by former chairman of British Beekeepers Association – Alan Johnson.

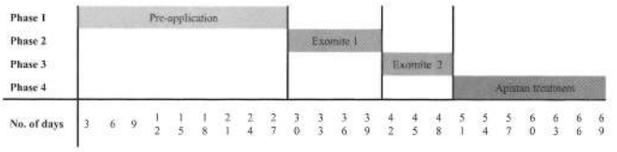
THE EXOMITE™ APIS SYSTEM – HOW DOES IT WORK?

The Exomite Apis system uses an innovatively designed bespoke applicator, which unlike other systems does not require the beekeeper to open the hive at all. The applicator slots into the hive entrance and bees therefore have to pass through the applicator to enter the hive. The base of the applicator consists of a tray, which extends into the hive underneath the frames. A preparation of Entostat powder, combined with thymol is placed in the tray. As bees enter the hive they pick up the powder on their bodies through electrostatic powder attraction and carry it into the hive. The bees then distribute the powder throughout the hive as they come into contact with other bees. The powder even gets in to the brood cells where Varroa can also be found. The photo below illustrates the extent to which the bees distribute the Entostat powder. The powder was dyed pink in order illustrate this.



TRIAL METHOD

In 2002 a prototype was tested on 98 hives and showed positive results. This led the way for further trials and the incorporation of design improvements to the applicator and a modification to the quantity of powder. Full-scale trials commenced in the autumn of 2003 on 33 hives. The trial consisted of 4 principle phases.



Phase 1 - (Pre-application)

Approximately 27 days before the Exomite Apis applications began, Varroa screens were placed in each hive. At intervals throughout the 27 days, the natural fall of Varroa in each hive was counted. This provided vital information regarding the initial levels of Varroa infestation. The hives were then categorised in to four groups depending on the level of infestation.

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Varroa infestation categories (daily count)		
Category 1.	0 – 20 mites	Very low infested hive
Category 2.	20 – 40 mites	Low infested hive
Category 3.	40 – 150 mites	Medium infested hive
Category 4.	150 + mites	High infested hive

Phase 2 - Exomite Apis 1

At the end of the pre-application period, Exomite Apis applicators containing Entostat powder combined with thymol were placed in the entrance of each of the hives for a period of 12 days. The mite fall was then counted and recorded.

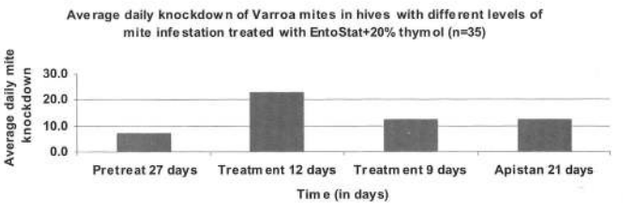
PHASE 3 - EXOMITE APIS 2

A second batch of Exomite Apis applicators was applied to all the hives, this time for a period of 9 days. The mite fall was again counted and recorded.

Phase 4 - Apistan Treatment

Finally, each hive was treated with Apistan for a period of 21 days, in order to assess residual Varroa infestation levels. This provided the number of mites left in the hive after the Exomite Apis applications and enabled researchers to establish the effectiveness of Exomite Apis when compared with a pyrethroid based Varroa treatment.

Results



Conclusions

The results were extremely good. The above graph shows the average daily mite knockdown of all levels of infestation. The field trial proved that with low to medium and even medium to high infestation of Varroa, the Exomite Apis knocked down a high number of Varroa, with over 80% efficacy. Exosect note that hives in the category of very high infestation showed some knockdown, however, in these instances, they would recommend the use of Apistan to clear those worst affected.

Integrated Pest Management

The Exomite Apis system is a hive cleanser which helps maintain a healthy hive. Demand for a variety of pest management tools has increased in recent years, as beekeepers have begun to adopt an integrated approach to pest management and this has been one of the key drivers towards the design of the Exomite Apis. Exosect have paid particular attention to the amount of thymol in this product. The targeted Entostat powder delivery system means that only small amounts of thymol are necessary, indeed the Exomite Apis employs 60% less thymol than other leading hive products. Exosect hope that when used up to twice a year as part of a general approach to hive maintenance, stronger pyrethroid and organophosphate based products can be reserved for use only when Varroa infestations reach a critical level and as a last resort.

Research Scientist at Exosect, Olivera Markovic is delighted with the results and noted that "Exomite Apis is a wonderful example of how effective our electrostatic powders are when applied as an efficient and targeted delivery system, in this case to ease the burden of Varroa infestations in an environmentally sensitive way."

Exomite Apis features

- The delivery system is highly efficient and non–intrusive with no effect upon colony behaviour
- The Exomite Apis is simply inserted in the hive entrance
- The bees carry the powder and thymol combination to the centre of the hive and even into the brood cells
- This non-pesticidal application uses thymol, the same ingredient used in other well-known hive products but at a reduced amount
- The Entostat powder is a natural, food grade carrier

The Exomite Apis system consists of two consecutive applications each lasting 12 days. In line with Integrated Pest Management and for ease of application, it is recommended that The Exomite Apis system be used in conjunction with a Varroa screen and should be applied in the Spring and Autumn before and after honey flow. Exosect Ltd will be happy to discuss distribution/licence opportunities with possible collaborators in New Zealand. For more details contact sales@exosect.com or call John Chandler on +44 (0) 2380 763838

From the colonies

Southern North Island

The weather has been a great deal better during March allowing the storm-affected beekeepers to continue with the cleanup. Most have made splits to replace losses and are getting on with beekeeping. A total of 1124 hives were recorded lost or drowned, equally spread between the east coast and the west coast of the southern North Island.

Allan Richards used a helicopter to lift out 45 hives, stranded in the upper reached of the Waitotara Valley on to the lower coastal strip. Access to these hives wasn't expected to be opened up until spring and by this time the hives could have died through mites or starvation. Thankfully the cost of this exercise was covered by insurance.

Some beekeepers in the Wairarapa face similar situations with access tracks washed away leaving hives isolated on the back of farms and in the bush. Access is a long walk in on foot but these hives don't face the same threats as the area is relatively mite free and there is a reasonable crop on the hives.

Hives are now breeding up producing winter bees thanks to a small flow, which is on at the moment from Catsear, Koromiko and Lacebark. They are also putting a dribble of nectar into the brood nest. Beekeepers are assessing hive conditions as they are being wintered down. Overall they are in good condition although some will need topping up with feed to see them through the winter.

Branch activity was greatly reduced with all this extra curricular activity and storm meeting, so the autumn field day was cancelled. However planning is well advanced for Camp Rangi (see the advert in this issue) and we have arranged our branch AGM and the Manawatu Diseaseathon for mid April.

- Frank Lindsay

Southland

"Patchy" is the best description of the season just past. Southland beekeepers who chased a succession of nectar flows have generally done well this summer. Kamahi flows were late, brief and intense, clover very good except in the drought areas of Northern Southland. But everything came to an abrupt halt with a very cold snap in early February. January Queen matings were good but there are lots of failures among later matings.

The growth of dairying in Southland has caused problems for beekeepers in recent years with some areas becoming unavailable or uneconomic for commercial beekeeping. However it was interesting to notice this season that, in the marginally dry districts, dairy farms had a fortnight longer honey flow than the neighbouring sheep farms. It appears that the rotational grazing, irrigation, and water conserved by longer grass cover have had a positive effect in this dry season.

There is interest in the proposal to import Carniolan semen, preferably before the arrival of varroa, but not just for their varroa tolerance. A proactive group of southern beekeepers are actively pursuing a co-operative Queen breeding programme utilising local bloodlines. We need to improve our operations to cope with the change in seasonal conditions.

Southland NBA members are still showing no enthusiasm for the proposed Varroa National Pest Management Strategy and will be making strong submissions to the Board of Enquiry. There is general agreement that we have better ways to spend money in preparation for the arrival of the mite.

- Don Stedman

Hawkes Bay

Most hives have surprised by yielding a good crop that has been gathered mostly in the latter part of the season. In spite of this I passed a beekeeper truck bearing a syrup tank on its way out to feed hives the other day, so some places are still short of food.

Conference is not far off and we remind branches to bring something representing your area for the charity auction. Last year $2,040 was presented to the Himalayan Trust and we hope to better this figure for a different charity.

Also there is the Roy Patterson Trophy for beekeeper innovation. Bring along your latest bright idea and would last year's winner please bring the trophy back.

It is not too early to register for Conference see elsewhere in this issue.

- Ron Morison

Canterbury

Once again another season has almost past. I say almost because wintering in my opinion is the most important job on the calendar. Get this right and half the Spring headaches disappear. Frank Lindsay has written some very good articles on this subject in past issues. NBA members can retrieve these from the library.

Please note that the Canterbury Branch meeting date has been changed to the 2nd Tuesday of the month, 7.00pm at the Hornby Workingmens Club.

The Canterbury Branch intends to move to an open discussion forum of timely Beekeeping topics. This is the place where you will be able to gain knowledge from fellow Beekeepers. I find little gems of info gained in this manner are sometimes not even consciously realised for several days or even weeks. By then they tend to be an original idea!

Canterbury Branches initiative is looking for help from all Beekeepers in assisting the AFB Management Agency with audit procedures.

If you are prepared to donate 1 or 2 days of your time this will enable the AFB PMS to achieve its goals for the benefit of all Beekeepers. It is vital that this strategy doesn't fail due to apathy on the part of Beekeepers. For further information contact Roger Bray (03) 308 4964

- Brian Lancaster

A "Sting" Operation

Phil Logue, Apiary Instructor for Corrections Inmate Employment (CIE) at Ohura Prison, is the first beekeeper in New Zealand to be recognised as an Apiculture Workplace Assessor.

This means Phil is now able to evaluate students against the beekeeping unit standards, which have recently been added to the New Zealand Qualifications Authority (NZQA) Framework.

Of course the students are a little different, they are all inmates at Ohura Prison. They are trained to help manage the prison's 940 hives that are located at 46 different sites on local farmland near the prison. Their training includes all aspects of the operation including manufacturing hiveware, tending the hives, honey extraction and packing. They also maintain all of the beekeeping equipment, and attend a basic health and safety induction course.

Phil says that the training given to inmates working in the Ohura Prison operation is on a par with that given in the private sector.

Not only do they receive formal training in things like hive manipulation, re-queening and replacing brood combs, they are also trained in the more strategic elements of beekeeping as well.

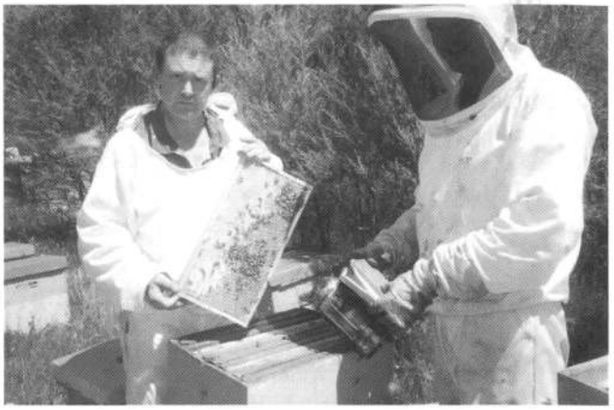
Students also learn about sugar syrup feeding, mite detection and control, and how to manage American Foul Brood (AFB) in line with the AFB Pest Management Strategy (1998).

Phil builds the knowledge base of students in these key areas so that they have a good chance of getting a job in the industry when they are released from prison.

Phil explains that around 40% of inmates don't have jobs when they go to prison, so will benefit from some kind of formal training.

"Inmate employment is a core tool in the Department's programme to reduce re-offending and help build safer communities. It's about giving inmates training and work skills so they can start over. Experience shows that those who have a job are less likely to re-offend.

"Now that I'm a Workplace Assessor, we can give inmates industry-recognised qualifications. That makes it easier for them to get post-release employment in the beekeeping



industry. Actually, workplace assessment is a big step forward for the industry in general," Phil says.

Jane Lorimer, President of the New Zealand Beekeepers Association agrees.

"Historically, there has been no means of formally recognising skills gained while people are training on-the-job, so this development provides one more avenue for people to get involved with beekeeping,"

The Ohura Prison operation produces bush, pastoral and Manuka honey. Some honey is retained for use by the prison with the remainder sold in bulk to other companies for processing.

- J Reader
Department of Corrections

Africanised Honey Bees

Tony Roper

AgriQuality Apicultural Advisory Officer

What Exactly is the Africanized Honey Bee (AHB)?

The Africanised Honey Bee (AHB) is the name commonly given to the hybrid bees that result from crosses between the African honey bee (race or subspecies *Apis mellifera scutellata*) and European honey bees. The African honey bee occurs naturally over a large part of the African continent, especially the central and eastern savannas, which can experience long hot and dry seasons. There are several other honey bee races native to Africa, such as the Cape Bee (*A. m capensis)* but this article focuses on the Africanised honey bee. The Africanised honey bees are found in the USA, Central and South America and Mexico.

The AHB looks very similar to European honey bees (EHB) except they are slightly smaller in size, on average 10%. The bee has quite a lot of a yellow colour and could easily pass as a good New Zealand Italian/feral cross. AHB's cannot be reliably identified by visual inspection alone. Laboratory diagnostic techniques, such as FABIS[1] or PCR[2], must be used to distinguish AHB's from European honey bees.

Over recent years the AHB has received a lot of attention in the press. It has been dubbed the "Killer Bee" because of its strong defensive behaviour, often with unprovoked mass stinging. This "Killer Bee" has been reported to have stung a number of humans and animals to death. Beekeepers find this name "Killer Bee" highly objectionable but the general public immediately recognises this name and it has stuck.

This bee has evolved in a hot dry to tropical climate with shifting nectar patterns. An assessment needs to be made of the likelihood of the AHB establishing in New Zealand with its temperate climate. This article looks at this issue and tries to assess how great a biosecurity risk the Africanized honey bee is to New Zealand.

[1] Fast Africanized Bee Identification System
Polymerase Chain Reaction

History of the AHB

In Africa man and other predators have long exploited the AHB for its honey, brood and wax. Only the most aggressive strains of bee were able to survive and over thousands of years the AHB evolved into a very defensive bee, a good example of Darwin's survival of the fittest.

In 1956 AHB queens were imported into Brazil to improve the honey production of European honey bee races in areas with a topical climate. The AHB was renowned for its defensive behaviour in Africa but it also held records for honey production.

Early on in the breeding programme, an ecological disaster happened when 26 AHB swarms escaped from quarantine in Sao Paulo. Unlike its European cousin the AHB was ideally suited to the tropical environment and spread at up to 400 kilometres per year to the south and west and especially to the north. Within a few decades the AHB had spread into Central America and on into North America. In 1990, the AHB was reported in Texas and it reached California in 1994. At present in the USA, the AHB is spreading at a rate of about 50 kilometres per year in California but at a much slower rate in the eastern states.

The AHB spread south from Brazil as far as northern Argentina, where the movement appears to have stabilised. The western movement has also been successful with the AHB

occupying the lower slopes of the Andes to altitudes up to 3600 metres. To date the AHB has not been able to cross the high Andes and Chile is still free of the AHB.

Reasons for the AHB's Survival and Success

A number of genetic traits are unique to the AHB, and when combined give it an extremely competitive advantage over other races of honey bees, especially in areas with a hot dry or tropical climate. Some of these traits are:

- Defensive behaviour
- Increased swarming ability, where part of the colony leaves the hive

- Absconding behaviour, where the whole colony leaves the hive
- Ability to utilise marginal nesting sites
- Ability to exploit small or intermittent nectar flows
- Shorter brood cycles
- High brood to honey ratios
- Increased drone production
- Superior metabolism

The AHB's defensive behaviour is legendary and unlike the European honey bee races, the AHB once disturbed will attack anything that moves within a 500 metre radius of its hive. Large numbers of bees will leave the hive and attack any animal or human en mass. If that animal or person cannot move away from the area they will receive thousands of stings, which can lead to death. The actual sting is no more venomous than other bee stings; it is the large number of stings received that causes problems. This strong defensive behaviour is one of its main reasons for its survival.

The increased swarming ability of the AHB gives it a much superior colony reproductive advantage over the European honey bee (EHB), a ratio of 10:1. AHB colonies multiply and disperse the species by producing large amounts of brood and bees and then swarming. Several after-swarms with virgin queens are often produced as well as the normal prime swarm. Within a few months these swarms in turn will be producing further swarms.

The AHB is the master of exploiting its environment and one of its strengths is its ability to exploit nectar flows and then move on to a new area. Unlike EHB's, Africanized colonies abscond, which is a behavioural trait that evolved in Africa. The AHB's migrate after the nectar flows, which trend to follow the seasonal rain patterns. They can also abscond if predators such as ants, honey badgers or humans attack the colony and so remove themselves from the threat. They also leave many pests and diseases behind in the old brood nest.

Because AHB's follow nectar flows there is no survival benefit in storing excess honey. This means they are not so fussy with the location or size of nesting sites and will even build nests in such places as rabbit burrows or car vents. The EHB on the other hand, tends to be very selective in choosing nesting sites and this limits its ability to colonise an area. The AHB will swarm or abscond and fly in stages over 100km to find new honey sources. The EHB usually stays put in a time of dearth and creates large reserves of stores to survive these periods. AHB's do not need large reserves of stores in their preferred environment and turn any stores into brood.

The AHB has a shorter brood cycle than the EHB, which gives it a competitive advantage because it can produce more bees in a shorter time. The shorter brood cycle also helps the AHB cope with varroa because there is less time for the mite to reproduce in the brood.

The AHB seems to put a lot of energy into producing brood, which results in a higher brood to honey ratio than found in

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Ph 8777300 fax 8774200 barb@aratakihoneyhb.co.nz

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EVENT	NUMBER ATTENDING	NBA MEMBER	NON MEMBER	TOTAL
Conference Registration		$30	$30	
Monday night get together 28th June		$15	$15	
Seminar Day – Tuesday 29th June		$40	$50	
Seminar Day – Wednesday 30th June		$40	$50	
Conference Dinner & Show – 30th June		$60	$60	
TOTAL COST				

Late payment of $20 applies after 15th June

Please make cheques payable to Hawkes Bay Branch NBA Conference

Completed registration forms to be sent to:

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Ron Morison
31 Puketapu Road
Taradale 4001
Napier
Ph / Fax 06 8449493
Email rmorison@clear.net.nz

ACCOMMODATION

Units have been reserved at the Scenic Circle Te Pania Hotel directly opposite the Conference venue. Contact the hotel direct to make your booking – let them know you are with the NBA and you will get the special room rate of $130 + GST per night.
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Fax 06 8337732
Email te.pania@scenic-circle.co.nz
www.scenic-circle.co.nz

For other accommodation venues eg backpackers, hostels, please contact the Secretary – Ron Morison – for details.

Attention Beekeepers!!!

This edition of the New Zealand Beekeeper has been sent to all New Zealand registered beekeepers, including those who are not members of the National Beekeepers Association.

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European races, and a rapid build up in bee population. The AHB produces larges amounts of brood with very little reserves of stores, whereas the European races restrict brood production and horde food reserves. It should be noted that this trait in the AHB can be a disadvantage in areas with long cold winters and dearth periods.

AHB's also produce a large number of drones, which tend to swamp an area. It is most likely that any virgin queens in a mixed mating area will be mated with AHB drones, especially as AHB drones fly earlier in the day and mature earlier that EHB drones. AHB drones will drift into EHB hives and inhibit production of EHB drones but the converse does not happen.

The fact that the AHB has a faster metabolic rate means that it produces more heat per body mass than the EHB. This enables AHB colonies to maintain brood temperatures with fewer adult bees and release more bees for foraging duties. The faster metabolic rate also means that the AHB will work harder and faster. In practice this enables the AHB to exploit weak nectar flows and in more inclement conditions, although this faster metabolic rate also consumes more food.

All these traits combine to make the AHB a superior bee in some topical and semi-tropical regions. The AHB can display negative heterosis, which results in a one-way gene flow towards the AHB. Normally when most races are crossed, the hybrids will show heterosis or so-called "hybrid-vigour" and will outperform both the parents. This is not the case with the AHB. The hybrids are often inferior to the African parent, but superior to the European parent. It is thought that this is the main reason why the AHB has retained its racial purity even after travelling thousands of kilometres and crossing with the European races on the way through South and Central America and Mexico. This negative heterosis allows the pure African genes to dominate the European genes, which gives them a superior survival advantages in a topical environment. Note that while this was true for South America it may not apply in the colder areas of North America where some of the AHB traits are not so advantageous.

How Would the AHB Fare in NZ?

How then would the AHB, which is a warm climate bee, survive in NZ with its more temperate climate? The issue is not one of warm temperatures or the lack of them. The key to the AHB's survival in New Zealand is whether or not there are areas with sufficient nectar flows throughout the whole year to support a bee that doesn't store a lot of honey.

It is unlikely that the AHB would survive in some areas of New Zealand where there are only one or two flows, such as the clover areas of Canterbury. Conversely in areas where there are a number of honey flows throughout the season, such as some native bush areas, it is the author's view that the AHB would not only survive but would flourish!

When considering the likely spread of AHB in New Zealand, it is useful to look at the spread of the AHB within the USA. There were two main incursions of the AHB, California in the west and Texas to the east. The AHB is spreading quite quickly in the dryer west but only spreading very slowly in the eastern states because these states are a lot wetter. The wet season appears to "trigger" the AHB into swarming. In Africa the wet season also triggers dry land and tropical flowers and trees to bloom, which produce nectar flows to sustain the bees. In the eastern states of America the wet seasons do not necessarily trigger any nectar flows and many swarms presumably starve.

In New Zealand it is uncertain what would happen. Would the AHB survive in wet areas such as Auckland and Waikato? If there were native bush near by they probably would survive, and in some cases do extremely well. Similarly on the West Coast of the South Island, the AHB could probably survive in the mild, wet climate because of the numerous flows over the year from the native bush. Conversely, certain native bush areas may not be suitable for the AHB, such as the South Island beech forests. Here honeydew can be produced at various times throughout the year but there are also dearth periods and it is doubtful whether the AHB could survive these. It is quite possible that the AHB could survive by absconding and exploiting honey flows in neighbouring areas with a range of other nectar sources like willows and pasture species.

The AHB could also survive very well in urban areas where there are almost continuous nectar flows and numerous nesting sites. The varroa bee mite has killed off most of the feral colonies in North Island cities so reducing competition for food and nesting sites. However, most swarms are likely to be eradicated by homeowners, beekeepers or pest control operators.

Present Measures Being Taken to Keep The AHB Out of NZ

What is presently being done to keep these nasty bees out of New Zealand? As part of the government's biosecurity measures, more than 500 at risk apiaries are inspected each year for the presence of AHB with suspect hives being sampled and tested in the laboratory. Further to this a number of surveillance swarm traps have been set up at major seaports in the South Island as part of varroa surveillance. All swarms caught in these traps are routinely tested for Africanization. The swarm traps are constructed of papier-mâché material in the shape of a large inverted flowerpot. The size is based on the average size of a cavity of an AHB nesting site. The traps are baited with a pheromone lure and are placed in strategic locations around the ports.

In theory any AHB swarm coming from an International ship will be attracted to these traps. The existing traps are monitored at regular intervals and any bees found in them are dispatched to a MAF lab for identification. The lab uses FABIS and PCR methods to identify the strain of bees caught in the traps.

Besides the trapped swarms, any other swarms found in the port region are also sampled for lab identification. Approximately 300 bees are taken from the colony, plus comb if available and sent to a lab where they are tested for AHB and other exotic pests and diseases such as tracheal mite, varroa mite for South Island swarms, the Small Hive Beetle and European foulbrood and even the Cape Bee. The Cape Bee (*A m capensis*) is particularly interesting because it is another African bee that would have a detrimental effect on beekeeping in New Zealand. As it is also very similar

morphometrically to the AHB, there are problems distinguishing between the two races as well as European honey bees.

Another risk is the illegal importation of AHB queens by a misguided beekeeper or bio terrorist. Admittedly this is a much smaller risk than an AHB swarm coming off a ship but nevertheless it still represents a risk pathway. This is controlled by normal MAF biosecurity surveillance at the ports, airports and mail centres.

Finally, because of the ability of an AHB swarm to fly large distances, surveillance for AHB is not limited to the seaports. Any reports of bees that are more aggressive than normal are taken most seriously. AgriQuality will request bee samples from beekeepers in such cases and send the bees to a MAF lab(s). To date, no AHB's have been detected in this country, and any reported aggressive bees have been found to be a cross between the yellow Italian bee and the black feral bee!

Despite all these measures we rely on beekeepers and the public to report any suspect sightings of swarms in and around ports and overly aggressive bees in other locations. If the AHB was to establish in New Zealand we would rely on limiting its effects by requeening and genetic 'swamping'. While the AHB has retained its genetic purity in many areas in the USA these locations are subject to continual re invasion from Mexico. This should not happen in New Zealand and any incursion is expected to be an isolated incident. However, we can expect an AHB swarm to arrive at our shores one day, probably from the USA or Central America as ships go through the Panama Canal. A swarm on a container ship bound for New Zealand, was reported about 2 years ago. The ship was asked to stop near Pitcairn Island where the bees were sprayed by Quarantine Officers, who had fortuitously been trained in beekeeping and quarantine by James Driscoll, formerly with AgriQuality Limited.

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Dadant & Sons, 1992. "The Hive and the Honey Bee".

Hall, Glenn, 2002. University of Florida, December. Personal discussions.

Sears, Elizabeth L. "Behaviour Characteristics of the Africanized Bees, *Apis mellifera scutellata*". www.earthlife.net.

Spivak, M., Fletcher, D.J.C., Breed M.D., 1991. "The African Honey Bee".

Other useful web sites:

University of California, http://bees.ucr.edu/
United States Dept of Agriculture (USDA) with links to many other sites, http://www.invasivespecies.gov/profiles/afrhonbee.shtml

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Contacts: President Lewis Olsen 07 823 6706 or Tony Lorimer 07 856 9625

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Varroa Board of Inquiry

Hon Jim Sutton MP recently advised that a Board of Inquiry will be held into a proposed Varroa National Pest Management Strategy, due to a lack of agreement among South Island beekeepers on the contents of the proposal. This will give all interested parties a chance to put their views to an independent body."

Mr Sutton said the submissions he received showed some submitters were opposed to the strategy on technical grounds, such as the feasibility of eradication, while others considered it an essential means of keeping the South Island free of varroa.

The proposed strategy contains measures to prevent the mite from spreading to the South Island and to ensure its early detection should it arrive in the South Island. The strategy was proposed by the Varroa Planning Group, made up of representatives from the arable, pastoral, horticultural and beekeeping industries, local government and the Ministry of Agriculture and Forestry.

The Board of Inquiry will hold hearings and review the proposal and submissions made on it, before providing Mr Sutton with recommendations on the proposed strategy. The appointment process for members of the Board of Inquiry is underway, and the Board is likely to be appointed by the end of April.

MAF will maintain existing inter-island movement controls on all beekeeping equipment until Mr Sutton has received the Board's recommendations and made a decision on the proposed strategy.

MAF will also carry out varroa surveillance in high-risk areas of the South Island during autumn 2004.

- Cathie Bell

Trees and Shrubs of New Zealand

A shrub or small tree growing in tidal mudflats in the North, and to the South as far as Kawhia on the west coast and Opotiki on the east coast.

The Mangrove has leathery leaves which grow opposite on the stem. The yellowish flowers provide a late source of dull greenish pollen in April to June depending on location. The Mangrove can flower again in October in some seasons.

During seasons of early flowering, the bees will work the Mangrove for nectar. The honey is light amber in colour but has an unpalatable flavour, similar to fermenting liquor.

The mangrove is different to many trees in that it grows in water. It is like all other trees in that the roots need to breathe. To do this the mangrove has special roots that grow upwards out of the mud – these specialised breathing roots are called pneumatophores. Even though they resemble new stems they allow the plant to get some air to the plant twice a day when uncovered by the receding tide.

- Tony Lorimer

STOP PRESS

Varroa board of inquiry appointed

The three board members selected to provide an appropriate mix of public policy, technical and epidemiological skills, as well as knowledge of the bee industry and the pastoral sector, are: Denise Church, Brian Mason, and Helen Benard.

In announcing the board Mr Sutton said Ms Church (former chief executive of the Ministry for the Environment) brought significant public policy experience and skills to the board. Dr Mason (Southland Farmer,Veterinarian and member of N.Z. Veterinary Association Council with 40 years' experience) provided a regional perspective, as a South Island member of the board. He is also an Environment Southland councillor, providing an important regional council perspective to the board. Dr Benard (Exotic Disease Investigator for the National Centre for Disease Investigation) brought important technical skills to the board, as both an epidemiologist and as someone who has worked with the beekeeping industry during the initial response to varroa in New Zealand.

The board of inquiry will hold hearings and review the proposal and submissions made on the proposed strategy, before providing Mr Sutton with recommendations, in accordance with the Biosecurity Act 1993.

The board will hold several public hearings. Following are the **proposed** meetings.

WELLINGTON
10.00am - 4.00 pm
Friday 21 May 2004
MAF Head Office
101-103 The Terrace

DUNEDIN
10.00 am - 5.00 pm
Friday 28 May 2004
Otago Regional Council
Council Chambers

CHRISTCHURCH
9.00 am - 5.00 pm
Monday 31 May 2004
Environment Canterbury
Waiau Theatrette

NELSON
10.00am - 5.00 pm
Thursday 3 June 2004
Council Chambers
Nelson City Council

Avicennia marina var resinifera
Common name: Mangrove
Maori name: Manawa

Varroa and Beekeepers: Observations of an Outsider

In 2003 I was privileged to attend the Nelson Conference to talk about the experience of varroosis in the UK since varroa arrived here (UK) in 1992. Listening to New Zealand beekeepers discussions and ideas was interesting as it exactly reflected the things that had happened to beekeepers here, who were eventually left a lot sadder and wiser and in some cases poorer, before they came to understand the beast. I offer you this experience since it seems so foolish for each place to have to reinvent the wheel each time (although my guess is that like beekeepers in the UK) this advice will still fall on deaf ears. However, here goes.

Varroa *destructor* is a parasite that feeds on both adults and larvae in the cells. It is an exotic mite that originally crossed the species barrier from the Asian Hive bee (Apis *cerana*) to our own Western honeybee (Apis *mellifera*). There is a lot of science behind these two small statements, but essentially what this means is that the western honeybee has no natural defences against the mite so it can cause huge colony and financial loss.

You will get it! It has spread ubiquitously throughout the world mainly by normal channels of international trade. The first reaction in the UK was panic, furious anger and looking for someone to blame. People were desperately looking for easy solutions, ways of preventing it from spreading and someone to blame for the disaster. It doesn't really matter where it came from and looking for blame is not very useful as once varroa arrives the only thing that can be done is to learn to live with the problem. Radical eradication programmes, statutory infected area controls, mountain ranges, sea channels, prevailing wind direction and other natural or regulatory controls have all been tried and help to slow down the spread but will not succeed in stopping it altogether. In many ways, it is rather like visiting the dentist. It is worse in the waiting room than actually being in the dentist's chair.

Amid widespread rumour apportioning blame to a well known monk, the reality was that the first findings in the UK were in areas near major international shipping terminals: Plymouth in Devon, Felixstowe in East Anglia and the Isle of Wight in Hampshire. It was discovered by two enthusiastic beginners – because beginners are the people who look most carefully at their bees. It was thought to have been in the UK for some time before it was discovered giving it plenty of time to spread unnoticed. Despite intense beekeeper vigilance and statutory controls it spread through almost the whole country within six years.

An interesting observation at the time was that many beekeepers did not trust the advice they were given from official sources, fearing it to be chemical company propaganda, and many rushed around like headless chickens in their own directions following all sorts of weird and wonderful theories. The attitude of the leaders of the LOCAL beekeepers associations was a key factor in how well people dealt with the initial crisis. If they recommended only organic treatments and shunned the commercial strips huge losses followed in the area. Where associations helped make the strips easily available, maybe negotiated bulk discounts, and helped and advised on their use colony losses were minimal. Country wide losses ran at about 30% on average.

The control of varroa is relatively simple. You look for it and then treat it!! Treatments however, give fascinating cause for debate. Beekeeping meetings are never the same again. Doing nothing is not an option. Do it wrong and the colony will die.

To start with however, if you don't look for it you won't find it – at least not until colonies start collapsing. By that time viruses will be well established. Once viruses are established in an area they will spread with the normal varroa spread and will do much to hasten the speed of colony collapse.

A few mites will not do very much damage to a colony so it is very easy for an infestation to go unnoticed for a long time. Varroa is symptomless until the mite numbers increase above a certain threshold level. Once mite numbers are heavy and viruses have become established collapse can be very rapid. Beekeepers in the UK were often surprised that they could take off a heavy autumn honey crop from an apparently strong colony and yet within two or three weeks it was dead. Winter losses were often blamed on natural causes with the real problem not being acknowledged. Typically bees die in the winter among plentiful stores or may be found in the spring with just a handful of bees and the queen. Rarely are many dead bees seen as most of them will have left the colony for greener pastures (taking lots of mites with them).

The simplest way of dealing with the mites is by using synthetic pyrethroid strips. Pyrethroid strips such as Apistan are 99% effective and can often restore even a heavily infected colony to health within days. The important point here is that you get to understand the nature of varroosis by using the simplest and most effective treatment available first. BE WARNED: Use only the correct medication in the correct way as directed by the manufacturers. To do anything else is to court disaster, not only for you but for every other beekeeper.

The widespread use of synthetic pyrethroid strips will reduce varroa mite numbers throughout the area very quickly. Two or three years after varroa was discovered in an area in the UK, mite numbers were often dramatically high, especially if the beekeeper hadn't treated the hive. I saw floor inserts resembling the top of a seed cake (and still the beekeeper didn't know it was there!!). By year four and most subsequent years, once the feral bees and feral beekeepers had dropped out of the system, mite numbers were so low that it was hard to find any sign of them at all and beekeepers thought they had it sorted. That it was easy. Beekeepers heaved a sigh of relief and got on with their beekeeping. THIS is the point in the cycle to learn about integrated pest management, to try out organic and biotechnical treatments and to be sure you start alternating treatments if you have legal alternative treatments to use. If not lobby hard to get them. It is essential not to rely on a single treatment method once the initial horrible destruction is over.

The first instance of resistance to the pyrethroid strips took only 10 years to develop in Britain and was discovered in autumn 2001 by a Ministry sampling programme carried out by the bee inspectors - the only instance of its kind in the world. Both pyrethroid strip brands are so similar chemically that neither can be used once resistance is confirmed. It is possible there may be further cross resistance into other products. It started, as might be expected in the place that the varroa started, Devon, but after further surveying, has been found in patches all over the country. It is not as easy to find as initial infestation because you can't tell if a mite is resistant to a substance by looking at it. Mostly this only happens when colonies are still collapsing despite treatment. Mites can become resistant to any treatment whether it is organic or non organic if it is poorly applied over along time.

Resistant mites develop because of abuse (illegal) or misuse (stupid) of varroacides. Be warned, although it is inevitable eventually, it was a group of commercial beekeepers cutting corners to save money and time that created the initial problem in the UK. They were misusing the strip treatments - shoving them in the entrance or in the feed compartments or above the queen excluder to save time and not always bothering to take them out. It was a short term and very selfish view and a long term disaster for our industry to loose such a simple and effective treatment. The government monitoring programme uncovered this early and beekeepers are realising in good time that they cannot now rely on a single treatment but must plan a sensible programme of treatment to reflect the size of the varroa population in the hive and the area that year. This means MONITORING colonies!!

At the beginning of the varroa infestation, one of the big problems that arose for beekeepers here in the UK was that a significant proportion of people were looking for cheaper or organic alternatives. This was a disaster both for them and for the reputation of the organic methods. To understand what I am getting at you need to understand the way the varroa population develops. Briefly, the development of the varroa mite population goes through a numbers of phases. The treatment used needs to be appropriate for the phase of the diseases progress as it sweeps across the country. Different areas will reach these stages at different times so what is appropriate for one part, where the mite is well established is not the same as in another part where it is not. This is why co-ordinated treatments did not work here even though some associations tried them conscientiously. For some people treating on a specific date was far too late and they experienced heavy losses while for others it was far too early and they had to treat again later to combat reinvasion. The beekeeper has to know the situation of the disease in his/her own apiaries and this means monitoring mite numbers regularly. The easiest way to do this is by drone brood uncapping, which can be done during normal inspections and gives a good indication of the level of mites in the colony. As a rough rule of thumb, if you can see them at all you have plenty of mites in the colony. If they get above 10% of the cells uncapped treatment is needed.

The biggest single cause of colony loss in the UK is giving the varroa treatment too late in the season. Varroa treatments have to be timed to ensure the health of the larvae that will become the over wintering bees. At this point in the season the mite numbers are potentially at their greatest and the larvae are at their smallest numbers so they are very vulnerable to mite damage. Another critical point is the vulnerable time in early spring. Checks and correct treatment at these times can save lots of problems. For many beekeepers in the UK it meant changing their honey removal and ensuring mite numbers were low before moving hives. Viruses may or may not be the cause of colony death but the sure fact is that the only way to keep viruses down is to keep mite numbers below the threshold of damage.

I am not going to go into treatment possibilities - it would be impossible to condense everything into one article. Thousands of words have been written about it. One of the best books I have seen on the topic is the New Zealand MAF publication Control of Varroa; A guide for New Zealand Beekeepers, that brings together all the current knowledge in a very readable form.

Finally, I think I need to talk about varroa tolerant bees (it best to call them tolerant rather than resistant as they are not completely immune and anyway it is confusing when also talking about resistant mites). The reported tolerance of certain bees to varroa mites has been the subject of research for many years now. Some African types and Africanised hybrids are considered to be tolerant to the mite as well as the bees imported into America from Georgia although it is not yet clear what the mechanism of tolerance is. In any case it is important to recognise that there are real commercial difficulties with this approach. The African bees are ruled out by their aggressive temperament and at $500 US a pop the American breeder queens are not commercial throwaways. It is important to ensure these queens do not loose their

tolerance by out crossing with local drones. Instrumental Insemination would appear to be the only real way of maintaining resistance. Then again there is no point in using resistant queens where there is no varroa. Resistance is developed and maintained by parasite challenge. Where this is not there it may be lost so that when mites arrive the advantage has already been lost. Our few defences against varroa must not be squandered. A programme of planned introduction and evaluation would be the best approach.

There are no 'magic bullets' for varroa. Varroa is now a serious fact of life for beekeepers in most places in the world. It can only be controlled by a sensible and informed approach from the beekeeper. The continuation of good research and the dissemination of practical beekeeping success to other beekeepers are essential. However, beekeeper experimentation must be done scientifically with a proper control group to be of any value. There is a lot of rubbish being bandied about which just increases the problem and the pain especially in the early years while people are still getting to grips with the problem. Proper monitoring and control is the key to success. Short cuts can only lead to problems with loss of production. Varroa is a serious pest of bees but many beekeepers, both large and small scale, throughout the world are controlling it and still making money from their bees.

Happy Beekeeping

- Pam Gregory

- June 2003 Magazine has a profile of Pam Gregory - Editor

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Changes to the Holidays Act

Payment for public holidays – where an employee works

If an employee works on any public holiday, that work now attracts a minimum payment of time-and-a-half for the time they actually work on a public holiday and a day in lieu.

Where the employee is working a shift that includes some time on the public holiday, only the time actually worked on the public holiday attracts the time and a half payment: the balance may be paid at the normal rate of pay.

Where the person is specifically employed only to work on public holidays (for example, an employee who is only employed to work at the racetrack for the Waitangi Day meeting), they must still be paid at least time and a half.

Some employment agreements specify a salary rate with unspecified hours or patterns of work, or set specific wage rates for public holidays. Employees on such agreements must be paid at least time and a half if they work on a public holiday.

Payment for public holidays – where an employee does not work

If an employee has a day off on a public holidays they are paid for that day if it is "otherwise a working day".

The employee is paid as if she or he had worked as normal on the day, and for employees working a regular pattern of hours the pay cycle continues unchanged.

An employee who does not normally work on the day in question and who does not work is not entitled to a payment for the day. For example, a part-time employee who never works Friday has no entitlement to a holiday or payment for Good Friday.

Minimum Pay
Current minimum wage by law
All employees aged 16 years or more must be paid the statutory minimum wage.

Minimum wage rates for all employees aged 16 and over as follows:

	Current Minimum Wage	Before 1 April 2004
Adult Rate:	**$9.00/hour**	**$8.50/hour**
per 8-hour day	$72.00	$68.00
per 40-hour week	$360.00	$340.00
Youth Rate:	**$7.20/hour**	**$6.80/hour**
per 8-hour day	$57.60	$54.40
per 40-hour week	$288.00	$272.00

This *adult rate* applies to those aged **18 or more.** The *youth rate* applies to those aged **16-17 years.**

The statutory minimum wage does not apply to:

- people who hold an "exemption"exemption
- people doing recognised industry training. Here you will be paid the minimum training wage - equivalent to the minimum youth pay rate above. Contact Employment Relations Infoline for more information.

The statutory minimum wage applies even if an employee is paid partly or wholly by commission or by piece rate. It applies to all types of jobs and employees, including homeworkers, casual, temporary and part-time employees.

Library Report

Life in the library has been a bit quieter in recent weeks. The magazine packs go out frequently and borrowers will notice a new one joining the selection. "Beecraft", an English publication, is now being subscribed to and it is hoped that it will contain articles of interest to both full-time and hobbyist beekeepers.

A selection of books was sent off to the Dunedin field day in the care of Linda Bray and quite a lot were borrowed by beekeepers attending. One new recipient of the magazine 'postings' was also added to the list.

An education kit of books, slides and posters has been lent to a Christchurch primary school for a "Bees and honey" study. This is available also to any beekeepers who are asked to give a talk to school pupils. An indication of the class level and the focus of the talk, e.g. "honey production" or "bees/insect life" would be helpful.

I will be away for a couple of months from 20th May so if any library items are needed it would be appreciated if requests could be sent in at least ten days prior to that date. Two options for ensuring that the magazine postings keep moving around are being considered.

It is anticipated that there will be a display of library books etc at the conference, and members of the executive would be more than happy to hear from anyone willing to spend a bit of time keeping an eye on it during that time.

Best wishes to the Napier Branch for a happy and productive conference.

- Chris Taiaroa
Hon. Librarian

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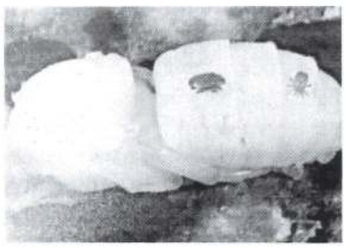
Asian Mite *(Tropilaelaps clareae)*

Byron Taylor

AgriQuality Apicultural Advisory Officer

Well, that's the last of them you think to yourself as you stroll back to the truck with the stack of bagged up sticky boards under one arm. Just the paper work to complete now and it can be all packed up and sent off to AgriQuality…

A quick cursory glance at the sticky boards reveals what you already knew, varroa mites spread amongst all of the other rubbish, but hang on a minute, what are those other critters on the board? They don't look like normal varroa….



Tropilaelaps clareae is an external parasitic mite that feeds on the larval and pupal stages of developing bees. They are fast moving, red-brown mites that are visible to the naked eye. While the colour of these mites is similar to varroa, they can be easily distinguished due to their size and shape. Varroa mites are larger than T. clareae and crab shaped while T. clareae are smaller and more elongated. (see photo).

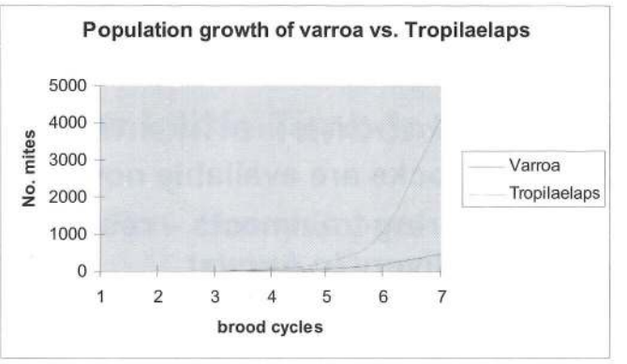
Tropilaelaps clareae is a tropical pest that occurs in Asia, from Iran in the northwest through to Papua New Guinea in the southeast, and it has also been reported in Kenya. The original host species is the giant honey bee, Apis dorsata but, like varroa, it jumped species and now infests Apis mellifera colonies, which are highly susceptible to the pest. It is spread between hives in the same way as varroa, that is, by drifting, swarming or robbing bees and unsuspecting beekeepers. T. clareae has also been recorded on both Apis cerana and Apis florea which it uses for dispersal but it does not reproduce on these species.

In Apis dorsata colonies, T. clareae typically exist at relatively low infestation rates of less than 7% but can be as high as 30%. In these colonies it is common to find damaged mites below the nests indicating that A. dorsata is able to kill them. Unfortunately the same is not true for Apis mellifera colonies with very high infestation rates and few natural defences. In areas where T clareae is present in A mellifera colonies, colony death is reported to occur in less than one year without human intervention. This is much faster than would occur with varroa.

Infestation can be recognised visually by an irregular and punctured brood pattern, dead or malformed brood, malformed wings, and crawling bees at the hive entrance, or by inspecting hive debris. Diagnosis is often made using a miticide and sticky board in the same way that varroa surveillance is carried out. Infestation will cause a rapid dwindling in colony strength and ultimately the bees will abscond.

The female mite lays between 1 and 4 eggs in a cell starting 40-48 hours after capping (compared to 60 hours for varroa) and approximately one day apart. There is usually one male and several females laid at once and the eggs require about six days to develop. Because of the high rate of development and the time they start laying relative to the capping of the cell, the mites are typically all developed by the time the adult bee emerges from the cell. This is one of the principal reasons why T. clareae will out compete varroa in hives where they are both present having three adult female progeny with every cycle of brood compared to varroa with an average of less than two. The male mites can mate with females in the cell but unlike varroa, will leave the cell and can mate with the females outside during their phoretic (dispersal) period.

In addition to the increased rate of development, the phoretic period is very short, as T clareae cannot pierce the segments of the adult bees so cannot feed. This means that on average only 3-4% of the adult mite population is on the adult bees compared with varroa that typically have up to 30-40%. This means that a far greater percentage of the Tropilaelaps mite population will be in cells reproducing. There is considerable debate about the length of time T clareae can survive on adult bees but up to 10 days has been suggested. Egg bearing T clareae females will die within 2 days unless they deposit their eggs.



Treatment of T clareae is very similar to varroa with synthetic pyrethroid impregnated strips and formic acid application being two common methods. Research also suggests that a light dusting of sulphur on a monthly basis will also control the mite however residues are likely to be a problem.

Effective non-chemical treatment can be gained by creating brood-free periods. As discussed earlier, T clareae cannot survive for long periods of time on the adult bees as they cannot feed on them. This means that brood free periods within the hive would cause the mites to starve and die.

If you suspect Tropilaelaps clareae in a hive or are unsure about symptoms that you have come across, contact an Apicultural Advisory Officer on 0508 00 11 22 or call the MAF exotic disease hotline on 0800 809 966.

Happy Beekeeping

Drugs and bees

The New Zealand Food Safety Authority (NZFSA) wants to set the record straight on the use of antibiotic drugs in beekeeping. Rumours about illegal drug feeding have been investigated in conjunction with the American Foulbrood (AFB) Pest Management Strategy Management Agency.

Since the discovery of Chloramphenicol residues in Chinese honey by European authorities in 2002, a succession of countries have stepped up the monitoring of honey imports at the border. Chloramphenicol is an antibiotic that is seldom used today due to the association between human exposure and a type of blood disorder in humans called aplastic anaemia.

The Canadian Food Inspection Agency have just recalled an Australian/Argentinean honey blend due to the apparent detection of another type of antibiotic – nitrofuran.

New Zealand exporters have been faced with testing costs and in some cases asked to supply pre-shipment certificates of analysis as the global monitoring efforts are stepped up. In 2003 two brands of New Zealand honey sampled and tested by Macao Authorities tested positive for Chloramphenicol. After initially suspecting product substitution, samples of the same batches were retrieved and subject to more accurate testing here and these confirmed no such residues. The Macao Authorities accepted the NZFSA findings – not surprising given that they had used a test method originally designed for detecting Chloramphenicol in pig urine.

Presently there are no compounds approved for the treatment of bees for AFB. The temptation to rehabilitate an infected hive rather than burn it may be present. However, unless specifically formulated for use in hives, compounds such as tetracycline may include surfactants and solvents which may kill bees. Fumagillin was historically approved under the now defunct Apiaries Act for treating hives with Nosema, however this registration has lapsed. Approval is required under the Agricultural Compounds and Veterinary Medicines (ACVM) Act 1997 for any product used to treat bees. Approval is also required as well as the Animal Products regime. The Hazardous Substances and New Organisms legislation may also apply to such substances.

With increasing vigilance by importing authorities it is also important that beekeepers follow the label directions or Code of Practice instructions for varroa treatments carefully. The only approved compounds for this in New Zealand are Apiguard, Apistan, Apivar, Bayvarol and the organic treatments Oxalic and Formic acids. By following the label instructions and the code of practice you will not only ensure cost-effective use of the compounds but also avoid residue and resistance issues.

It is an offence under the ACVM Act to feed or treat bees with drugs unless an approval exists to do so. Fines of up to $150 000 may be incurred. The Animal Products Act makes it an offence to endanger, deceive or even submit honey for processing that may not comply. Fines of up to $500 000 may be incurred for such offence. These substantial fines reflect the seriousness with which these offences are viewed.

As well as maintaining a residue testing programme, largely for export purposes, the NZFSA will conduct investigations into allegations of drug feeding. An audit of the bee industry is planned to review the uptake of the ACVM and Animal Products legislation. Illegal drug feeding places at risk not only the enviable reputation of New Zealand's bee products but all other products as well.

The message to beekeepers – if you are thinking of feeding drugs to bees – don't unless you are absolutely certain they have been approved for that purpose and you are using them as per directions.

- **Glen Neal**
  New Zealand Food Safety Authority

About the Apiary

Colder weather is approaching fast and there is still a lot to do in the bee yard before the bees settle down for winter. Some beekeepers are removing honey while others are feeding following what has turned out to be a poor season.

Most will have reduced hives entrances to 9 mm by 100 mm so the bees can guard against robbing from other bees and wasps.

Wasps are making their presence felt at the moment. Their populations are reaching a peak and require sucrose to produce queens. Hence they attack ripe fruit and when this isn't around, use the next best source – a beehive. Entrance closures help but once they have gained access to one hive, they quickly take on the scent of a hive and walk straight in and begin robbing everything out of the hive. They are difficult to stop once robbing has started so it is best to try and get rid of the nest. Nests are usually in banks and along streambeds within 500 metres of the hive. If you can't find the nests put out a dummy hive and place a 1/4 bottle of old jam in it. When wasps are feeding freely, you should be able to follow them better in the early morning or late evening back to the nest.

Bees are just as bad as wasps for robbing straight after the main honey flow has ceased. They are always on the look out for a free feed and a diseased, or a weak hive, or a nuc presents an opportunity not to be missed.

When the robbing period has finished it pays to check the middle brood frames in your hives to make sure that they are still free from AFB. Better to find disease in your hives now, instead of finding a robbed out hive in the spring. While you have the hive open, check the quality of the brood. Diploid lava (brother /sister fertilised) cause a spotty brood appearance indicating that the queen is failing. It is preferable that all hives go into the winter with a young queen and plenty of young bees.

Hives should also have enough stores to comfortably take them through to the spring - at least one full super of honey. Experienced beekeepers can quickly check a hive's weight without opening it by "hefting" it. Stand behind the hive and by using the handgrip of the top super, try lifting the back of the hive off the ground. You shouldn't be able to or it should be very heavy. The only incident where this doesn't work is when you have a failing queen in the hive and the bees have filled the bottom super with pollen. This weighs as much as honey and could fool you into thinking you have enough honey in the hive. Therefore it pays to check that you have enough stores when you do your disease check. If you haven't opened the hive for some time, split the hive and tilt the top super back (add a little smoke to move the bees) and look along the bottom of the frames in the top super. Most of the frames should be fully sealed.

Mice and rats quickly move into hives and houses at the first hint of cold weather so put out Talon® baits for the mice. Crush them and place two or three flattened baits in a wide mouthed plastic bottle under a hive to keep the bait dry. This is environmentally safe as the bottle prevents native birds getting at the baits.

Check that the base of each hive is secure, off the ground so there is an airflow underneath and slightly slopes towards the front so the rain doesn't pool on the bottom board. Cut the grass or lay another board in front of the hive so that it provides a ramp up on to the baseboard. During the winter, bees fly to cleanse themselves or are out collecting early pollen. Quite a few come back cold, land short of the hive and are lost in the grass. A board in front allows them to walk into the hive.

Most North Island beekeepers should be checking mite levels after there initial summer treatment. Most beekeepers in the acute areas have noticed high reinvasion. It can only take five days to reach threshold level and will require further treatment.

For those who haven't found mites yet, they are coming so prepare for it. Basically it's a mind- set. Once you find them, express your dissatisfaction and get on with beekeeping bearing in mind that it will now cost you more time monitoring and treating hives.

Most of my hives now have varroa. I have noticed that as varroa numbers rise in the hive you can see evidence of their presence. Some drone cells will not be fully capped by the bees. Instead, the bees tend to draw the capping outwards elongating the cell capping which leaves the pupa inside the cell half exposed. You may also see that capped drone cells tend to have the capping chewed away so that it looks yellowish with just the silk holding it together and thirdly, you will observe drones that have died while trying to emerge.

All these signs appear when you have more than 100 mites in your hives and once observed, continue to monitor the hives. Some beekeepers suggest you forget about monitoring and just treat the hives. Don't forget to tell your neighbouring beekeeper so that all hives in a given area are treated at the same time.

When it gets colder you can try out alternative methods of treatment. The "Tea" candle method of sublimating oxalic acid works well with a few modifications. Basically this consists of a stand over the Tea candle on which the oxalic crystals are placed and the heat from the candle vaporises them. Some of the Wellington Beekeepers have played around with this device in sheds and glasshouses and have perfected this simple device. They cut the top quarter off an aluminium can (use whatever soft drink or beer can you like) partly cut out one side so you can slide the candle in and put in a few air holes around the bottom rim for ventilation. Either change the Tea candlewick to a larger diameter one or replace the paraffin wax candle with methylated sprits. (This is recommended as it burns with a hotter flame and you get better vaporization). Invert the modified can so the concave underside is upwards and place two to three grams of oxalic crystals in the hollow. Add an empty super, light the candle or meths, replace the roof and seal the hive entrance with foam and any cracks. The bees don't like this much and fan vigorously which disperses the vapour throughout the hive. After 10 minutes remove the foam, sublimator and the additional super. Repeat in fifteen days for a better kill.

Because such a low dose is used it can be repeated up to eight times during the year if you wish. It doesn't kill the mites as quickly as strips but mites die off over the next 4- 6 days.

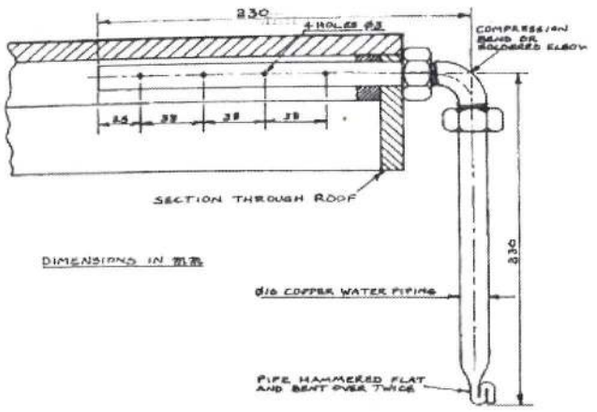
Caution - Don't breathe in the vapour as it is highly toxic and wear safety spectacles and rubber gloves when handling oxalic acid crystals. Always work up-wind of the hive or wear a mask.

There is a lot of interest in sublimation devices in Europe and many groups are experimenting with different devices. *Eric McArthur wrote in the February issue of The Scottish Beekeeper of how he made a simple sublimator using two length of copper water pipe (230 mm long) and a bolted elbow which is used to join these together to form a right angle with one end closed by being hammered flat with the end turned over twice (twice is important!).*

I loaded the device up as directed with 3g of oxalic acid crystals and sublimated them by heating the 'blind' end of the tube with a blowlamp for 3 minutes as directed. This was done outside the hive to prove that sublimation not only occurred but was seen to occur.

I noticed that some of the gas condensed at the end of the tube, which was still relatively cold. This condensation would obviously affect the efficiency of the device since the full charge of the 3g treatment was obviously not going into the hive. So like other beekeeping innovators before me 'innovated' with different lengths and finally plumped for the device shown, which was kindly drawn for this article in a most professional manner by Ian Craig, our Education Convener. This modified design is inserted at the top of the hive, through a hole bored in the hive roof. Factory made hive roofs have an air space above the internal rebate - the tube locates into this air space.

There is no need to bore holes Willy Nilly in all your fine hive roofs, one or two roofs will do. It takes no time to make a couple of the sublimator devices either. When treating - I treat 5 colonies at a time - by treating a minimum of two colonies together the first device is cool enough to handle by the time the second hive has been treated.



The device is heated at the "blind" end for three minutes by a blowlamp. A good guide to the correct temperature is the discolouration of the heated end of the tube.

Even if an 'Open Mesh Floor' is fitted to the hive the treatment is still effective since the gas falls through the bees and comb as it fills the brood chamber.

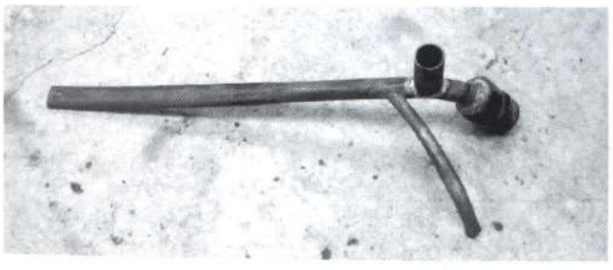
To do the job methodically merely replace the 'in situ hive' roof with the modified roof, have an empty super (only one!) above the brood box containing the bees. Load the device with the 3g of oxalic acid, tap the device to ensure the acid goes down to the "blind" end of the tube, push the device into the hole in the 'treatment' roof, heat the 'blind' end of the device for the prerequisite time and that's it!

A metal heat shield should be used to safeguard against charring the wood of the modified roof. The best and most elegant component is yet to come!

Take a small block of wood, say 11/2 inches square and about 11/4 inches thick and drill a 16mm hole, 21 mm deep into it. This hole when filled to the brim with oxalic acid crystals carries, by weight exactly 3g.

Loading the device is a piece of cake! The treatment is around 98% effective and costs about £0.03p/ hive. The bad news is that it is necessary to wear a mask to safeguard against inhaling any gas escaping from the hive body when using any form of sublimation. The good news is that the recommended mask (FFP 3-S/LU 0200 / EN 149) is relatively inexpensive and easy to obtain. Gloves and safety spectacles are also a must. The sublimation treatment can be carried out at any time when the ambient temperature is above 3C during the late autumn through to the late winter and can be repeated two or three times at 3-4 week intervals without harm to the bees. It is most effective when the colony brood level is lowest. This method may also be used on swarms (shook or natural!)

Fritz Fuchs of Porirua developed another device pictured below. He made up this in half an hour from old bits in his garage. Very simple construction bronzed together and uses



a hand pump to deliver the vapour into the front entrance of the hive. The bottom is unscrewed, oxalic acid crystals added, water added to the open pipe at the top and heated. When the water in the tube boils, start pumping for one minute to deliver the vapour into the hive. When vapour ceases, dip the hot end in a bucket of water, open then add more acid crystals and you are ready to do the next hive.

For the commercial beekeeper, there are some products coming on the market that we hope will make mite control easier and cheaper, however they won't be as effective as strips but will be part of an integrated pest management scheme.

This month's activities: Winter down hives, treat or check for mites. Check feed and for AFB, slope hives, replace any rotten woodware, attend to fences, store extracted supers and fumigate for wax moth, check for wasp robbing and control grass around the hives.

- Frank Lindsay

Branch and Club Contacts

NORTH CANTERBURY BEEKEEPERS CLUB
Meets the second Monday of April, June,
August and October
Contact: Mrs Hobson Phone: (03) 312-7587

AUCKLAND BEEKEEPERS CLUB INC
Meets 1st Saturday monthly at Unitec,
Pt Chevalier, Auckland.
President: Ian Anderson
Phone: 09 480 8327
PO Box 214, Waimauku

AUCKLAND BRANCH - NBA
Held: 24 Andromeda Cres, East Tamaki

CANTERBURY BRANCH
Meets the last Tuesday of every month,
February to October
Contact: Roger Bray Phone: (03) 308-4964

SOUTH CANTERBURY BRANCH
Peter Lyttle Phone: (03)693-9189

CHRISTCHURCH HOBBYIST CLUB
Meets on the first Saturday of each month,
August to May, except in January for which it is
the second Saturday. The site is at 681 Cashmere Road,
Commencing at 1.30pm
Contact: Jeff Robinson, 64 Cobra Street Christchurch 3.
Phone: (03) 322-5392

TARANAKI AMATEUR BEEKEEPING CLUB
Phone: Stephen Black (06) 752-6860
685 Uruti Road RD 48, Urenui

HAWKES BAY BRANCH
meets on the second Monday of the month at 7.30pm,
Arataki cottage, Havelock North
Phone: Ron (06) 844-9493

NZ QUEEN PRODUCERS ASSN
Phone: Mary-Anne (06) 855-8038

DUNEDIN BEEKEEPERS CLUB
Meets on the first Saturday in the month
September - April, (Except January) at 1.30pm.
The venue is at our club hive in Roslyn, Dunedin.
Enquiries welcome to club secretary,
Margaret, Phone: (03) 415-7256
Email: flour-mill@xtra.co.nz

WAIRARAPA HOBBYIST BEEKEEPERS CLUB
Meet 3rd Sunday each month (except January)
at Norfolk Road, Masterton at 1.30 pm.
Phone Convenor: Arnold Esler (06) 379-8648

SOUTHLAND BRANCH - NBA
Phone/Fax: Don Steadman (03) 246-9777

WANGANUI BEEKEEPERS CLUB
Meets on the second Wednesday of the month.
Phone Secretary: Neil Farrer (06)343-6248

MANAWATU BEEKEEPERS CLUB
Meets every 4th Thursday in the month at Newbury
Hall, SH3, Palmerston North
Contact: Joan Leckie, Makahika Road, RD 1, Levin
Phone: (06) 368-1277

POVERTY BAY BRANCH - NBA
Phone: Barry (06) 867-4591

WELLINGTON BEEKEEPERS ASSN
Meets every second Monday of the month (except
January) in Johnsonville. All welcome.
Phone: John Burnet 21 Kiwi Cres,
Tawa, Wellington 6006
Phone: (04) 232-7863 Email: johnburnet@xtra.co.nz

NELSON BEEKEEPERS CLUB
Contact: Kevin Phone: (03) 545-0122

FRANKLIN BEEKEEPERS CLUB
Meets second Sunday of each month at 10.00 am for
a cuppa and discussion. 10.30am open hives.
Secretary - Peter Biland
Phone: (09) 294-8365
President - Stuart Ward
Phone: (09) 238-1441

Is your group or Branch missing from here?

Please contact the Secretary

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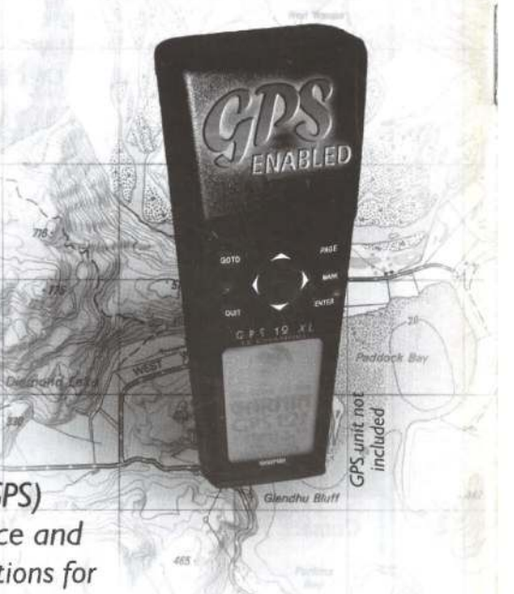

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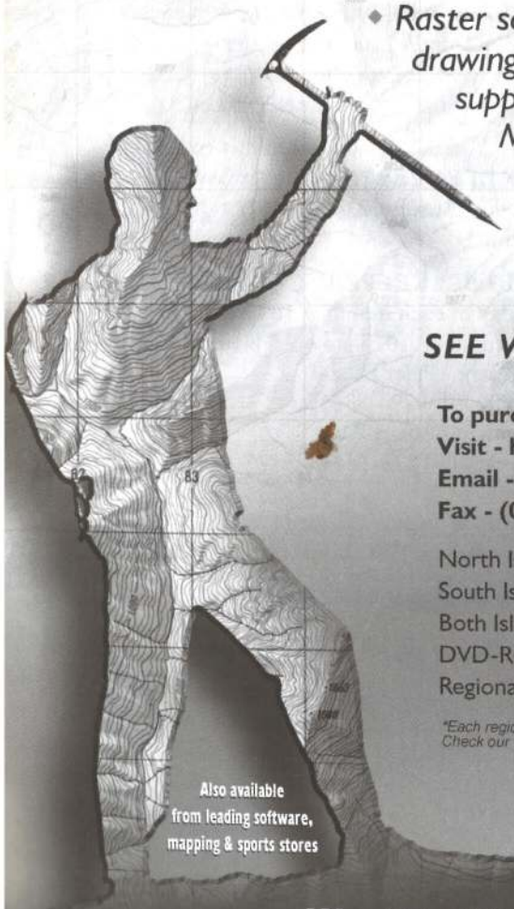

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