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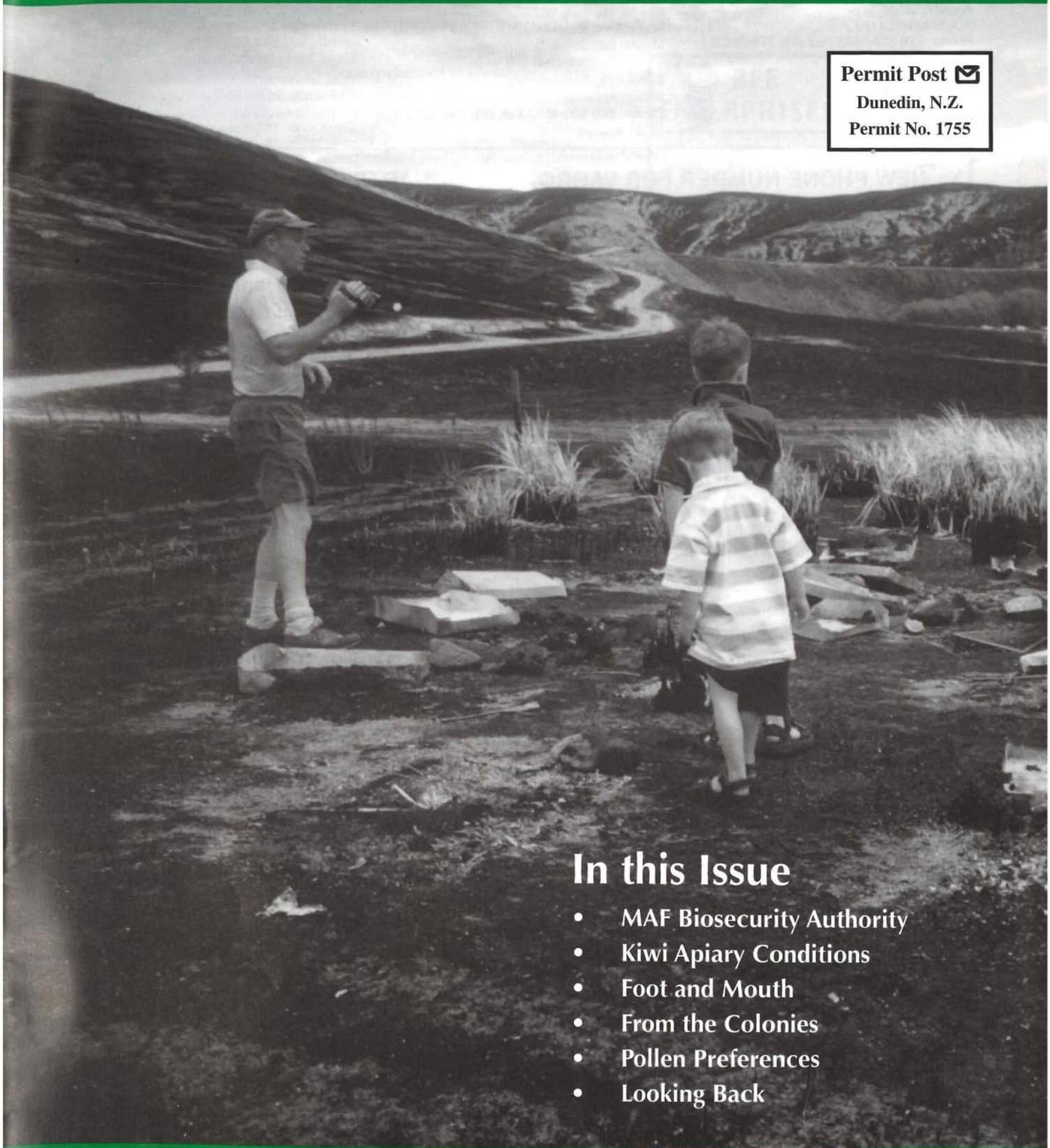

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Open Letter to All members of the NBA.

Over the past year we have introduced a number of significant changes to the National Beekeepers Association operations and management principles resulting in a number of significant improvements to the financial and operational viability of the NBA. The National Executive passed the Strategic Plan back in August 2000 and is working to that three year plan. As with all plans it will require regular review and update.

The financial policies of the NBA have significantly changed to operate and report in the same way as a company. This includes financial budgeting based on standard accounting practices, ensuring revenue is collected and not written off and delegations and authorities more in line with current company practice. Over one year the NBA has turned a deficit into a surplus of over $80,000 and is now trading in a solvent state. The NBA needs to achieve approximately 50% reserves of turnover to ensure long term viability.

Regarding pest management strategy, a number of significant changes have been made to ensure that we have a more operable one. Also looking into the future, how we can make levying and compliance much easier for the beekeeper whilst reducing the expenditure for the NBA.

Last month the executive passed a policy that would mean the 2002 year would have a levy reduction of 10%. This has been achieved through ensuring that a high percentage of the levy is collected and a policy of taking to court anyone that does not pay.

I would dearly like to remain president for the next year but my own career must take precedence. I have been appointed to the general managers/director position for a telecommunications company working in Australasia but based in New Zealand. I will be responsible for the NZ operations of this organisation. Therefore I cannot put myself forward for the executive and presidency as I would not be able to dedicate the time necessary. I have advised the current executive that I will be able to provide advice and guidance if they so require.

The foundations are now coming together and we can build a strong NBA that can truly represent the interests of members in the wider community.

Thank you for giving me the opportunity of being President, I have enjoyed my time in the role.

– *Richard Hatfield*
President, National Beekeepers Association

Front Cover:
Marlborough branch President Gerald Steer and his sons survey the ruins of 17 hives, burned when bush fires swept through the region between Christmas and New Year.

MAF Biosecurity Authority

Paul Bolger

Recent conversations with beekeepers suggest the structures put in place to manage the varroa response are not well understood in the industry. The following explanation may be helpful to some.

On December 6, 2000, the Government instructed the Ministry of Agriculture and Fisheries to work with affected industries on a three-phase plan to manage the impact of varroa.

Phase I (immediate treatment of infected hives) has been completed. Phase II is a two-year transitional plan, running from November 2000 to the end of October 2002. Phase III is a long-term plan, to take effect from the end of Phase II.

To manage this process, three groups have been created on which both MAF and the National Beekeepers Association are represented.

Varroa management group

The varroa management group oversees the two-year transitional management programme. Made up of NBA representatives (Richard Hatfield, Don Bell, Graham Cammell, Tim Leslie) and MAF nominees (Derek Belton, Paul Bolger, Helen Benard), this group advises MAF's chief technical officer on policy issues related to the two-year programme.

The group meets at roughly six-week intervals. Examples of issues discussed are amendments to movement control conditions, timing of surveillance programmes and eligibility criteria for assisted treatment. Any issues relating to the management of the two-year plan should be address to the varroa management group, via the NBA representatives.

Varroa research advisory group

The research advisory group reports to the varroa management group on issues related to research. Its key function is to make recommendations on the spending of the $500,000 of research money allocated by the government for the two-year programme. It contains nominees from the NBA, MAF and FoRST. All decisions on the allocation of research money will be made by the varroa management group, but will be guided by the advisory group.

Varroa planning group

The varroa planning group has been charged with formulating a long-term management plan for varroa, to take effect from the end of the two-year programme.

This group is made up of a range of interested parties; MAF, NBA, Federated Farmers, Zespri International, Pipfruit Growers of NZ, FruitFed/Veg/Fed/BerryFed and local government representatives from the North and South Islands. It has no role in managing the two-year programme, but is concerned solely with what happens beyond October 2002.

It looks at "big picture" issues, such as what legal controls (if any) will be required over varroa after the end of the current programme.

In addition, the NBA has recently formed an advisory group to the NBA executive, comprising one representative from each branch. It is called the varroa advisory/oversight committee.

Hard line on levies

As part of the drive to collect all monies owing, the National Beekeepers Association executive has employed a solicitor to recover outstanding levy debts.

To date, nearly 180 letters have been sent and money has started coming in. One beekeeper was prosecuted and the court awarded the NBA full payment and costs. As the solicitor works through the records in the next few weeks, more prosecutions may follow.

The message is clear. Apiary Levy is a legal obligation on all beekeepers (unless a Statutory Declaration claiming exemption has been filed) and the NBA is determined to recover all levy monies owed.

Beekeepers who do not pay penalise those who do and unfairly increase costs to the whole industry. - **Tim Leslie, executive secretary**

Reports reveal Kiwi apiary condition

By Murray Reid,

National Apiculture Manager, AgriQuality NZ LTD

Fewer beekeepers but more apiaries and hives were counted in the latest American Foulbrood Pest Management Strategy.

At the end of March, 2001, there were 4841 beekeepers, 22,242 apiaries and 320,516 hives, compared to 4956 beekeepers, 22,443 apiaries and 320,113 hives at the last reporting period, at the end of June 2000.

The figures show 115 (2.4%) fewer beekeepers in all apiary registration districts, except in Tauranga and Whangarei. The result was unexpected, considering Auckland is the worst varroa-affected area, but the trend may change once annual disease returns (ADRs) arrive in the next few months and hobby beekeepers choose not to continue after reporting dead or dying hives. Significant hive mortality is being reported to varroa headquarters most days.

Nevertheless, apiary numbers have increased by 450 and hive numbers by 17528, mostly in the Whangarei, Hamilton and Tauranga districts. Some of the figures will reflect late ADRs from last year, and seasonal changes.

Annual Disease Returns (ADRs)

ADRs were sent to 4956 beekeepers last year, but on March 23, 2001, 767 (15.5%) had still to be returned. Some of those may have been beekeepers who changed addresses without notifying AgriQuality and whose forwarding address arrangements had expired. A list of all defaulters were supplied to the National Beekeepers Association last July.

The year's ADRs were printed at the end of April and copies were being mailed out this month with an enclosure supplied by NBA at no extra charge.

DECAs and COIs

On March 3, 2001, 3034 beekeepers had Disease Elimination Conformity Agreements (DECAs) and a Certificate of Inspection (COIs) exemption. That allows them to inspect their own hives for disease and report to AgriQuality on authorised forms.

Beekeepers without an inspection exemption must get a beekeeper with a DECA to inspect and report on the disease status of their colonies.

At the end of March, there were 545 beekeepers with a COI and 1262 COI defaulters. Lists of defaulters, as recorded on December 15 last year, were supplied to the NBA as required.

In Tauranga, the NBA instructed a beekeeper's DECA be suspended for six months for failing to display his registration number. He may go to arbitration on the issue. The beekeeper alleges his company name and address were displayed on several hives, but concedes the registration number may not have been. Audits of several of his other apiaries confirmed each one has his company name and contacts displayed on several hives. Many beekeepers do not display their registration numbers or fail to remove numbers no longer allocated to them.

PMS Inspection

AgriQuality and the NBA found 16 apiaries (10.4%) and 40 hives (4.3%) infected with American foulbrood between July 1, 2000 and March 31, 2001. In total, 410 apiaries and 755 hives were found or reported to have AFB by beekeepers and AgriQuality during this period. The statistics could be understated, however, as many beekeepers report AFB on their annual disease returns.

Lab testing samples

AgriQuality requested 1064 honey or bee samples from 152 beekeepers be sent to the Hort and Research laboratory at Ruakura, on the basis of past disease histories and hive holdings. For example, hobby beekeepers were asked to send in bee samples, while commercial beekeepers were requested to supply honey samples. Commercial beekeepers were generally asked for up to 10 honey samples.

At the end of March, only 213 samples (20%) had reached the laboratory. A reminder letter was sent out earlier this month, prompting beekeepers in the middle of honey harvesting to take samples. They will be reminded to fill in the submission forms, use appropriate packaging to prevent breakage and leakage and send in a sufficient number of sample bees.

Of the 96 honey samples received, none had *Paenibacillus* larvae, while 117 bee samples had nine positives on culture. Of those, eight showed more than 100 colony-forming units (CFUs) on the culture plates, indicating hives with clinical AFB. Six of these hives showed AFB during the summer and were destroyed, while two had only just been tested and a follow-up was yet to occur.

Fifteen beekeepers sent in 19 suspect comb or larval samples for differential diagnosis, in addition to the samples AgriQuality requested. Five were positive. Reports on all laboratory results have been sent to the relevant beekeepers and AgriQuality officers.

Unregistered apiaries found

Eight unregistered apiaries were found, with four being duly registered and the others still under action in Southland. An NBA authorised person is consulting with the beekeeper concerned, to have the apiaries relocated to more suitable sites before they can be registered.

Abandoned apiaries

Sixteen abandoned apiaries and 140 hives were identified by NBA authorised persons. Seven apiaries and 80 hives were destroyed and the others have been taken over by other beekeepers.

Inspections

AgriQuality inspected 67 apiaries and 449 hives from a target of 100 apiaries.

- Palmerston North was over-represented because of a regional disease situation and the destruction of a number of abandoned apiaries.
- Tauranga, Christchurch and Invermay in Dunedin are scheduled to complete their inspection quota this month.
- AgriQuality also inspected another 110 apiaries and 3000 hives during pollination audits and audits for live bee exports. The figures are yet to be recorded in statistics, but only two cases of American foulbrood, both in the early stages of infection, were found during the checks.
- The NBA inspectors (authorised persons) inspected 93 apiaries and 517 hives.

- Auckland, Waikato, Tauranga, Gisborne, Whanganui, Hawkes Bay, Nelson, West Coast and Southland are conducting inspections this month, with the help of AgriQuality apiary lists. Inspections may occur in other regions before the season ends.

Apiaries with AFB destroyed

Beekeepers are generally good at destroying hives with American foulbrood, once advised of its presence or served a formal notice. In one instance, seven apiaries and 809 hives were destroyed as a result of the beekeeper's failure to act on the notice served on him.

Other AgriQuality action

- Seven restricted place notices were sent to nine beekeepers and all but one beekeeper complied.
- 22 beekeepers holding a COI reported finding and destroying 36 hives of American foulbrood in 23 apiaries.
- On March 23, 2001, COIs were held by 1721 beekeepers, between them running 3283 apiaries and 25,891 hives.
- After consultation with the NBA, in December 2000 AgriQuality arranged for a team of authorised persons to destroy seven apiaries and 80 hives, and accompanying derelict equipment, on default of a notice. Many of the hives had American foulbrood.

Varroa surveillance

Two exotic bee disease surveillance programmes last spring involved nearly all apiaries within 6km of the Auckland epicentre or primary cluster, plus the "Infected Places" or "Blips" outside the Auckland Hauraki Plains areas. Many of the originally-infected hives could not be re-sampled because they had been treated with Apistan. Ten apiaries (68 hives) in the Auckland area and one apiary (33 hives) in the Hokianga were inspected and sampled.

The second area surveyed was around Christchurch where AgriQuality and NBA inspected 178 apiaries and 1162 hives.

AFB detected during varroa surveillance

No American foulbrood was found in Auckland, but it was present in 12 apiaries, containing 17 hives in the Christchurch exercise. All AFB hives were destroyed. Some hobby beekeepers with infected hives subsequently cancelled their registration.

Information to disease co-ordinators

Information on request has been supplied to NBA disease co-ordinators so apiaries and hives can be inspected. The importance of restricted access to this information was stressed, with many beekeepers sensitive about the location of their apiaries and the bee disease history of their hives. Material given to co-ordinators included work instructions, inspection forms and spread sheets identifying beekeepers with American foulbrood over the past five seasons.

Apiary database

Information supplied by beekeepers has been entered into a database, with due care taken to transcribe data accurately and code apiaries to their correct inspection districts. New programmes requested by MAF allow better tracking of varroa finds and the allocation of inspection lists to varroa surveillance teams.

AgriQuality appreciates the concerns of the NBA, receiving "gone, no address" letters or abusive calls from beekeepers questioning demands for levies, the return of ADRs or COIs. The accuracy of beekeepers' statements is easily checked by referring to AgriQuality Registrars. "Gone, no address" cases are followed up, using local knowledge, the Internet White Pages, or electoral rolls to locate the beekeeper.

Foot and mouth devastates the whole British economy, reports beekeeper

Beekeeper Willie Robson and his wife Daphanie live at Horncliffe, Berwick-upon-Tweed, on the English side of the Tweed River. Willie talks about life in England, ravaged now with the foot and mouth epidemic.

Foot and mouth disease is not so bad around here - so far. Bees have to be fed and farmers have been very co-operative with us.

The winter has been bad - minus 20degC in February and no electricity for a week. The bees were OK, but many are queen-less.

In areas badly affected by foot and mouth, like Devon and Cumberland, the outbreak has meant devastation to the whole economy: from hotels to tractor dealers. Beekeepers have had difficulties.

One man, 100km south of Horncliffe, told me a lack of pollen means bee numbers are dwindling badly. The foot and mouth is terrible and clouds of smoke and the smell of burnt animal skin fills the air. Wagon loads of dead animals are driven to pits for burying.

Dealers are doing very well by compensation, but small family farms will probably never recover and property developers are moving in. Pedigree herds are being lost and one farmer had 415 dead dairy cows in a field for several days.

Beekeepers in Devon are able to visit their hives, provided they disinfect themselves and their vehicles. The worst problem down there is dwindling bee numbers due to lack of pollen and the bad weather.

In the North of England, there will be enough arable acreage to accommodate the honey farmers. The general consensus is that the government's handling of the situation has been woeful. Animals just buried are now being dug up in case they contaminate the water supply!

Here at Berwick-upon-Tweed, borage is not going to be planted this year as the price has collapsed. I have written to the Ministry of Agriculture, suggesting phacelia (I am told the seed comes from New Zealand) be set aside. We were still selling plenty of honey before Easter but are prepared for a lull.

I would also like to try some plastic foundation (wax-coated). I will have to construct a new BS shallow frame to accept the thick midrib.

We are greatly troubled by damaged combs and broken frames. I would like to use these in polystyrene shallows and use three shallows (10cm) per colony - two for the bees and one for re-queening. The easiest way to re-queen is to use a whole unit with the young queen in it, because the weather is bad and the bees are generally hasty. The third shallow containing the young queen would be extracted once the weather improved.

From the colonies

Auckland

Varroa, varroa varroa . . . is a summary of life for beekeepers in the Auckland area.

Poor weather this summer resulted in poor honey crops and the varroa mite is spreading quickly in the region..

Beekeepers are using monthly branch meetings to try and help each other deal with the problem. Few Auckland apiaries are now varroa-free and reports of mites moving into the Northland, Waikato and Bay of Plenty region keep coming in.

The frequency, the most cost-effective and types of treatment available are all being discussed. Options include the harder chemicals (Apistan, Apivar etc.) to the softer chemicals (formic acid, lactic acid, etc.). Passive control, like the mesh or grid bottom boards; the use of drone frames in the brood boxes and subsequent culling at the correct time; or the use of half frames with the bee-built drone comb at the bottom being stamped out, are all being discussed. The use of copper gluconate has generated interest.

There are reports of city hobbyist hives having died out in the summer, despite having received a full Apistan treatment in the spring. Should you therefore continually blanket treat all your hives during the first wave of infestation and die-out of feral and unmanaged hives?

Many hives in the Auckland area will be wintered where feral and unmanaged hive-collapse is now taking place. This is probably the worse-case scenario for rapid re-infestation.

Other concerns are:

- The initial increase of American foulbrood as the collapse of feral and unmanaged hives occurs.
- Should there be importation of new, genetic stock in New Zealand (e.g. carnolian, which tends to have a more pronounced brood break)? Or should we wait and see how well our existing stocks cope?
- The effect of the different chemicals will have on queens and bees.
- The fear that research money will go into "reinventing the wheel". We should be looking at control methods that are already working overseas and seeing how best they work in our conditions.
- Make contact with beekeepers that are working in similar conditions to New Zealand (do they exist elsewhere?), not just Canadian and English beekeepers.
- The setting up of an extension officer contracted through Government funding to the NBA to help beekeepers come to terms with beekeeping with varroa.
- The slow registration of non-commercial varroa treatment (e.g. formic acid).

"Protect your wintering bees" is advice Australian scientist, world varroa expert Denis Anderson gave when he was over here last year. Ignore it at your peril.

- Brian Alexander

Bay of Plenty

Beekeepers have experienced a rather poor honey season and very few had a crop coming close to average. That was mainly achieved by migrating their hives over long distances.

The package bee export from this region has suffered severely from the varroa incursion and will mean a loss in turnover for quite a few.

Propolis is turning over as normal, but in future people have to be aware that fluvalinate (Apistan) will store readily in propolis and residues may get too high if this is not managed properly. Companies purchasing the raw product need to look into this and set allowable and hopefully achievable residue levels. There could be a restriction on propolis collection, according to the time of year and which part of the hive it comes from.

This autumn, there will be free Apistan to sites identified as varroa-infested. This should encourage varroa finds to be reported to AgriQuality. Next season, the industry will have to manage its own treatments.

The March branch meeting called for the establishment of a branch varroa taskforce to organise and co-ordinate field days, workshops and treatments. There will be a need to register cheap substance treatments, like formic acid and oxalic acid. The branch could also be involved in this process, increasing the chance to make these substances available to our members.

Finally, I want to stress that it is only the economics which dictate the viability of individual beekeepers and the industry as a whole. Whatever restrictions are put on our local industry, the industry as a whole will suffer from it. After this season, it is on its own. While facing the increased expenditure to cope with varroa, it needs every opportunity to try and remain viable and equitable.

- Gerrit Hyink

Marlborough

Murray Bush who attends meetings in Wellington for the New Zealand Beekeepers Association, will speak about varroa at the branch annual general meeting. Starting at 7.30pm on April 23, it will be held in the Rep Room, Simon St, Blenheim. - at the branch annual general meeting.

- Gerald Steer

Northland

April 25 - Combined Northland and Far North branches' Varroa Field Day

An inspection of Brendan Nichols' hives. Meet at 10am in the picnic area by the Rawene turn-off from SH12 (35km from Kaikohe).

Bring picnic lunch, bee suits, hive tools, smokers and flyspray (you don't want to transport varroa back to your own hives).

For more details, contact Northland president Don Hoole (09) 431-7348, secretary Simon Peacey (09) 434-6344 or Brendan Nichols (09) 405-8220 or 405-4874.

- Simon Peacey

Waikato

Honey is being slowly pulled off, but crops aren't looking any better than they were last month.

The varroa mite is spreading tremendously fast around the region. Nearly every day new reports of it are coming in but until all beekeepers get out there and check their hives, we won't know the full extent.

The Waikato branch is holding its annual general meeting on April 20 at the Homestead Ruakura, starting with a cup of tea at 10am.

On April 28, also starting at 10am at the homestead, a field day will be held with Mark Goodwin from HortResearch Ruakura speaking on "Where to Now, With Varroa?".

Beekeepers from the Auckland region will be there to offer a first-hand report on their experiences with the mite. That will be followed by a long discussion time on varroa.

- Lewis Olsen

West Coast

Moving hives and getting things wintered down have been the main activities for beekeepers here over the past month. A branch disease check was recently carried for American foulbrood. One infected apiary was identified and action is now being taken.

A varroa surveillance check will be underway soon.

- Gary Glasson

Otago

An early spring and good rainfall left beekeepers feeling optimistic last year that the season was going to be a good one. But then came a cold snap and many forage bees were lost.

Since Christmas, there has barely been no rain in most parts of Otago and hence, little honey. Crops are less than three tonne per hundred, compared to four to five tonne in a good year.

No rain leading into winter is a concern because bees aren't able to find any honey, meaning beekeepers must stock them up for winter - and probably in spring, too. It's not a good start to the next honey season, if you can't winter your hives well. Still, there's an old saying: "The longer it is from the last shower of rain, the closer it is 'til the next one." Or (to quote Lin McKenzie) "Every drought seems to end with a shower of rain."

- Otago branch members are busy organising the national conference, to be held in Queenstown on July 25. A good line-up of speakers is promised.

- Blair Dale

Far North

A field day is planned for April 23 at Mapuri, down the Hokianga Harbour, to raise people's awareness of the varroa mite.

A lot of people still don't recognise it so anyone who needs to be better informed should go along. We've had Australian beekeepers coming over to have a look, but not many New Zealand beekeepers.

The New Zealand beekeeping industry could learn a few things from its counterpart in Australia, where everyone seems more "switched on" to the risks of foreign incursions and a careful watch is maintained at all the ports for unwanted arrivals. The Asian bee *Apis cerana* was spotted at one and is now contained. Look at where varroa is most prevalent in New Zealand - in Auckland City near the container ports - and it isn't hard to guess how it probably entered the country. The *Apis cerana* bees, while resembling a normal honey bee to the casual observer, are smaller, striped bees which can build little nests in the locking hollows of containers.

- Malcolm Haines

South Canterbury

The extreme dry spell has continued in South Canterbury and is now at the serious stage. Farmers are feeding out to stock already and will go into winter with no autumn growth at all. The fire risk is extreme and hydro lakes in the McKenzie Basin are at all-time lows.

Extracting this season's honey crop is virtually completed with most beekeepers producing a below-average crop.

The fine spell of autumn weather has been ideal for re-queening with two-day-old queen cells, but robbing has been a major problem.

We are now having a bit of a break, waiting for temperatures to drop so we can start wintering down after the Easter holidays

. - Peter Smyth.

Franklin Beekeepers Club

- **Coach trip**: Names are now being taken for Franklin Beekeepers Club members and their families for a commercial visit to Bryce and Sue Hooten, Matamata, on Sunday, June 10. The Hootens market their honey under the Golden Flow brand.
- **Buddy system**: To encourage better communication and help members remember meeting dates and changes, a buddy system is to be re-introduced.
- **May meeting**: To avoid a clash with Mother's Day, the date has been changed to Friday, May 6, starting at 10am at Des and Shirley Carter's, 8 McNalleys Rd, Pukekohe.

Wax moth transmits disease

Evidence gleaned in Switzerland's prestigious Liebenfeld research centre, Bern, has revealed that faeces from wax moth larvae can contain spores of *Paenibacillus* larvae and contribute to the spread or continuation of American foulbrood (AFB).

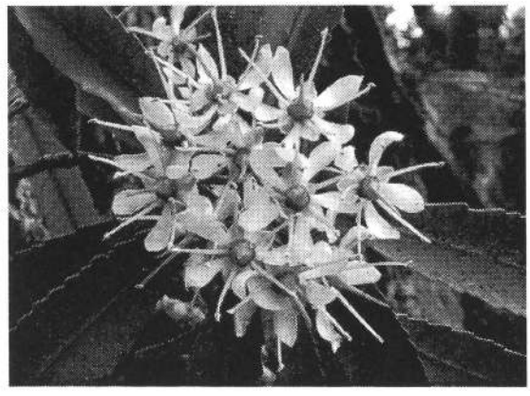
It was long held that hives which had died from AFB, and the combs later eaten out by wax moth larvae, were "sterile". This may now not be the case, emphasising the need for extra care with deceased hive material. (*"Beekeeper's Quarterly"* No. 63), The Australasian Beekeeper, January 2001.

Study identifies bees' pollen preferences

By Rosemary Webby

I work at Industrial Research Ltd (IRL), Gracefield, Lower Hutt, in a plant chemistry team studying a variety of pigments found in plants, including one group called flavonoids.

Flavonoids are popularly known in the health food industry as "bioflavonoids".



Tawari *(Ixerba brexiodes)*

Over the past few years, I have been analysing flavonoids found in bee-collected pollens and I am building up a record of the flowers bees collect pollen from in New Zealand. I have used a technique called HPLC (high pressure liquid chromatography) to analyse the flavonoids in extracts from the pollens, a method developed by Dr Ken Markham and Mr Kevin Mitchell at IRL, along with Portuguese scientist Prof Maria Campos.

The technique gives a reliable, species-specific pattern for all but a handful of similar plants (eg, dandelion family) allowing the floral source of a pollen (and therefore of a bee-pollen mix) to be identified from its HPLC-determined, flavonoid profile.

A number of beekeepers sent bee pollen samples to me through the 1998-99 season and I have used the above technique to identify the floral source of pollens collected. In this project, I have analysed what the bees have actually collected.

Observations from collecting bee and floral pollens, along with those from beekeepers, have enabled me to compile a list of flowers that are important pollen sources for bees in New Zealand (see Table 1).

References in the literature detailing plants considered good sources of nectar and pollen both in New Zealand and overseas, include *The Pollen Loads of the Honey Bee* by Dorothy Hodges, *Practical Beekeeping in New Zealand* by Andrew Matheson and *Nectar and Pollen Sources of New Zealand* by R.S. Walsh. Several scientific papers may also be of interest: "Pollen in Honey and Bee Loads," W.F. Harris and D.W. Filmer (1948), *The New Zealand Journal of Science and Technology,* October 1948 (pg 178-187); "Seasonal Pollen Collection by Honeybees from Grass/Shrub Highlands in Canterbury, New Zealand," W.D. Pearson and V. Braiden (1990), *Journal of Apicultural Research 29 (4)*: (pg 206-213) and "Use of Native New Zealand Plants by Honey Bees (*Apis mellifera* L.): a Review, V.M. Butz Huryn (1995), *New Zealand Journal of Botany, 33*: pg 497-512.

Hebe stricta

Bees collect pollen from many weed and crop plants, but also from native plants, including beech (*Nothofagus*), rewarewa, tawari, five finger, lancewood and other members of the Pseudopanax family, koromiko and other hebes (see Table 1), if these are available.

Hebe canterburiensis

Some of the species mentioned in Table 1 have a long-flowering season. With others, the season is short. This difference could affect the value of a species as a source of bee-collected pollen.

I have also noticed bees forage from preferred plants. Eucalyptus and acacia grow in New Zealand, but I have found few of their pollen grains in the bee pollens studied, although they are important foraging plants in Australia (G.J. Keinschmidt, 1986, Research Papers: Queensland Agricultural College Plant Protection Department and the Queensland Beekeepers Association).

The project is not finished yet so only the major pollen sources are listed at this stage. Also, pollens analysed may not represent every vegetation type found throughout New Zealand.

To help me complete this work, I would ask readers to contact me if they know of other plants that are good pollen sources for bees but are not listed in Table 1. I will then check the flavonoid patterns of those pollens in the flowering season and compare them with pollens from bee-pollen mixes I have. Any worthwhile results will be forwarded to the contributor.

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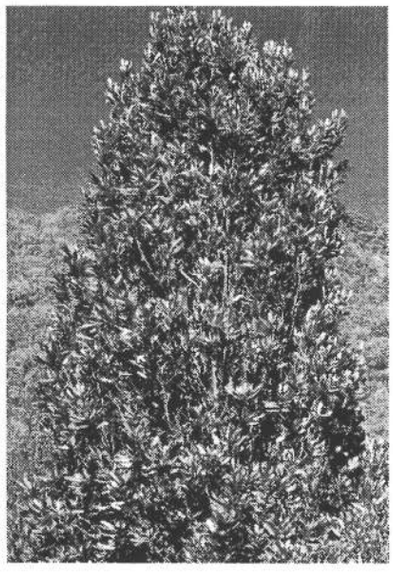
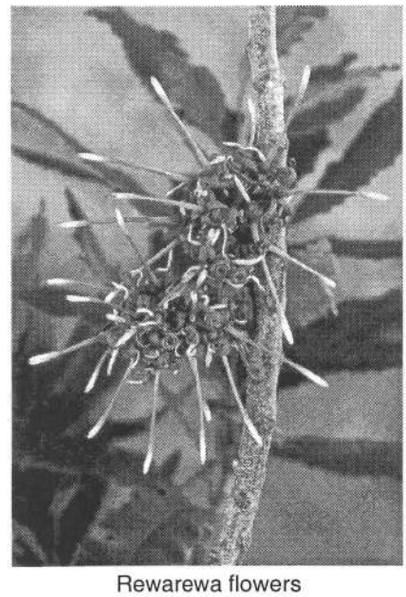


Rewarewa *(Knightia excelsa)* grows into a tall tree



Rewarewa flowers

I hope the following tabulated list will be of interest and that it may help you determine the best area to site your hives.

Acknowledgments: The following people helped supply me with pollen and supported the project: F. Abernethy, A. and M. Allen, V. Alexander, R. and C. Coers, Comvita New Zealand Ltd, F. and M. Lindsay, G. Glasson, G. and I. Hyink, R. Kearney and D. Yanke, G. Kelly, H. McBrydie (HortResearch, Ruakura), C. Richardson, P. Sales, T. Scott, C. Van Eaton. N. Wallingford sent me the Kleinschmidt reference and the project is funded by the Foundation for Research, Science and Technology (in part through contract No. C08X0005-5).

Table 1: Floral Pollen Sources Identified By HPLC Studies of the Flavonoids in Bee Collected Pollens

Very popular sources for foraging include:

- • Beech *(Nothofagus)*
- ¶ Blackberry
- ¶ Buttercup
- ¶ Clover
- ¶ Dandelion family (includes dandelion, catsear, hawkbit)
- • Five finger
- ¶ Gorse
- ¶ Hawthorn
- • Kahikatea (white pine)
- • Koromiko
- • Lancewood
- ¶ Plantain
- • Rewarewa
- ¶ Sycamore
- • Tawari
- ¶ Thistles
- ¶ Willow

Other plant sources include:

- ¶ Box
- ¶ *Brassica* species e.g. wild radish
- ¶ Broom
- • Cabbage tree
- ¶ Cherry laurel
- • Clematis species
- • Coprosma species
- • Corokia
- • Flax
- • Fuchsia
- • Hebes, including koromiko
- • Kaikomako
- ¶ Kiwifruit
- ¶ Lawsons cypress
- • Lemonwood
- ¶ Lotus
- • Matagouri
- ¶ Meadowfoam
- ¶ Nightshade
- ¶ Pine
- • Pohutukawa
- ¶ Privet
- ¶ Ragwort
- • Southern rata
- ¶ Spanish heath
- • Tainui
- ¶ Teline
- • Totara and other native conifers

- • Native Species
- ¶ Induced Species

LET'S PUT THE SQUEEZE ON OUR BEES

Looking Back

R. R. BUSHBY started beekeeping in 1931, purchasing eight hives in petrol cases at a cost of a dollar each. The first honey sold for five cents a pound.

He joined the Canterbury Branch of the NBA and when secretary, James Foster of Washdyke retired and the South Canterbury members decided to form a branch of their own, he became secretary of Canterbury with its headquarters in Christchurch.

• This story was first printed in The New Zealand Beekeeper in August 1975.

For over a hundred years, since Langstroth invented the movable frame hive, beekeepers the world over have striven to increase the yield of honey from their hives. Many like myself have spent a lifetime trying to breed more productive queens.

Two queen hives, hybrid queens and all manner of systems of management have been used to try and boost production, most of them with limited success. At our 1975 Conference, Mr I. Forster stated in his address that no significant break-through had been made in the beekeeping industry. We may be nearer to it than you think.

About 1967 we found that colonies in which the queen was restricted to one brood box with ten frames, produced more honey than those where queens had the run of two supers. We thought at this stage we were making some progress.

In 1971, I attended the 23rd Apicultural Congress in Moscow. About a year later I received the report of this meeting, with all of the papers submitted. An article by M. A. Alber of Italy entitled **"A Century Of Wrong Spacing"** interested me. Alber wrote: "That Hoffman relied on natural combs built by German Blacks before adopting 35 mm or 1 3/8" spacing for Langstroth bodies. Quinby suggested 11" spacing and Dadants adopted it and this was followed by some British and German researchers. While the right cell size caused endless discussion for long years with the only exception of the Soviet Union nobody seemed to be interested in right comb spacing. More than 20 years ago Livenets described the reduction of space as a current trick for better spring built up. Later Soviet research revealed that a narrow space of only 30 to 31mm. 1 3/16" to 1 1/4" gave about 25% more brood surface as compared to that of wider spaced colonies (see "Pchelovodstvo 1951/1").

Much research was done by Alber on measuring combs built with swarms of various races of bees available in Europe and the spacing varied from 30-35mm; Italians preferring the narrower and Carniolians the wider space. In June 1970, Alber & Compagna revealed excessive spacing as the main cause of violent Nosema and therefore decided to study the natural spacings of various races of bees. From this it was found most swarms remained more or less below the narrower 35mm Langstroth hives. Italians of the universally-known PIANA stock had a scarce 31mm (1 3/16") spacing, (exactly what Soviet scientists had found best for their smaller bees of the south).

Alber made no mention of the resultant honey crop, nevertheless his findings aroused my interest and my son James and I decided to make our next batch of frames with 1 1/4" end bars. On assembling them we found that 11 frames would go in a super and give about 1/4" clearance. There didn't seem any point in using only 10 frames when 11 would go in, even though most apiary instructors tell us to use nine, to make manipulations easier.

In the November 1974 *N.Z. Beekeeper,* G. M. Walton, on metric measurements for Langstroth hives, goes into great detail on bee space but nothing is said on comb spacing except in the list of frame sizes. He gives the size of Hoffman end bars as 33mm. Only 10 such frames will go in a super with 7/8" sides. By reducing it to 32mm, then eleven frames would go in.

It took some time to get supplies of drawn combs to try out as a brood nest and with only one swarm the first year, nothing significant was noted. However, last season we made considerable increase in colonies and with a reasonable honey flow and a number of colonies dispersed through the outfit with eleven frame brood chambers, the results were apparent to even a casual observer.

A conservative estimate, was at least 25% more honey surplus, not counting the top brood box or food chamber, left on over winter with the excluder removed. This "food" super contains ten 10 frames and the queen is put down in the bottom box in the spring and the excluder replaced between the brood supers. The bees then proceed to fill the food chamber as any brood in it hatches and this honey is left for winter stores. Only supers above the second box are harvested.

Although 1 was a carpenter, work was not plentiful in the depression so hive numbers were gradually increased.

On shifting the hives to their wintering sites (it is too cold and wet to leave them on some of their summer sites on the West Coast) it was noticed those with 11 frame brood boxes were much heavier than the rest. It appeared that they could have stored some honey in the bottom box as well. These hives produced one super more than the, others which were four storey, and may have produced more if we had the supers to put on them - meaning an increase of nearly 50% could be possible.

Bees will not tolerate open spaces in the brood nest and proceed to fill it with comb. With 11 frames per box with 1 1/4" end bars we find that we have 3/8" between the top bars, which are 7/8", the same thickness as a brood comb. (Australian type top bars of 1" are useless here), we have two layers of bees one on each face of the comb. With 1 3/8" end bars we have 1/2" between combs, so we get three layers of bees, and we squeeze out this extra layer. These bees were serving no other purpose than maintaining the micro climate, enabling the queen to lay in these outer combs, otherwise unattendended.

Hence, the faster build-up with 25% more brood, as found by the Soviet researchers 25 years ago, or should it be nearer 33%? When the brood chamber becomes full of bees the overflow moves into the supers and out into the fields to work so we have 25%. more workers, as there are no "hangers-on" in

this eleven- frame set up, except under the bottom bars. However, this area could be built up with drone comb, as there is no space for drone comb with 1 1/4" spacing. Drone comb, according to Alber requires 1 1/2" or 40 mm spacing.

With this system we get straight, flat combs provided the foundation has not been stretched or buckled. There is no need for brace comb or bridging pieces or lumps of wax on the sides of the top bars or supers. They make removing the first comb difficult, even in nine-frame units. A hive tool with a hook on one end is a help, especially if you have thick fingers.

How is the space in a super used?

In a super containing nine frames 8" is taken up with comb and 6 1/4" space for bees. With 11 frames, we have 9 5/8" for combs and 4 5/8" for bees and therefore approximately 25% less bees and two more frames of brood. It takes 25% more bees to fill a nine frame brood box and we have 20% less comb area. It is this comb area, per cubic foot, that is the vital factor. To spread the brood combs out through more supers only accentuates the problem of idle bees and perhaps it is these bees which get the swarming impulse.

I know some will say an up tight brood nest will have no freeway for the hordes of returning honey gatherers. Pollen collectors deposit their loads directly in the cells, but most honey gatherers disgorge their load just inside the hive. Perhaps a top entrance made by sliding back the super on the queen excluder could be to the bees' advantage when the honey flow starts.

There is still a lot more to learn on this and our apiculturists are limited in their work by the lack of basic materials. It is up to us as beekeepers to try and test any methods which can help our crops and pass on what we have learnt through our journal.

In conclusion, my thanks go to Mr M. A. Alber of Italy for making his research available to beekeepers through Apimondia. My only regret is we didn't have the information on Soviet Union research 25 years ago.

Portfolio reports

A Support portfolio being developed has reached the stage where a committee is to be established (see page15). An application to the "Sustainable Farming Fund" earlier this year was not successful and a re-written application has been submitted. A similar application to the Industry Trust Fund is to be made.

The thrust of the portfolio will be to develop support systems in areas perceived as inhibiting Beekeepers' ability to operate their businesses in a profitable and rewarding manner. Comment and suggestions from members are sought.

The status of the Communication portfolio is action in order of priority.

- Library and magazine have been ranked as "priority one".
- Electronic communication system as "priority two".
- Industry "Profile Document" as "priority three".

The library is now operating again and the executive has approved the purchase of a computer system.

The magazine is now being published under a different concept and development proceeds. An editor with journalistic training has been appointed and is coming to grips with our requirements. An editorial committee to assist her, particularly with technical matters, will be soon appointed.

Development and expansion of the web page will happen in the short to medium term. Suggestions are welcome.

The "Industry Profile" document, to be updated and reprinted as finance allowed, can now proceed. Figures will soon be put to the executive.

Hives settle down for winter

By Frank Lindsay

Winter is drawing nearer. Mornings dew is getting heavier, the days are shortening and midday temperatures are falling. The dry weather continues, although two days of good rain last month helped to green the countryside. That stimulated the bees into bringing in a little nectar, although after two or three days they were hanging around the extracting plant again.

Hebe, lace bark, eucalyptus and a few banksias are flowering, although not as prolific as last year. One advantage to the lack of nectar is it stops the constant dribble often occurring in February and March. That stimulates brood production, which eats into the winter stores, leaving hives a little light just before winter. This year, the hives are still full of honey but there are fewer bees.

Depending upon their location, bees have either formed their winter cluster or are just about to. On fine days, drones are being harassed and driven out of the colonies. Most hives retain a few drones, though, and ones headed by older queens tend to keep more through the winter.

To understand what's happening inside a hive, look at the landing boards and observe the bee activity. A few chalk brood mummies outside warrants a closer look in the brood nest. The hive may need a replacement queen in spring or have its dark brood frames replaced.

With little grass in front of the hives, dead bees outside them stand out. I have found 20 to 40 dead bees although, a closer look revealed acute and chronic bee paralysis. The bees were crawling around the ground, or were being ejected from the hives by other bees. Ones with wings slightly ajar have acute bee paralysis and those with totally hairless bodies have chronic bee paralysis. The problem is overcome with re-queening.

I read recently that viruses invading damaged bees is what kills varroa-infected hives. I will now try and eliminate crippled bees from the hives so healthy bees have a better defence.

Once all the work in the apiary is done, thoughts turn to comb storage. Honeycombs are one of your most precious pieces of equipment. To draw out the frames in a super, about 5kg of honey was used - quite an investment by the bees. With the right care, however, they can be re-used for years, although it takes only a month or two's neglect, for mice, rats or wax moth to damage them.

Some commercial beekeepers store their supers in ventilated sheds on raised stands. Cold air then flows through them, stopping the wax moth developing. Chicken wire or queen excluders cover the stands to protect the stacks from vermin.

Hobbyists usually store their supers indoors, making them a prime target for wax moth attack. Dark combs with a little pollen residue attract them, so melt them down or protect in other ways.

Most beekeepers use PBD (paradichlorobenzene) crystals to protect their honey supers. It leaves no residue in the wax and the supers can be used on the hives next season after a day's airing. Never use mothballs.

Stack the supers on half a dozen newsprint pages and block any cracks between supers with more paper or foam plastic. On top of each stack, place two tablespoons of PBD crystals in a dish or piece of paper, then seal the stack. Gas produced by the crystal, being heavier than air, expels the air and kills moth larvae. It does not kill moth eggs, however, so the treatment must be repeated in a month's time.

An alternative for those with just a few supers, is to freeze them for 48 hours, killing both eggs and larvae. Store supers in large plastic bags, or as above.

Frames can also be sorted in each super. Place foundation or newly-drawn frames on the outside and intersperse dark with light ones in the middle. Then, if a moth lays eggs on the outside of the super, the larvae must crawl a long way before it finds food. In most cases, the PBD will get them first.

Frames with only slight wax moth damage can be saved. Run the hive tool along the web tunnels and kill the larvae. That opens up the wax cells for the bees to repair. Severely-damaged wax makes excellent fire starters - but make sure the chimney has been cleaned, as they burn pretty hot.

Things to do this month:

- Check feed.
- AFB check.
- Slope bottom boards for water drainage and fit mouse guards.
- Replace rotten or damaged supers and bottom boards.
- Attend to fences.
- Fumigate for wax moth, check for wasps, store extracted boxes and control grass around hives.

I have asked Bill Bosanquet to write about 31mm frames. Now we have varroa, the principle behind them should be looked at again. Single brood box colonies, no drone brood in the frames, cheaper to treat, more honey . . . ?

Frames are used from three to 10 years, depending upon your replacement raceme. Think carefully before ordering your next frames.

Farewell to Ron Stratford..... Nelson NBA Life Member

(4-1-1916 to 11-1-2001)

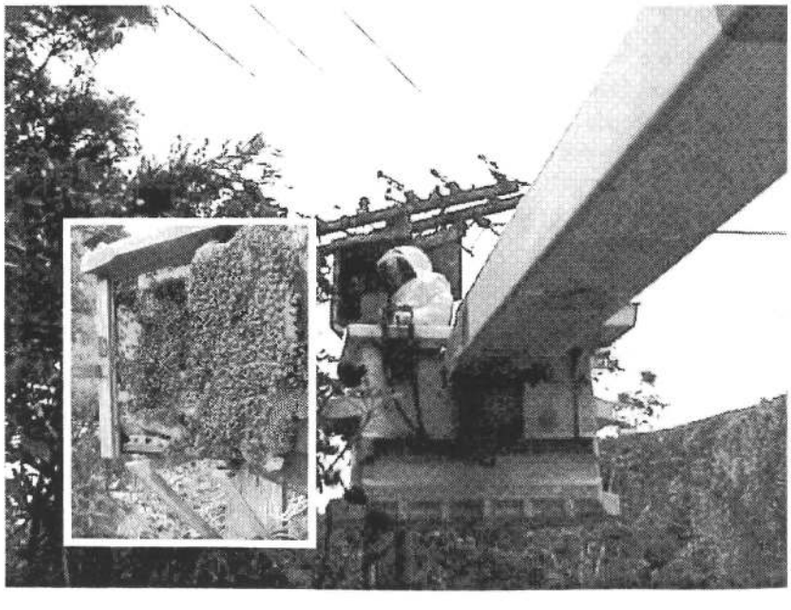
The Nelson branch of the National Beekeepers Association has recently lost its 150% character beekeeper, Ron Stratford who lived, walked and talked beekeeping. His back section, workshop, queen yard and think tank were the congregating zone for most Nelson Beekeepers at some time during their careers.

Ron's formal education may have been short lived but growing up through the depression forged in him lessons about independence, innovation, and economy, that were reflected in many of his sayings: "waste not, want not," "cut once, measure twice," "the pub pays no dividends" and "of COURSE we can make one."

Ron picked up the Chris Dawson concept of the DV Variable Nuc, experimented and refined it over 20 years and made a classic contribution to queen rearing in the form of the "Multi Nuc Hive". Ron could start, finish and pick up to six mated queens from the one FD box (see video in beekeeping library). Ron believed strongly that knowledge, like a relay batton, was to be taken up from others, added to and passed on.

Even in his final year Ron would leave the comfort and warmth of his nursing home to support our branch meetings. Here in Nelson, Ron and his mate Fred Galea were role models of "committment to the cause", always first to inject some common sense comment, to volunteer to host a field day, visit a school, or introduce a novice to the magic of bees, ("...what I know about bees would fill a book and what I don't know would fill a library").

Ron used to say that old beekeepers never die, they just lose their sting. Well, Rons' wings finally wore out but here in Nelson there is hardly a beekeeper who hasn't picked up the "beekeeping batton" from Ron. So his "sting", his humour, solid values and commitment to beekeeping will be around for some time to come.



Two photographs showing the removal of bees from a hot water control cabinet in Lower Hutt.

The honey and the majority of bees and brood were rescued and added to a nuc. The rest of the bees were destroyed because other bees around the area had started robbing the hive.

Good Keen Members Needed

The call is out for three people to form a dynamic support committee to advise and make recommendations to the executive and operate an extensive support programme.

A support portfolio is charged with designing and initiating programmes to support beekeepers in their operations. It is envisaged these will range from setting up business management courses to practical beekeeping training. An application to the Sustainable Farming Fund has been made and other funding sources are being investigated.

Beekeepers will need the ability to operate "sharp" enterprises to survive the advent of varroa and "Support" is viewed by the executive as an urgent and important part of meeting the most serious challenge ever faced by the industry. The first task for the committee will be to assist in the development of the "Terms of Reference" they will work under.

• Contact Lin McKenzie(03) 444-9257 if you would like to take up to the challenge.

Training Course

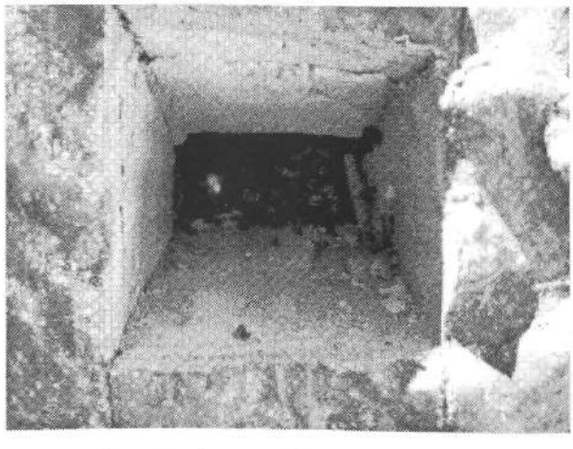
An American Foul Brood Recognition and Destruction course, followed by a Pest Management Strategy AFB competency test will be conducted by authorised instructors Lindsay Moir and Jeff Chandler, Christchurch Beekeepers Club, on May 12.

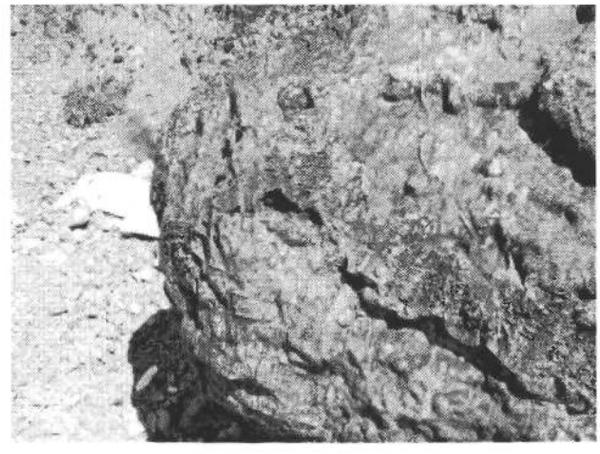
The course will be held in Christchurch from 9am to 1.30pm and the test will start at 2.30pm. Morning refreshments will be provided and a 30-minute break taken for lunch.

Course costs including the test fee will be $60, (a non-refundable $25 goes to NBA), persons not wishing to sit the test at this time will pay $35. People wishing to sit it must pay by May 1 so test papers can be arranged.

It is anticipated these courses will be held on an annual basis.

Contact Jeff Chandler, Ph (03) 385 5375 or LINK mailto:jchandler@xtra.co.nz jchandler@xtra.co.nz for more details.





Workers during the cleanup of the film set at Haywards *"Lord of the Rings"* site, struck a problem when it came to disposing one of their polystyrene boulders. The boulders were approximately 1.6 metres in diameter and had a hollow in the middle. A perfect place for a hive. The right size cavity, warm and protected from the elements. Unfortunately, the hive was unable to be saved.

ADVERTISING RATE

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Black & White	$75
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Rates for inserts and 4-colour advertisement along with specified positions are subject to negotiation.

Straightforward typesetting and layout for advertisements will be included as part of the insertion rate. Additional costs will be incurred where logos and graphics are required to be scanned.

Please contact Allan Middlemiss for clarification and costings. — All payments to be made to Crown Kerr Printing Ltd. P.O. Box 5002, Dunedin

Copy for advertisements may be mailed, faxed, emailed or supplied on disk providing it is formatted for Macintosh. Please check with us before you forward the disk.

Articles published in the NZ Beekeeper Magazine are subject to scrutiny by the Associations publication committee but do not necessarily reflect the views of either the Association or the publisher.

BRANCH CONTACTS AND MEETINGS

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

AUCKLAND BRANCH
Meets last Monday of the month at 7.30p.m. at Ceracell BeeKeeping Supplies
24 Andromeda Crescent, East Tamaki
President: Brian Alexander
Phone/Fax: (09) 420-5028
Secretary
Jim Thompson
Phone/Fax: (09) 238-7464

AUCKLAND BEEKEEPERS CLUB INC.
President: Ian Anderson
Phone: (09) 480-8327
Email: ianderson@clear.net.nz

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

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

CANTERBURY BRANCH
Meets the last Tuesday of every month. February to October.
Field Day November.
Contact: Trevor Corbett
Phone: (03) 314-6836

CHRISTCHURCH HOBBYIST CLUB
Meets on the first Saturday 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: Maggie James, 21 Humboldt St, Christchurch 8002. Phone: (03) 337-2421

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, Dorothy, Phone (03) 488-4390

FRANKLIN BEEKEEPERS CLUB
Meets second Sunday of each month at 10.00am for cuppa and discussion and at 10.30am open hives.
Secretary - Liz Brook
187E Clarks Beach Road,
R.D. 4, Pukekohe
Phone: (09) 232 1111
Mobile: 025 720 761
Fax: (09) 232 1112
Email: liz@pageset.co.nz

HAWKE'S BAY BRANCH
Meets on the second Monday of the month at 7.30pm,
Arataki Cottage , Havelock North.
Phone: Ron (06) 844-9493

MARLBOROUGH BRANCH
contact Jeff: (03) 577-5489

MANAWATU BEEKEEPERS CLUB
Meets every 4th Thursday in the month at Newbury Hall, SH 3, Palmerston North.
Contact: Andrew MacKinnon
Phone: (06) 323-4346

NELSON BRANCH
Phone: Michael
(03) 528-6010

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

OTAGO BRANCH
Phone: Mike (03) 448-7811

POVERTY BAY BRANCH
Contact: Barry (06) 867-4591

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

NORTH OTAGO BRANCH
Bryan O'Neil
Phone: (03) 431-1831

SOUTHERN NORTH ISLAND BRANCH
Contact: Frank
Phone: (04) 478-3367

SOUTHLAND BRANCH
Contact: Don Stedman
Ph/Fax: (03) 246-9777

TARANAKI AMATEUR BEEKEEPING CLUB
Phone: (06) 753-3320

WAIKATO BRANCH
Contact Tony: (07) 856-9625

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

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