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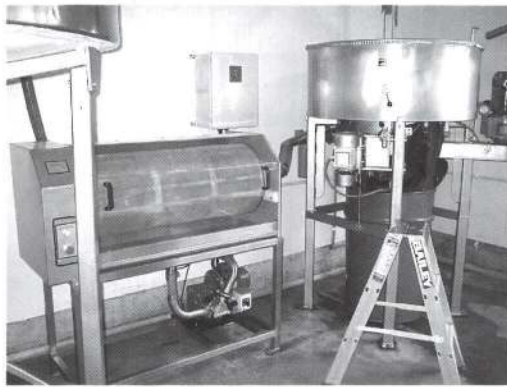
It's all on!

Southern North Island Field Day

Photos by Frank Lindsay



Some of the day's participants



Rotary honey strainer (Boutelje model)



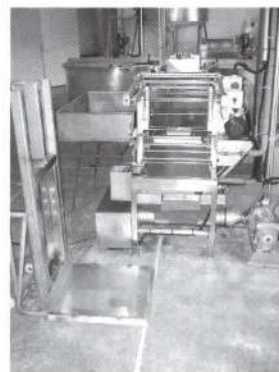
Four generations of Tweeddals : Sean (5), Mark (28), Concheta, Don (55), Stuart (89). Sean can just lift a super.



Beekeepers inspecting a hive



View from the honey tank



Front end of the process, including lifter, uncapper, auger

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President's Report

Trip to Chile and Argentina

Tony and I have just returned from two and a half weeks in Chile and Argentina. We spent most of our time at two symposia, where we gave five presentations in total to beekeepers in both countries. It was a very interesting time and provided a learning experience to both parties. We will provide a couple of articles for the journal at a later stage.

Code of Practice meeting, Wellington

The beekeeping industry code of practice for the Risk Management programme is being progressed by the New Zealand Food Safety Authority, with assistance from many beekeepers and bee product companies. Parts 1 through 4 have now been drafted, and I understand that there will be a further meeting in Wellington on 16 November. After the last meeting on 7 September there was a short meeting to consider setting up a consultative forum for issues that will need addressing in the near future. Topics on this agenda include:

- risk management programmes
- plant alkaloids
- residue monitoring and control
- product traceability
- transfer of compliance information between establishments (eligibility)
- American foulbrood, and the use of the NPMS database
- cost recovery
- overseas market access requirements.

I understand that the next meeting to begin looking at these issues will be on 17 November.

ERMA meeting 23 September

The Environmental Risk Management Agency regularly runs public meetings where individuals or organisations can raise concerns about the work that ERMA undertakes. At the latest meeting on 23 September, the NBA raised two issues that have been significant in the past. The first was to do with surfactants: to bring to ERMA's attention previous research carried out by Dr Mark Goodwin showing that some surfactants are deadly to bees. We asked if surfactants will have to be registered, as well as asking if warning labels will be used to ensure that bees are not harmed. We also raised the issue of the use of systemic insecticides on crops and their possible harm to bees that forage on that crop. A report on this meeting is likely to follow.

Executive – PMS Operations Committee meeting

The Executive and the Operations Committee met in Hamilton on 22 September to work through some issues, especially those related to governance. The Executive also met on the afternoon of 21 September. Most of this day and a half was spent on the Pest Management Strategy and the role that the NBA has in its capacity as the Management Agency.

Prior to this meeting Ian Spence had handed in his resignation as Chairman of the Operations Committee. Ian had indicated to me on several previous occasions that he wished to resign,

as his personal circumstances had changed and he now no longer had the free time to put into the PMS. We thank Ian for the considerable work that he has done on the Operations Committee, and in particular as Chairman of the Committee. I know the job was extremely difficult at times. Thanks, Ian. I hope, though, that you will still be available on occasions to give us some friendly advice.

In looking at the governance issue, the Executive has made the decision to disband the Operations Committee and to form a specialist advisory group. We thank the Operations Committee for their valued input in the past and have asked the members to make themselves available as part of the advisory group. Most have indicated their willingness to do so.

As we delegate jobs to our AFB PMS Manager, James Driscoll, he will be asking various people to help him to complete the tasks required. This may be, for example, an individual with accounting skills to assist with the drawing up of the budget, or a group to draw up the Operational Plan. If a group is formed to carry out a task, a chairman will then be nominated. We believe that this will allow for more timely progression of the PMS.

We have drawn up a broad structural overview to illustrate how each of the organisations and individuals that are involved in the strategy will interlink with each other. You can find this diagram on the next page.

- Jane Lorimer

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American Foulbrood Pest Management Strategy update

Recently the NBA Executive, meeting as the American Foulbrood Pest Management Strategy (AFB PMS) Management Agency, reaffirmed the NBA commitment to the AFB PMS. We have taken steps to clarify the structures and procedures now in place, as illustrated in Figure 1. A major change is that the Executive has decided to disband the Operations Committee and to form a specialist advisory group.

With the appointment of a paid manager (James Driscoll) earlier this year, the formal separation of the PMS administration has now become possible. The manager is responsible for the day-to-day running of the PMS. Tasks that were formerly assigned to the Operations Committee are now the responsibility of the manager. James will utilise or employ advisors and resource people as necessary.

All beekeeper account details are now entered into a database and consolidated accounts are now able to be produced. To minimise PMS administration costs, it is important to eliminate unnecessary duplication of communications and accounts. The new system will allow timely accounts to be produced and penalties as specified under the biosecurity order to be added automatically, so that non-payers will eventually meet their extra costs.

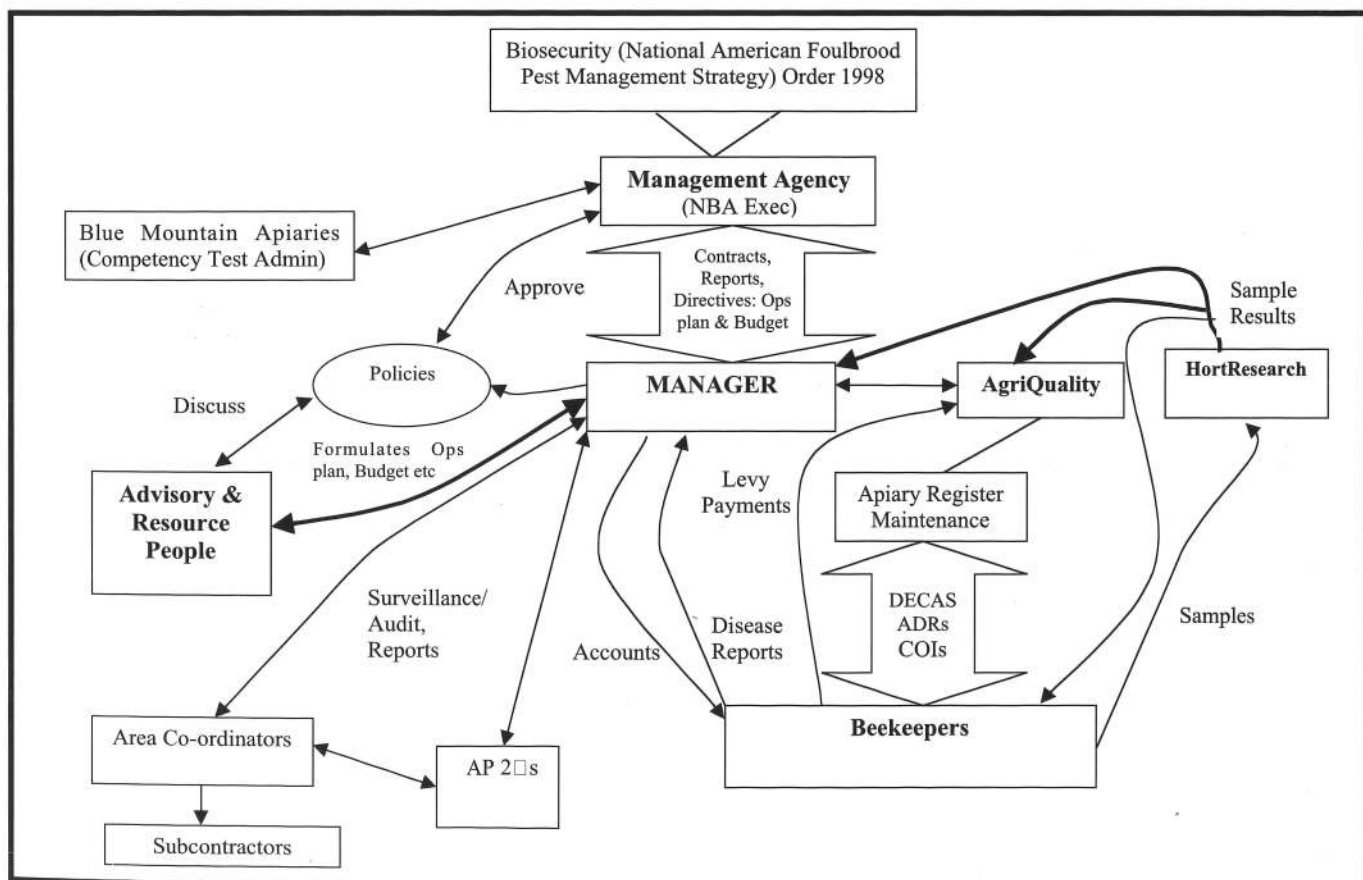
As James is working for us as the PMS Manager for only a few hours each week, all communication with him must be either in writing or via email. We want his time to be used as productively as possible to maximise efficiency at minimum cost. James Driscoll can be contacted at PO Box 9098, London Street, Hamilton. His email is james@driscoll.pn.

We need the active cooperation of beekeepers if the PMS is to succeed in its goal of eliminating AFB. By refining procedures and setting up more effective surveillance and auditing systems, we hope that compliant beekeepers will see the value of the strategy.

Some hive owners currently choose to ignore their obligations under the PMS order. The Biosecurity Act provides severe penalties for non-compliance. If education does not bring about compliance, the Management Agency will use the provisions of the Biosecurity Act to prosecute and enforce compliance. AFB does not stay within a single hive or behind a fence. No beekeeper wants to be affected by the actions or inactions of his neighbour.

- NBA Executive

Figure 1: Operating Structure of the American Foulbrood Pest Management Strategy



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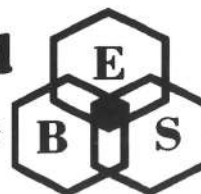
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From the colonies



Hawkes Bay Branch

Most of the stone fruit hives are in the orchards by now and as I write the apple hives are just starting, so no sleep for a while. The hives are starting to recover from the weather in August: indeed, we could use some rain at the moment as it is getting very dry, but the hives have plenty of pollen and are starting to breed up well. Winter losses have been a lot higher than normal for most beekeepers in this region; still, a hard spring is usually followed by a good honey crop.

- John Berry

Southern North Island Branch

Reports from around the region show that the season has been extremely variable. Many beekeepers have come through the winter with strong hives; others, particularly those who experienced storm damage in February, have later had hives collapse in spring — some have lost an entire apiary. The combination of water damage, poor mating, and varroa has made it very difficult for some. In Manawatu there are entire apiaries that seem to be abandoned.

But for those that are starting or are about to start pollination services, life goes on. Plums are nearly finished; pears should start within the first two weeks of October and this will help cashflow. One of the themes we talked about on the field day on 25 September was the strapping, loading and moving of hives. We need to be aware of the responsibilities that we as beekeepers have to the general public and to anyone assisting us with pollination. Moving hives can be stressful, but safety is paramount.

Members are wondering what has happened to our declining numbers: it seems that there is a far greater number of non-member beekeepers, both commercial and small beekeepers. All of us have a responsibility to talk to our fellow beekeepers, both commercial and hobbyists, and ask, "Are you a member of NBA? If not, why not?" We all need to have a voice in the wider corridors of governance, not only within the bee industry, but also with local government and government departments. Collectively we can make a difference.

Drones are now being found in hives and the odd queen cell will appear soon if we are not careful — swarming with all its related problems is nearly here. In the Wanganui region, it is easy to see varroa in drone cells and that can be a wake-up call, if treatment has not already been started.

- Neil Farrer

Canterbury Branch

Once again September has rolled around. After a cold start to August, with very few bee-friendly days, September has just started to improve in time for the start of the willow flow. The 20th saw the first gatherings in my hives, so now we just have to hope that the equinox winds are merciful and leave the catkins on the trees for a few more days.

2005 NBA Conference planning is well underway, so watch this space for details as they become confirmed. The dates for the 2005 conference are Monday 4 July through Thursday 7 July 2005 (inclusive), at 'Chateau on the Park' in central Christchurch. Look forward to seeing you all there.

- Brian Lancaster

Southland Branch

Yet again, a late snowfall after a mild winter has knocked back hive development and created access problems for beekeepers trying to complete their spring rounds.

The very poor autumn left nucs and weak hives short of stores and mortality has been high.

Southern beekeepers have been gutted by the decision of the Minister of Agriculture to approve a varroa PMS for the South Island. While our submissions were listened to, they do not appear to have been heard and the proposal has very little support among beekeepers in the south. We cannot see whose interests will be served by the strategy. Certainly ours will not.

Stewart Island beekeepers are hoping that they will be left out rather than expected to fit in to the varroa PMS. Despite points made in early submissions, they have been totally ignored by the proposal.

The AFB PMS has general support in this area and a high level of compliance. The varroa PMS has very little support and noncompliance is widely threatened. Fortunately the new prison in South Otago is situated in a good beekeeping area!

- Don Stedman

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Southern North Island field day – Taihape

This year's field day was hosted by the Tweeddale family on 25 September. Stuart Tweeddale started the business after the Second World War and with a rehabilitation loan he purchased 200 hives. Times were tough in the initial stages. It didn't help that honey was graded by colour, and as the region only produced dark bush honeys — Kowhai, Rewarewa, Kamahi and Manuka — payments for honey were always below those of the clover producers.

The business has expanded greatly since Stuart's son Don took over. The initial buildup was for kiwifruit pollination but they pulled out of this activity when the Varroa Movement Control Line prevented them from moving their hives back home again after pollination in the Bay of Plenty. Since then they have concentrated strictly on honey production. They run over 7,000 hives (objective 8,000) with a staff of six, three being family members. (No wonder Don works seven days a week and can't attend branch meetings!) Both Stuart (approaching 90 years) and his wife Thelma are still active in the business.

The Tweeddals are fastidious when it comes to beehives and this extends to all their activities. They believe farmers like things neat and tidy, so anything coming on to their farms should be the same. They also feel that there is a positive side to everything. When Don first found a hive with foulbrood, he would build 20 to replace it. When beekeepers were thinking of retrenching, he increased hive numbers. The family believes that everything should be in peak condition:

no time wasting. All their supers are dipped for 24 hours in Metalex when new and hand painted in the 'Tweeddale's Green'. You know whose hives they are when you see them in a paddock. They're all the same colour: light green supers with dark green roofs. Brood supers are repainted about every five years and any with a bit of rot is discarded to the woodpile.

Just recently they have extended their sheds and put in a new extracting plant. Don had invited the branch to hold our field day there and tour the facilities. The weather was overcast and cool, with guests and upcountry beekeepers shivering at times as they hadn't come dressed for the inland climate. An ideal day to hold a field day.

Sixty persons viewed the Tweeddale's honey house and buildings. Well, it's not really a honey house as such but two huge steel frame buildings joined together and finished with foam-filled panelling. One building is used for super storage (20,000 honey supers are stacked in there at present) and the other is used for honey extraction. They emphasise hygiene and because young children are around, everything is up to OSH standard. All the light switches and power outlets are in waterproof housings and all machinery is guarded so little fingers can't get in.

After the bees are removed from the honey supers, mostly with a blower, they are unloaded using barrows (sunken dock) and brought into a heated room and left overnight, where most of the bees left in the supers migrate to nuc hives (the

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The extracting shed



Different straps were demonstrated by Allan Richards.



24-frame tangential extractor (Boutelje)



Mark Tweeddale loading sugar syrup from storage tank to truck



Ramp set-up saves double handling for loading honey supers



The lifting gadget designed by Stuart Tweeddale



Don Tweeddale explaining the extracting operation



Three of the 4 trucks

Tweeddales produced 90 last year). The extracting plant handles 220–250 supers per day using a Beequip™ uncapper and two Boutelje 24-frame tangential extractors. The cappings are augured and pumped with the honey from the extractors through a heat exchange (set at 34–35 deg C) into a spin float which removes the wax, then the honey goes through a fine mesh revolving filter into a storage vat from where it's gravity fed into drums. The supers are washed to remove any honey and the wet frames are stored until they go out on to hives again.

Being a cold area and having a thermal building, wax moth only becomes a problem in January and February. Don is looking at solutions to eliminate this nuisance.

The Tweeddales have four trucks: three 4x4's for general use and a nine tonne for big jobs. The truck chassis have been extended a metre to give longer decks. They run normal road tyres on the front and 4x4 Michelins on the rear and use a four-wheel motorbike when paddocks are too wet for the large trucks. The trucks were set up for feeding hives, which can carry either one or two 1000-litre syrup tanks on the back with a pump delivery system to the hives. All have drop sides to save time: no need to tie on small items or supers if they are only two supers high. All hives have internal plastic feeders, and bees are fed on a 24-day rotation along with pollen substitute to get the hives cracking in the spring (recipe: 2 kg Hive Alive, 4 kg unsalted yeast, 10 kg of sugar syrup mixed into a fairly dry patty).

During honey harvest they remove everything and use ramps to load the supers in one movement from hive to truck. The

decks of their trucks are washed down each evening and they polish the trucks once a week. Two trucks are fitted with stone guards and sun-hoods, which has saved on windscreen damage (stones can break up to three windscreens a year on local roads), and the cabs are much cooler in the summer.

The rest of the day was taken up with covering the new research in queen introduction, followed by Mark Goodwin's Powerpoint lecture pointing out the difference between Parasitic Mite Disease and AFB. The trade sponsors (Peter Lyttle, Trevor Cullen and Stuart Ecroyd) told us about their products. After lunch Mark Goodwin covered thymol, including some of the research his team has done using this generic product. We discussed strapping and moving hives for the small beekeeper. A group looked in the hives while the rest swapped notes and told tall stories. Here's a good story from Merv Farrington from his days at Fields: Don Gibbons was unloading supers of honey. One super was wobbly and a lot of the frame lugs had been replaced with nails. He took a step and a frame fell out. He took another step and a second frame fell out. A third step, and another frame fell out. Don was so frustrated that he upended the super on the ground and stomped on the frames. The boss walked out to see what was going on, quickly withdrew and nothing was ever said about the incident.

All in all, a very good day: everybody came away with ideas they can work into their businesses. Thanks to the Tweeddale family for hosting such a successful event.

- Frank Lindsay, Southern North Island Branch Secretary



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About the Apiary

The weather is still a bit unsettled as I'm writing this column, but usually we have a spell of mild settled weather during the first couple of weeks of October. Unfortunately this also signals the start of the swarming season.

After the first spring inspection where you inspected all frames for AFB, judged the amount of surplus honey stored, checked the queen's laying pattern, and generally cleaned up your hive(s), the work involved in beekeeping for the next few months is to inspect your hives on a 10-day basis for signs of swarming and ensure bees have adequate provisions (a minimum of three frames of honey). The work involved can be as little as splitting the bottom two brood supers apart, lifting the top one back and looking for queen cell development along the bottom bars.

If you come across a fully formed queen cell, do not immediately cut it out. The hive could be superseding and this might be the only cell. Check for eggs or other cells before deciding what to do. If there are no eggs and only one cell, close the hive and let the queen emerge.

Swarm prevention

Preventing swarms creates a lot of work, which can be minimised if you follow a few simple rules:

- requeen yearly: I don't, so perhaps I'm creating work for myself
- note the hives that are ahead on brood production, especially drone production, and split these hives
- give the bees room to expand. Those using two super brood chambers can simply reverse the bottom two supers when you see brood extending down into the bottom super. If you use a single brood nest, move one or two of the outside honey frames above the excluder and replace them with newly drawn frames.

Generally in a hive that's going to swarm you will see the preparations being made a month or two earlier. Massive egg laying will culminate in four to five frames of capped brood, all about the same age, as well as every drone cell in the hive being capped. You will also see three to five queen cell buds appearing around the edges of the outer brood frames. Mark these hives and keep a close eye on them. Sometimes the bees make preparations and never swarm. If the queen starts to lay in the queen cell buds, cut out all but one cell and split the hive.

Commercial beekeepers don't have the luxury to be continually checking hives so they do something about these strong hives as they find them. Most commonly, one or two frames of emerging brood are removed and given to a hive that is not so far advanced. Equalising hives means they are all at the same point; therefore, instead of looking at each hive as an individual, they treat all the hives in the apiary as one.

You can give brood frames to a weak hive but it will not reach its full potential if it has a failing queen; i.e., it will have a spotty brood pattern. You will have to requeen it.

Requeening

In New Zealand most beekeepers requeen their hives in autumn, as the queens are better mated and are easier to introduce. In recent years, however, a large number of North Island commercial beekeepers are putting in 10-day-old queen cells and relying on the supersedure impulse to requeen their hives. This method is very effective and can result in up to 80% of queens being replaced successfully. Mated queens are then installed in all those that fail to requeen: i.e., queens returning to the wrong hive; queens lost for other reasons, such as predation by birds and dragonflies. The advantage to using this method is that it creates a brood break, making varroa control a little easier. The disadvantages are that you cannot use the same line of bees, as this will create inbreeding.

There are times when you just have to replace a queen. It could have started to become a drone layer or the bees could be prone to chalkbrood. They could have turned bitchy, or it could be just a matter of good common sense beekeeping.

In the spring, however, you can't use this method to requeen a strong hive as it will swarm. The emphasis is on getting mated queens into the hives so they can produce eight weeks of brood before the honey flow starts.

Varroa has meant lots of changes to beekeeping. With increased winter losses (15-30%) there is now a huge demand for good early queens. Most of these go to commercial beekeepers who have ordered them well in advance. To overcome some of the shortages, some beekeepers are now overwintering nucs to make up losses. A few New Zealand beekeepers have been doing this for years.

In the spring, nucs are carried on the vehicle and introduced into a failing colony when it's found. It's just a matter of finding the old queen, killing her, spraying the hive with an 'air freshener' to disguise the different odour between the hives and popping the whole nuc into the middle of the hive. The bees from the nuc will protect the queen. An alternative is to wrap the nuc frames in a sheet of newspaper to slow down the release of the nuc bees.

Finding the queen

New beekeepers have difficulty finding a queen amongst 15,000-30,000 bees spread over two supers. They all look the same at first but after a queen has been shown to you a few times they start to stand out. Their markings are different and they stand slightly higher on the frame.

It's easier if the queen is marked. This is a good idea as it identifies the age of the queen and she can be seen amongst the bees. Ask your queen breeder to mark your queen(s). It costs a little extra but it's worth it.

Finding a queen is not always plain sailing and sometimes can be a very difficult exercise. I recommend that new beekeepers have another person looking over their shoulder when they first start looking for a queen. Quite often the other person spots her right off.

The best time to look for a queen is in the morning. She's generally on the warm side of the hive on about the second or

third frame amongst a patch of emerging brood. There is always a small space around her, or you will see all the bees pointing into a small circle.

Preparation is important. This is one time when you have to use a minimum of smoke. If you put a few puffs in the entrance she will move upwards. Puff over the top super and she'll run down. Hence smoke is only to be used when the bees become excited and show signs of aggression or alarm: heads coming up, stings protruding, with the odd bee flying at your veil.

Open the hive and upturn the roof. Put the roof on the ground, separate the supers and place the top super onto the upturned roof. Cover the super on the hive stand, with the mat or inner cover to reduce the light going into the super.

Work with the top super first, as the queen is most likely to be there. Position yourself with the sun behind you and, starting from the east side of the hive (the sunny side), carefully remove the outside frame. It will either be empty, contain honey or pollen. The queen is unlikely to be on this frame, so gently place the frame in front of the entrance on the ground. Then check the next frame. If there's no brood, lean this frame against the first frame at the hive entrance.

Now you are getting to the business part. Gently remove the next frame and, while holding the frame, look at the surface of the next frame in the super. If the queen is on the next frame you will see a large bee (standing out higher than the others) either scurrying away from the light or just moving amongst the bees. If you do not see the queen, look at the face of the frame in your hands. Run your eyes systematically across all sections of the frame. You are looking for a clear spot where there are no bees covering the brood. She is likely to be one of these. If you don't see the queen, check the other side of the frame. If still no luck, check under the bottom bar or, if there are holes between the wax and the bottom bar, look in these holes. All this should take 30–40 seconds. If you can't find the queen on that frame, place the frame back into the super close to the outside.

Continue by gently removing the next frame. Look first at the surface of the next frame in the super, then check the one in your hands. If you don't spot the queen, replace and repeat until you have been right through the top super. Replace all the frames in the same order they were in the super before you disturbed it. Then repeat the process looking through the bottom super. If you still can't find the queen, don't despair: it happens to all of us.

It's best not to repeat the exercise as it only serves to upset the bees. Place a queen excluder between the supers and close the hive. Wait four days and start again. This time you are looking for eggs. The queen will be in this super. You have a number of options:

- if you're looking in the top super, cover both supers and leave them split for half an hour. The field bees in the super will return to the hive entrance, which makes it easier to find the queen.
- if you're looking in the bottom super, reverse the supers (place the top onto the base and the bottom onto the upturned roof). Leave the hive alone for half an hour, then check. When you find the queen,

dispatch (kill) her quickly: either pinch her or cut her in half with the hive tool. If you wait, she'll disappear if you take your eyes off her. Remove the old queen and place the new queen cage between the frames where the old queen was found (after removing the candy plug and positioning with the candy end upwards) and close the hive.

An alternative: make a split

You already know where the old queen is (having already split the hive with a queen excluder), so now put the super containing the queen on the baseboard, make sure it has honey reserves and cover it with a split board, with the split board entrance to the rear. Remove the candy plug from the queen cage and introduce the new queen into the super (the one without eggs) by placing the candy end upwards, between two brood frames. Remove an empty outside frame and replace with a syrup feeder. Add two litres of sugar syrup and lightly plug the entrance with grass (so that no bees can get out) then close the hive. The grass will dry and allow the bees to remove it. The bees in the top super will re-orientate to the new entrance. Congratulations: you have just made a split.

Check in 10 days' time to see if the new queen is laying (look for eggs). If there are no eggs, check the cage — is the queen out? If the bees are calm, leave the hive for a few days and check again. If there are still no eggs, place a frame with eggs from the bottom super into the top one (after shaking off all the bees) and leave for two days. Check that frame again and see if the bees have made queen cells: acorn-shaped cells standing out of the surface of the frame. If you find



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BK219

queen cells, your requeening operation was unsuccessful and you will have to try again.

If you find eggs in the top super you have two options:

1. go through the bottom super and dispatch the old queen, remove the queen cage and the split board and replace with two sheets of newsprint. Reassemble and you have a hive with a new queen. (The bees will chew through the paper and unite into one colony).
2. replace the split board with two sheets of newsprint and allow the bees to unite. The bees from the top super will dispatch the old queen in 80% of cases.

You could shortcut most of this work by placing a queen excluder between the supers four days before the new queen arrives and then proceed to split the hive as above. It's much quicker and a lot easier.

Other alternative methods of requeening

When I first started beekeeping 35 years ago, mated queens were posted by the queen breeder and the idea was to get them into the hive as quickly as possible. The method recommended in those days was the 'paper bag' method.

First off, you have to find and remove the old queen. Introduce the new queen immediately: take a white lolly paper bag (i.e., a bag about 10 cm square) and put about a dozen pinpricks through the bottom half of the bag. Using an old mustard tin, scoop bees off the side of a frame until it's full. (An alternative would be to shake a frame of bees into the roof and empty them into a 250 gm honey jar). Then tip the bees into the paper bag and shake them for about 20 seconds. Open the end of the queen cage and, while holding the opening of the bag around the cage, allow the queen to walk up into the paper bag (do this inside the house or in a car if you think you will lose the queen). When she's in the bag, shake it for another minute. This disorients the bees, disperses the queen substance and the queen takes on the scent of the bees. Put two or three small folds in the top of the bag so that it remains closed and place the bag gently in between two frames of brood. Within half an hour the bees would have chewed through the paper and released the queen and she will be accepted. This works well if the queens were taken from the mating nuc the day before you received them.

This method relies upon your having found the old queen and dispatching her, which will be problematic if the new queen is not accepted. You then have a queenless hive and need a replacement queen, which can take a week or more if you're lucky. Putting a queen into a colony that has been queenless for a while can be hazardous. Normally you want a slow release under these circumstances. Over the last 20 years, the method recommended for hobbyists is to make a nucleus hive, introduce her into this nuc and get her laying for a week or two, then dispatch the old queen and unite the nuc over the existing hive with two sheets of newspaper. The actions are deliberate and done at your convenience — no rush. As an insurance against the new queen not being accepted, another nuc could be made with the old queen instead of dispatching her.

These days, queens are sent to beekeepers when they have just started laying in their mating nuc. New research has shown that queen acceptance goes to 80% if the new queens are held in the nuc hive for longer than 26 days. Some queen producers are adapting to this research and will be holding queens in their nuc hives for longer, although this method will come at a higher price.

You also get better acceptance if the attendants are removed from the cage before it is put into the hive. Remove the attendants inside against a window. Slide the queen cage open slightly so the attendant bees can fly out one by one. If the queen approaches, put your thumb over the exit until she moves away.

What I haven't covered is looking after your queen when she first arrives. Drip two drops of water into the cage twice a day and store in a warm spot out of the sunlight, in a hot water cupboard or just above the warm spot on your deep freeze. Make sure she is stored in a place that hasn't been fly sprayed for a long time. These insecticides are long lasting and bees have no resistance to them.

If you want to read a little before about introducing queens check in the 'bible' *The Hive and the Honey Bee* (edited by Joe M Graham, published by Dadant & Sons) or look in SK and MP Johansson's *Some Import Operations in Bee Management* (1978) or CC Miller's *Fifty Years Amongst the Bees*. The methods haven't changed in a hundred years but research is improving the results.

Things to do this month

Check feed and pollen levels, do an AFB check, raise queen cells, super up hives, requeen hives, control swarms and cull old frames. Remove the entrance guards if you use them. Check stored supers for wax moth.

I also put out single super bait hives. Put in two or three old drawn frames (the others are foundation frames) and place the hives at least six feet up on sheds to catch the odd swarm that gets away. Restrict the entrance to the bait hives to about 2 cm.

- Frank Lindsay

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Agrichemicals: can we limit bee mortality?

Absolutely we can and we must.

The beekeeping industry is hard enough with varroa and environmental conditions. Consider what Dr Mark Goodwin stated in an article in the *New Zealand Herald* ("Varroa mite decimates 22,000 North Island hives" July 5, 2004). Latest figures show that since 2000, managed colonies in the upper North Island hives decreased by 16% or 22,000 hives. This is a disturbingly high number, particularly when you consider this decrease occurred after more than 5,000 hives were imported from the South Island. We cannot allow some members of the horticultural industry to act irresponsibly and impact severely on large numbers of beekeepers.

The Kiwifruit Pollination Association (KPA) has been instrumental in bringing awareness and to some degree, I hope, compliance to the kiwifruit industry by funding my activities in education programmes (talking to growers, sprayers and packhouses), placing articles in the *New Zealand Kiwifruit* journal, *AvoScene*, a Zespri KiwiTech Bulletin as well as writing a letter to all spray applicators on the Zespri database.

The chemical that concerned us the most had not been transferred to the Hazardous Substances and New Organisms (HSNO) Act 1996 and at that time fell under the Pesticide Regulations 1983, which was enforced by the New Zealand Food Safety Authority (NZFSA). We facilitated an investigation and a NZFSA inspector worked for two days. He had six spray applicators to investigate: some were applying hard insecticides onto open kiwifruit flowers. I believe this investigation equates to a core sample of what has been happening, when you consider the area and the time frame that the breaches occurred in. The good news is that, because of the actions of the KPA, I am anticipating far fewer instances this year, although I realise this work has to be ongoing.

With the kiwifruit industry being only one of many needing attention and the continual registrations of new products (including some systemic products that have had serious questions asked overseas, and products which are recommended to be used during full flowering with no enforceable directives on labels), there is a lot of work to do. I believe with a coordinated effort involving the entire beekeeping industry in setting up educational programs, structures, procedures and networks, combined with using the regulations available, we can attain a high level of compliance.

The Regulations

The legislation that sets out to protect bees from the misuse of pesticides is the Hazardous Substances and New Organisms (HSNO) Act 1996. To cite Section 49:

49 Use Of Substances Ecotoxic To Terrestrial Invertebrates.

1) A person must not apply a class 9.4 substance in an application area-

If bees are foraging in the area and the substance is in a form in which bees are likely to be exposed to it;

or

To any plant or tree that is likely to be visited by bees

if-

The plant or tree is in open flower or part bloom; or
The plant or tree is likely to flower after application of the substance within a period specified by the Authority.

2) The period specified by the Authority must not be longer than 10 days.

As of 2003 not all chemicals had been classified and transferred to HSNO. This process is planned to be completed this year and may already have been achieved.

If a chemical being used has not been transferred then it falls under the Pesticide Regulations 1983.

Section 14: Use of pesticides toxic to bees-

This regulation applies to every pesticide in respect of which the label approved by the Board bears the words "toxic to bees".

No person shall apply any pesticide to which this regulation applies otherwise than-

- (a) In accordance with a permit issued by the Director-General; or
- (b) In accordance with the warning appearing on the label.

"The use of any pesticide labelled 'Toxic to bees' was provided for under regulation 14 of the Pesticides Regulations 1983 and offending in breach of this regulation carried, amongst other things, a maximum \$1,000 fine. However, the use of any pesticide labelled 'toxic to bees' is currently regulated pursuant to the Hazardous Substances and New Organisms Act 1996 (HSNO). Any breach of regulation 14 of the Pesticides Regulations 183 is an offence under section 156(1)(a) of HSNO and in accordance with section 114(2) of HSNO the penalty for such a breach is a fine not exceeding \$50,000."

I believe that beekeepers and the horticultural industry have a symbiotic relationship; thereby it is in the interest of both parties to protect each other's industries wherever possible.

For further information contact a member of the Kiwifruit Pollination Association or me. I can be reached on 027 499 1300, or by email neale@maxnet.co.nz.

- Neale Cameron



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American foulbrood control by numbers

Dr Mark Goodwin
HortResearch
Ruakura Research Centre
Mgoodwin@hortresearch.co.nz

Epidemiology is the study of epidemics and the way they spread. To the dismay of those of us with an aversion to maths, epidemiology is, in part, a study of numbers. Aspects of the epidemiology of American foulbrood disease (AFB) can also usefully be described by numbers which provide some useful insights into the spread of the disease.

The first issue is the spread between colonies. Any swapping of equipment between colonies carries a risk with it. However, the way the equipment is exchanged affects the size of the risk.

In the first example, three frames of bees and brood are removed from one hive and papered onto a second to increase its strength. At worst, taking it from an unrecognised AFB hive will create one more AFB hive. Fortunately, most beekeeping activities fit this model, where the activity doubles the number of AFB hives.

The second group is where an activity more than doubles the number of AFB hives. A good example of this activity is extracted honey supers. The infectivity of these has not been properly determined but it is safe to assume that it is less risky than exchanging frames of brood. For the sake of discussion we will assume that an extracted honey super from an undiagnosed AFB hive infects 75% of the hives they are placed on. The bigger the honey crop, the greater the risk from the AFB hive. Two extracted honey supers from an AFB hive will infect 1.5 other colonies, and four supers will infect three other hives if the supers are placed on different hives.

The situation gets worse when the components of an AFB hive are spread further. For example, we saved a few supers of honey to feed nucleus colonies we were overwintering. We went to great lengths to ensure the hives we took the honey from did not have AFB. This consisted of taking the honey from an apiary that hadn't had an AFB hive for a long time, giving the hives three AFB inspections and testing the honey for AFB spores. This is because we are taking about 18 frames from each hive and putting one frame in each nucleus colony. If we took them from an AFB hive, assuming a 75% chance of a frame infecting a colony, then an AFB hive has the potential to create 13.5 new AFB hives.

Feeding extracted honey or pollen can be even more disastrous. There are a number of cases where beekeepers have fed extracted honey or pollen to a large number of other colonies. One of the hives supplying the honey or pollen had AFB with the result that one hive was turned into 20 or 30 AFB hives.

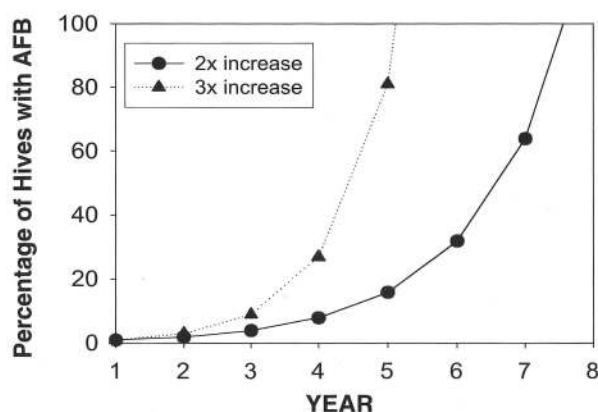
Another example of this is a situation we are sometimes

contacted about, where a beekeeper has been producing queens and has found out the starter being used has AFB. Several hundred queen cells may have been started and placed in several hundred hives.

A good principle is, therefore, to assess the risk of removing something from a hive to place it into another. If it is only being placed in a single hive, be careful: at least carry out a complete brood check. However, if what you remove is going to be placed in more colonies, you need to be very sure that the source of the material doesn't have AFB. If what you remove is going to be placed on or in 20 or more colonies, then don't do it. Or at least understand the risks being taken and decide whether you really want to face the potential consequences if things go wrong.

Looking at the disease levels in a whole beekeeping outfit rather than in individual hives, the numbers again provide some interesting lessons. Unchecked, the AFB incidence in an outfit probably increases exponentially. Assuming each AFB hive creates a new AFB hive each year and none are found, then the incidence will double each year (Figure 1). A doubling of AFB hives each year will increase AFB incidence from 1% to > 60% in six years. If each AFB hive produces two AFB hives each year, then the incidence will increase from 1% to > 60% in four years.

Figure 1 – Increase in the percentage of AFB hives when the number doubles and trebles each year.



These rapid increases are the reason beekeepers are sometimes caught unaware with a major problem. If you have only a 0.5% incidence, the worst that you can expect next year is 1% or 2% if things go wrong, as there are not that many AFB hives available to infect other colonies. However, if you have a 5% AFB incidence you are sitting on a potential time bomb. Get it wrong and you may have 20% next year.

Avocado Pollination Best Practice Guidelines Manual available

I have just written the Avocado Pollination Best Practice Guidelines manual in co-operation with the Kiwifruit Pollination Association. The guidelines outline best practice for avocado growers with respect to putting bees in their orchards for pollination purposes. The guidelines also outline best practice for beekeepers with respect to managing their hives for avocado pollination. Included also are some suggested hive standards for avocado pollination. The guidelines are freely available to the wider community of beekeepers from the avocado industry website www.nzavocado.co.nz in the news section.

If anyone has trouble downloading the guidelines, please call the Avocado Industry Council office for assistance on 07 571 6147. Their mailing address is Avocado Industry Council Ltd, PO Box 16004, Bethlehem, Tauranga.

- Dr Jonathan Dixon, Scientist
Avocado Industry Council Ltd

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Natural antibiotic found in honey

Nicola Bradbear, Peter Martin and David Wainwright, United Kingdom

In 2003, two consignments of honey being brought in to the EU from Zambia were found to contain low levels of the antibiotic streptomycin. According to EU law, honey must not contain any antibiotic residues. Tetracyclines are the only antibiotics that can be used to treat the honeybee disease European Foulbrood, but only under veterinary control and supervision, and procedures must be followed so that any honey produced during the treatment period cannot enter the honey market.

The imported honey was harvested by beekeepers living and working in the forests that cover Zambia's remote North Western Province. It is very unlikely that these beekeepers are using antibiotics in their beekeeping. The honey is harvested from local style hives made from cylinders of bark and placed high in trees of the miombo woodland. No honeybee diseases are known, and beekeepers do not have the resources, possibility or necessity to use antibiotics in their beekeeping.

So how could streptomycin have become present in the honey? Is it possible that it is a natural constituent of honey, carried into the hive by foraging bees? Streptomycin is produced by bacteria belonging to the genus *Streptomyces*: these bacteria are common and widespread. Streptomyces have been discovered in samples collected from the miombo woodland, in places frequented by bees, such as hollows in trees, water holes and leaf mould.

Early indications are that the streptomycin could indeed be occurring naturally. This has implications for honey legislation and the world honey trade, as well as for understanding of honeybee biology and honey's long-known role in health and healing.

It is also known from research that ants and Streptomyces have a highly evolved relationship: some leaf cutter ants have white spots on their bodies – these spots are colonies of a *Streptomyces* species, producing an antibiotic to protect the ant colony's food sources from other pathogens. Could bees also have evolved a way to harness the benefits of the antibiotic streptomycin?

Clearly, research was needed to investigate this amazing discovery, and to provide scientific data concerning the streptomycin and its possible origin. Aware that the presence of antibiotics in honey could adversely affect Zambian honey and other developing countries' trade in honey, Bees for Development applied for a grant from DFID (The UK Government Department for International Development), and gained support under the Business Link Challenge Fund, which enables research on issues with implications for trade with developing countries. Partner organisations working with BfD in the Project are North Western Bee Products of Zambia, Casa Mel of Mozambique, and Tropical Forest Products of Aberystwyth, UK.

Research is now underway in co-operation with Professor Elizabeth Wellington and her team at the University of Warwick, towards proving the genetic origin of the streptomycin in the Zambian honey. Results so far are providing the evidence that we need to prove that this streptomycin is occurring naturally, and preliminary data will be published in scientific research journals later in 2004.

New Zealand Beekeeper *gratefully acknowledges the authors and the Bees for Development Journal for allowing reproduction of this article from issue 72, September 2004.*



Beekeepers at work in Zambia's remote North Western Province. Cylindrical hives are made from the bark of trees, as shown here. Beekeepers make as many bark hives as possible from one tree. The empty hive is placed in a tree, and sooner or later will be occupied by bees. The bees attach the combs of their nest to the inside wall of the hive. The beekeepers harvest the hives by cutting out the ripe honeycombs, after which they separate the honey from the beeswax. The honey is certified organic and fairly traded.

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BK91

Test flaws risked GE contamination

Two GE studies have been rapped by safety inspectors after holes in their security allowed genetically altered material access to the open. In one case the problem has created a large area of land which must be monitored by the Crop and Food Institute for rogue GE potatoes until 2007.

One study was a potato field test by the Crop and Food Institute at Lincoln University and the other was on flowers at Otago University. Inspectors from the Ministry of Agriculture and Forestry (MAF) identified both problems, leading to an inquiry by the Environmental Risk Management Authority (ERMA).

In the field test, a MAF inspector found three potatoes several metres outside the testing boundary.

ERMA's head of new organisms, Dr Libby Harrison, said although the potatoes were identified as not being genetically altered, it was a breach that could have allowed transgenic potatoes out of the test area.

The potatoes had grown after the original test was completed. The rules of the trial stated the plots had to be checked over the next three years for regrowth. The rules also stated the potatoes be hand-picked during the trial, but were ambiguous about how they should be cultivated afterwards. It led to another method being used, and the potatoes being dragged away from the test site where they were found by the inspector.

"The fact they found these potatoes mean they (MAF) need to discuss with Crop and Food how they do their cultivation

and mention the area where these genetically modified potatoes were grown as an area that needs to be handled carefully," Harrison said.

The test was aimed at making potatoes resistant to bacteria, and introduced DNA based on silkworms, toads and bacteria. The trial started in 1998, and was to see single plots of 10 plants for up to 150 different GE tests.

Each trial was to be surrounded by three lines of "buffer" potatoes that were not genetically modified – these were the potatoes dragged away from the test site.

In the other case, inspectors were critical of a study involving GE flowers grown by Otago University. They found that bags meant to be sealed around the flowers to stop the escape of pollen and seed had not been fitted properly. They also found the method used to stop GE pollen being carried from the laboratory was not the one in the rules for running the trial.

Associate Professor Iain Lamont, head of the university's committee which sets rules for the trial, said the problems were fixed within a day.

Asked whether any seed or pollen had escaped, he said: "We don't know that. I don't think there is any seed around that could have got out of the facility."

- David Fisher (reprinted from the *Sunday Star Times*, 12 September 2004)

Varroa NPMS established

On 7 September 2004 the Minister for Biosecurity announced the establishment of a National Pest Management Strategy for varroa. The Ministry of Agriculture and Forestry (MAF) will facilitate the establishment of a Management Agency comprising one Crown appointee, three regional council representatives, one beekeeper representative and one technical adviser.

MAF is currently setting up a focus group to consider the appropriate way forward in setting up the Management Agency and other requirements, in order to implement the strategy without further delay.

- Roger Bray

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Hosted by
Brisbane Amateur Beekeepers' Society
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ROCKLEA SHOWGROUNDS CENTRE RING**

Rocklea Agricultural and Industrial Association,
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for inspection: beekeeper suits provided.
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**Contact Errol Marsh, President,
or Julie Marsh, Treasurer
Brisbane Amateur Beekeepers Society.
(07) 3216 8269
Fax: 073 420 5460
Email: errol_juliemarsh@smartchat.net.au**

NIWA's climate outlook: September to November 2004

Lower than normal mean sea-level pressures in the south Tasman Sea are expected during spring, with more west to southwest wind flow than usual over New Zealand. Surface temperatures of seas close to the country are expected to be near average.

Temperatures are expected to be near average in most regions, but above average in the eastern North Island and northern South Island. Normal or below normal rainfall is expected in the north and east of the North Island, with normal or above normal rain in the west and south of the South Island. Near normal rainfalls are expected elsewhere.

Normal or below normal soil moisture levels and streamflows are expected in the north and east of the North Island and the east of the South Island. Normal or above normal conditions are expected in the west and south of the South Island. Normal soil moisture and stream flows are expected elsewhere.

The tropical Pacific is on the verge of El Niño conditions. It is very likely that a weak El Niño will develop during spring, and ease back to neutral conditions during summer.

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Letter to the editor

(Responding to Tony Lorimer's article in the September 2004 issue, 'Trees and Shrubs of New Zealand: Kowhai')

Kowhai must taste different in the Waikato: down here it has all the subtlety of brake fluid with a greasy oily aftertaste and a strong hint of chemical residues. I'll send Tony some if the sun comes out while they are flowering; still it is good to see someone making an effort to educate us on our native trees.

Bon appétit.

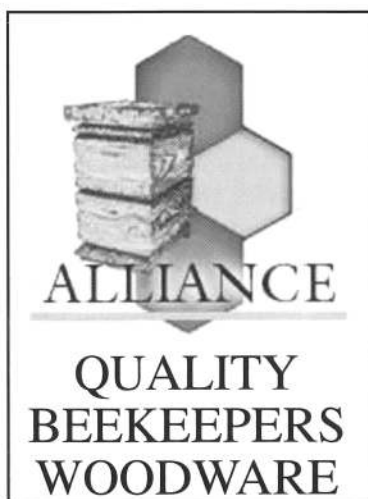
- John Berry, Hawkes Bay

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In Memoriam — Keith Detlaff

(Keith Detlaff died early in September. The following article is reprinted with permission of the *Greymouth Evening Star*, September 2004 and with kind permission from Keith's wife Colleen)

Keith Detlaff - Ross stalwart

Keith Detlaff leaves behind a lifetime of achievements. A beekeeper and a bee lover from the age of 12, Mr. Detlaff died tending his bees at Ross last Friday. He was a life member and past president of the West Coast Beekeepers Association.

The retired sawmilling engineer led an active and varied life dedicated to the betterment of Ross, the community and the surrounding environment.

An old working sawmill at Shantytown is credit to Keith's efforts after he drew up the plans, built the establishment and managed the operation for many years.

Apart from a short time in Canterbury, working as a butcher, he spent his life at Ross. It was during the short stint in Canterbury the young man met and married Colleen. The couple had three children, Sharon, Peter and Stephen, all reared in the home built by Keith at Ross. Throughout their life together Colleen supported her husband in all his endeavours.

Stephen remembered his father as a man with an appreciation of nature. "He was a man with a spirit of adventure, a story teller, active in local politics. He was very involved and his Secret to Success was that he always completed a task before moving on to the next one."

Mr Detlaff is credited with opening the Ross Information Office and operating it voluntarily for over 20 years. "Dad had a wealth of knowledge about Ross and he was happy to pass it on," Stephen said.

The Information Office led to the Friends of the Ross Walkway group, focused on upgrading historic buildings, and also the present Grimmond House Information Centre.



In seeking funding to renovate the old Grimmond House with an Historic Places Trust 'C' rating, Keith operated the Ross Community Association gaming machines. The "thankless, time consuming and stressful task" raised many thousands of dollars, donated towards various community projects, particularly \$90,000 to the re-building of Grimmond House.

Keith served on the Ross Borough Council for six years until its amalgamation with the Westland County Council.

For six months he tutored the skill of surveying, mapping and recording historic Ross Goldfield sites for the Department of Conservation.

He was a Friends of the Ross Walkways foundation member and chairman for many years.

He was a member of the Community Council, which later became the Ross Community Council, and was chairman and treasurer for the last few years.

Keith was instrumental in having the historic film *Ross, Gold Town* made, constructing various sets and preparing sites. The film has won five national awards.

The family said their father was "always out there, quietly helping someone less fortunate. Taking trailer loads of wood or fixing things for people".

Ross and the West Coast will be a lot poorer for his passing.

If you are an NBA member,
then there is a lot more going on behind
the scenes at the
"National Beekeepers Association"
Website:

www.nba.org.nz

The Publications Team are currently
reviewing and updating our website,
however for you to see what is happening,
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If you need further help or assistance,
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Telford Rural Polytechnic update

Telford has combined with Tairāwhiti Polytechnic in Gisborne to start a new National Certificate in Apiculture (level 2) Beekeeper's Assistant course, which started on 13 September with nine students. The course will run over 12 months with block courses once a month.

Telford ran a weekend queen bee rearing course in Gisborne on 18–19 September. The 12 people attending were shown techniques of grafting and raising queen cells using the Cloake board method. Hives were assessed for breeding potential and tested for hygienic behaviour. Cells were introduced into queenless nucs and wrapped cells were introduced into queenright hives.

Full-time students are away on two weeks' work experience in the North Island at present. Students return on 4 October, with graduation scheduled for 26 November. The numbers on the new one-year unit standard-based correspondence course have increased to over 30, with two students studying theory modules while at school under the Secondary–Tertiary Alignment Resource (STAR) programme.

Enrolments for next year's full-time course should be forwarded to Telford over the next month. For further details phone 0800 Telford (0800 835 3673).

- Dr David Woodward
HOD, Apiculture

Apologies

In the September 2004 issue, page 12, the Editor's Note stated that Dr Mark Goodwin of HortResearch was the contact person for those wishing to receive a copy of the full report "Effect of the beeFORCE™ unit on honey bees and varroa". This is incorrect. For a copy of the full report, please contact BeeForce Australasia Ltd (www.beeforce.co.nz), not Dr Mark Goodwin as previously stated.

Also in the September issue, back page, the Canterbury Branch of NBA meets on the *second* Tuesday of every month, February to October. Roger Bray is the contact and his phone number is 03 308 4964.

We apologise for these errors.

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Trees and Shrubs of New Zealand

Brachyglottis repanda

Common Name: Rangiora

A small bushy tree: leaves dull green above, and white and slightly furry on the underside, up to 25 cm long. The flowers droop in clusters, cream coloured and fragrant — blooming August to October depending on location.

The honey is light amber, pleasant flavoured, but mostly used by the bees in brood rearing. Some authorities have claimed Rangiora honey to be poisonous, but a government analyst failed to isolate poison back in 1917. Honeydew can occasionally be gathered from the trunk during February.

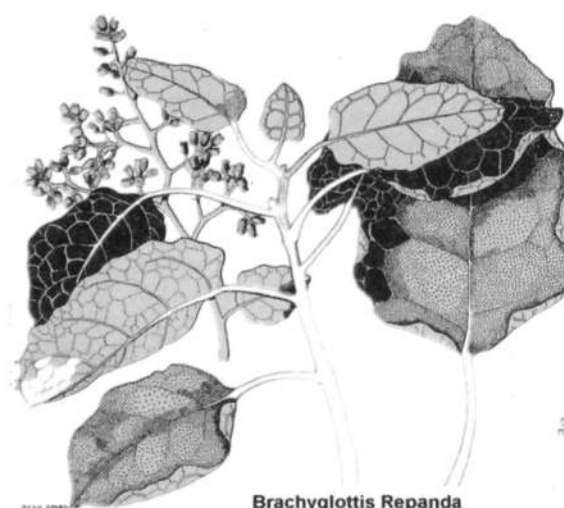
The leaves of Rangiora contain an alkaloid poison that has been known to kill stock, but this alkaloid is also useful in the leaf for a wound dressing — the hairy underside helping to stop the flow of blood. The bushmen also put the leaves to good use — hence another name for Rangiora was Bushman's Friend; i.e., toilet paper.

The Maori collected gum from the west side of the tree which was chewed to get rid of foul breath, but swallowing the gum caused death.

The white underside of the leaf can also be written on with a ballpoint pen. It has been used as notepaper in the bush from time to time.

The Rangiora growing on Mayor Island (Tuhua Island) suffers from Giantism — i.e., the leaves can often reach the size of A4 paper if the plant is growing in a sheltered area. Visitors staying at the Tauranga big game fishing lodge on Mayor Island used Rangiora leaves as postcards for a while until New Zealand Post put a stop to the practice, as the stamps would not adhere very well to the leaf.

- Tony Lorimer



Club Contacts & Beekeeping Associates

<p>NORTH CANTERBURY BEEKEEPERS CLUB Meets the second Monday of April, June, August and October</p> <p>Contact: Mrs Hobson Phone: 03 312 7587</p>	<p>AUCKLAND BEEKEEPERS CLUB INC Meets 1st Saturday monthly at Unitec, Pt Chevalier, Auckland.</p> <p>Contact: Carol Downer, Secretary Phone: 09 376 6376 Email: fairy-angel-peewee@xtra.co.nz</p>	<p>WANGANUI BEEKEEPERS CLUB Meets on the second Wednesday of the month.</p> <p>Contact: Neil Farrer Phone 06 343 6248</p>
<p>NZ QUEEN PRODUCERS ASSN</p> <p>Contact: Mary-Anne Phone: 06 855 8038</p>	<p>SOUTH CANTERBURY BRANCH</p> <p>Contact: Peter Lyttle Phone: 03 693 9189</p>	<p>NELSON BEEKEEPERS CLUB</p> <p>Contact: Kevin Phone: 03 545 0122</p>
<p>WHANGAREI BEE CLUB</p> <p>Meetings: 1st Saturday each month (except January) Time: 10 am, wet or fine (we are keen) Contact: Dave Trinder Phone: 09 433 8566 John Parsons Phone: 09 438 8766 Kevin Wallace Phone: 09 423 8642 (Wellsford)</p>		
<p>TARANAKI AMATEUR BEEKEEPING CLUB</p> <p>Contact: Stephen Black 685 Uruti Road RD 48, Urenui Phone: 06 752 6860</p>	<p>HAWKES BAY BRANCH</p> <p>Meets on the second Monday of the month at 7.30pm, Arataki cottage, Havelock North</p> <p>Contact: Ron Phone: 06 844-9493</p>	<p>CANTERBURY BRANCH</p> <p>Meets the second Tuesday of every month, February to October</p> <p>Contact: Roger Bray Phone: 03 308 4964</p>
<p>MANAWATU BEEKEEPERS CLUB Meets every 4th Thursday in the month at Newbury Hall, SH3, Palmerston North</p> <p>Contact: Frances Beech 35 Whelans Road, RD 1 Levin Phone: 06 367 2617</p>	<p>WAIRARAPA HOBBYIST BEEKEEPERS CLUB Meet 3rd Sunday of month (except January) at Norfolk Road, Masterton at 1.30 pm.</p> <p>Contact: Arnold Esler Phone: 06 379 8648</p>	<p>FRANKLIN BEEKEEPERS CLUB Meets second Sunday of each month at 10.00am for a cuppa and discussion. 10.30am open hives.</p> <p>Contact: Peter Biland Phone: 09 294 8365</p>
<p>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.</p> <p>Contact Club Secretary: Margaret Phone: 03 415-7256</p> <p>Email: flour-mill@xtra.co.nz</p>	<p>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</p> <p>Contact: Jeff Robinson 64 Cobra Street Christchurch 3. Phone: 03 322 5392</p>	<p>WELLINGTON BEEKEEPERS ASSN Meets every second Monday of the month (except January) in Johnsonville. All welcome.</p> <p>Contact: Richard Wickens 59 Puriri Street Lower Hutt Phone: 04 566 9347 Email: wickensfamily@paradise.net.nz</p>

**Is your group or Branch missing from here?
Please contact the National Beekeepers' Association - inside front cover.**