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Spring work

NBA Vice President Neil Farrer with boxes dipped and ready for frames, two apiary sites (one with nucs), a swarm. *Photos: Frank Lindsay.*

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President's Report

Apimondia

Prior to the Congress in Melbourne I went on a technical tour that encompassed beekeeping systems in New South Wales, ACT and Victoria. Our tour programme was disrupted by the equine flu outbreak and the lunacy of APEC. We were unable to visit the quarantine station because of its proximity to the control centre for the outbreak response, and APEC disruptions forced a splitting of the tour party into separate groups for accommodation and dining. A real pain for the organisers and frustration for the group.

The tour party consisted of a wide range of nationalities and even had an Australian: a retired commercial beekeeper who wanted to see a bit more of his own country. Despite the initial setbacks at the beginning, we were able to see a good range of beekeeping technology from the primitive to the latest.

The larger commercial operators we visited all ran nice outfits, but a disconcerting note was the continued use of unlined galvanised drums for the storage of honey. NZFSA, take note here. Some of these drums appeared to be of an advanced age.

Due to the extensive migratory nature of beekeeping in Australia the capital investment in trucks, forklifts and large buildings is substantial. Palletisation of hives appeared almost universal, and the use of single brood nest hives was also considered a normal management procedure. The Australian hive tool appears to be a forklift.

Despite the large honey yields, at the end of the day they appear outwardly to be about the same as we are financially and they have to deal with similar issues to ours. These issues include the price they get for honey, loss of beekeeping sites in public lands, changing agricultural landscapes and the increasing emphasis on pollination services.

The continuing drought is still of concern, but it didn't appear obvious as we had substantial rain on many days and the countryside looked a picture. But the water supply dams were nearly empty and irrigation water allowances had been substantially cut, which indicated the reality of the situation.

The small hive beetle situation was discussed with a number of beekeepers and it appeared to be a relatively minor problem in most areas. A lot of beekeepers use large cool rooms to store honey supers prior to extraction. This is primarily a means to suppress wax moth but it also suppresses hive beetle as well. The Australian beekeepers are resigned to the fact that varroa mite will eventually establish in their country. While they have good border control systems they are not perfect and eventually things slip through, as is the case with small hive beetle, equine flu and the Asian honey bee incursion in Cairns.

I had a chat with some Western Australian beekeepers about the usual things. However, one well-known W.A. beekeeper mentioned that the New Zealand government was completely mad in allowing the importation of honey from Australia. In his opinion it would probably not comply with the requirements of the IHS, as foreign honey would inevitably be blended with the Australian product. Another W.A. beekeeper I chatted with admitted an AFB infection rate in his outfit of around 30%! He was not very forthcoming about what he did to deal with the problem, though.

The Apimondia Congress itself is basically a giant version of our NBA Conference. There were so many Kiwis there that you felt you were still at home. I believe that there were about 80 participants from New Zealand present. I gave a presentation on beekeeping in New Zealand to a session on rural development. The papers were to be presented in a preset format with a time limit of 20 minutes. But as the abysmal chairing of the session allowed speakers to carry on well past their time deadlines, and as the speakers themselves did not follow the format, my talk had to be reduced to 15 minutes and was 45 minutes late. This meant I had to

rearrange my presentation at the last minute and reduce the time available for discussion of points that I had brought up. Also, many people who were going to listen to my speech had to leave prior to my presentation to go to other sessions.

It was unfortunate that the Apimondia General Assembly was held at the same time as the bee breeding session. That session was on my list of priorities so I was going to attend regardless. Jane Lorimer filled in for me; thanks, Jane.

I managed to meet a number of leading lights in the bee breeding world, including Sue Cobey, Karl Bienenfeld and Ralph Buchler. Malcolm Sanford from the US and Martin Braunstein, a queen producer from Argentina, gave a presentation on the issues related to the international trade of production queens and the movement of genetic material. They proposed that a group currently referred to as the Global Bee Breeders Initiative be formed. I attended that inaugural meeting which consisted mainly of commercial queen producers and bee breeders, however no Europeans. Although it was just an informal chat to sound out ideas with no real outcomes achieved, the desire to form some sort of group was evident. Thinking about it later, I have developed the view that the beekeeping world and associated trade of bee products is divided into three main groups: Old World, New World and Third World, and the Old World sets the rules of engagement. Food for thought.

AFB issues

At Apimondia there was a session on the management of AFB. Dr Mark Goodwin presented the New Zealand approach in his usual entertaining style. This talk was well received and sales of the yellow book (AFB manual) increased after the session. The following speaker was quite a contrast, as she presented data on the use of cinnamon (!) for controlling the symptoms of AFB as well as the traditional antibiotics. The distinct impression I gained from this session is that other countries are not really coming to grips with how to deal with this easily eradicated organism. If you take a cynical approach then it could be viewed that oxytetracycline is the major causative agent for the spread of AFB. It was mentioned that in California about five percent of colonies exhibit AFB symptoms, despite the use of antibiotics.

The New Zealand approach to AFB management seems to be working, albeit more slowly than we would all like. The Government's approach of letting the beekeepers manage the disease themselves is quite unique internationally, and is looked on as a model to be emulated by some. Unfortunately, the Government is not supporting the AFB NPMS to the extent that is required under the legislation that has been given to the beekeepers to administer.

The verification process for export certification requires the traceability of bee products to the site of production. It is a requirement that apiary sites be registered. This leads to some issues relating to the signing of harvest declarations that are statutory declarations, as is the correct completion of the Annual Disease Return. The tie-in between the AFB NPMS database and export verification processes is becoming inextricably linked for better or worse.

If honey is harvested from unregistered apiaries and a person fills in a Harvest Declaration which includes the honey from these unregistered hives, then they have technically signed a false statutory declaration as well as being in breach of the provisions of the AFB NPMS. This will compromise their ability to export product if auditing procedures find them to be in breach of their statutory obligations. While some individuals do not like having to pay their levies or to deal with site registration procedures, disease reporting etc., the cost of loss of export opportunities may eventually cost more than the perceived gains from avoidance.

As seen from the front cover photo of the October issue of the magazine, the helicopter surveillance trial auditing the accuracy of apiary sites and registration requirements will be under way by the time you read this. Watch this space for a report on the results.

- Frans Laas

Two decades of varroa, part I

Dr. Malcolm T. Sanford
http://apis.shorturl.com

I have been informed that my pending visit to Australia will be like a beekeeping journey back in time. "Down Under" in "Oz" beekeepers continue to enjoy being free of beekeeping's greatest nemesis, the varroa mite (*Varroa destructor*). I look forward to seeing and experiencing beekeeping as it once was in the United States, a simpler time, when the honey bee was a more 'wild' (feral) animal that could look after itself without being actively aided by the beekeeper. For, truthfully, this insect is now a much more 'domestic' animal in most of the world than previously because of this mite.

In recent years, there appears to be a resurgence of hobby and sideline beekeeping according to my sources. I have corroborating evidence of this by seeing who is in attendance at various association meetings, and have recognised the emergence of two populations of beekeepers, which I characterise as before varroa (BV) and after varroa (AV). The AV folks really have no idea of what beekeeping used to be like for us that are in the BV community, and shouldn't, for the landscape has inalterably changed with introduction of the varroa mite, except for a few places like Australia.

Tempus fugit (el tiempo vuela) "time flies", as this month (October 2007) is the twentieth anniversary of the first detection of the varroa mite in North America. As one of those on the front lines at that time, I have seen and felt the invasion first hand. It is worth looking back on this singular episode and subsequent events in a series of articles in order to get a historical perspective of what beekeepers have gone through in the last two decades. Much of this one can still find in my old, but still live, web site at the University of Florida, the pages of the *Apis* newsletter, and now in my site, The Apis Information Resource Center and associated "lenses" at Squidoo.com.[1]

I wrote the following in the *Apis* newsletter, then published by the University of Florida: "Introduction of the Asiatic bee mite (*Varroa jacobsoni*) is a nightmare come true for the North American beekeeping industry. Even as I write this, many persons are in a state of shock. As of this date (October 20, 1987), some nineteen of Florida's sixty seven counties have had positive finds. Latest information is that there has been confirmation of the mite's presence in the states of Pennsylvania, Ohio, Illinois and Wisconsin. The great majority of finds so far have had some kind of Florida connection.

"As a first step in attempting to assess the situation, the Commissioner of Agriculture on the advice of Varroa Mite Task Force and the Honeybee Technical Council has placed a two-week moratorium on bee and beekeeping equipment movement. This is to try to get an idea of the mite's present distribution. Emergency teams made up of Florida bee inspectors and APHIS (Animal Plant Health Inspection Service) of the U.S. Department of Agriculture are now combing the state for infested colonies.

"It is extremely important to ensure that Varroa is not confused with the tracheal honey bee mite (*Acarapis woodi*), first found in 1985. There has been and continues to be a great deal of controversy about the latter mite which lives in the breathing tubes of bees. It is difficult to find and the damage it inflicts on colonies is a matter of great debate. At present there is no legal chemical control and experiments on a number of aspects of the biology and control of this mite are continuing. Both the general and beekeeping public, however, may think the present mite crisis is a continuation of the tracheal mite affair. THIS IS NOT SO!

"The Asiatic bee mite (*Varroa jacobsoni*) is another story entirely. There is near unanimous support that it is potentially the most serious pest ever to threaten U.S. beekeeping. As evidence for this, consider that both Canada and Mexico have sealed their border to U.S. bees because of the recent finds. Reports from other areas where the mite has been introduced, especially temperate climatic regimes, indicate great losses of colonies have occurred"[2]

The next month, I reported the following: "On November 9, a Varroa Mite Research Work Group was created, chaired by Frank Robinson, Secretary-Treasurer of the American Beekeeping Federation and retired Professor of Apiculture from the University of Florida, the purpose of the group is coordination of research, regulatory and extension activities related to the Varroa mite situation in the state. The following is a brief summary of the research activity going on in Florida at the present time:

"To address the short-range problem of bee movement around the state, which is a top priority, Drs. Harvey Cromroy, IFAS (University of Florida) and Everett Nickerson (Methods Development, Division of Plant Industry, FADCS) have initiated paperwork which is being assembled in Tallahasee by Jim Downing, FADCS to request a Section 18 Specific Exemption label for the miticide, Amitraz. This is to develop the necessary information on the material's dosage (how much material should be applied and in what manner), efficacy (how many mites are killed during treatment of a colony) and residues (how much miticide might get into bees, honey and wax).

"In conjunction with this effort, Drs. Cromroy and Nickerson, with the help of Dr. Elton Herbert, Beneficial Insects Laboratory, Beltsville, Maryland, have embarked on a screening program to examine a number of different chemicals now in use in Europe and elsewhere to control mites. These include Apitol, Apistan, Folbex VA, and Varamit. In addition, they will also be looking closely at the use of various dusts, which on a prelimary basis appear to be effective as mechanical controls for mite populations, as proposed by Dr. William Ramirez, University of Costa Rica."[3]

In spite of all the regulatory effort noted above, it was too late. The varroa mite literally was everywhere and no amount of expense or effort would limit its spread. It still remains incredible to me the rapidity of the mite's spread; it seemed to spring up everywhere once first detected. The above paragraph contained something extremely significant, the beekeeping industry was embarking on a road to chemical treatment. This paradox was not lost in my statement/question in December 1987, "Pesticide Use Inside Beehives?"[4]:

"Some years ago the above statement would have raised more than a few eyebrows. Many questions by beekeepers each year concern using pesticides to rid colonies of invasions by ants, wasps, wax moths and on rare occasions, beetles. No answers, however, ever indicated pesticides were to be used near colonies, much less inside them. The closest to this was wax moth control which involved fumigating empty supers with pesticides. To most beekeepers, pesticides were an anathema, responsible for killing untold numbers of colonies in agricultural and urban areas, and agriculturalists and mosquito controllers were considered a collective enemy for using them.

"The worm has turned. With detection of the tracheal mite and now *Varroa jacobsoni* (the Asian honey bee mite), the hue and cry for pesticide use within the hive by beekeepers has reached a crescendo. This irony has not been lost on some of my colleagues, who've been plagued with beekeeper complaints about pesticide use over the years. Not that pesticides don't have a place in control of mites, but the all-too-prevalent view that they are somehow a 'magic bullet' which will mean the end of the pest and a return to business as usual is a bit disconcerting.

"This philosophy may come from the experience with Terramycin®, which is now routinely used as a preventative treatment for American foul brood (AFB). As successful as this has been, it has not entirely eliminated the disease. Most bee inspection services are in place today specifically because American foul brood is still a threat. Hundreds, perhaps thousands, of colonies nationwide are burned each year to eliminate American foul brood reservoirs. Many beekeepers emphatically state that if they see a colony with AFB, they immediately destroy it themselves, even in states like Florida where an indemnity is paid if a bee inspector burns a colony for AFB.

"It's important to realize that the management system to control AFB did not come about overnight. It is the result of a good deal of learning on the part of beekeepers, scientists and others since the 1920s, when thousands of infested colonies were routinely burned in an effort to control infestation.

"And as effective as it appears to be at present, use of Terramycin® is not without possible future complications which run the gamut from contaminated honey to an antibiotic-resistant bacterium strain. Fortunately, the causative organism, *Bacillus larvae* [editor's note: now named *Paenibacillus larvae larvae*], has not shown resistance to Terramycin®. Routine treatment for American foul brood also means that the line between bees which have some innate resistance to the disease and those that are susceptible becomes fuzzy. Nevertheless, colonies continue to be routinely treated despite proof that resistance to the disease by several mechanisms does exist within some bee populations. Thus, should *Paenibacillus larvae larvae* eventually become immune to Terramycin®, bee populations which are resistant to AFB might be difficult to find.

"In Varroa control, resistance by mites to chemicals improperly used and/or applied has already been established, particularly phenothiazine in Japan and amitraz in Israel. This means that pesticides must be used far more judiciously within the colony than is currently done with Terramycin or resistant mite strains will quickly develop."

Looking back on these statements reveals how prophetic they were. The beekeeping community adroitly clambered aboard what many have called the "pesticide treadmill" in a futile effort to find a "magic bullet" for varroa control. The first candidate was quickly approved by the authorities on an emergency basis, using Mavrik® (active ingredient fluvalinate) soaked on plywood strips. I had first seen this technology in Italy in 1989, although the material had the brand name Klartan® in that country.

On March 21, 1988, it became no longer legal to use fluvalinate-treated wood sticks. Instead, only plastic strips manufactured to slowly release small quantities of fluvalinate, were legal and had to be used under an emergency compliance agreement with the Division of Plant Industry. Apistan® indeed appeared to be a magic treatment and the industry was to get ten good years of use from this material.

The use of Apistan® did not fully alleviate the fears of many that honey could be contaminated by fluvalinate, which might morph into a big problem for the honey market. And in August of 1990, I wrote the following, "It was only a matter of time. *The Boston Herald* reported that honey from a specific outfit had been contaminated with fluvalinate, the active ingredient in Zoecon's Apistan® plastic strips. Taking this conclusion further, the newspaper then implied that the contamination

came from the strips themselves. The facts do not bear this out, the Corporation says, in a packet of information sent to industry leaders. According to the Corporation, it would take some 96 strips placed into a colony all at once to reach contamination levels reported by the newspaper (1.14 parts per million). If used according to the label, Zoecon points out, honey cannot be contaminated using the strips.

"There are a number of ways that honey might become contaminated with fluvalinate. This active ingredient, also marketed in other products to control insects on ornamentals or turf, may be applied to beehives in many ways. Plastic Apistan® strips can be left in the brood nest too long. It is not legal, nor wise, to leave the strips in a colony longer than listed on the label. Wax and honey contamination, as well as build up of resistant mite populations, are the likely outcomes of this practice. Experience in Israel, where fluvalinate impregnated in wooden strips are often used to control Varroa, indicates the material builds up in wax and possibly honey. The result of this episode of contaminated honey and the attendant press coverage will be increased testing of product destined for the consumer market. The state of Florida has added fluvalinate to its honey testing protocol and this will probably be the case in other states as well."

I, therefore, concluded: "The message is clear: all misuse of fluvalinate (that includes at the present time, ANY USE EXCEPT Apistan® strips applied ACCORDING TO THE LABEL accompanying the product) will be sought out by the authorities and is potentially damaging to the beekeeping industry."5

This sets the scene for the next article on this important historical event in U.S. beekeeping. It will reveal how among other things, the fluvalinate silver bullet has lost much of its effectiveness to be replaced by even more toxic materials, while at the same time a variety of so-called "soft" chemicals have come on the scene. In addition, the move toward integrated pest management, something well known in other agricultural areas, will be described.

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Control of varroa using organic treatments

Natalie Page-Weir, Harlan Cox, Mark Goodwin, Heather McBrydie, & Ajith Nayak

HortResearch, with support from the Sustainable Farming Fund (SFF), the National Beekeepers' Association (NBA), contributions from a number of beekeepers, and Zespri, are working with 10 beekeepers to trial the efficacy of organic varroa control products. The organic products being trialled are Apilife VAR®, Thymovar®, Apiguard®, and thymol crystals. A series of articles will be written as a means of sharing the information on use and efficacy of organic products to control varroa.

The current control strategies for *Varroa destructor* are not sustainable in the long term, because varroa has developed resistance to the synthetic chemicals that are used to control it. Varroa has now spread to the South Island and is likely to infect all colonies over the next few years. In the North Island it has resulted in the loss of more than 50,000 colonies. Many of these losses have been overcome by importing hives from the South Island. With the presence of varroa in the South Island this will no longer be possible. It has been predicted from a survey of beekeepers and grower groups (funded by the SFF) that this may result in a shortage of hives available for pollination.

HortResearch in Ruakura has been developing solutions to combat this problem. One current project is to breed bees that are tolerant to varroa. Another solution is to facilitate the use of organic chemicals within the beekeeping industry. Organic treatments are derived from chemicals that are naturally produced by plants or other organisms; typically, these have a different mechanism of action from synthetic chemicals, and thus it may be harder for varroa to form resistance.

The availability of organic treatments that offer good varroa control will benefit New Zealand beekeepers. This will mean that organic products can be used alternatively with synthetics, or that beekeepers can control varroa using only organic products. This may be particularly beneficial to beekeepers who wish to be 'organic beekeepers'.

HortResearch, with support from SFF, NBA, beekeepers, and Zespri, has recently begun a two-year trial that aims to assess the efficacy of some of the commercially available thymol products for varroa control. Thymol is an essential oil extracted from the herb thyme.

Ten beekeepers are cooperating in this trial. Each beekeeper is applying either a synthetic treatment (Apistan® or Bayvarol®) to some hives and one of four organic products to other hives. The organic products are Apilife VAR®, Thymovar®, Apiguard®, and thymol crystals. Each of these products is being applied to both single and double brood box hives.

The results from the synthetic treatments (Apistan® or Bayvarol®) will be used as a baseline to compare with the organic treatments. We have asked the cooperating beekeepers to sample mite numbers before and after treatments are applied. This experiment will determine the efficacy of each product at controlling varroa.

As part of the extension of the information we gather, we will write regular articles to keep New Zealand beekeepers informed on the progress of the trial, to provide the feedback from those beekeepers involved, and to make recommendations on organic control of varroa.

Our thanks to the 10 beekeepers taking part in this trial, for their generous use of hives, their time for counting mites and applying treatments. Thanks to Reuben Stanley for providing Apilife VAR®, Stuart Ecroyd of Ecroyd Beekeeping Supplies for providing the Thymovar®, and Trevor Cullen of Ceracell Beekeeping Supplies for providing the Apiguard® used in this trial.

Applying thymol crystals in dishes. *Photo: Hort Research*

Peter Molan gains KuDos

Dr Peter Molan has won the inaugural Hamilton and Waikato Community Science Entrepreneur Award in the 2007 Science Excellence Awards, known as (the) KuDos. Dr Molan, a professor in biological sciences at the University of Waikato, received one of eight awards made to eight of the region's top scientists.

The eight winners were chosen from nearly 50 scientists who were nominated as either individuals or science teams. The nominee list was narrowed down by expert judges to a list of 19 finalists, including the eight winners.

Dr Molan received a $4000 award, plus $4000 of intellectual property services from James & Wells.

In making the award to Dr Molan, the judges noted:

"He has, through research, education, invention and advising companies, taken his discovery of the unusual antibacterial activity of manuka honey through to developing wound dressings used in hospitals around the world. Professor Molan has enabled successful commercialisation of manuka honey products for wound care that are now registered as medical devices with the regulatory authorities in Australia, Canada, the countries of the European Union, Hong Kong, New Zealand and the USA."

The Hamilton Science Awards Trust was established in April 2007 and its aim is three-fold:

1. To recognise the contributions of scientists working in the Waikato River catchment
2. To encourage high school students to enter the sciences
3. To raise the profile of science achievements within the Waikato community.

The KuDos were launched in June 2007 and are set to become an annual celebration of local scientific innovations impacting the Waikato region, New Zealand and the world. All scientists are required to spend their cash rewards in ways that further their research in the Waikato region.

Information from www.thekudos.org.nz.

Spring has arrived

As I write this in the second week of October the warmer weather has arrived. If you thought that there were no bees out there, think again! Here in Hawke's Bay the swarms are starting to be reported and collecting them is one way of making up for winter losses. Sure, they are too late to form hives strong enough for most of the pollination, but they are ok for splits to build your numbers and to produce a honey crop.

Remember that the general pattern is for the old queen to go with the swarm, leaving the new queen in the old location, whether it is a feral nest or an overcrowded hive. So, requeen as soon as possible. Generally bees with AFB are not strong enough to swarm, but don't risk an outbreak. Keep your new swarm in isolation until you are really satisfied it is clean. Also treat for varroa mites as they will travel with a swarm.

The fascinating thing about collecting swarms is that you never know where the next one will be. It pays to have a puffer of insecticide powder with you for the swarm in the lining of a building or similar difficult to access location.

Most people are terrified of swarms, so if your branch has a well-publicised list of those who will remove them, this is a great public relations service.

- Ron Morison

NIWA's climate outlook: October to December 2007

Over the coming late spring period, mean sea level pressures are expected to be higher than normal to the south and southeast of New Zealand and lower than normal to the north, with weaker than normal westerly winds, on average.

Air temperatures are likely to be average or above average over most of New Zealand. Rainfall is expected to be normal or above normal in the north and east of the North Island, normal or below normal in the north and east of the South Island, and normal elsewhere. Soil moisture levels and stream flows are likely to be below normal in the north and east of the South Island, and normal or above normal elsewhere.

There is a slightly lower than normal chance of an ex-tropical cyclone passing within 500 km of New Zealand in the coming tropical cyclone season (November 2007–May 2008).

Obituary: in memory of Ron Parkes

12 August 1915–29 July 2007

Ron was born in Wanganui, the second youngest of six children. After leaving Wanganui Technical College he fell into a life of farm labouring, hunting and riding his motorbike.

Ron realised he would have to find a career of some sort but was not interested in following his father and brothers into farming. He saw an advertisement for an assistant in beekeeping. He knew nothing about what it would entail but he loved it from the outset.

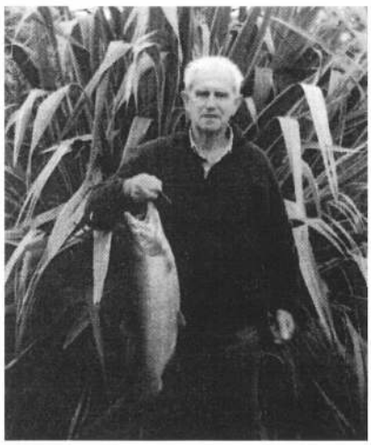
After working in Wanganui for a time the family moved to Tauranga, where Ron worked on the family farm at Ohauiti and slowly built up his beekeeping business. After marrying he moved to Kaitemako Road where his brother had a small farm, and they both worked with the bees for several years.

Ron joined the NBA when it opened a branch in Tauranga in the late 1950s and was the branch secretary for a few years. Ron was the genuine Kiwi handyman who got stuck in and made his own hives and frames. He invented a device to drill three holes (at one time) into the end bars that the wire threads through. He also made his own wooden queen cages.

He had a Tauranga Apiaries sign at the gate and was kept busy with local trade. In the season he filled tins with his honey and made trips to Rotorua or Auckland. A busy life, but it was a love and passion.

In between times Ron was a very keen golfer and had been Junior champion in Wanganui. He helped to create the Tauranga Golf Course and was a Tauranga representative.

Then he met up with Don and Charlie Barrow and Ron Mossop, also keen beekeepers, gardeners and fishermen. Don had a batch at Lake Rotoiti and soon invited the two Rons to join in regular trout fishing jaunts. Trout fishing became a passion and Ron looked forward to the opening season every year. A lot of his spare time was spent making up flies and lures for his fishing. He would stop and inspect road kill, and often arrived home with possum fur and bird feathers gathered from the road.



Here are two of Ron's poems about his mates:

Ron Mossop

When discussing world events with Ron Mossop
I sometimes think perhaps it's a tossup
Whether he's giving me news
Or his personal views
Or perhaps just a load of old gossip

Don Barrow

He grows a good garden does Don Barrow
But I'd match my turnips with his patch of taro
I might take envious peeks
At his lovely leeks
But I'm damn sure he won't equal my marrow!

Ron was forced to give up his beekeeping when in his mid-fifties and sold his 750 beehives to Ron and Neil Mossop. He was made a Life Member of the Bay of Plenty Branch of the National Beekeepers' Association in May 1972.

- Laurie Gardiner

Nelson beekeeper experiences a winter honey flow (thanks to varroa)

Having lost his hives to Biosecurity New Zealand in the attempt to rid Nelson from the varroa mite in early spring 2006, Nelson's Ray O'Laughlin once again became a hobbyist beekeeper with the purchase of a varroa-free nucleus hive in November 2006. Being ever cautious, Ray didn't immediately bring the hive into the area where his old hives had been as he had already caught two swarms, one testing positive with 60 mites and the other with nine.

Ray's experience with the reintroduction of a varroa-free hive makes for interesting reading, as he has been able to keep such accurate and up-to-the-minute data.

He has made screens for his hives with a back entrance for an aluminium tray to slide in under the screen. The tray has a mixture of Vaseline and oil applied so the mites stay where they fall. For the first two months he counted the fall morning and night until numbers decreased.

Ray got a permit to bring his now three hives back into his original site in Richmond in early January 2007. By 24 February the first mites appeared on the board. Four days later he inserted Bayvarol strips, four per each of the two brood chambers. Because mites were coming out of the brood, the hives had became infested about seven days after bringing them into the area (counting 21 days back from the emerging brood).

In the next six weeks over 8400 mites had fallen from these three hives. Strangely enough, all the hives seemed to average similar numbers, leaving Ray no option but to do back-to-back treatments.

The mite drop decreased slightly to 30 mites a day by May, but by the end of June and into July it had again increased to 100 mites a day. The bees were bringing in lots of honey, and Ray did mean lots—the honey was being capped as fast as it was coming in. "It was an amazing sight, seeing bees drawing foundation and bees behind them adding honey before it was even completely drawn out, and capping it as they went along," said Ray.

Of course the bees have been bringing in 'proper' honey (as opposed to nectar) already processed by other bees. Ray's local feral infested hives (some having been in existence for 20 years) are finally dying out from varroa, making the honey free to be robbed by Ray's hives. So not only is Ray rewarded with fresh honey, but his hives are infested with all the mites from the untreated hives. Of course his ever-present fear is that his robbing bees will also bring AFB to his hives, but luckily this hasn't happened so far.

"There is light at the end of the tunnel," states Ray. "The August drop is back down to 20 mites per day and in September, five to 11 per day."

As he writes in early October, Ray says, "I have taken off 28 litres of honey from two hives in August, put the boxes back on and they are again six high. Lots of bees and lots of swarming; just looked out my window at the hives, thousands of bees, I have never seen anything like it. You would never know that there have been three large swarms already. As the feral hives were collapsing, my bees were bringing home the goods. I was keeping my eyes on two feral hives for Dr Mark Goodwin. One was dead in March and the other in August. They don't last long with varroa. Mark was right about that."

"When varroa arrives in your area, expect a real change, but if you have a lot of feral hives near you, your bees are in for a feast, and there is not a lot of competition for them now, so it is not all bad. Enjoy your beekeeping," Ray said.

I would like to add that we appreciate Ray's extensive data, which demonstrates only too well the problem with 're-invasion' of varroa. You may have properly treated your hives for varroa, but in the early years, they will be re-infested from all the dying hives around that haven't been treated.

- Merle Moffitt

Ray O'Laughlin's spring cropping hives.

BeesOnline finalist in Sustainable Business Awards

Congratulations to BeesOnline, which won the National Trailblazer Award at the National Sustainable Business Awards (SBN) held Thursday 25 October during a gala dinner at Auckland's War Memorial Museum. This award category is for small to medium size businesses, the Supreme Award was won last year by Comvita Ltd.

The Waimauku, Auckland café and honey producer, headed up by NBA Executive Council member Maureen Maxwell, also was named as a finalist for New Zealand's Sustainable Business of the Year. Design Mobel, designer and manufacturer of contemporary flexible slat beds, won the 2007 Supreme Award title.

The other finalists for the 2007 NZI National Sustainable Business Awards included State of Grace, Dulux Paints, Urgent Couriers, Catalyst R&D, Opus International Consultants, Agrisea, Squiz and The Mussel Inn.

To qualify, each of the nine finalists completed SBN's Get Sustainable Challenge, subsequently entered the SBN awards and won the Supreme or Trailblazer category in their region.

BeesOnline won the North Region Sustainable Business Awards held on 23 August 2007. The notes for the awards stated:

"BeesOnline is well-known for its support of sustainability. The café and honey producer has embedded sustainability in the design of its building, using energy efficient lighting and appliances, the management of its own waste water treatment, and its product focus on natural and certified organic honey. BeesOnline also supports local suppliers."

BeesOnline also won the Trailblazer category for SMEs at the North Region awards ceremony, a precursor to their national award. The Trailblazer category is described by the Sustainable Business Network (SBN) as follows: "A business who has been actively implementing sustainability actions for more than two years. It is likely to have sustainability as a strategic part of their business operations, products and services. These businesses are innovators & leaders who are positioned to maintain market advantages while providing both ecological, social, & financial dividends."

Left to right: Rosemary Hay (BeesOnline), Rachel Brown CEO (SBN), Wade Gillooly, Maureen Maxwell, Prime Minister Helen Clark, Chris Morrison (Founder, Phoenix Organics).

Wade Gillooly, General Manager of BeesOnline says, "This is a positive step towards our journey to develop and refine our business operations and practises to ensure that we can define ourselves as a truly sustainable business".

The Judges' comments read: "The winner of this award is an outstanding example of a successful company that produces a nationally and internationally acclaimed product; is committed to sustainable best practice in all aspects of its production, wholesale and retail operations, and makes a very positive contribution to the region socially, environmentally and economically. The winner of the Trailblazer Small and Medium Category award is BeesOnline".

Information provided by Wade Gillooly, BeesOnline. Further information from http://www.beesonline.co.nz/newsandevents/index_dynamic/containerNameToReplace=Middle/focusModuleID=3571/overideSkinName=newsArticle-full.tpl

http://www.scoop.co.nz/stories/BU0710/S00250.htm

http://www.sustainable.org.nz/newsitem.asp?r=national&id=2267

Maureen Maxwell with award presenter Geoff Dangerfield, CEO, Ministry of Economic Development.

Photo credits: Dave Olsen Photography

The buzzing of bees brings terror to the mighty African elephant

James Randerson, science correspondent, *The Guardian*

It might seem like the epitome of a David versus Goliath mismatch—up to 12 tonnes of heavily armoured mammal flesh versus a few hundred milligrams of irritating insect. But despite their thick skins and size advantage, elephants turn tail and flee at the sound of a swarm of bees, according to research in Kenya.

The scientists who discovered the elephant reaction say it could be exploited to keep the animals from raiding crops.

To find out whether the elephants shy away from bees Oxford University researcher Lucy King set up experiments in which she played recordings of African bee swarms to 18 elephant families. She was careful to put speakers well away from her own vehicle so the elephants would not associate the sounds with people.

"It's hard to put it into words how dramatic this reaction is," said Ms King. "As soon as the bee sound played they would stop immediately what they were doing and turn directly to the speaker.

"The young ones would immediately bunch up to their mums in a defensive format. Normally one of the elephants would trigger a retreat and the whole herd would either run or walk fast after them," she added.

Ms King compared the reaction to bee sounds with the elephants' response to white noise. She reports today in *Current Biology* that only one family had not moved after hearing the bees compared with eight who heard the white noise. The response to the bees was quicker, too. Half of the families moved within 10 seconds.

She said elephants can be stung around their eyes or even up their trunks and that a swarm of bees could kill a calf because its skin is not yet thick enough to repel stings. So the animals probably learn through painful experience to avoid the buzzing.

Farmers, she suggested, could use that to protect their crops from elephant raids, although it would probably be necessary to have real bees' nests rather than recordings because the animals would probably rumble the bluff. She added that her findings did not add weight to the notion that elephants were scared of other small animals such as mice. "There's no evidence whatsoever for that," she said.

To see this story with its related links on the Guardian Unlimitedsite, go to http://www.guardian.co.uk/science/2007/oct/09/kenya

From the colonies

Auckland Branch

At the moment we're busy giving the bees room for swarm control and cutting out cells. Some sites are really starting to try and get away on us. The main part of pollination is almost upon us and the first lot of hives go into gold kiwifruit tomorrow night.

It is always interesting trialling new products and seeing how good they are. We have always had some apiaries that struggle for early pollen sources and the bees can take a while to really get started. We have in the past tried different pollen substitutes, but have never really been happy with any of them. When we heard that a new product, Feedbee, was coming on the market designed specifically for bees, we were keen to try it. We identified those apiaries that can historically struggle for pollen and over a period of 4–5 weeks gave all those hives three feeds of Feedbee with a little amount (approximately one litre) of syrup.

Two things pleased us: the uptake of Feedbee and the response of the hives to this treatment. We also fed any hives in other apiaries with Feedbee, as well as a stimulus syrup feed, if we thought they were lagging behind the average hive in that particular yard.

We feel that the average strength of those apiaries identified as always struggling for pollen is a lot better than we've ever had. It is a management technique that we will use in the future.

We are also giving our new (early October) splits Feedbee as well as a syrup stimulus feed. Next year we plan to use this management practice again, but will also include our early cropping yards, starting in the last week of July.

We have noticed previously that just because there is a lot of early gorse flowering, low temperatures and wet weather mean there is not always a lot of pollen in the hives. With early honey (i.e., Manuka) being the most valuable honey we crop, we will do our utmost to get our hives as strong as possible at the start of the honey flow.

- James Harrison

Hawke's Bay Branch

So far we have had a fairly normal spring this year. The nor'westerlies have picked up as normal for this time of year and are driving everybody nuts. A severe frost we had in early October has done a few million dollars' damage to grapes, pipfruit and stonefruit. I have not had any reports of damage to kiwifruit, but with the frost getting down to -4°C in some areas and lasting for over six hours there is bound to be some damage.

There is a very heavy flowering on the Kowhai this year and when the wind is not blowing it is providing a very good source of early nectar. Fortunately the bees normally eat the Kowhai honey before the main flow starts, as it has a taste remarkably reminiscent of brake fluid and the unsubtle aftertaste can keep you spitting for half an hour. There are a lot of different Kowhai species throughout the country and I have heard that some of them are a lot nicer than ours. They would need to be, but it's still a lot better than having to feed sugar.

- John Berry

PS: if there is anyone out there who does not believe me about the taste, I have a jar in my shed.

Waikato Branch

It has been difficult tracking down beekeepers this month—yes, they are all flat out and I am told that the colonies are in most cases way ahead of normal. The first swarms have gone out and it is a busy juggling act of swarm control, requeening, mite treatments, and preparing hives as pollination units. A number of Waikato beekeepers are using alternative mite treatments this spring. Mites are reported to be at relatively low levels.

The branch has begun the AFB surveillance again, opting for spring rather than autumn surveillance when beekeepers are less busy! No date has been set yet for the next branch meeting, however, we do hope to meet soon to hear from those who attended Apimondia, and also to share information received from the visiting Chilean and Uruguayan beekeepers.

- Pauline Bassett

Bay of Plenty Branch

Like most of the country, spring here has tried to be all things to all people everyday. We have had a lot of rain but enough wind to dry out the paddocks and orchards. Not too much bogwheeling, just enough to keep up the interest.

Gold kiwifruit pollination is now well under way, although the temperature and wind have not provided the easiest conditions for the kiwifruit growers or the bees. Avocados are also in full flower, with many members providing hives for pollination.

The cold westerlies have meant the hives are light compared to the last two years. The willows were a bit of a non-event due to the weather and now the Rewarewa, Barberry and Hawthorn are underway, so hopefully the weather will settle and the hives can fatten up a bit. Some sun would be good.

The bees are looking good despite the poor weather, and so far have mostly elected to stay home. We have had to deal to only a couple of wayward swarms to date, well down on previous years. Varroa numbers are also low but it is now time for treatment to keep on top of the mites.

Green kiwifruit are next on the board and looks like it could be a drawn-out season as the lack of winter chilling has caused an uneven budbreak. We wait and see. Meanwhile we hope the weather settles and the wind drops.

- Barbara Pimm

Nelson Branch

Nelson had a very settled August, but true to history, when everything is ticking along nicely, down comes the rain!

This year the end of September and early October have been very wet and the bees have lost the benefit of most of the available willow pollen and nectar.

Local beekeepers report that the hives are strong but quite lean on stores, except for one hobbyist beekeeper who is having a honey flow thanks to varroa, but I have written about that in more detail in a separate article in this issue (see page 12).

It has been difficult for queen producers to get consistent mating days over the last three weeks but I am sure that sunshine is around the corner. The benefits of the rain, of course, will be lots of lush green growth everywhere, so the farmers will be clapping their hands.

This week we have practiced our protocol for wet weather beekeeping. It consisted of getting soaking wet while removing partially submerged hives from a site beside a swollen river (gumboots were left at home), putting out queen cells in pouring weather under an umbrella, and pulling out a stuck truck in a muddy and greasy paddock six times before dry safety was reached. It doesn't get any worse (other than during the same day, petrol went into our diesel tank and the 'bach' we stay in got flooded due to a tap left on and a plug left in!)

Assessing apiary site suitability in wet Marlborough, 10 Oct 2007.

The Nelson Branch met on 4 September in Motueka. We discussed kiwifruit pollination standards and Apimondia (especially the debate related to CCD). I gave a short presentation and demonstration on what we do with anaphylactic shock kits, allowing several to try their skills at administrating adrenaline.

We were fortunate to have the experienced Dr Malcolm Sanford of Miami address the meeting, giving his humorous and lateral comments on the beekeeping challenges prioritised by the meeting attendees. The topics raised ranged from dealing with 'red tape' to increasing production of honey and queen bees.

We shared information on where varroa has been detected in the Nelson area. The majority of beekeepers are still relatively varroa-free, but we agreed that the situation will soon change with the moving of hives post-pollination.

- Merle Moffitt

Otago Branch

My comments last month about less wind than usual have come back to haunt me. October has been dominated by *WIND*...from all directions but mostly the west and mostly strong.

The good news is it rains in between gales so soil moisture is still okay. When the winds do ease there is a good dandelion flow in places, especially amongst the Lucerne paddocks that are thriving with the rainfalls.

With few settled days local beekeepers are reporting poor queen matings so far this spring. I am putting out cells a bit late this year and just as well it seems. It is a bit like putting in early spuds down here; you are in with a chance but a late frost might get them too.

All things considered my hives seem in good shape and should be ready for the main flow, whenever that may be! The overwintered tops have come through really well and will replace normal losses.

Central Otago is looking green. The Thyme flow is about to kick in and shouldn't suffer from the drought conditions experienced last year.

Congratulations to the magazine crew on the fantastic October issue. The discussion on the timing of conference is interesting. I guess the seminar days could be held over a weekend, but no doubt that wouldn't suit some. The magazine certainly has something for everyone and I enjoy reading it from cover to cover. Even this bit.

- Peter Sales

Beekeeping in Fiji

A number of years ago I visited a school near Suva that had an agriculture course that included beekeeping. The teacher in charge had a beehive and was a bit nervous about opening it. He wanted to remove a couple of combs of honey for the pupils to extract and asked for my help.

We opened the hive and, being requeened with a New Zealand queen, it was easy enough to handle. Soon I had a couple of nice combs of honey that I handed to the teacher. At times like this you could kick yourself for not having a camera. Imagine the sight: a large Fijian with oversized overalls, his veil tucked into the top of the overalls to prevent the bees getting into his veil, good heavy bee gloves well up over his sleeves, a comb of honey in each hand and to top it off with all that protection, BARE FEET.

At one stage we started a queen-rearing business in Fiji and had to requeen some of the local hives. You soon learnt that you put your veil on *before* opening the door of the truck.

When you approached the hive, you smoked the entrance and then backed into the bush to remove the stings, then you took the lid off and smoked the bees again before backing into the bush to remove the next lot of stings. This continued with removing a super, lifting out a frame, etc., until with great joy you pounded the life out of the queen and then after adding the new queen, you reversed the procedure smoking, backing into the bush, etc., until the hive was together again. Being so hot, you had to be lightly clad so were easily attacked.

In about six weeks the Fijian beekeepers were able to work the hives without smoke or veils. I wonder if the original black bees in Fiji were the last remaining British bees that the UK beekeepers speak so highly about? Perhaps extinction has its good side.

One of the sidelines of beekeeping in Fiji was the hornets. They made small fist-sized nests and although they seemed to carry on their business ignoring people, apparently if the nest is disturbed can be quite nasty.

A young Fijian I was visiting knocked a hornet's nest down onto the ground. We went away for an hour or so and when we returned the hornets had gone and the ants had eaten all the larvae.

I went into a cane field and asked a nearby worker if he had seen any hornets. Within seconds all the workers had disappeared. They hadn't heard my question, only the word hornet and that was obviously equivalent to disappear. By their reaction I assume that the hornets pack a real punch.

The ants gave me an insight into absconding of bees from nuclei. I asked the Fijian boy how the ants affected the bees. He told me that the bees knocked the ants down as they walked up the combs. While there the odd nucleus absconded and I realised they were the nuclei that did not have bees covering the width of three combs. It appeared to be the bees covering the width of comb, not size, that was important. So if you have absconding problems, make sure that the nuclei have enough bees to cover three combs in width; i.e., bees on the outside of three combs when looking down into the nuc.

In New Zealand, wasps can pressure nuclei into absconding. Several abscond and then concentrate into one nuclei, which will be then strong enough to survive against wasps.

- Gary Jeffery

Forgotten verse

Harold Grant from Exeter has a query relating to Lewis Carroll's Alice books: "My granddaughter giggles with joy at Carroll's 'How doth the little crocodile' poem but I have been trying to find the original on which it was based. I'm sure he based it on a poem beginning 'How doth the busy little bee?' Can you find it for me, please?"

Like much of Carroll's work, his parody is now much better known than the original.

Here is the busy bee that gave him the idea, written by a man best known for his many hymns. Note the often quoted second half of the third verse.

Against Idleness and Mischief
By Isaac Watts (1674–1748)

How doth the little busy bee
Improve each shining hour,
And gather honey all the day
From every opening flower!

How skilfully she builds her cell!
How neat she spreads the wax!
And labours hard to store it well
With the sweet food she makes.

In works of labour or of skill,
I would be busy too;
For Satan finds some mischief still
For idle hands to do.

In books, or work, or healthful play,
Let my first years be passed,
That I might give for every day
Some good account at last.

Reprinted from the International Express *(UK), October 16, 2007. Thanks to T M Patterson of Auckland for sending this newspaper clipping.*

Queen bees avert the sting in the tail

Heidi Ledford

Honeybee queens produce a chemical cocktail that politicians would swarm to lay their hands on: the scent of a queen keeps her drones and workers loyal to the throne, dutifully feeding and grooming their ruler.

Now it seems that this chemical perfume also prevents worker bees from developing aversions. This means that undergoing a negative experience around a queen won't lead a worker bee to learn to hate her.

"They can still respond to something nasty," says entomologist Alison Mercer of the University of Otago in Dunedin, New Zealand. "But what they can't do is learn to associate particular stimuli with nasty outcomes."

Negative association

Mercer and her colleagues tested this by training bees to associate a particular smell (not from the queen) with a mild electrical shock. They strapped the bees down, released the odour, and administered the shock. The bees extended their stingers in response to the jolt.

After a few repetitions of scent and shock, the smell alone was enough to trigger the stinger reflex even without a jolt of electricity—as long as the bees didn't scent their queen.

Bees exposed to the queen's pheromones, and specifically to a compound called homovanillyl alcohol (HVA), did not learn to associate the smell with the shock. They could, however, still learn to associate a particular smell with food, showing that HVA was acting specifically on aversion rather then general learning or physical responsiveness. The results are published this week in *Science*[1].

Previous work had shown that HVA acts on the bee brain via a signalling molecule called dopamine. In humans, dopamine plays a role in motor control and reward-seeking behaviour. In insects, however, dopamine is responsible for motor control and aversion. A different chemical, called octopamine, mediates positive associations, which could explain why HVA did not affect responses to food.

Smells like queen spirit

HVA is just one of many compounds within the queen mandibular pheromone coating the queen's body. The queen's attendant workers groom her with their proboscises and by rubbing her with their antennae. Then, when they mix with the rest of the hive, they distribute her pheromones to other bees. This calms the crowd and prevents reproduction among worker bees. "As soon as you put a queen into a colony, the young workers are less active and less aggressive," says Mercer.

So why would a queen need to chemically prevent the workers from learning to hate her? One possibility, suggests Mercer, is that the queens may have a problem with body odour: in high concentrations, their heady mix of pheromones become repellent.

"You can overdo any odorant," says Mercer. "We experience that in humans, too." If worker bees, particularly those closest to the queen, were to get a whiff of that stench too many times, they may begin to avoid her. And that could spell the end of the queen.

Entomologist Dr Mark Winston of Simon Fraser University in Vancouver, Canada, says the study provides an exciting glimpse into the relationship between genes and behaviour, but he finds the 'stinky queen' explanation unlikely. "I doubt that pheromone concentrations ever get high enough in a colony to be repellent," he says. But he says suppressing aversion may still be important for other bee activities.

References

1. Vergoz, V., Schreurs, H. A, & Mercer, A. R., *Science* 317, 384–386 (2007).

http://www.nature.com/news/2007/070716/full/news070716-14.html (full article available to subscribers only)

Reprinted from HiveLights, *Canadian Honey Council, August 2007, Vol. 20, #3.*

Letters to the editor

Shoddy varroa treatment practices won't be tolerated

Dear Editor,

Perhaps the only good thing to come from varroa is that we have had plenty of time to learn from other people's mistakes. Many varroa treatment products no longer work in many overseas countries and to a large extent this has been caused by the misuse of these products, either through ignorance, laziness or lack of regulatory controls.

I suppose I was naive to think that this would not happen in New Zealand. I have recently had reports of the use of Mavrik® (completely illegal), as well as hives that have never had varroa strips removed, just new ones added periodically. With all the information that has been given to us about varroa, no one has the excuse of ignorance. We have regulatory controls over the use of these products, so once again, no excuses. This just leaves laziness. If you have been doing any of the above, then I urge you to do some research and find out how much danger you're placing the beekeeping industry of New Zealand in, including yourself.

Be warned: if I find anybody practicing this sort of shoddy behaviour, I will report them to the necessary authorities and the very least you can expect is being unable to find a buyer for your honey crop. Think about it—if you have used 'off-label' products or misused products you cannot legally sign a harvest declaration.

I am not the only one out there prepared to stand up to this sort of behaviour. This sort of thing is, thank goodness, only being done by a tiny fraction of the beekeepers in New Zealand, and unless they mend their ways no one will miss them.

John Berry

Groundhog Day regarding Manuka honey (packed in Australia?)

Dear Editor,

Yet another squeeze pack of runny Manuka honey seen at Apimondia in Melbourne, Australia, kicked my 'spin antennae' into gear again. (Refer to my article on page 15 of the September 2007 issue, 'What you see is what you get' … right?)

The bold label says MANUKA HONEY. The very small print on the side of the pack whispers of the "Blend of local and NZ honey".

So does this mean that Australia is now harvesting its own Manuka? The word-artist who created 'the red herring script' chose a heap of flavour-of-the-month features such as:

- 100% pure honey with no added sugars, syrups or extenders
- no preservatives, and no artificial flavours or colours
- produced in "pollution-free environments surrounded by clean water, lush floral, and fresh crisp fresh air".

None of these qualities, however, differentiates this so-called Manuka from any other honey on the shelf. The halo effect of the word "Manuka" is what attracts many to buy the pack.

So, Capilano honey company, while I commend you for your sponsorship of a successful Apimondia, the integrity of your brand would be enhanced by a simple statement of fact, indicating the tested percentage purity of the Manuka within.

Another case where Manuka lovers need to be assured that they are getting a premium product for a premium price paid, or, 'what you see is what you get'.

Sincerely,
John Moffitt

Filipino beekeeper seeking work

Greetings!

I am Mr. William A. Lopez, a Filipino citizen and a hard-working and well-experienced beekeeper. I am presently working here in New Zealand as a beekeeper.

I've been in Saudi Arabia since 1988–1990 and lately in Canada last season of 2005 as beekeeper. My work expired in October, so I will greatly appreciate if you could find a job or employer here.

Hope to hear from you soon.

Sincerely yours,
Mr Lopez

[Editor's note: Mr Lopez's email address is qoheleth_weelee@yahoo.com.]

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About the Apiary

Late October and the hives in our area have just started swarming—about three weeks late. We have had many rainy, windy days and even snowfalls on the ranges, but despite this the bees have managed to get out during the odd fine days and collect pollen and a little nectar to keep brood production going. When opening the hives I have sometimes found half a queen cell with the bees eating out the royal jelly. The bees made preparations to swarm but then decided the weather was unsuitable, so eventually cannibalised the mature queen cell.

There's lots flowering in the bush and along hedgerows, providing nectar and pollen. Barberry, Hawthorn, Bush Lawyer, Buttercup, Dandelion, Ceanothus, and by the time this is printed, Kamahi will be in flower. Hives should be expanding like mad. Give the bees extra room and something to do on those wet days by adding the odd foundation frame in to the second and third super. At the same time while inspecting the hive, move several frames of honey into the upper supers (the third and fourth super) to draw the bees up into the upper supers.

It's getting close to the start of the main honey flow for most areas. Some areas of New Zealand suffer a drop in brood rearing at this time of the year caused through insufficient pollen. There has been a flush of pollen from gorse, willow and the bush, but this has now finished and there seems very little to take over until the bees start working clover. In the northern hemisphere this is referred to as the "June gap".

If you have hives in a rural area, you may notice that there isn't that ring of pollen around the brood any more—just a few cells. This is the time commercial beekeepers put pollen supplements into their hives or just swap a few pollen frames around from hives that still have a lot of pollen stored. If there are only one or two hives in an apiary or you live in an urban area, your bees will generally find sufficient pollen to carry them through this dearth.

Inspecting for queen cells

Carry on the quick inspection for queen cells. For those who do not use queen excluders, you can reverse the brood chambers again after a month to keep the majority of brood in the bottom super.

No matter what you do, some hives stop going ahead. If you equalised all the hives in the spring or wrote notes on each hive, you may notice that the odd hive's population isn't building the same as the others. It could be that a hive has swarmed without you realising it, but it could also be due to a failing queen—egg laying has slowed, brood may not be covering all the free space available, missed cells start to appear, raised drone cells are found in worker larva cells. You could also see a big increase in the amount of pollen being stored (another sign of a failing queen). The bees are bringing pollen in at the same rate, but it's not being used at the same rate.

Some of the older queens will have had a beautiful laying pattern in the spring. You made the decision not to replace her because the brood looked so good, but older queens often can't keep up egg production to the same extent that a new queen can. When the brood nest has expanded to cover up to ten frames, the older queens tend to break down.

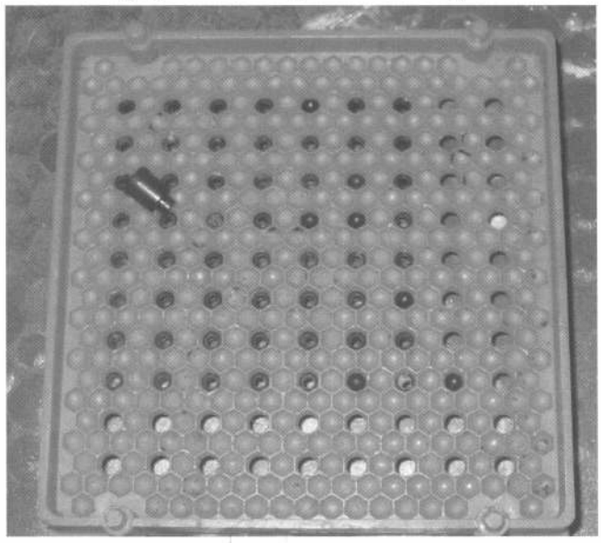
Young queens can also fail. They might have not have mated with sufficient drones in the spring. It's normal to have the odd hive fail. Find and dispatch the queen and add a nuc (with a young queen) on top, using a couple of sheets of newsprint as a slow introduction method. Some commercial beekeepers spray air freshener all over the frames of the nuc and main hive and put the nuc directly on to the hive (a form of direct introduction). The air freshener completely upsets the normal colony odour and that of the queen so the bees take a while to settle down. In the meantime, both sets of bees have accepted each other.

If you don't have a spare nucleus, order a new queen and when she arrives, make a four-frame nuc from the failing hive. Once the new queen is laying, then dispatch the old queen and unit the nuc on top.

At this time of the year you should also assess all your hives. Only keep strong hives; that is, hives with bees covering the frames in two, three or four supers. Smaller hives should be united with other hives to make them into strong units, as you get double the honey production from them.

If two weak hives have new queens, before uniting the hives, find one queen and put her into a four-frame nuc box. Once this has been established, it can be used later on to replace a failing queen or put into a super to build up, to store sufficient honey and winter as a single. (Place the hive with the queen on top, using newsprint as a slow merge method.)

Producing queens using the Jenter system



Jenter cage with plug at top left.

I received an email from a friend wanting some advice on queen rearing using the "Jenter" system, invented years ago. (Karl Jenter is now 90 years old and was at Apimondia with a new invention for removing royal jelly, which incidentally received a medal for innovation.)

The Jenter system consists of a plastic square of comb foundation with 90 removable cell plugs inset into the bottom of the comb. Once the queen has laid in the cells, individual plugs can be transferred to the base of a queen cell.

Most beekeepers have brought one of these units over the years and given them away after a few tries because the system is too fiddly, but some beekeepers have used the system extensively. The good point is that it can produce 90 cells at once and you don't have to have perfect eyesight to transfer larva. The drawback is that you have to have specialised queen cell cups to take the larva. But this system may come back into its own again in the future now that we know a queen is determined within an hour of the larva hatching. (Dr Peter Deardon made reference to "1000 queen bee RNA being turned on within 12 hours of hatching" in his talk on The Honey Bee Genome at this year's NBA conference. This was a University of Otago project that we hope to hear more about at next year's conference in Masterton.)

My friend wanted to requeen in spring, intending to kill all the spotty laying queens and to put in cells. I felt he shouldn't do this, as killing all the queens can lead to some hives becoming queenless as not all virgin queens return from mating. Also, it creates an 18-day brood break when hives should be building rapidly towards the main flow.

I prefer to create nucs from the hives that are likely to swarm and put queen cells in these, so that the hive continues to build (albeit slowly) without a brood break. If the hive has an old queen, she can be replaced by direct introduction once the queen in the nuc has been laying for a couple of weeks. This technique was practiced by Brother Adam (UK) and Steve Taber (USA) and consisted of finding both queens and swapping each onto the place where the other queen had been (i.e., gently pick up each one and place it close to the other location). Most of the time the bees don't notice any difference, and as the pheromone levels of the queens are the same the queens are accepted straight off. You can tell if she's accepted, as there is no reaction to her when she moves about the frame. She's not accepted if a bee hangs on to her leg or wings: the start of balling. If you see this, she'll have to be caged for a slower release. Take the nuc with the (now) old queen back to the mating yard and keep her alive until another cell is ready to introduce.

I prefer to put the best of my old queens into nucs for insurance against any losses, or make up extra nucs in anticipation of a few not mating or getting lost.

Requeening without dequeening

Once the swarming season is over, it's easy to put in a protected queen cell into a hive without removing the old queen. Our own Murray Reid (AgriQuality Limited, now known as AsureQuality) did this research more than 20 years ago. Requeening without dequeening gives an 80 percent replacement rate. You can still put in queen cells in the spring but the hive should be fairly weak and unlikely to swarm. The new virgin will generally sort out the old queen.

Method: Wrap a strip of oven foil around the cell and cup but leave the bottom one-quarter exposed so the new queen can emerge. (Some beekeepers use a 30-mm length of irrigation pipe as a cell protector, as it's less work.) Push the cell into the brood on the edge of the brood nest in the top super, or just place it in between two frame top bars. (If there isn't a chance of a cold spell, you can put the cell anywhere there are bees covering frames in the second or third super. That way you will at least get a changeover of 80 percent to new queens. The rest, and any that are queenless after three weeks (depending upon the weather), can have a mated queen introduced later from your nucs or you can reintroduce the old queen. (This method ensures that the hives don't have a brood break, thus reducing your honey-collecting population). Remember that each queen requires the choice of 100 one-month-old drones to mate with, so have lots of drone comb in your hives.

Generally I put protected queen cells into my hives in the last week of the main flow at the end of January. There are plenty of drones about and the weather is better than springtime. So order your cells in plenty of time if you are not going to produce your own.

My friend was going to use triple nuc boxes (a super divided into three so that there are three frames in each section). I suggested he make sure the wooden partitions were tight in the grooves. They should be airtight, otherwise the pheromones from one queen will drift into the nuc next to it. If the bees think they already have a queen they will kill the queen in that nuc. If the wooden partitions are loose, use RTV to seal around the edges. (RTV is the black substance used to seal car window screens in place.)

Returning to the Jenter system

Take a darkish frame (one that has had three to four cycles of brood in it) and cut a square hole in the bottom so the Jenter fits snugly into the frame—screw it to the top bar for support.

Next you have to get the bees to draw it out. Put the frame with the Jenter system into the centre of a strong hive and feed the hive sugar syrup so the bees start to draw out the wax. Once drawn, shake out any honey the bees have put in the cells, then put the frame into your breeder queen hive, with the breeder queen locked into the cage. (The plastic covering keeps the queen imprisoned so she has to lay in the cells.) Check two days later to see that she is laying and if she has filled most cells, remove the cover and release her. Sometimes the queen will take a few days to lay in the cells.

It's very important that queens are produced from the youngest larvae—less than 24 hours old. The Jenter system allows you to transfer eggs into a Jenter queen cell cup so that when it hatches, it's immediately recognised as a queen cell and fed royal jelly.

A day or two before you put in the queen into the Jenter square, make up a two-story (super) hive that you are going to use to draw out the queen cells. The hive should be headed by an older queen, be two supers high and overflowing with bees. When I say overflowing, I mean that all frames should be covered with bees and when you remove the roof, the bees come up and over the edges of the top of the super. This hive will have enough bees to raise about 30 queens.

If the hive is not overflowing, make one up a week or so earlier (use a hive with a marked, good queen that can be found when

required). Add frames of emerging brood from other hives, but make sure they are free of AFB first. In a week the bees will have emerged and will be ready to feed the queen cells.

Procedure: Feed the hive one litre of thin syrup (one-third sugar to two-thirds water) for a week before you want to put the queen cells in. Four days before the queen cells are due to be put in, find the queen and put her in the bottom super below a queen excluder. If you can't find the queen, put a queen excluder between the first and second supers. Look in four days for eggs. The queen will be in the super with the eggs, so place this super on the baseboard and put the queen excluder on top of this super. Also start to feed the bees a little bit of pollen every day (i.e., trapped pollen if you have it, or take a pollen frame out of another hive and scratch out the pollen with a fork). Add honey (or thick sugar syrup if you have a disease history) so it is a sloppy mix, and pour about two dessertspoons full over the top bars of the top super. The bees will clean this mixture up in a few minutes and will ingest the pollen, thus producing more royal jelly.

You can see the results of this pollen feeding the next day. Look at the three-day-old larva in a normal hive and observe the amount of royal jelly under the larva. Then look at the young brood in the hive you fed the pollen to. There should be twice as much royal jelly under each larva.

A day before you are to introduce the queen cells, sort out the queen-producing hive. The queen must be in the bottom super below the queen excluder. Look for eggs in the brood frames, then go through all the frames of brood and check for queen cells, removing any you find. At the same time, rearrange the hive. Select frames of sealed brood and place them in the top super. If these frames are from the super with the queen in it, find the queen. If you can't find her, shake all the bees off the frames before transferring the frames to the top super, so that you are certain the queen remains in the bottom super.

In other words, you should have only sealed and emerging brood in the top super. Move a pollen frame to the middle of the super and remove a frame of honey to create a space for the cell bar. So you have the super set up as follows: a frame of honey on the outside next to the super wall, three frames of emerging brood, a pollen frame, a gap for the queen cell frame, more sealed brood and another pollen frame, and the feeder (if it's the in-frame type). Then put in the cell bar complete so the bees polish the cells.

Take a piece of thick plastic and cut it so that it is about 400 mm longer than a super. Cut its width so there is a 12-mm gap at each side: this allows bees to move between the super, but restricts the amount of pheromones being transmitted up into the top super.

Lay this piece of plastic across the top of the queen excluder so there is a 12-mm gap on both sides, put on the top box and feed pollen and a litre of sugar syrup and close the hive. Sugar feeding is important as queens are produced when there is a honey flow on.

The next morning, take out the cell bar and shake off the bees. Go to the queen breeder hive and look for the larvae that have just hatched. If less than 12 hours old, take them out by removing the cell plugs and transfer them from the Jenter frame into the cells. If no larvae, transfer eggs into the cell cups, which make better queens in the long run.

Three hours later, the bees should have started to put a little wax on the cell cups that have young larvae in them—this means they have been accepted. To check this, carefully remove the frame and move the clinging bees aside with your finger so you can look into the cells. Don't shake the bees off as these are the bees feeding the larvae or wax builders. Check any cells that do not have wax around the lip of the queen cell. If the cell still has an egg, paint the cup as this will emerge later than those with larvae. Any that have been accepted will have plenty of royal jelly in the bottom. Anywhere there is no larvae, replace with another plug with a 12-hour old larva or leave alone.

A day after 'all' the cells have been accepted, lift up the top super and remove the plastic sheet. (The plastic is a form of "Cloake board", which beekeepers use to isolate half a beehive, and is referred to in most queen rearing books. The piece of thick plastic—the stuff used as a liner for concrete walls—is quite stiff. The late Chris Dawson used this method to produce queens, although he used half-width, full-depth frames in five-frame nuc boxes to produce queens.)

One the tenth day, remove the cells, protect them and then put them into nucs you made up the day before. If you wait any longer to remove the cells, you can damage the developing queen's wings. (That is, the wing buds are touching the cell walls and any bumping can damage them. Any cells dropped should be discarded as the queen will emerge without wings.)

Remove the painted queen cell one day later.

So that's it. The most important thing to remember about queen rearing is **POLLEN**. Not the pollen in the frames but the pollen in the stomachs of the bees. You have to feed it to them. If you just rely on the bees taking pollen out of the pollen frame, you will get small queen cells.

Cells less than 10 mm long are no good. Sometimes it takes a couple of tries to get the bees producing good queen cells. After each batch, wash out the Jenter cells carefully to remove all the larvae so you can start again.

You can see when everything has gone right, as there should be a plug of royal jelly in the bottom of the queen cell after the queen has emerged. This means they have adequate food to develop fully. Now go and have some fun.

Things to do this month

Check feed, check pollen, continue swarm control, AFB check (every time you open a hive, look over a few frames of emerging brood). Cull out old frames and super up hives.

Raise queen cells. Fit foundation into comb honey frames. Check on mite fall. Have your miticide strips out a couple of week before the main flow starts.

Clean up the solar wax melter—it's warm enough to use now.

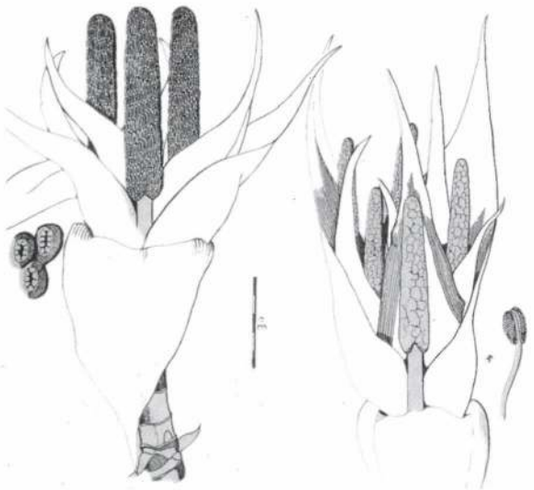
- Frank Lindsay

Trees and Shrubs of New Zealand

***Freycinetia baueria* (formerly *banksii*)**

Common name: Kiekie

Freycinetia baueria



Male and female inflorescences

Kiekie is a tall climber with leaves up to a metre in length and finely toothed.

The flowers are termed spikes that are seven to 15 cm long, surrounded by white fleshy bracts occurring from September to October.

The honey gathered is water-white in colour but has an unpleasant flavour. In earlier times a considerable surplus could be gathered, but as the possums eat the flowers and fruits the bees don't get much of a chance.

The plant is found in the North Island and the West Coast of the South Island.

The Maori and early settlers used to eat the fruit—often called the fruit salad plant, although the Kiekie was a tapu plant to some tribes. The fruit was also used to make fermented liquor when waipiro (alcohol) was unavailable.

The leaves were used to make baskets, although flax was more commonly used as the leaves were longer.

The aerial roots were used for fish traps.

-Tony Lorimer

If you find an unregistered or abandoned apiary: report it ASAP ... it could be the source of disease that has plagued a beekeeper for a few years.

More photos from Apimondia

Clockwise from top left:
Frank Lindsay on usual duty.
Ecroyd Beekeeping Supplies stall. Left to right: Stuart Ecroyd, Sarah Valk and Darren Clifford (Marlborough), Andrew (Ecroyd staff).
Mark Goodwin of HortResearch looking for new Australian RMP business opportunities with the help of John Moffitt (Apimondia technical tour). Yes, that is a python around John's neck!
Darren Clifford and Sarah Valk admiring the photo of their Marlborough apiary at Ecroyd display. John Moffitt looks on.

Photos: Merle Moffitt