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Notes from the President

Nick Wallingford

Changes to legislation that affects our organisation has stretched over a number of years and generated a variety of phrases and TLA's (that' short for the dreaded Three Letter Acronym). This month I will attempt an overview of the legislation to put into context the timing. It is somewhat long, I know. For some who have been involved in NBA affairs through the changes of the last 10 years or so, it probably seems a lot longer!

Levy Collection

Until the early 1950s the NBA received its income entirely from voluntary subscriptions. From then until the middle 1970s the NBA received some of the money collected from the Seals Levy. During this time, the collection was undertaken by the HMA (Honey Marketing Authority. See? I told you I'd start in with the alphabet soup...). The HMA made a grant toward the NBA's operating expenses. For the historically minded among you, this came about with the Honey Marketing Authority Regulations 1953, created under the authority of the Primary Products Marketing Act 1953. In the middle 1970s levy regulations were created to allow the HMA to collect a levy based on hive numbers. Again, this levy funded the NBA through a grant.

Faced with serious financial difficulties in the middle 1970s, the NBA successfully sought a change to the levy system. The outcome was the Hive Levy Act 1978, the act that is still in force, at least for another two months. It was introduced to Parliament by the Hon J. Bolger, who was then Associate Minister of Agriculture with responsibility for our industry.

The Hive Levy Act changed little, except for those changes brought about with the dissolution of the HMA leaving the NBA as the sole administrator and beneficiary of the levy. In the late 1980s, the levy took on new importance, however. The disease control programme previously provided by the Government for the industry's benefit was withdrawn. Faced with this loss of a crucial service, the NBA was compelled to fund a programme for all beekeepers. At about the same time, the desire to provide a marketing programme for the industry resulted in the raising of the levy.

Also in the late 1980s a number of organisations that had such levy systems as ours were told that these would be phased out. We were told they would be replaced with an 'umbrella' act that would still allow us to have compulsory levies but would provide a genetic system for gauging support, setting the levy rate and all the other levy related matters.

Ultimately, that act was passed by Parliament as the Commodity Levies Act 1990. We'll call that one the CLA. The CLA included clauses that would repeal the Hive Levy Act after five years, at the end of 1995, since it was felt that would be plenty of time to change over to the new act.

Within a very short time after its passage, however, drafting flaws made it apparent that the CLA would not be useable. The problem came with the voting to gauge support. The Minister's opinion indicated that more than half of the total number of levy papers, and more than half of the total commodity to be levied, would have to vote in favour of a levy before he could approve it. That is, non-voters were assumed to be opposed to a levy.

The CLA was amended in 1993 to fix this problem. The referendum is simply tallied by voter numbers and the amount of commodity both of which still must be a majority for the ballot to succeed. Non-voters are not counted.

But when the NBA attempted to use the CLA in 1995, we were told that 'apiaries are places, not things, so you can't have such a levy'. After recognising that the industry really did want such a levy, and had been assured that such a thing was feasible with the CLA, yet another amendment in late 1995 extended the 'sunsetting' period of the Hive Levy Act for one more year, to the end of December 1996, and fixed the CLA so it would be used to levy apiary numbers.

So for levy collection, that is where the NBA now is. We have earlier this year conducted a referendum to gauge support for our levy proposal, which was successful. The Hive Levy Act will expire at the end of December. The application for a levy order is currently with the Minister and we are hopeful it will be finalised to allow our organisation to start the new year with a secure funding base.

Disease Control

The first disease control legislation in New Zealand was the Apiaries Act 1906. Faced with serious American foulbrood problems being worsened by box hive beekeepers, the Act was hailed as a valuable and useful protection for the beekeeping industry.

The Apiaries Act was amended and re-written several times after that, with the last major revision being the Apiaries Act 1969. The Act has served the industry long and well. It provided the legislative framework to control American foulbrood, as well as required registration of beekeepers and the strictures against such things as antibiotics to control AFB.

It was still working, so again in the 1980s, what do we hear? Another piece of 'umbrella' legislation would consolidate all such specific legalisation! After a long gestation period, the Biosecurity Act 1993 (the BSA) emerged. Provisions of this act allowed for the creation of Pest Management Strategies (PMSs, of course) to describe the control of a pest or disease.

Here comes the part that seems to cause some confusion. The BSA has provisions to allow for a levy to fund strategies. They are, in fact, nearly identical to those of the CLA with one significant difference - no support referendum is required. If the Minister believes it the best thing to do in terms of the BSA, a compulsory levy can be imposed on those who would derive benefit from the control of the pest or disease.

As the NBA was already working toward a Commodity Levy Order, we chose not to use the levy provisions, instead we plan to collect the funds for our PMS using the levy raised using the CLA. We chose to go this way for simplicity and efficiency (we will not be collecting multiple levies and incurring additional administrative overheads) and out of a sense of fairness (it would be exposed to a vote of those affected).

Once the BSA was enacted, the Apiaries Act was set to expire at the end of June, 1996. But as we all know and as fate would have it, the BSA was also flawed in its drafting, and no PMSs were possible during those three years!

The Apiaries Act was extended by a regulation to October 1998, to give the industry time to finalise a PMS in light of new provisions. And that's where we are with that! The Biosecurity Amendment Bill No. 4 will not be enacted until early/ middle of next year (assuming New Zealand does get a government...).

While the Minister would be willing to *notify* our PMS, he would not *approve* it prior to the passage of that amendment.

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THIS ISSUE

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It is significant that he did not feel this way about the strategy to control TB prepared by the Animal Health Board! Rather, he felt *that* PMS was too important to sideline. I guess that gives us an idea of our perceived importance!

Summary

The Hive Levy Act 1978 has been used to collect the levy for the NBA. It will expire at the end of this year, and we hope to have a new levy using the Commodity Levy Act 1990 before then. The Apiaries Act 1969 will expire in October 1998. We hope to have our Pest Management Strategy, using the Biosecurity Act 1993, approved before that date.

We will use the levy collected from our Commodity Levy Order to fund all aspects of NBA activity — the administration, marketing and the Pest Management Strategy.

There — Is that confusing enough for you? I know it is hard to see all of this as 'beekeeping', and I thoroughly agree with you. It will be important to you, however. It will impact on your beekeeping. I hope that by presenting the history and current situation to you in this manner you will be better informed when it comes time to comment or make decisions that affect your beekeeping future.

News Release

Award to Poukawa Research Station Staff

The nine-strong research team at AgResearch's Poukawa Research Station, south of Hastings, are among the winners of the inaugural AgResearch Team Awards.

The awards, introduced by AgResearch this year, recognise the efforts of science teams on the basis of excellence and relevance in science, financial performance, and contribution to technology development, commercialisation and other organisational goals.

The successful teams each receive a lump sum payment that the team members will decide how best to use.

Members of the Poukawa team, led by Dr Chris Korte undertake a wide range of locally supported research on the East Coast of the North Island including:

- Investigations of copper deficiency in the Wairoa district, aimed at gaining a better understanding of how copper and molybdenum contents of pasture changes during the year, and relating this to the copper status of cattle.
- Beef research with research and on-farm experiments focusing on improving beef quality for the Asian markets, and helping suppliers achieve livestock performances to meet quality specifications.
- Evaluating the impact of ewe milking ability on lamb production.
- Investigating the effectiveness of cocksfoot/ryegrass mixtures for reducing ryegrass staggers.
- Lamb growth studies on tall fescue and ryegrass pastures, and on cocksfoot/ryegrass mixtures. The research on tall fescue and ryegrass is aimed at getting a better understanding of the effects of clover and leafiness, so that lamb growth can be predicted more accurately.
- Fertiliser research in dry hill country, including environmental effects of fertilisers on waterways.

The Poukawa team also place a strong emphasis on technology transfer with regular field days which are designed to provide farmers, consultants and agribusiness people with practical information based on research findings. Recent field days have covered lamb production, beef cow management, and fertiliser use.

Pest monitoring for New Zealand grass grub, porina and Tasmanian grass grub, in association with the Meat Research and Development Council, aims to make farmers aware of when to sample, control methods and economics of control. Nodding thistle control plots, and a demonstration of Californian thistle control methods, are used in conjunction with Hawke's Bay Regional Council staff as workshops for farmers.

The East Coast Research Advisory Committee, chaired by Sam Robinson, has been a key element in the Poukawa group's success. It plays a major role in advising on research direction so that research is more relevant to industry needs, and identified the need for an active technology transfer programme to ensure the transfer of research results to end users. As a result a successful MRDC funded programme was established at Poukawa, and committee makes recommendations on field day programmes, ensuring that they meet farmers' needs.

From the Colonies

South Canterbury

We have had a beekeepers dream spring in South Canterbury, which has got hives off to a terrific start to the season. Normally the appearance of the catkins on the willows seems to trigger some sort of meteorological disaster, either a month of nor'west winds, or a month of cold, wet overcast conditions.

However, this year we received two weeks of hot, still weather, with the bees plugging hives with welcome willow honey, so feeding will not be necessary in many areas.

The Past-President of our branch, Nigel Parish has sold his business to Doug Marrett. Doug has been a beekeeper in South Canterbury since he left school, and has finally taken up the challenge of running his own business, so good luck Doug. We also wish all the best to Nigel, who is returning to his trade as a plumber.

Prospects for a great season look good at this stage, with hives in excellent condition, and we have received ample rainfall, so with prices looking good we are very enthusiastic, and looking forward to a memorable season.

Peter Smyth

Letters to the Editor

If you write a letter to the Editor, or have an article you want printed as an article, can you clearly mark it as such. ***Thanks, Ed***

Dear Sir

I am an 18 year old Electrical Engineering student from Canterbury University, I am looking for full-time work over the summer holidays in the beekeeping field.

I have had two and a half season's experience with two different employers. In this time I have been employed in a wide range of tasks that include extraction and fieldwork. The area I have the most experience in is extraction with almost two season's work.

If you don't have a position available but know of someone who might I would be much obliged.

Thank you

Adrian Kitto
R.D. 3
Alexandra.
Phone/Fax: (03) 448-7884

Dear Mr Brown

I wonder if you would consider placing a note in the next issue of *"BeeKeeper"* concerning bees and cabbage trees. As the enclosed leaflet explains I am writing a book on cabbage trees. I would like to include material on their value as a source of nectar and pollen. Several people have told me about the importance of cabbage tree nectar in helping to build up bee numbers, because of the large early flow. Do any of your readers have opininons about this? Could shelter belts of cabbage trees on farms be useful to beekeepers? Are natural stands valued as a location for hives? Do any readers have photographs of bees working on cabbage trees, or a cabbage tree honey in the hive?

I know that bees like to nest in the hollow trunks of cabbage trees and some readers may have good photographs of this. James K. Baxter wrote a childhood memory poem "Wild Bees" about trying to get the honey. Perhaps your readers have similar stories.

I would be very pleased to receive stories, information and photographs from beekeepers around the country. The responses will help me assemble an interesting page or two in my book, and they might also make an interesting article for your journal.

Philip Simpson, J.D. Stout Fellow

Please reply direct to P.O. Box 600, Wellington, New Zealand, Phone: +64-4-472-1000, Fascimile +64-4-496-5439.

Thanks Ed

Dear Editor

When Peter Barrett writes, we read with deep interest and admiration. He is a historian who collects his facts widely, assembles them in a masterful fashion and presents them in a way that allows those interested in the history of beekeeping to follow with ease.

In his story of William Charles Cotton — (*New Zealand BeeKeeper*, October 1996, pages 16-18), he has, in his heading, dubbed the accolade of "The Grand Bee Master" on Cotton, probably following the lead of a 19th Century writer. He is correct in this as it applies to the 19th Century. While he is correct in this applying to the 19th Century, this honourable title fell from Cotton's shoulders when the 20th Century dawned and is now worn by Isaac Hopkins.

We in these days, do not realise the tremendous contribution that Isaac Hopkins made during his very full life. Nobody, before him or since, has contributed so much to the progress to the craft of beekeeping. He promoted the skills of beekeeping as a craft and helped to establish the commercial arm and the first National Beekeepers Association.

An American Academician who studied the subject of bees and beekeeping compiled a list of the great beekeepers of his time. He placed Isaac Hopkins as one of the six greatest beekeepers in the world.

Isaac Hopkins is "The Grand Bee Master of New Zealand" in the 20th Century.

Chris Dawson, Rangiora

Can you help?

Application for further studies on beekeeping to National Beekeeper's Association in New Zealand.

My name is Amie Jabang, I am a girl of 15 years old, I live in Sifoe Village, Kombo, South Western Division.

I have my Middle School exam now to a High School.

I have been training beekeeping since I was young and now I would like to go for further studies in university. I will be happy to hear from you.

Yours, Amie Jabang

My contact address is:

Sifoe Kafoe Farm,
C/- Vibeke Glud, P.O. Box 2163, Serre Kunda, The Gambia.

If you can help please contact Amie direct.

Thanks Ed

"Catching robber bees red-handed"

First of all, I am extending warmest greetings. By your untiring supports, I hope I will be able to achieve my goals.

The case is as follows:

I took a one month annual leave and went to my family. There my father had 10 local hives. Among these hives nine were high yielding but one remained with no honey yield at all for years. Father was often dissatisfied with this poor yielding hive and told me to resolve the case since I was working in the Ministry of Agriculture as a beekeeping zonal expert.

After listening to my father's grievances, what I did was... I simply made ready some cups of chalk powder ($CACO_3$). I was to use wood ash from my mother's small kitchen but finally I preferred chalk to ash for some reasons.

Dear Sir

I think writing the whole process of the trial I made will be time consuming but after observing the trial for four consecutive days I came to verify...

I identified the robber hive (caught the robber bees red-handed). Then I took measures to ameliorate my father's poor harvest by shifting that robber hive to some distance in our locality by such measures, my father is by now happy because that robber hive being disappointed of robbing has started collecting pollen and flora diligently. Hence it has become one of the best honey yielding. Besides this, I am advising other local farmers how to identify and alleviate such cases.

What I anticipate from you:

1. Pave me the way so that I can further retry my observation in a better manner possibly help me to visit or attend research seminars, tours abroad (whom I have to contact also).
2. Get me the necessary fund for purchasing other research tools.

I appreciate even your negative responses for this letter.

Azeze Tebo (Ato)
P.O. Box 80
Awassa
Sidamo, Ethiopia

If you can help please contact Azeze direct.

Thanks Ed

All-time export record for New Zealand honeys

Bee fodder raved over by New Zealand foodwriters.
Otago/Southland Field Day enjoys North Island honeys.
...guess which was the favourite honey?
The quest for honey standards has started... (or should that read the headache begins?).
What is the long-term forecast for New Zealand honey exports?
Crushed manuka and the best coffee in the South Island.
My favourite honey this month... a three way tie!

All-time export record for the New Zealand honey industry

Set out below in italics is a copy of a media release that we put out to a number of newspapers, magazines and radio stations at the beginning of the month. This year has been exceptionally good. I've heard comments from some quarters that we still have an over supply problem in New Zealand, but the figures are there to show that:

a) That's unlikely and b) it is a seller's market!

However as always, it's over to the seller as to how, and when and for what price?, they sell their product.

New Zealand honeys enjoy record world demand despite high New Zealand dollar exchange rate

The high New Zealand dollar is stinging the honey industry but overseas demand is rising despite the increased prices caused by the exchange rate.

Total exports for 1996 will set an all-time record at just under 3000 tonnes. The average export level over the last ten years is 1800 tonnes. The previous best was 2616 tonnes last year; and before that 2500 tonnes in 1986.

Honey prices paid by German buyers usually sets the pricing for all internationally traded honeys.

The price German buyers are now paying for New Zealand high-grade clover (our benchmark variety) has moved up 25% on last year, with beekeepers getting $2.90 to $3kg ex farm gate as compared to $2.40 last year.

The price increases directly relate to a pending international honey shortage crisis, says New Zealand Honey Marketing consultant, Bill Floyd.

The New Zealand honey crop competes with the Australian, South American and Canadian crops but poor weather in those countries has meant low honey volumes available for export.

The USA honey stock surplus had been compensating for world production shortfalls for the last five years, but that has now been used up. The current USA honey harvests are down because of disease problems in the beekeeping industry there.

The overall picture is for a shortage on the world honey market over the next two to five years, says Bill Floyd.

Major buyers from Europe and Asia are now trying to get New Zealand exporters to sell forward.

Although some smaller New Zealand suppliers did sell forward earlier this year the major New Zealand exporters are now starting to commit on a 'drip-feed' basis only, maintaining market supply but able to increase prices steadily throughout the season.

The export price has a significant impact on domestic honey prices, says Bill Floyd, and we can expect prices to increase within New Zealand over the next few months.

The record export result has meant very low stocks of honey left in New Zealand from last season.

The honey harvest traditionally begins around early December and goes through to mid-February, depending on the honey type and region.

New Zealand eats more honey per head of population than any other country in the world but the industry doesn't expect any price increase to affect consumption here; honey will still be a very cost competitive spread and health food.

Although the present price movements are based on the international commodity price of honey, New Zealand is starting to get increased price movements internationally based on its unique competitive advantages, says Bill Floyd.

Honey crops from some export countries are regularly showing up chemical residue in the beeswax. This is because beekeepers in those countries feed chemicals to their bees. These are fat-soluble and accumulate in the wax.

The New Zealand beekeeping industry does not use chemicals in maintaining hive health. This means our honeys and especially comb honeys are residue-free. A major attraction in markets such as Germany, Switzerland and Japan. Japan in particular is now placing heavy emphasis on 'safe' foods.

New Zealand exporters are targeting niche markets based on our residue-free honey status and getting above commodity prices in those countries.

There has also been a significant development in the export of New Zealand's unique floral honeys. Manuka, Rata, Kamahi, Honeydew, up to 12 unique varieties in all, are developing unique markets at premium prices.

The New York retail giant, Macey's, developed a special promotion with New Zealand's largest honey exporter, Airborne, last month. The promotion utilised 11 large windows, with each window display exclusively devoted to a different New Zealand varietal honey.

We believe it is the first time any New Zealand product has had such exposure, says Bill Floyd, and the success of the promotion is now developing a strong position in New York for New Zealand as a source of premium gourmet honeys.

Bee fodder raved over by foodwriters

Sandee and I attended the 1996 New Zealand Foodwriters Conference in Dunedin... a most interesting event. We put on a presentation of New Zealand southern honeys at the conference. Many foodwriters raved over one specific honey. It was a honey that Keith Herron provided for me, it was a frame of Kamahi, from a trial area in fact. Keith is tossing up whether to feed it back to the bees or not. The foodwriters raved over it! Foodwriters like Next's Alyson Gofton, and the Listener's Lois Dash thought it was an absolutely beautiful honey and wanted to know where to buy it from.

There are some real opportunities for Gourmet Honeys in the market place. I get constant comment from people about them. I know there is a huge amount of work required to successfully introduce a new innovative product, for example a range of boutique honeys, but there is a significant and "price flexible" section of the market out there looking for unique honey to enjoy.

The whole weekend went very well, and I had the added bonus of talking to some very "switched on" Otago manufacturers about using honey in their product development.

Otago/Southland Field Day enjoys North Island honeys

Guess which North Island honey took the Field Day by surprise?

I met around 50 beekeepers from the Otago/Southland branch area at Ethel and Ernest Adamson's property near Alexandra. I had a very enjoyable day and a friendly bunch they are down there. We carried out a honey tasting at the Field Day (similar to the ones I run for chefs except in this case we used six North Island honeys). A most interesting reaction as beekeeper tried honeys with subtle nuances of difference in the flavours from what they were used to.

One of the honeys that got the most comment was the Pohutakawa, provided for us by the Stuckeys at Waitemata Honey. Everyone was delighted by this honey — arguably the rarest honey in the world! The second most popular was one that initially defied anyone's ability to guess. It was an

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extremely pleasant Waikato clover! A beautiful honey they all agreed, — a unique honey and deserving of being marketed under a unique "non-clover" name was the suggestion; but I guess that's another issue!

It was good to be able to attend another Branch Field Day — this time in the far South. The event coincided nicely with the Foodwriter's conference in Dunedin, and I also gave a chef's honey tutoring course at Christchurch on my way back to Blenheim.

Where possible I will try and co-ordinate events together so that I can visit branches and Field Day's as it's very important to meet and listen to beekeepers around New Zealand. Let me know when you are planning to have a Field Day and I will see whether it is possible to attend by tying it in with some other marketing work.

The quest for honey standards commences: (Or the headaches begin?).

I discussed honey standards at the Otago/Southland Field Day and questionnaires have been sent out to, and received from, a wide range of industry people. There is a very strong consensus that honey "should be what it says it is" and very strong agreement in principal with the concept of honey standards, but at that point the answers start to differ because of the sheer complexity of the issues and the difficulties that we are going to face.

One thing that we can assure every beekeeper is that it won't be rushed and it will be openly discussed before we come up with a set of standards. Even then the standards will be voluntary. There will be no compulsion for beekeepers to have to use them.

(And so as they say watch this space. I will keep you informed on progress in the *BeeKeeper*).

What's the long-term forecast for the international honey scene

A very interesting article in the American Bee Journal last month: Roger Morse, one of the doyens of the American Bee Industry takes a comprehensive look at world honey production. His projection is that the price of honey is stable and this will continue for several years before there is an increase in supply to threaten that price again. Observers of our own industry here have been making similar predictions recently.

The New Zealand honey industry really does have an exceptional opportunity. During this current period of low supply and increasing prices we can also develop our strategies for New Zealand honeys being decommoditised. This will mean that in three to five years, when supply starts to pick up, we will have gained market-share based on our unique competitive advantages. Those values will then insulate us to a considerable extent from future commodity price fluctuations.

Hislop's crushed Manuka and the best coffee in the South Island

Coming back from Christchurch we called into Hislop's Whole Foods Cafe and shop at Kaikoura. Paul Hislop is a beekeeper and his operation is very well presented at the cafe. I was particularly impressed with his "crushed manuka." Whole manuka comb crushed and retail packed. As Paul said this technique captures all of the goodness of the hive and makes it available to the consumer. As a caffeine addict, I can say that they served the best coffee that I tasted from Blenheim to Dunedin and back!

M favourite honey's this month

It's a three way tie:

Keith Herron's comb kamahi — a superb, complex flavour with no faults at all. I understand that there is no quintinnea down South and the Kamahi honey is excellent. The honey has rounded butterscotch flavours with a long after taste.

I'm also into Blue Valley honey's Autumn Amber blend which I was given by the Wraights on my visit to the Nelson branch earlier this year. I am enjoying the honey on crumpets.

And the third honey from conference earlier this year (just a!) Clover blend from Canaan Honey. A beautifully creamed smooth mild honey but with a zingy complex flavour. A credit to the Brandons. It's being consumed on fresh bread at lunchtime.

And that's all except that Sandees just reminded me that it is "Christmas cake making time" and we can definitely recommend the Unforgettable Christmas Cake (see recipe published in the 1995 December *BeeKeeper*). It's a cake with a wonderful flavour. It is so rich that you only need thin slices. We only finished ours about a month ago. I know the Gavins made the cake and can recommend it too.

Regards, Bill Floyd

Notes for beginners and others

Not very long to go now till the bees and the beekeepers face the main honey flow once again. Some in the warmer parts of the country may already be in that position. With over a thousand kilometres between North and South and the mixture of low and high altitudes there are considerable time differences as to the onset of the honey flow. Last month this page was devoted to spring management and the prevention of swarming. Time just marches on and now we are hopefully dealing with good strong hives, ready or near ready to tackle that enormous job (from the little honey-bees viewpoint), the gathering of the 1996/97 honey harvest.

It is also the time for swarms. No matter if you have taken all precautions, done some of the manipulations recommended to prevent swarming, there will always be the odd hive going its own merry way.

We cannot change nature, swarming is the natural way for reproduction, increase and in fact survival of the species, at least in the wild.

Genes have a lot to do with it, some strains have a far greater swarming tendency than others. Other factors are broken weather, lack of sufficient storage space, congestion of the brood nest, inadequate ventilation (are your entrance blocs still in?), and last but not least the matter of queen substances (pheromones). These are the chemicals produced by the queen which are so very important for the proper functioning of a bee colony, as we want it for domesticated colonies. A queen can only produce a certain quantity of this substance for distribution throughout the hive. It is neither limitless nor inexhaustible. Good young queens produce more than old ones. Once a hive's population exceeds a certain level not enough of these pheromones are available to go around. It is the combination of several of these factors which cause the bees to start building queen cells and subsequently swarm.

So while waiting for that honey flow to start there is still that uncertainty. What more can one do? Check for queen cells. There are three different types: Emergency, supersedure and swarm cells. One should be able to differentiate. The first two types are usually positioned near the centre of the combs, are darkish in colour and low in numbers, swarm cells appear on the edges of the combs, especially on the bottom edges, are much lighter coloured and in far larger quantity. A quick check can be made without pulling the hive to bits. In the case of two brood chambers separate the two supers with a hive tool, pull the top one a little forward and tilt it backwards. A look into the bottom of the top super will tell the story. No cells visible, no worry. If cells show up the hive has to be taken apart, every comb must be examined for cells which must be removed and that goes for the bottom super too. Don't miss any cells. Again no guarantee, cells will be built again soon, have another look in a week's time. Once the flow is properly under way the swarming impulse seems to subside. Placing a decoy in the yard can often pay a dividend. A super with some dry combs and perhaps a few sheets of foundation on a bottom board and with a cover is like a sign "House to rent". Your own swarm or a passer-by may well take up residence. Keep giving an extra super where needed, including sheets of foundation.

That extra super serves two purposes: More space for a strong bee population and for the storage of the crop when it starts to come in.

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Also don't forget that many bees will need a lot to eat so keep a close eye on stores. A collapsed colony through starvation shortly before the honey flow starts is a dreadful waste and literally a dead loss. Hives have had to be fed till near Christmas at times. In an emergency a few kilogrammes of dry sugar on a sheet of paper with a couple of cuts under the crown board will keep a strong hive ticking over.

Being a beekeeper you will be called upon if a swarm lands somewhere in your town or neighbourhood. Please don't ignore it, go and deal with it otherwise it will take off, probably next day, for a more permanent destination, a hollow tree at best or probably in the wall of a building which is worse for sooner or later they will have to be removed, causing lots of trouble.

A swarm will usually leave a hive before noon or early afternoon, wheel around and then settle often close by on a tree, shrub, fence post, under a picnic table in the park or perhaps in the doorway of the church while the late morning service is in full swing. All kinds of possibilities, you name it. It may be easy or awkward but more often easy. When having to deal for the first time with a swarm you may well have some misgivings. Just take it easy, swarms which have just issued are in general very docile, the bees easy to handle, they are full of honey. First of all get organised.

Find out about the situation, where they hang out etc. That will indicate what you need. Anyway smoker, hat and veil, gloves if you need them, a receptacle to hold the swarm, perhaps pruners, saw, ladder, rope. You can put the swarm in a super with some combs and with a couple of crown boards as bottom and lid, secured with some type of strap or better still into a swarm box, one side a removable screen and a handle for carrying. Sometimes it is simply a matter of holding the box under the swarm and one good shake will see the whole bunch drop in or you may have to gently brush the bees down. Other times it will be better to cut a branch. It all depends on the circumstances. If it is a ladder job don't run undue risks for a swarm is not worth a broken ankle or worse. You may need to recruit some assistance.

The late Mr Jim Marshall, life-long beekeeper on the Taieri Plain, dealt with a swarm high up in a popular tree using his shot gun. He was in his eighties then but still a good shot. The branch with bees came down to the ground and marched nicely into the box he had ready for them.

Dealing with swarms is not a complicated operation as a rule as long as you have your wits about you and if possible keep onlookers at a safe distance.

At times one may come across a number of small clusters of bees relatively close to each other, different from the normal single bunch. These are probably after swarms. The first swarm with the old queen had left the hive earlier, afterwards some swarm cells hatched simultaneously, more swarms, small, each with a virgin queen took off too. Put them all together to make it worthwhile. The queens will fight it out. Such small swarms on their own are not worth twopence, probably would not be able to gather enough winter stores. When the temperature starts to drop a cluster of bees will contract. So a swarm looking enormous in the middle of the day will not be so big towards evening. It does pay sometimes to wait a bit with catching it. But don't leave it till late next morning or they will be gone.

Next you will have to take them home and house the swarm permanently. They can be left in the swarm box overnight or even longer as they have full stomachs but put the box in a cool spot.

Then it is a matter of preparing a bottom board, one or two brood supers with dry combs and or foundation (depending on swarm size), crown board and roof. Shake the bees into the top super, leave a few combs out initially or better still after readying the hive spread out some kind of sheet in front of the hive and dump the swarm in front of the entrance. It is intriguing to watch the bees marching in.

There is no need to feed a swarm unless a bout of bad weather makes foraging impossible for a prolonged period.

Swarms can carry disease so one must watch for any signs of B.L. once a brood nest has been established. Some advocate to house a swarm for a week in a bare box without combs so that all honey carried is consumed first or turned into wax and then put them into supers with combs. Fine as long as there is no nectar coming in.

Well good luck and have fun.

Honey-bees deliver beneficial cocktail

An antibiotic spray, streptomycin, used to combat fireblight in apples and pears, could be replaced by a cocktail of beneficial bacteria and pollen on the basis of HortResearch trials this spring. Scientists at Ruakura Research Centre have already established that honey-bees can colonise blossoms with natural biocontrol agents which are effective in controlling the fireblight pathogen, *Erwinia amylovora.*

This season's trials aim to establish basic management practices such as the number of beehives required in each orchard, and the quantities and concentration of the pollen-bacteria mix needed to successfully colonise all blossoms with the protective agent, *Erwinia herbicola*. These beneficial bacteria colonises the flower stigmas where it produces an antibiotic-type compound which kills its harmful cousin, *Erwinia amylovora.*

Plant pathologist Joel Vanneste says when climatic conditions are favourable — wet and warm, the fireblight pathogen can multiply rapidly on the surface of the stigmas, enter the plant through the nectarthodes and quickly migrate down the tree, leaving only dead tissue in its wake.

"A big outbreak could occur anywhere in New Zealand with significant losses. If orchards are not protected, it could be a catastrope."

Fireblight has wiped out the pear industries in California and south west France and made the apple industry in northern Mexico uneconomical. The last major outbreak of the disease, which occurred in south west Michigan in the United States, cost an estimated $US3.8 million.

The beneficial bacteria are delivered to the blossoms by placing simple pollen inserts at the exit of the hives. As the bees leave the hive, they become coated with pollen and bacteria, which they deposit on the flowers they visit.

Dr Vanneste says the system is "very nice". It could be economical and it is environmentally sustainable. It will enable New Zealand growers to keep pace with countries such as Sweden which plans to phase out all streptomycin spray by the year 2000. It also overcomes the problem of development of antibiotic resistant strains of the disease. A spin-off from the research is the capacity to use the system to deliver compatible pollens, overcoming the pollination difficulties of some cultivars.

The work is funded by the Foundation for Research Science and Technology, the New Zealand Apple and Pear Marketing Board, and the Agriculture and Marketing Research and Development Trust.

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Acknowledgement HortResearch

Beekeeping Memoirs

by Ron Mossop

Riverside Honey House

Thirty-six years ago when I shifted from the Waikato to the Tauranga area I bought a few acres of land with about eight chains of frontage on the Wairoa River and built a honey house on the side of a hill, as I thought, well above the flood level. I knew from my days in the Waikato the sort of damage a flood can inflict on a beekeeper's property. I planted four varieties of willow trees for early pollen and nectar alongside the river.

Once, after three days of heavy rain in the hills, I went to the section to see how things were faring and found that the flood waters had been right through the honey house to such a depth that my Ford V8 truck in the truck bay had been submerged up to the top of its bonnet. In addition, lots of things on the section disappeared down the river, never to be seen again. It was not one of my good days!

Only about fifteen years ago they built a hydro scheme above the Wairoa River at Ruahihi. The then Prime Minister officially opened it and everybody was happy. The Prime Minister had no sooner got back to Wellington and put his feet up, or whatever Prime Ministers do when they return, when the side fell out of the main canal feeding water from the hydro lake to the powerhouse. The water roared down a nearby gully into the Wairoa River and on past our honey house. By some miracle we survived that one! The hydro station was left without a drop of water going through the turbines, everybody was then very unhappy!

After a few years the trout came back into the river and my son, Neil, found that if he went to a certain spot in the river at the right time of the day and used the correct lure he could catch a 10 pound brown trout.

One of the things that prompted me to buy land by the river was the thought that I may be able to also buy a fast launch to go down-river into Tauranga Harbour and indulge in some sea fishing as a change from having my head stuck in a beehive all day. When I finally did get my boat I found that logs and silt had built up in the Wairoa river-mouth to such an extent that it was difficult to even get into the harbour. As a result I settled for a smaller boat so that I could row across the river to the sheep farm opposite and collect mushrooms, or anchor in the river and fly-fish for trout under the willow trees.

Over the years I have seen all sorts of boats, water-skiers and even raft races go past our place, it makes a change from road traffic.

While uncapping honey I can look out the big windows in front of me and across the river, which is about two hundred yards wide at this point, to the back of a large block of Maori Affair's farmland. This land slopes from the river up to about 300 feet elevation. There was around two acres of tall gorse growing up this hillside. One morning 17 men arrived at the top of the hill and commenced cutting the gorse down, they were part of one of those early farm labour schemes. They set to work with a will, I could see the sunlight flashing on their slashers, but it's hard work swinging a slasher, after about two hours the flashing of steel diminished and half the workers were laying down. By the end of the day all the gorse was cut down and everybody was laying down.

Most of us know what happens when you just cut gorse off without the roots being grubbed out. In a year or so it came back, bigger and better than ever. In two years time the gorse was as green and as healthy as I have ever seen it.

To the left of the gorse there was a strip of land, from the river to the top of the hill, that was yellow with ragwort flowers. One morning 10 girls arrived at the top of the hill, their job was to pull the ragwort out by the roots and pile the plants in heaps about the paddock. Where one girl found a bush too hard to pull out, another girl would give her a hand. Sometimes it took three girls to pull out an extra big ragwort plant. They worked continuously at their task even though it was late summer, and still very hot. I could not help comparing their sterling efforts with the puny efforts of the men two years previously. At midday with over half the ragwort pulled out, the girls went down to the river for their lunch. My helper and I went to our lunch-room for ours. Halfway through my lunch and above the noise of my man's radio I heard what sounded like a scream. I decided to investigate and went outside to see what was going on and walked down amongst the willow trees to the river. If one looks up-river from our honey house, on the left is a 100 foot cliff plunging straight into the river. The river swings away to the right with tall gorse growing on the bank. Where the river turns before the cliff it deposits sand and leaves a small sandy beach. On this beach I saw an amazing sight — ten girls as naked as the day they were born and all frolicking about. Every so often two of them would race across the sand and dive into the river and after coming up screaming they would then splash cold water over any of the other girls within range, resulting in more squeals. Some of the girls who were a bit reluctant to get into the cold water were simply thrown in, accompanied, of course, by more screams. I am not a "Peeping Tom" by nature so I went back to the lunch-room where my man was still munching away on his sandwiches and simply said that those 10 girls are swimming in the river, whereupon he grabbed his remaining lunch and shot out the lunch-room door like a fox terrier after a rat. He did not come back again for some time, in fact I had already restarted the extractor motor. From then on for the rest of the afternoon he seemed intent on spoiling my view of the girls now dressed and pulling the rest of the ragwort out.

Different flowers remind me of the things that have happened over the years. When I see a flowering bougainvillea, I am reminded of the grand time New Zealand beekeepers had at the Rarotonga Conference, or when I see a Rewarewa in flower with the nectar shining in the flowers, I think of the year when we had 20 tons of Rewarewa honey extracted by Christmas Day. When I see a patch of Nodding Thistle, I think of the days before the thistle weevil, when we got big crops of thistle honey. When I see the odd barberry hedge in flower I am reminded of the time years ago in the Waikato, before the days of barberry hedge cutting machines, when almost every second hive swarmed unless you gave them a lot of attention.

When I see a hillside covered with yellow ragwort flowers, I think of those 10 girls and I hope life has been kind to them. Next time you are uncapping honey, just look up and see what you can see. If your view is as good as mine you are indeed, a very lucky man.

William Charles Cotton

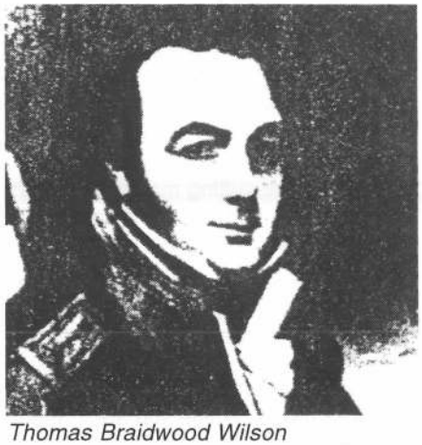
Grand Bee Master of New Zealand

Part III

A beekeeper with bees is a contented man

A Cotton letter home in April 1843 read **"I hope to have some bees sent over to me from friends in Sydney, where they prosper, as I wrote to you before, most wonderfully. The first stock which was brought to Van Diemen's land some years ago, and left there in a very sickly state, had multiplied to 16 in the following year."**

Though Cotton was unsuccessful in bringing bees from England to the antipodes in 1842, a Scotsman named Thomas Braidwood Wilson had succeeded eleven years earlier. Dr Wilson arrived at Hobart Town, Van Diemen's Land, in January 1831 aboard the ship John after a trip of 107 days. He was a Royal Navy Surgeon Superintendent of convict transports, then on his sixth of nine voyages. He left his hive in the Government Gardens at Hobart and it was reported to have swarmed sixteen times in the first year. Following his seventh voyage, Wilson took at least one swarm from Hobart to Sydney around August 1832. It was given to the daughter of the Colonial Secretary, Alexander Macleay.



Thomas Braidwood Wilson

Writing home from Woolloomooloo, Sydney, in May 1842 Cotton gave details of these 'Macleay' bees **"I met Mr MacClay ... Bees were first brought over for his daughter. The ship with them on board docked at Van Diemen's Land and the bees seemed so sickly it was thought useful to leave them there awhile to spur[1] them on. They were left there but when he returned next year he found that his one stock was healthy and had multiplied[1]. From this source Sydney has been supplied."**

This last statement was not entirely true, for bees had been successfully introduced into New South Wales in 1822. However, it seems likely that progeny from these bees were subsequently given to Gregory Blaxland, Elizabeth Macarthur and Rev Dr Thomas Steele. It was from Steele that James Busby procured some bees in July 1843. Swarms from this source subsequently supplied Cotton with his longed for bees.

With the arrival of the swarms 'Princess Mary' and 'Princess Alice' at Waimate from Waitangi in March 1844, Cotton joyously began to document the numerous beekeeping experiences that were to follow. He had bees of his own.

Into a knee deep swamp

'Princess Alice', daughter swarm of 'Princess Royal' and grand daughter to 'The Queen' **"flew away into the bush in the air and we saw no more of them."** Cotton described the escape on **"Friday March 8th 1844. Mr Hobbs of the Wesleyan mission at Hokianga came to breakfast. One of the natives came in to tell me that he had found the Bees. They were clustering under a plank (not 10 yards behind the bee house, which had been used for plaining weather boards). I hived them, they flew out again after settling in the hive. This they repeated twice ... This is like an empty house taken ... again as I was hiving them for the fourth time ... they all went so completely into the hive, that had I tied the cloth round them, removed them in the even to the house, and kept them confined, for a day or two, feeding them from the top until they had built a comb or two, all wd have been well. But I contented myself with leaving Bruce's little boy to watch — and about 4 he came to tell me that they were swarming again. We all followed them, Mr Davis, Mr C Davies, Hutton, Wm Watts and myself over all the Bps** (note: Bishop's) **paddocks, over which they coursed just like a pack of beagles. They then lead us thro' a knee deep swamp, and all of a sudden, mounted in the air, and we saw no more of them."**

Pa Karaka honey

From Busby's original 1843 stock named 'The Queen', a daughter swarm 'Prince of Wales' produced a third generation swarm 'Prince Henry' which was sent to Pa Karaka. **"Wednesday March 27th 1844. James Davis gave me a mount, and I went over to Pa Karaka to take some of their honey — a very successful operation. I drove their bees down into the lower box by a few puffs of smoke — took the box off the top and loosened the combs from the sides - then lifting the hive up bodily, the combs which I had detached slid out, without breaking — in ten minutes, and without the loss of any bees the hive was all right again. The astonishment of an Irish carpenter, now working for Mr Williams was excessive. His father used to keep 20 hives and he had no idea of anything except putting them down (I thought it was taking them up) with the brimstone match. I never saw more beautiful combs. The honey was as clear as the finest Kauri gum — I took 5 large combs ... part of which I shall send home. The rest is for Mrs and Mr Burrows."**

Taking Honey before Breakfast

"Monday August 26th 1844. A plunge in the cold cold sea at sunrise. Soon after John Fox's boat came for me, and I went to breakfast with Mrs Busby ... After breakfast took twelve pounds of honey from her original hive. She has been so liberal with the increase, that she now has only two. She took 120lb from three hives ... The difference between the climate of the Bay and of the Waimate is shown by nothing more than this that at the former place, the honey season lasts all the year round whilst here they have been nearly as torpid as they are at home." Marianne Williams corroborated this event in her journal **"Mr Cotton went to Mrs Busbys before breakfast to take her honey for her."**

A 'Suspicious Character' from Kororareka

Later that day Cotton **"... intended to go on board the Gov brig to see the Governor, so Mrs Busby did up a beautiful honey comb for me to take as a present to him, ran rapidly across the Bay. The Governor came upon deck as soon as I got up the side. I mentioned my name and said that I had brought him a beautiful specimen of New Zealand produce, a piece of honey, which not half an hour ago was in the hive. 'I am sorry that I have made an invariable rule not to accept any presents.' The members of the ship have a story that I then said `well then, Your Excellency, I will eat it myself.' But it was not so. I offered to leave it for Captain Richards. But the fact was the Gov did not catch my name and thought I was a 'suspicious character' from Kororareka. In a few minutes of recollection, for I stood by feeling very awkward without offering to go, he remembered who I was, and having seen Mr Bickham the Police Magistrate his ?2, he invited me to walk up and down the deck for an hour, and asked my private opinion about things in general. Very flattering. I fear it is the defect of the**

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Gov's character to be too ready to listen to every thing that every body has to say. I took the liberty of asking him whether he had ordered the meeting of the Chiefs to be called on the 15th ult. He was very much surprised — never having heard of it before, when Captain Bickham came down into the cabin, the Gov gave him a regular good dressing for it. He told me that he intended to take the troops up to the Keri Keri. March about eight miles towards the Waimate, take up a position there, and then procede [3] according to circumstances. He seemed quite determined on this point. ... The Governor is very anxious not to mix the missionaries up in any way with this quarrel and so I landed a few minutes before he got into the barge of the Hazard, whose guns boomed out a salute in glamorous style. And when I had time I found the Governor addressing the few Maoris who were there through Henry Kemp as his interpreter. I went about my business in Kororareka."

A Veteran Apiarian

While on board the Hazard, Cotton met Colonel Holmes who **"was on board. A very fine looking old soldier, and the introducer moreover of bees into Norfolk Island where I believe they have multiplied amazyingly."** Two weeks later on 11 September 1844, more on Holmes and Norfolk Island was revealed by an anecdote about Selwyn's son **"Today Willie said to Mrs S 'Tell me about that Eternal Hum', 'About what, child', 'That Eternal Hum what came here with the Governor, Mama'. He meant Coln Holmes. Tho when she knew what he meant she had not much to tell him tho Eternal Hum is a better name than might at first be imagined, for he is very fond of bees, and reports that 50 stocks have sprung from one which Capt McConochie introduced some little time ago into Norfolk Island. I must give the old veteran a swarm as soon as possible."**

The most glorious of all spring sights

"Friday October 25th 1844. I was up before sunrise getting ready my Hubers hive, for a swarm had gone out from Princess Mary yesterday, but had returned back again. It was well that I got all ready so soon for it was a roasting day, and the swarm rose about nine, and settled nicely on a Mimosa tree — all safely hived in a very short time. It is the first time I have seen this most glorious of all spring sights in New Zealand." The hive names of Mary and Marianne would appear to refer to the same hive for Mrs Williams diarised for October 24th **"Sarah and I watched the bees. They swarmed about half past ten from 'Marianne'."**

Cotton at chess

A Chimney Sweep

After having walked to Kerikeri early the previous day in a pouring rain, Cotton diarised the return trip to Paihia. **"Monday November 4th 1844. When the natives were starting we proceeded on our way overland to Paihia. I have never been this road before but had heard that it was a very bad road. There is one nasty swamp but the rest of it is very good. It lies over very high land, and we had a brilliant view of the Bay. It comes out at Mrs Busbys. She was away making a morning call at Paihia. I of course went to see the bees — and it was well I did so, for a swarm had just risen, and was hanging on a high bough of a Mimosa tree. I sent Hulian[2] up, who climbed as tho he had been bred a chimney sweep. I got onto the kitchen table, put a chair on it and mounted on this scaffolding managed to hive the bees when Mr H had cut thro the bough. Mrs B has already nine stocks — she only had two about six weeks ago. I then took 20lb of most beautiful honey from the two oldest stocks, walked onto Paihia. about half a mile from Paihia we met the Bishop walking in towards the Waimate by himself."**

Swarming by division

"Wednesday Nov 6th 1844. By six o'clock I was with the bees, I performed what was certainly a very old operation — the observatory hive has been for some weeks on the top of one of Mrs W (note: Mrs Henry Williams) **Hives which has swarmed twice. Before each swarm the observatory wd be quite full, and a certain quantity of work wd be done in it but the day they swarmed they would clean every scrap of honey out of the obs and then desert it entirely — Besides there is no certainty of seeing the queen, when the main part of the swarm is below — so I determined to establish the obs by itself as a separate stock, and that without waiting for a swarm. I turned up the first swarm of this year. Took two good combs, placed them in the obs with many bees upon them and then put in several hands full more and a royal cell with a bee in it. I was anxious to capture the queen, that my friends here might see her, and that I might be certain in which part of the divided hive the queen was left — I took out all the combs — shook all the bees out onto a table cloth, and turned them over with my fungus but I cd see nothing of her. I happened to look into the obs H and there she was. So I returned the R cell to the old hive (tho there was one besides) to make doubly sure, replaced the combs, and set each hive in its place, anxious to see how this experiment wd turn out, but cd not stop. Walked into the Waimate — arrived at 3."** Mrs Williams recorded **"Mr Cotton at the peak of the day has been busy taking bees out of the hive by handfuls and put them into the waiting hive with a queen to form a swarm."**

For a fascinating explanation of the phrase **"turned them over with my fungus"** I turned to Cotton's 1842 *My Bee Book* which describes the method of 'taking up', the honey harvest. **"You may find in damp meadows a fungus, which children call *Frogs'Cheese* and *Puff Balls*. When quite ripe, if you pinch them, a dirty powder, like smoke, will come out. Pick them when half ripe. The largest are best, and they often grow to the size of a man's head. Put them in a bag, and when you have squeezed them to half the size,**

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dry them in an oven after the bread is drawn, or before the fire. The fungus is fit for use when it will hold fire like tinder; keep this dry till the time you take your bees. ... You should get a little tin box fitted to the nose of your bellows, having a sort of spout coming from it, which fits the door of your beehive. Take a piece of fungus twice the size of a hen's egg, light it, and when it burns freely, put it into the box; fit it into your bellows, and blow the smoke into your hive. ... The bees at first will make a great buzzing; in about five minutes all will be as still as death. Lift the hive gently off, and turn those bees which have fallen on to the bottom board into a large white dish. They will be quite harmless and still, as if they had been burned with brimstone; but the fungus does them no harm; it only makes them drunk, which is very good for Bees, though bad for men, as they get well in twenty minutes, have no headache next morning, and are all merrier afterwards ..." (pp.66-69)

Cotton musings of tranquillity at the Kerikeri library clearly display his contentment. "**Friday October 6th 1843. ... the most comfortable room in all New Zealand. Every one at his own book, and that deep solemn silence soon prevailed, which is to be found in a Public Library and no where else. A number of people gathered together, each busily engaged in his own pursuit, and yet nothing to be heard except the crackling of the fire, occasionally a heavy breathing or a deep drawn sigh ... I sat alone in the quiet solitude of the library. The constant music of the Keri keri cascade, not ten yards from the building has a soothing effect, mingling most touchingly with anything you may be doing or thinking, never obtrusive, yet always heard and endearing either to study or to sleep as the case may be. I know no better place for a good day-dream than the K K Library.**"

The next episode recounts Cotton's preparations for the move to Auckland and his subsequent beekeeping adventures.

Notes

1 The words underlined have been deduced due to indecipherable handwriting and in places, some embedded Latin text
2. Handwriting unclear
3. Original spelling maintained

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3. Cotton, William Charles (1841-1847) Journals, Vols. 7 and 8, Mitchell Library, Sydney
4. Cotton, William Charles, (1842) *My Bee Book*, London
5. Williams, Marianne (1844-50), her journal

Acknowledgments

Special thanks to Bruce Stevenson of Kerikeri for his research into a set of Cotton letters held at the Auckland Institute and Museum and into the journal of Marianne Williams.

Peter Barrett

Who is Denis Anderson?

Untapped facets of bee health and kiwiana lured Australian scientist Dr Denis Anderson across the "ditch" in 1985. Denis was appointed bee pathologist to New Zealand, a position jointly funded by the National Beekeeping Association and the then Department of Scientific and Industrial Research. He established a three year seasonal survey, with the help of the MAF Apiary Advisory Officers and 71 commercial beekeepers throughout the country, to determine the occurrence, distribution and relative importance of honey-bee diseases in New Zealand and establish our worldwide health status.

Between routine survey processing Denis also tackled the problem of the honey-bee brood abnormality called 'half-moon disorder' that, at the time, had serious implications for beekeepers. A systematic and methodical study eliminating possible causes rewarded him with the understanding that it was not a disease of larvae, as first indicated, but a disorder of queens; a premature ageing of queens due to a nutrition deficiency. This information helped not only queen producers and bee exporters, but pollinators and honey producers, to realise the importance of colony nutrition. The possibility it existed in other countries alleviated health export problems related to this disorder.

As well as being an exceptional scientist Denis is also a very practical person, a much needed quality in the early days when resources, such as bee colonies, were scarce. It was not unusual to find him dissecting queen ovaries in the morning and putting together bee boxes and chasing swarms in the afternoon. I quickly learnt to throw away my watch, as a short job could turn into an amazing discovery if we just observed. There was always enough time just to stop and learn, well sometimes there wasn't, but Denis still did. Mind you, there was the time Denis failed to observe the queen that had fallen in front of the box of a newly collected swarm and he promptly squashed her... and the time Justin his son (then three and sharing a genetic passion for insects) escaped his care, naked — only to be spotted with the lid off the nuc Denis had installed in the back yard saying "bee bee"...

Denis generously shared his time and knowledge attending many meetings and field days. He really enjoyed visiting beekeepers whenever possible. I was often taken out for 'lunch'... and I thank the Cammell's for the peanut butter sandwiches!! Much was learnt during the many formal and informal discussions. The open forum created, led to a more informed look into our bee health, genetic diversity and other issues. Other projects completed during his time in New Zealand were diagnostic training, pollination experiments, chalkbrood experiments, bee disease surveys of Fiji and Papua New Guinea.

Denis returned with his family to Australia in 1988 to continue his work (observing Canberra Raiders and analysing Fosters) at CSIRO in Canberra. I think he also mentioned:-

- A study of the physiology of queen-bees.
- Travelling four times a year to Papua New Guinea and Irian Jayia to study the Varroa mite and its eradication.
- Sequencing the Varroa mite genome to determine strains.
- Developmental work with Apis cerana in Papua New Guinea and Indonesia.
- Molecular work on chalkbrood.
- Sequencing the sacbrood virus genome.

It will be great to see Denis again and hear some new Aussie jokes...

***NOTE:* DENIS ANDERSON WILL SPEAK AT THE AUCKLAND BRANCH FIELD DAY, FEBRUARY 15 1997.**

Venue is Pukekohe High School... **diary the date!, (February 15th)**. As well as Denis we will have Peter Molan from Waikato Uni as one of the speakers. Full details in the December magazine.

Special thanks to the sponsor **Chelsea Sugar, TECPAK Industries** and **Nuon Industries**. Please support our sponsors as they have enormous requests made for support, and this time they help us so let's support them and tell them thanks for sponsoring the Auckland NBA Field Day.

One cell two matches

I was looking at some photos of FB the other day , they had been brought in for instructional purposes and I took an immediate dislike to them. Thinking it over later it wasn't the quality or anything like that, it was the way they struck me as being pathetically useless for teaching someone about spotting FB. Now that's probably a bit unfair as they were reasonable photos of a badly infected frame of FB and FB in a cell and of a larval tongue poking up in the classic FB style. There were also photos of chalk brood and sac brood, very useful indeed for keeping what disease is what straight.

What they didn't show was what you usually see in a hive when you're looking for FB and there is some there. Once you've become suspicious, positively identifying FB is as easy in most cases, as sticking in a match and watching it string, or if you are in doubt you can ask someone with more experience, or send off a sample to be tested. Dead hives are a bit more awkward, but I'll cover those later. The point I'm trying to make here, is that although because of the length of time between hive checks, we can't help but get the occasional bad FB. What we are normally going to see is FB in its early somewhat difficult to spot stages. In order to diagnose it, you've got to spot it first. You've got to do this every time it's there, at a quick glance and under such adverse conditions as poor light, savage attack, robbing, or lack of time. What I'm going to try to do is to paint a mind picture of what to look for and what to learn to ignore, without the aid of photos. I think one cell two matches would be a great motto for our eradication campaign, it's certainly the way I view the FB problem. You spot one cell, you stick one match in it to make it rope and you need number two match to finish the job. Even I'm not so tight as to recycle the first match.

Now before I start on what to look for I'll just go back to a previous article I wrote on FB.

Never take anything off a hive without checking for FB EVER.

OK enough with the introduction.

Every time I see brood I check it automatically for FB, I can't help it, I've even found FB when extracting (not my boxes). I pull out a frame with sealed brood on it, after first shaking the excess bees off, I hold it up so as to get the best possible light on it. Now I look at the brood, a nice even brood pattern with no imperfections or colour variations is what I want, but not what I want to see. You've got to train your eyes to look for imperfections, then eventually to ignore the irrelevant imperfections, but always you've got to be looking for the different, the unusual, things you haven't seen before, things to take a closer look at or get advice about. If nothing else it keeps up the interest level.

The particular things to look out for are;

- A sunken cap on a brood cell, look into the cell after carefully uncovering it, in all cases if what you see is a pearly white lavae or a nearly formed bee everything is fine, you can look for another suspicious cell.
- A darkened cap on a brood cell, carefully uncover and look inside. (Cells angle upwards towards the top bar so always look at an angle that lets you see straight to the bottom of the cell).
- A brood cell with a perforated cap, carefully uncover and look inside.
- A brood cell with a darkened perforated cap with darker edges on the perforation, you've got to check this anyway but you're probably going to need your match so don't grubby up your hivetool.
- Check all unusual cells, check any unhatched brood cells in unusual places, check the darkest cell on the frame, check the most sunken cell on the frame, check anything out of the ordinary. FB does not always display the classic look displayed in photos but it will look at least a little different.

It is obvious that you also need to keep an eye out for brown slimy things in uncapped cells.

Now you've decided which cell (cells) to look at you can rely on your photos and experience to identify chalk brood, sac brood, poisoned brood, AFB and anything different which you can refer straight to MAF for an expert opinion. If it looks even vaguely like FB, (and remember no one is watching over your shoulder, so you're only likely to be embarrassed if you don't check it), stick a match in it. If it strings or ropes, BURN it. In the middle ages they ducked witches underwater for a time and if they didn't drown, they burnt them, give your hives the same benefit of the doubt.

Dead hives! Long dead hives are very difficult to tell, it's easy to be sure it died of FB sometimes but extremely hard to be sure it didn't. Look for any brood remains and check these, sometimes even long dead brood will rope. Larval tongues sticking up are a dead giveaway but the dried scales left by FB I find very hard to be sure of. I leave it to your conscience but suggest you grab the bottom of the nearest redhead. Hives which have not been dead for very long are an easier proposition, if there are few dead bees and no brood with loads of pollen where the brood should be it was queenless. Lots of dead bees, often rotting between the frames, with patches of dead brood, means it starved. Be careful here, stress will often bring on a dose of FB and it's very hard to pick amongst all the other dead brood. Guilty until proven innocent!

Peter Berry

The Canterbury Branch Field Day

to be held at the property of:

Derek Newton - Alford Forest Road

24 November 1996 - Commences 10.30am

The Canterbury branch extends a friendly welcome to all interested beekeepers and their families who are able to travel!

We have arranged an informative and fun day for the whole family including:

- **Practical queen raising**
- **Demo by Professional Candlemaker**
- **Other speakers to be confirmed**
- **Boot Sale at lunchtime**
- **Practical demos of hive manipulation**

★ ***Pony rides and lolly scramble for children*** ★

★ Morning and afternoon tea, sausage sizzle at finish provided ★

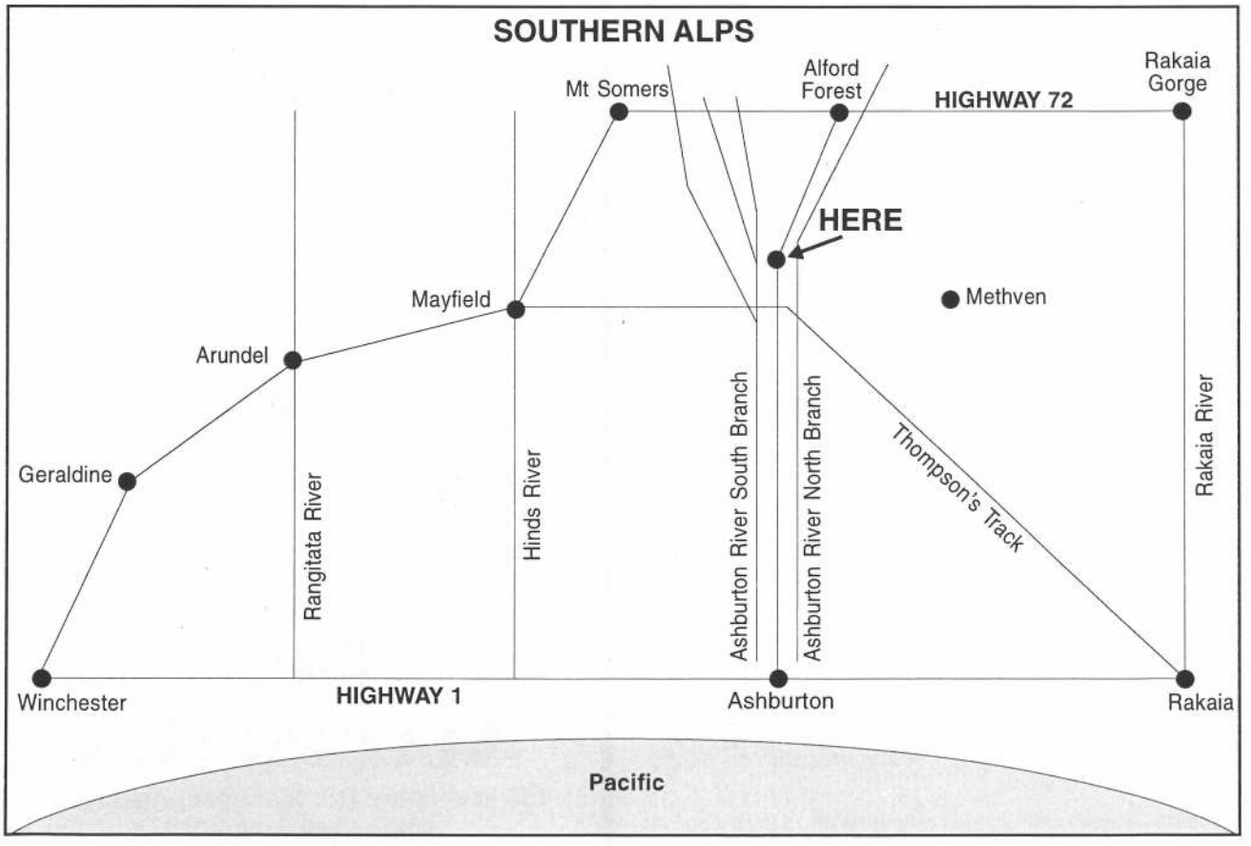
Please bring - **picnic lunch**

- **veil**

for more info please contact:

Don Bell (03) 318-3869

Brian Lancaster (03) 318-6966



MAP TO FIELD DAY — NOVEMBER 24th, 1996

Another Fred story

"Believe it or not" was, in years past a famous syndicated column in our newspapers. In this cartoon type presentation were depicted some incredible feats and actions, many defying ready explanation.

Beekeeping is an industry which seems to sustain itself on things which defy a logical explanation. Take the time Fred was called over to Charlie's place late one afternoon.

After the inevitable cup of tea dispensed by Charlie whenever anyone arrived at the cottage he lived in, it transpired that a puzzling thing had occurred that day at the yard on the Murphy property. Charlie was alone at the time and he set to work on the dozen or so hives. Brood check and food stores were the principal reasons for disturbing the hives. Nothing amiss on the first half dozen hives, but when he opened hive number seven there seemed to be an unusual number of bees present in the top of the hive. Honey frames were nearly all full in the top box and he removed this box to look at the brood frames. Nothing apart from a smattering of pollen in the top corners. Dead queen surmised Charlie as he removed the box to go further down the hive. Lifting a frame from this next box showed brood aplenty, and so it was for the other frames in the super. The super below also had some brood present and ample pollen stores to boot. Why was the third box up the hive so empty?

The rest of the hives were normal in composition and layout. There were a few dead bees on the landing board of the odd hive, but no more than was normal for the time of the year. All supers on the hives came from the same overwintering stack in the storage shed, all had been subjected to PDB as a moth preventative and all had been well ventilated prior to going out on the hives. Yet this one super was not being accepted by the bees. Traffic to the top super was up the inside walls of the supers, not up through the frames. Charlie was nonplussed, scratching his head and yet could not think of any reason for the event he observed. Yes, he had replaced the offending super and straight away the bees scurried into the new frames without a second thought. Crazy!

As we made our way back to the house Wally arrived, and he had a dozen of the best suds in town, it was his turn to provide. He also was puzzled about the super being rejected by the bees. Despite the lubrication we enjoyed over the next hour, no feasible explanation could be offered.

Time passed, and some two months later I called around to Charlie's. He had his nephew Peter there, a kid mad on becoming a beekeeper. He wanted to go to Telford, but the course was so popular that he was on a waiting list. In the meantime he filled his weekends helping Charlie. Lunchtime came around and after lunch Peter went to the shed out the back. He emerged carrying an old bicycle and came back to the workbench he had spent the morning at. He grabbed a completed super full of frames and used it to support the bike. Rusty bolts are hard to get undone, so he went again to the shed, this time coming back with a can of CRC, gave the bolts a good squirt and waited a few minutes.

In no time the bolts gave up the struggle and he had the bike in bits. By this time lunch break was over so he tidied away all the bike bits and carried on filling frames with wax foundation sheet. Charlie was bringing up a new pile of supers when he looked at the bench, at Peter and roared "You're the one who caused the mystery in the beehive?" Peter of course was confused. His uncle suddenly roaring like that was enough to put anyone off-balance. When asked what he had done with the super he used in the lunch break, Peter pointed it out at the end of the bench. Wally snatched it up, sniffed and said "GOTCHA".

Of course Peter had used a super to support the bike the last time he visited, had used CRC on the bolts and was ignorant about the spray overflow down into the super supporting the bike. The super was put back on the heap after lunch break and duly went out to the hives. Residue on the wax was sensed by the bees and they refused to work on the affected frames. Mystery solved.

Fred was amused when an explanation was preferred at the next suds session. Wally laughed his head off then nearly choked when he sipped some of the brew down the wrong way. Charlie learned a lesson when working with beginners. Take nothing for granted. Think of every eventuality — if you can.

Ham Maxwell

Roy Paterson Trust Fund

So far I have received Donations of just over $3000.00.

The Executive will decide at the December meeting (3rd) on the best way to use these donations.

If you wish to donate please send your donation to Box 307, Hastings.

Harry Brown, Executive Secretary

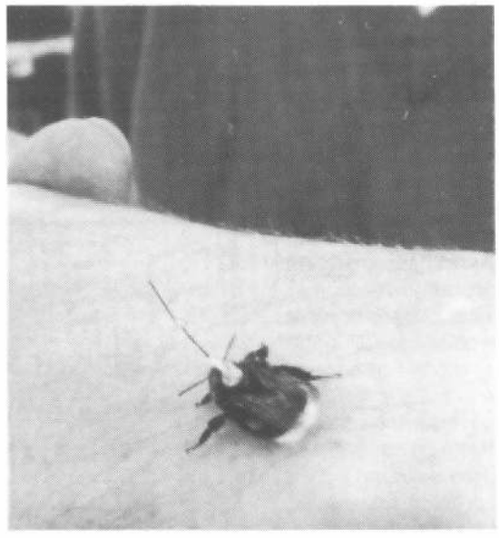
Radar that can track bees' journeys

Shown here are radar dishes of the National Resources Institute (NRI) that are used for tracking the flight of a bumble-bee fitted with an antenna. The miniature instrument does not impede or harm the insect and can be easily removed.

Conventional radar (the large dish) cannot be used alone to track flying insects at low altitude because the small radar echoes from insects are swamped by the larger reflections from ground features and vegetation (clutter). The technique developed by the NRI Radar Unit (part of the University of Greenwich), relies on a harmonic radar (small dish) to track insects in low flight.

A target insect is "tagged" with the antenna and the electronic device absorbs energy from the incoming illumination radar beam and re-transmits it at a harmonic of the incoming radar signal. The signal can be detected even in the presence of strong ground clutter and successfully tracks bees as they travel to and from the nest and forage sites, up to a range of around 700 metres.

The prototype system, tested at the institute of Arable Crops Research (IACR), Rothamsted Experimental



Station in southern England, has revealed how far bees will "commute" between nest and forage sites. Pictured with a tagged bumble-bee is IACR Bee Researcher Norman Carreck.

The data could assist in the development of strategies for the conservation and management of domestic and wild bee populations. It also reveals how bees are affected by weather conditions and by changing agricultural practices. Extreme miniaturisation is possible because the electronic tag needs no battery.

NRI originally developed the harmonic radar technique for tracking tsetse flies in Africa. The insect is responsible for infecting people and animals with sleeping sickness (trypanosomiasis) causing serious loss of life.

Tsetse fly behaviour has been investigated for many years by a team led by Dr Glyn Vale of the Regional Trypanosomiasis and Tsetse Control Programme in Zimbabwe. As the tsetse is very much smaller than the bee, further miniaturisation of the insect tag is necessary.

Harmonic radar may yet reveal secrets of tsetse flight behaviour and enable scientists to optimise tsetse fly trap placement techniques.

New Zealand businesses merely "satisfactory", not world class — Matheson

New Zealand businesses must lift their game if they are to survive an increasingly globalised marketplace, says business leader and chairman of the New Zealand National Quality Awards Foundation, Doug Matheson.

"Although New Zealand businesses are generally satisfactory performers, they are not world class," Matheson says. "This limits their ability to succeed in a competitive world. Satisfactory performance is simply not good enough for long-term survival."

The foundation will next year introduce a comprehensive programme which gives businesses better hands-on support to help them achieve their potential.

The programme was launched at the New Zealand Quality Awards, on November 12 at Auckland's Sheraton Hotel.

The recent NZ Institute of Economic Research report *A Season of Excellence?* shows reforms have created an economic environment in which excellence can flourish, but poor management skills and underuse of applied management tools are hampering performance.

Matheson says the fact that only two companies — Toyota's Thames assembly plant and Telecom Directories — have been recognised by Quality Awards administered by the foundation, adds to his concerns about New Zealand businesses performance.

The foundation's programme will make a difference to businesses' bottom line and help them meet rising international standards.

A recent survey found that American businesses applying the model on which the foundation's programme is based had shown on average a 250 per cent increase in stock value gain.

The programme has an innovative approach but is based on sound, traditional principles.

"This programme develops leadership skills and tools by which management can apply and integrate outstanding performance throughout the whole organisation," says Matheson.

"It puts them on track to achieve world-class performance."

Total customer focus and constant improvement throughout the entire organisation are central to the programme, which Matheson says will give New Zealand businesses a "leg-up".

"Any New Zealand organisation can be world class," says Matheson. "But management must first get to grips with the concept of how real excellence in business works — what it looks and feels like. That will be the foundation's first step, but we will then give businesses tools to make it a reality for themselves."

As well as being chairman of the foundation Matheson is national president of the New Zealand Institute of Management and the Electricity Supply Association and director of Wairarapa Energy and its Crown Health Enterprise.

He was an executive at IBM, including its New Zealand director, for 23 years before retiring in 1991.

The foundation is a trust set up in 1992 by the private sector with government endorsement.

It aims to help New Zealand organisations improve their quality, productivity and competitiveness through sustain business excellence and quality management.

"Satisfactory performance is simply not good enough for long-term survival."

Robert Ellis, New Zealand National Quality Award FoundationTelephone: (09) 302-0062

Acknowledgement Food Business

The changing face of beekeeping

I am sure there is no need to convince Canterbury farmers' of the startling changes to land use that have taken place over the years. Beekeeping is no exception. Changes in the arable and horticultural sectors have affected beekeepers in the following ways:

1. There has been a growing awareness of the role of honey-bees in pollination. Farmers are requesting more and more bees. For example, beekeepers have been asked to provide bees to pollinate all of the following crops; white clover, red clover, Chinese vegetables, apples, black and red currants, carrots, phacelia, borage, buckwheat, evening primrose, yarrow, oil seed rape, squash, chicory, cauliflower, turnips, radish, cabbage, raspberries, strawberries and tick and broad beans.

Many growers are now putting out their pollination requirements to tender.

2. Beekeepers have traditionally been able to help farmers simply by operating more hives. However, average honey production has fallen. This is because of greater hive populations and less forage available for those hives. It is becoming expensive to maintain hives from one honey flow to the next. There are many areas where significant amounts of honey are gathered for only five to six weeks each year. In Australia, for instance, beekeepers can shift hives from one honey flow to the next, enabling hives to gather honey all year.

3. Beekeepers have observed an increase in the amount of chemical damage to hives. While no one would be surprised to hear that insecticides will kill bees, one might be surprised to hear that a solution of detergent and water will also have fatal consequences. Furthermore, if any unacceptable substance should come into contact with a bee, when that bee returns to the hive she will be rendered and outcast and killed.

Hence, to avoid damage to bees, sprays should not be used in a manner that makes contact with bees likely. The responsible farmer would not apply aerial sprays to any crop, whether attractive to bees or not, during bee forage hours. This is because the bees flight path may cross non-forage crops.

Bees help monitor toxic dump sites

Edgewood, Maryland

Thousands of honey-bees have been put to work at the Aberdeen Proving Ground. Their mission: To detect traces of escaping chemical weapons at one of the nation's most toxic dump sites.

They do so by buzzing from flower to flower, gathering nectar and pollen and particles of everything else they happen to touch.

The army spies on their every move, counting their comings and goings, sniffing them, even gauging the amount of wind generated by their wings.

"A honey-bee is probably nature's most superb monitor of materials," said Jerry Bromenshenk, a University of Montana biologist who designed the project for the military base near the top of the Chesapeake Bay.

"You've got a little flying fuzzy creature with electrostatically charged hairs," he said. "They're like flying dust mops."

Acknowledgement ???

Put aside your fear of swarming bees

by Willem Olivier

Soon it will be bee swarming time again.

You may expect them from early October and usually on nice, warm days.

In the Rodney district there are many bee populations that have settled in all sorts of cavities as hollow trees, in buildings and between walls in the past.

I pick up bee swarms when people call the council or Citizens Advice Bureau, and last season I picked up 16 swarms.

I have noticed a lot of fear among our citizens and I would like to explain the reasons for swarming, and given some tips so that people don't have to be afraid at all.

Bees are usually swarming when the old "nest" becomes over-populated and they need more space.

Mr Olivier working with Carnolian bees in Poland in 1983. These are a passive bee as can be seen by the lack of protective gear — not even a shirt!

Some time before the queen has laid eggs in queen cells.

When the first young queen is about to hatch when the weather is suitable — even for only a couple of hours — the old queen and about half of the population of the "nest" or hive takes off.

Depending on the weather the swarm can first settle close by or they can fly for a few miles.

They usually settle on a tree, in a shrub or against a pole or wall.

Some days before the so-called scouting bees have already looked for other cavities in the surroundings for their new "nest".

When the scouting bees have found a new location, the swarm takes off again and will occupy that new location which can be anywhere eg in walls, in the ceiling etc.

They only need a tiny opening to reach such locations, so make sure they can't find one in your home!

When you see a settled swarm, call as soon as possible.

The bees in a swarm are in a very good mood with their tummies full of honey to last a couple of days.

They are not interested in human beings at all.

However, avoid being in their "flight" paths and bees do not like unpleasant smells like body odour, beer/alcohol, sweating and other smells of people and horses.

If you are close by, cover your head so they cannot fly in your hair and get trapped.

When they do, they will panic and may sting you on your head.

So be quick and fast, and clam the culprit dead with your flat hand to avoid a painful sting.

Beekeeping really is a fascinating hobby, and bees are very important for pollinations of fruit trees and other crops.

If you have lavender, chium or other good 'bee' plants in your garden, it is very nice to watch them working the flowers and gathering pollen which they carry in little, hairy baskets on their hindlegs.

The colour of pollen from lavender is bright orange.

From other plants bees collect pollen in a scale of different colours.

Acknowledgement "The Coaster"

Library News

Purchased:

Health and the Honey-bee by Charles Mraz. 1995, 92pp., USA.

A very interesting book written by the pioneer beekeeper — apitherapist. Specialising in the use of bee venom to relieve the symptoms of sufferers from forms of arthritis, venom allergy, asthma, MS etc. The book is a record of successes and setbacks, support and obstruction by members of the medical profession and of dedication to his chosen work. Mr Mraz published several articles in US beekeeping magazines about apitherapy. As with our New Zealand Manuka honey researchers will some day give proof of the medicinal value of bee venom. Perhaps another "natural" medicine freely and cheaply available to mankind.

I have not been able to find the time to view these tapes and cannot give info as to the duration of the films but a note about this will appear in a future *New Zealand BeeKeeper.*

Copies of the new updated and revised catalogue are now available. Much easier to follow than the old one, all books and papers are alphabetically listed, no supplements. It took 43 pages to contain the list of our collection. Cost the same $3.75 plus postage. Harry Brown took care of the photocopying, real service, many thanks.

Mr Breden, a beekeeper from Otaki mailed copies of three video tapes he made:

Tape No. 27	NBA Conference 1996 - Wanganui
Tape No. 28	Talks by Sue Walker on propolis and Les Gera on Plastic Fantastic
Tape No. 29	Pork and Honey Cookathon

Thank you Mr Breden, much appreciated.

The National Beekeepers are now on E-Mail

Contact numbers is:
natbeeknz@xtra.co.nz

Disease control

The first disease control legislation in New Zealand was the Apiaries Act 1906. Faced with serious American foulbrood problems being worsened by box hive beekeepers, the Act was hailed as a valuable and useful protection for the beekeeping industry.

The Apiaries Act was amended and re-written several times after that, with the last major revision being the Apiaries Act 1969. The Act has served the industry long and well. It provided the legislative framework to control American foulbrood, as well as required registration of beekeepers and the strictures against such things as antibiotics to control AFB.

It was still working, so again in the 1980s, what do we hear? Another piece of 'umbrella' legislation would consolidate all such specific legislation! After a long gestation period, the Biosecurity Act 1993 (the BSA) emerged. Provisions of this act allowed for the creation of Pest Management Strategies (PMSs, of course) to describe the control of a pest or disease.

Here comes the part that seems to cause some confusion. The BSA has provisions to allow for a levy to fund strategies. They are, in fact, nearly identical to those of the CLA with one significant difference — no support referendum is required. If the Minister believes it the best things to do in terms of the BSA, a compulsory levy can be imposed on those who would derive benefit from the control of the pest or disease.

As the NBA was already working toward a Commodity Levy Order, we chose not to use the levy provisions. Instead we plan to collect the funds for our PMS using the levy raised using the CLA. We chose to go this way for simplicity and efficiency (we will not be collecting multiple levies and incurring additional administrative overheads) and out of a sense of fairness (it would be exposed to a vote of those affected).

Once the BSA was enacted, the Apiaries Act was set to expire at the end of June, 1996. But as we all know and as fate would have it, the BSA was also flawed in its drafting, and no PMSs were possible during those three years!

The Apiaries Act was extended by a regulation to October 1998, to give the industry time to finalise a PMS in light of new provisions. And that's where we are with that! The Biosecurity Amendment Bill No. 4 will not be enacted until early/middle of next year (assuming New Zealand does get a government...).

While the Minister would be willing to *notify* our PMS, he would not *approve* it prior to the passage of that amendment. It is significant that he did not feel this way about the strategy to control TB prepared by the Animal Health Board! Rather, he felt *that* PMS was too important to sideline. I guess that gives us and idea of our perceived importance!

Summary

The Hive Levy Act 1978 has been used to collect the levy for the NBA. It will expire at the end of this year, and we hope to have a new levy using the Commodity Levy Act 1990 before then. The Apiaries Act 1969 will expire in October 1998. We hope to have our Pest Management Strategy, using the Biosecurity Act 1993, approved before that date.

We will use the levy collected from our Commodity Levy Order to fund all aspects of NBA activity — the administration, marketing and the Pest Management Strategy.

There! Is that confusing enough for you? I know it is hard to see all of this as 'beekeeping', and I thoroughly agree with you. It will be important to you, however. It will impact on your beekeeping. I hope that by presenting the history and current situation to you in this manner you will be better informed when it comes time to comment or make decisions that affect your beekeeping future.

Way out blokes

by Peter Berry

Drones come in for a fair bit of stick and bad press at times, over their often quoted laziness and over active sex drive. But really they're a necessary part of the hive's well-being. They are also one of the most interesting things in the hive and they have the saving grace of not stinging. Now if I had a dollar for every time I've looked into a hive over the years, I wouldn't need to keep bees for a living, so I've obviously poked my nose into quite a few over the years and one of the things that crop up occasionally are mutant drones. These are drones with different coloured eyes from normal. I once saw a photo from Europe with a whole bunch of drones with all sorts of eye colours, but for myself the most common colour I've seen is white, which I've seen every other year or so and pink which I've seen two or three times. With both white and pink there have sometimes been quite a high percentage of mutant drones in the hives. In the other colours I've seen there were only a very few. These were a hive with red eye drones and to my eyes weirder still one with bright yellow eyes. What brought the subject to mind was a hive that I found yesterday with something different again and in my experience quite unique. This was a hive where half the drones were black, not a very uncommon experience you might think, given the average hives propensity towards reverting to a wild strain at a moment's notice, but these black drones were different. They were pure black not a trace of colour anywhere, except that in the sunshine the shiny parts of their bodies were blue, just like on a blowfly, in fact they looked just like long blowflies so close was the colour resemblance. I'm guessing that this is a case of melinism, the opposite of albinism, but to be honest I really don't know much at all about how these mutations work. I know that dead bumble-bees in hives once they've had all the fur polished of them by the bees are a jet black so maybe honey-bees are the same and these drones just had black fur, but I don't think it works that way for honey-bees? Perhaps Harry can find someone who knows about these things to write an article. As an aside dad tells me he once saw a hive with black drones with what looked like grey fur. I find the whole subject quite fascinating so if you have any similar experiences, please, write to the *BeeKeeper* and let us all in on it, or better still, if you know how all these things work, send in an article on it.

Exporters stand out

At least twelve companies related to the New Zealand food industry as either producers of food and beverages or suppliers to those industries have been named as finalists in the 1996 New Zealand Export Awards, organised by Tradenz and sponsored by Air New Zealand Cargo.

The food or wine producers include Palliser Estate Wines (Martinborough), Free Range Egg and Poultry Co (Auckland), finalists in the Export Excellence Award for a Small Business Exporter; Bay Milk Products (Edgecombe), a finalist in the Export Excellence Award for a Major Business Exporter and Airborne Honey (Leeston), a finalist in the Export for a Regional Exporter.

The New Zealand Hop Marketing Board, which represents the country's hop producers who are all based in the Nelson region is also a finalist in the Excellence Award for Regional Exporter along with Team Horticulture, of Tauranga, which represents a group of New Zealand avocado growers in the Australian market.

Acknowledgement Export News

Yet another Fred story

Beekeeping is full of "Jobs for job's sake" tasks. Take this winter's shut down of hives at the Jacobson apiary. Bill and Ted who are in partnership have run this business, to all intents and purposes, efficiently and supposedly profitably.

The bulk of their hives are on farmland in the foothills surrounding our town. Manuka honey is their mainstay and they have become very adept at extraction of this sticky and tacky substance. Kiwi resource goes a long way in the operation of their plant, as Ted has a genius for figuring out how a machine should do the job. Obtaining a commercial "pricker" to process the manuka filled combs was out of the question. In due course Ted made his first prototype, and initially it worked well, but then began crushing the combs. After that the time he spent in alterations far exceeded the capacity their plant needed. As a result Bill became frustrated at having to extract the honey by himself using the long bladed hand knife from previous seasons.

Fred called in one afternoon to borrow the steam generator, a nice small portable unit Ted had produced the previous season. His entry to the extraction house saw him walk into the father of all rows, Bill accusing Ted of lack of interest in the work needing to be done whilst Ted in return complained that Bill expected too much from him and he would damn-well give up his half share and get peace and quiet by staying home from now on.

By interrupting them, Fred managed to put paid to what appeared to be a showdown, as fists were formed and being waved in the air. An offer by Fred to assist with the work then and there was grudgingly accepted and the extraction work recommenced. As they worked Fred gradually pieced together the situation between the two men and had a close look at the machine which had become the focus of the disagreement.

With extraction finished for the day, they all went into Bill's comfortable house adjacent to the workshop, cracked a few tops and began to wind down. Peace was restored when Bill apologised for his outburst and Ted acceded he was spending too much time on the alterations to the machine. Looking on from the outside Fred was able to see both points of view. He advised them to both consider whether the machine was a viable entity in their operation, particularly at the very time they could least afford the time away from the extraction needing still to be done.

A week went by and Fred called in again to return the steam machine. With it was a small package labelled "profit". He casually put it down on the bench, thanked them for the use of the steam generator and departed. That evening the phone call from an excited Ted, and later from a more subdued Bill showed that the contents of the package had been utilised. Both were profuse in their thanks and they could now expect a much more rapid turn-round in processing the Manuka honey. The machine was working like a dream, and they felt humbled that the solution to their problem was so simple.

The end of the season saw an invitation arrive in the mail for Fred and his wife to embark on a weekend Mystery tour. Nothing to pay and given with grateful thanks from Bill and Ted. Their turn-round time of Manuka honey frames had halved resulting in considerable cost savings, and they felt Fred should share in their gains.

And the solution Fred came up with? By applying a little lateral thinking and having mechanical know-how Fred had pinpointed the section of Ted's design that was letting him down. Being so close to the problem and with the added aggravation from Bill, Ted had consistently overlooked the point at which the machine was failing. Yet he persisted in time wasting effort to perfect his design at the very time he should have been concentrating on the business of honey extraction.

At Fred's urging they went on to develop a co-ordinated plan of operation. Each partner had a defined role in the production cycle over the season. Programmed time for machinery development meant that Ted's design talents were able to be utilised without interrupting the work in the honey house. A spin-off has been the commercial release of both the steam generator and the Manuka honey pricker for the local industry. What started as a hit-or-miss approach to overcome their production problems is now a co-ordinated, well planned business.

Perhaps you too run your operation on the original lines that Bill and Ted commenced with when they inherited the business from their dad. In today's business climate the demand is for a well planned operation, allowing flexibility for the vagaries of operation that honey production throws up from time to time. The initial cost of accepting advice appears high to people not trained in planning and production. The true cost benefit comes when an efficiency of operation is reached by following sustainable goals. Realism coupled with forward thinking are the qualities needed for you to plan your future in the industry.

Are you up to the challenge ahead?

Ham Maxwell

Question Korner

Are Karaka Flowers toxic to bees?

Yes says Terry Gavin, they enjoy the flowers so much they will actually work them in the rain.

What do you do?

Terry says move the hives for the two weeks the flowers are out , or chop down the tree. (This is not a native but a import bought by the first Maori who arrived in New Zealand).

Kind regards, Harry Brown

Bee Services Directory

I have had a request from a Hawke's Bay member to see if we can put together a directory of service available to the Beekeeping industry.

Ie: If you want Honey tested where do you go, how much will it cost?

Pollen tested for purity. Who will do this for me. How much will it cost?

AFB tests who will do it, how much will it cost?

Are you happy to provide the services you have available? Information to me to collate for the industry.

Harry Brown, Box 307, Hastings. Fax: (06) 878-6007. Please include your contact numbers.

(Phone number. Fax Number. Approx cost and any other info you think is relevant).

A beekeeper's Will

I Leave...

To my wife:
My overdraft at the bank. Maybe she can explain it.

To my son:
Equity on my car. Now he'll have to go to work to meet the repayments.

To my banker:
My soul. He's got a mortgage on it anyway.

To my neighbour:
My clown suit. He'll need it if he continues to farm as he has in the past.

To the Metrification Board:
My conversion calculator.

To the Rural Adjustment Board:
My unpaid bills. They took some *real* chances on me and I want to do the same for them.

To my Apiary Advisor:
My Apiary plan, maybe *he* can understand it.

To the local Council:
My pile of discarded shock absorbers and blown tyres. I suggest they make the appropriate deduction from my overdue rates.

To the junk man:
My Honey Extractor. He's had his eyes on it for years.

To my Undertaker:
A special request. Six bee equipment dealers for pall bearers, please, they're used to carrying me.

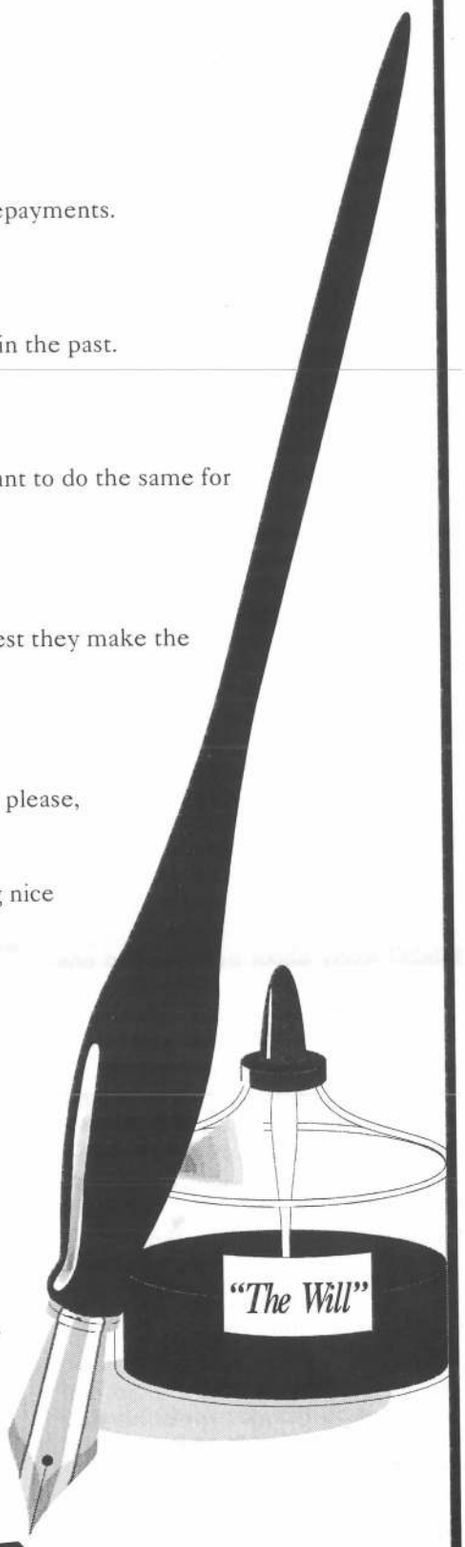
To the Weatherman:
Rain, sleet and hail for the funeral please. No sense in having nice weather now.

To the Gravedigger:
Don't bother. The hole I'm in should be big enough.

To the Monument Maker:
Set up a stump for the epitaph; something like the following:
"Under this stump a beekeeper lies,
No one laughs and no one cries
Where he's gone and how he fares
No one knows and no one cares".

Alternatively:
If I am cremated send the ashes to the Taxation Department with a brief note:

"There you are, now you've got the bloody lot".



Thanks to Allen McCaw and Clutha District Council

What's E-Mail?

In the last two years we have grown used to hearing about the global computer network, Internet, as a vast treasure trove of information, where details on nuclear reactors can as easily be found as the complete works of the Kama Sutra.

But looking for information is only half the promise of this remarkable new medium.

It easy to ignore the one Internet application which really is quietly changing the way we communicate.

And that's electronic mail, or e-mail.

E-mail has been around since the start of the Internet. The Internet was born out of a need to send messages from one place to another using computers and telephones as the authors and carriers.

The principles are easy enough.

You type a message on your computer, address it to the right person, click the command and hey presto, within a few minutes it's sitting, waiting for your correspondent to pick up and read.

As to price, it makes not one whit of difference whether the message is going to the next street or the other side of the world.

It is as complicated as that.

How does it work?
E-Mail breaks a job down into a series of simple tasks, which it then executes very quickly. To do this, the computer needs a piece of software — an "e-mail" package.

Some e-mail software comes as part of other Internet programmes, but you needn't worry about trying to find one because you are given some kind of e-mail software when you open an account with an Internet service provider (ISP).

An ISP is your main gateway to the Internet. There is probably a local company in your area, but you can also use the new national networks — CompuServe, IBM, Voyager, and in a few months Telecom or Clear.

When you open an account, three things happen:

• You are given a bundle of software (including e-mail) to live on your computer.

• You are given a unique log-in word, and a password, so that you can dial into your local service provider's computer, and then connect to any of the other services and places on the greater Internet.

• Your log-in becomes the unique and distinct part of your e-mail address.

Your e-mail address:
Say you choose "gandalf" as your log-in (people do!). And say your Internet company is called "Supernet". Your e-mail address then becomes **"gandalf@supernet"**

Now take a moment here. In your wild moments of fantasy, you might fancy yourself as gandalf. But do you want the whole world to know you by that name? Choose a log-in you want to live with as your e-mail address.

How does my e-mail address become unique?:
The Internet breaks down decisions and responsibilities to the smallest level of community, or "domain".

Your access company has registered itself as a domain with the next level of organisation, and chooses a suffix. For example co. or org. or edu.

In New Zealand the process is finished by giving the last suffix n.z.

Thus you will end up with an e-mail address: **memy@company.co.nz, memy@organisation.org.nz, memy@school.edu.nz**

Whatever it turns out to be, you need to tell people the exact syntax including the full stops (usually spoken as "dot").

If you, or someone sending you a message, gets it wrong, it will "bounce" — that is it will come back to you undelivered.

Pseudo Domains:
Many companies have discovered a little trick, and it's open to you as well. You don't have to be known as an add-on to an Internet Service Provider. You can register your own domain.

A real one is fully connected to the Internet (just like your ISP). A pseudo domain isn't. It's a ghost — it only exists as a name. But it has been registered with the appropriate administrator.

When you register a pseudo domain, it's your property, and you can ask any ISP to administer it for you.

My e-mail address is: **paulr@mcgovern.co.nz**

The domain "mcgovern" is my own invention (it's my mother's name). I have asked my ISP to administer it, and so my pseudo domain name is assigned to my ISP. This means when any of my messages pass through the New Zealand international gateway, the computers have been told to send it to my ISP.

Of course, if I move, or decide I can get better value from another ISP — just like changing doctors — I can take my pseudo domain with me.

Any competent ISP will offer to register a pseudo domain on your behalf. Let them. The small fee involved is well worth avoiding the hassle in doing it yourself.

Advantages of e-mail over letters and faxes:
There are three: speed, cheapness, and the ability to attach any other computer file to your message.

By and large, an e-mail message will arrive on the other side of the world in minutes. Your correspondent, like you, dials into their ISP, and retrieves it.

As to price, e-mail is charged by the number of bytes of information it takes up. When you see an ISP advertising "no data charges" it means there is no charge at all. However, you will pay for the amount of time you are connected.

But even if you are charged by the "byte", the advantages are quite simply overwhelming. If a fax costs a dollar, an equivalent e-mail message will be a few cents.

E-mail has one more unique feature. You can "attach a document" to the message.

If you want to send someone a working draft of your novel that you wrote on your computer, simply attach it as a document, and your recipient will be able to read it, or print it. You can send any kind of file including digital pictures of your kid's birthday party, or a complete set of accounts to the taxman.

Sending and receiving e-mail:
The most popular software package for e-mail is called Eudora. Like everything else on the Internet, it achieved this prominence because it was free. Most ISPs will give you a copy.

But this might change very rapidly. The reason is another piece of software called Netscape. You use this to "browse" the World Wide Web — that part of the Internet where you can look at, and navigate through information — pictures, text, and, in theory, audio and video.

For most people, increasingly, the Web is the Internet.

Up till the last month or so, you used Netscape to browse the Web, and then switched to Eudora to send and receive e-mail.

Not any more.

The latest release of Netscape has its own built-in e-mail package called Netscape Mail.

It looks much the same as Eudora, and shares its basic features, but with one crucial advantage. If a friend sends you an Internet address that they want you to go to and look at, then all you have to do is click on the highlighted address, and you will go straight there.

Basic features of an e-mail message:
Every package offers the same kind of layout. There are two sections. The header, and the body of the message.

The header: Here you will find the following:

• To: In the "To" field, it wants you to put in the e-mail address of the person you are sending the message to. It wants it exactly as it is, with all the fullstops in

Continued on page 25

Continued from page 24

the right place. For example: **paulr@mcgovern.co.nz.**

Incidentally the most reliable way of finding out someone's e-mail address, is to ask them.

• From: This is your e-mail address. It should be filled in for you automatically. If it isn't then put it in. You can change it to anything you like if. For instance, if you are working on someone else's machine, you can change it to your own.

• CC: This means "carbon copy". You fill this in with the e-mail addresses of any one else you want to send the message to. You can put in more than one, as long as there is a comma between each address.

• BCC: Blind Carbon Copy. A cute trick, little known to most. If you put an address in this field, the recipient won't know you also sent it to this person.

• The Subject Line: This is very important. You need to give your message a title. This is the first thing your friend will see (see reading your mail).

The body message: As it suggests, this is where you write your message. You can write as much as you like. Hopefully you will quickly find that e-mail is a bit different from either a letter or a fax. The style allows for greater informality, as well as offering a space for short, snappy messages.

There are no trees involved, and it's quick. It's like when the post was delivered three or four times a day — you can break a conversation down into little parts, responding to points as they come back and forward. With three or four people in the loop (by using the cc command) you really can have a busy and enjoyable time.

Reading e-mail:
To get your mail, you dial into your ISP, open your e-mail package, give the right password, and the mail is sent down the line to sit on your computer.

The different messages are presented as a list of subject lines — you click the subject line with your mouse and the message is displayed.

Every good e-mail package allows you to save your messages into different folders.

You can make as many as you like. Then you use the transfer command to move them into a folder. One folder is called Trash, and that's how you get rid of ones you don't want.

You can also use the "delete" command, but trash is better because it gives you a second chance. Having a good set of folders is the key to managing your e-mail.

Forward to:
There are also other features like "forward to" allowing you to send a message from one friend straight to another.

Nicknames:
All good packages have this feature. It allows you to give regular correspondents a nickname and their e-mail address is automatically filled in.

Attaching a document:
People get a bit lost with this. There's no need. For example, in Eudora, the command sits tucked away in the "Message" option — the same place you went to open New Message.

You click on it, and a box appears showing you all your directories and folders on your computer. Go to the right folder, select the file by clicking on it with your mouse, choose OK, the box disappears, and you will see a line at the bottom of the header section with the file name filled in. When you send the message, a copy of the file goes with it. Don't worry, it's only a copy, the original is still safely in your computer.

When you receive an attached document you will be prompted in the same way — all your folders appear, and you choose one. Either that, or in the Special menu, you can fill in a folder name where it will be sent automatically. Then open it up in the normal way. For example, if it's a word processing document, open your word processor.

It's important to note that the new Netscape isn't quite as nimble on its feet as Eudora with attached messages. Hopefully the next version will sort that out.

That's enough to be going on with. The best way to learn, like everything to do with the Internet, is to practise.

Sure, you will fall over, and mess up a few times, but so what?

And there really is nothing like getting your first message. When you do you will have become one of the 75 million people in the world with an e-mail address.

All first e-mail attempts gladly received at: **paul@mcgovern.co.nz**

Paul Reynolds, who lives in Auckland, is co-author of *The Internet — A New Zealand Users Guide*. He has his own web site on: http://www/mcgovern.co.nz.

Acknowledgement Infotech Home

RECIPES

Beehives

¼ cup honey
1 egg, beaten
2 cups shredded coconut
1 tsp vanilla
2 tbsp flour
1 cup chopped dates
1 cup chopped nuts

Combine egg, honey and vanilla in a mixing bowl. Beat until well blended. Stir in coconut and nuts. Coat dates with the flour and add to mixture. Drop by teaspoon on greased biscuit sheet.

Bake at 325 degrees F. for 12 minutes or until done.

Honey Brownies

½ cup butter
1 tsp vanilla
1/3 cup flour
1 cup honey
2 oz chocolate
2 eggs
1 cup chopped nuts
1 tsp baking powder
½ tsp salt

In a small pan over low heat, melt chocolate, butter, salt and vanilla. Mix well and then remove from heat. Blend in honey, flour and baking powder. Add eggs and beat well. Add nuts and pour into greased 9x9x2 inch pan.

Bake at 325 degrees F. for 35 to 40 minutes or until tests done in centre. Cool before cutting in squares.

Honey Bun Biscuits

1/3 cup melted butter
1/3 cut nuts or light raisins
½ cup honey
2 packets (8oz) biscuits
2 tbsp grated orange peel

Preheat oven to 375 degrees F. Brush a 9 inch ring mould with 1 tablespoon of butter. Pour in honey.

In small dish, combine remaining butter and orange peel. Separate biscuits and shape each into a bell. Dip in butter mixture to coat and then dip in nuts. Arrange biscuits, nut side down, on honey in mould. Bake 20 to 25 minutes or until golden. Cool in pan 5 minutes before turning out on plate. Serve while still warm.

Coconut Cream Pie

2 cups milk
1 tsp vanilla
½ cup honey
1 cup coconut
2 eggs, separated
4 tbsps cornstarch
1 tbsp butter
½ tsp salt

Scald 1½ cups milk. Combine honey, salt and cornstarch and add ½ cup cold milk. Make a smooth paste and pour into hot milk. Cook, stirring constantly until thick. Beat yolks and add 3 tablespoons of hot mixture. Blend, then return to milk mixture.

Add coconut and cook 2 minutes longer, stirring all the time. Remove from heat and add butter and vanilla. Blend well. Beat egg whites until stiff and fold into warm mixture. Pour into baked pie shell and sprinkle some toasted coconut on top. Refrigerate.

Thanks to Bill Floyd for honey type. Honey varieties are suggestions.

Coconut Pie Crust

1½ cups flaked coconut
½ cup cracker crumbs
oil to moisten (2-4 tsp)

Mix and spread in 9 inch pie pan.

Crunchy Oatmeal Pie

¼ cup butter
1 1/3 cup honey
½ tsp cinnamon
¼ tsp cloves
¼ tsp salt
1 unbaked pie shell
3 eggs
1 cup uncooked oatmeal
½ cup chopped pecans

Cream butter and continue baking while adding honey in thin stream. Add spices then eggs, one at a time, beating well after each one. Stir in oatmeal and nuts. Pour into pie shell and bake 50 minutes at 350 degrees F., or until pie is set. Pie is very rich, so cut in small pieces.

Honey Peas

1 packet frozen peas (prepared as directed on package)
¼ cup honey
¼ cup butter

Blend the butter and honey. Whip until light and fluffy. Serve over the hot, drained peas.

Fried Corn

4 tbsps butter
¼ cup honey
fresh corn (cut from cob)

Melt butter in skillet. Place corn in skillet and stir. Pour honey over corn and continue frying until honey and butter combine to make a syrup. Season with salt and pepper before serving.

Sweet and Sour Cabbage

4 cups shredded cabbage
½ cup diced bacon
3 tbsps flour
1 small onion, chopped fine
¼ cup honey
¼ cup vinegar
½ cup water

Cook shredded cabbage until tender, then drain. Fry diced bacon until well done and then drain. Place on cabbage. Blend bacon drippings with flour. Add honey, vinegar, water and onion. Cook until thickened. Pour over cabbage and bacon. Season to taste. Heat thoroughly and serve hot.

Sweet Gherkins

30 small gherkins
2 cups lime
4 cups honey
2 tsp whole cloves
2 gallons water
1 tsp salt
2 quarts vinegar

Dissolve lime in the water and pour over gherkins to cover. Let stand overnight and then rinse well. Then let stand for 3 hours in clearwater. Drain.

Mix vinegar, honey, cloves and salt and heat just enough to dissolve honey. Pour over the drained gherkins and let stand overnight. The next morning, bring to a boil and cook for 30 to 35 minutes. Pack in hot jars to within ½ inch from tops and complete sealing. Process 5 minutes in boiling water bath.

Yield is 10 pints.

Acknowledgement American Bee Journal

Honey suggestion for these recipes...

"This month — one suggestion — a honey that is light, moreish, crisp and clean flavour, hint of 'butter' but with zingy citrussy overtones — it's called "Waikato Clover" but it's so good it should be marketed as a unique type rather than a second-rate clover. Goes with just about any food — perfect for the above recipes"

WANTED TO BUY

HONEY AND COMB HONEY

We are buying all grades of honey.

For our current buying price…

Contact: Steve Lyttle

NEW ZEALAND HONEY LIMITED

Cnr Elginshire and Treneglos Streets
P.O. Box 2155
Washdyke
Timaru

Phone: (03) 688-7150
Fax: (03) 688-7125
Mobile: 025-995-599

IMPORTANT DATES FOR 1996

BRANCHES SEND YOUR MEETING DATES IN FOR 1996. NO CHARGE.

EXECUTIVE MEETINGS

December Meeting 3 December Tuesday to 4 December Wednesday

MAGAZINE

Copy/advertising deadline 1st of month. **EXCEPT for DECEMBER issue. DEADLINE 25 NOVEMBER.**

COMING EVENTS...

1996-1997 CALENDAR AUCKLAND BEEKEEPERS CLUB

December 7th 12 noon Christmas BBQ
Check honey flow

Contact: (09) 838-8567, Jill Dainow.
AUCKLAND BEEKEEPERS CLUB INC.

WHANGAREI AND DISTRICT BEE CLUB PROGRAMME FOR 1996-97 SEASON

December	7th	Hive management — Christmas BBQ — Own meats
February	1st	General management
March	1st	Taking of honey
April	5th	AGM — Honey Show — BBQ — Own meats — Wintering hives

Secretary: Mr Harold Hagemann. Telephone: (09) 437-0098

★ ★ ★ BRANCHES... *PUT YOUR MEETING DATE IN HERE...* FREE ★ ★ ★

AUCKLAND BRANCH
Christmas BBQ, BYO
All welcome Sunday, December 22,
12 noon onwards,
let us know if you are coming.
February 15th — Field Day.
Top overseas speakers.
Phone Janey or Rob Johnston,
Runciman Road, Drury.
Phone: (09) 294-8320

NORTH CANTERBURY CLUB
Meet the second Monday of every month March to November inclusive.
Contact Don Edwards
Phone (03) 327-5409

SOUTH CANTERBURY BRANCH
Phone Noel (03) 693-9771

CANTERBURY BRANCH
Phone: Brian (03) 318-0732

CHRISTCHURCH HOBBYIST CLUB
These are held on the first Saturday each month, August to May, except for January on which the second Saturday is applicable.
The site is at 681 Cashmere Road, commencing at 1.30pm.
Contact Peter Silcock
Phone: 342-9415

DUNEDIN BEEKEEPERS CLUB
We meet on the first Saturday in the month September - April, (except January) at 1.30pm. The venue is at our Club hive in Roslyn, Dunedin.
Enquiries welcome to Club Secretary, Dorothy phone: (03) 488-4390.
Next Club meeting to be held at 30 Lawson Street on November 2 1996.

FRANKLIN BEEKEEPERS CLUB
Meet second Sunday of each month at 10.00am for cuppa and discussion.
Secretary — Yvonne Hodges,
Box 309, Drury.
Phone: (09) 294-7015
All welcome — Ring for venue.

HAWKE'S BAY BRANCH
Meets on the second Monday of the month at 7.30pm.
Cruse Club Taradale.
Phone: Ron (06) 844-9493

NELSON BEEKEEPERS CLUB
'Mead-Making' demonstration and barbecue
Date: Saturday, November 16
Time: 5pm
Venue: Peter Ree's place,
39 Todd Bush Road.
Phone: (03) 546-1422

OTAGO BRANCH
Phone Bill (03) 485-9268

POVERTY BAY BRANCH
Barry Foster (06) 867-4591

SOUTHERN NORTH ISLAND BRANCH
Phone: Frank 478-3367

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

WAIKATO BRANCH
Call Tony (07) 856-9625

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

WELLINGTON BEEKEEPERS ASSOCIATION
Meets every second Monday of the month (except January) in Johnsonville. All welcome.
Contact Frank Lindsay
(04) 478-3367.

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