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President's notes

by Richard Hatfield

Fellow beekeepers,

A new season seems to be unfolding. In the southern North Island, it is generally good. I hope the conditions are good for your area as well.

The varroa phase 1 activities are now drawing to a close with the majority of hives being treated under the government funded programme. The phase 2 plan has now been submitted and is available from the MAF website. Please read it, it affects you. There are a number of management matters covered, particularly moving hives and the treatment of hives. Varroa does require coordinated treatment for an area, not just for individual beekeepers or apiary sites. Reinfestation rates are high if one or two colonies are not treated. This will also be true in areas with large numbers of feral colonies and will remain so until they succumb.

Lin McKenzie has put in a bid to the Sustainable Farming fund for a coordinated programme for beekeeper business improvement. Lin will be publishing more on this later.

Recently, we, via the Poverty Bay Branch, made a submission to the Royal Commission on GM. This submission will be published in beekeeper. In summary, we supported a moratorium on open field trails, registration and auditing of closed environment GM/GE. We also submitted that regular reviews are undertaken so that if the science became more stable then other potential avenues could be exploited.

The fundamental message was that decision must have an ethical base not a marketing or political (in the wider sense) base. On this basis we would be neutral to or support GM if it reduced the impact of a pest on either a producer (eg Cow or Bee) or the food that it lives on (grass or nectar). We do not support the modification of the food or eventual product. We see that most of this research is being undertaken overseas.

GM/GE is here (in the world) and will remain and it will eventually be here in New Zealand. However we need to protect ourselves from the 'start up' phase mistakes whilst being able to exploit the science when it is appropriate to do so. I do expect some comment on this stance.

Our next Executive meeting is in Auckland on the 25 November. Tim will be inviting the local branches to the meeting. Budgets for the next year will be the major topic of discussion.

Letters to the Editor

Ministry of Agriculture and Forestry, New Zealand

To whom it may concern

An update on compensation for beekeepers affected by the *Varroa destructor* management programme

What's happened since 11 August when we last wrote to you about compensation?

1. The varroa compensation advisory group (CAG) has been established to advise the MAF Director Animal Biosecurity on compensation entitlements. The CAG has met twice to consider the types of losses described in the 'Intention' forms that were returned to the Ministry of Agriculture and Forestry. Claim forms and guidelines for claimants are being finalised. Other practical arrangements have also been made to enable the compensation process to proceed efficiently and fairly.

What happens next?

2. If you advised MAF of your intention to seek compensation, you will have recently received a claim form and guidelines on completing a formal claim under section 162A of the Biosecurity Act 1992.
3. MAF requests that claims relating to the period 12 April to 17 October 2000 are lodged by 30 November to help ensure a fair and timely compensation process. However, there may be future claims relating to ongoing movement controls.
4. If you did not previously advise MAF of your intention to seek compensation, but now wish to initiate a claim, please obtain the claim form and guidelines from Ashley Edge, phone: (04) 474-4213, email: edgea@maf.govt.nz. Forms and guidelines are also available on the MAF website: www.maf.govt.nz/pests&diseases/varroa/compensation.htm

In reply to a Letter to the Editor from Mike

I suggest that you take your problem to the Small Claims Court, they may be able to help with your claim.

Editor
NZ BeeKeeper

Cover photo: Courtesy of Dick Schoneveld, Opotiki

MAF Biosecurity

The New Zealand BeeKeeper

THIS ISSUE

New movement controls relating to varroa bee mite

The Ministry of Agriculture and Forestry has established new movement controls relating to the varroa bee mite. The new movement controls have been established by way of a formal notice that has been sent by letter to every registered beekeeper in the North Island.

The movement controls provide that the movement of certain items from the North Island to the South Island, and from the upper half of the North Island to the lower half of the North Island, is prohibited, except with the permission of a Biosecurity Act inspector or authorised person. The items concerned are honey bees, used beehives, new beehives that contain wax foundation, honey that is not packaged for retail sale, unprocessed beeswax, propolis, and pollen, some used beekeeping equipment, and any thing upon which, or within which, the varroa mite is present.

In addition, the movement within the upper half of the North Island of live honey bees and unextracted honey that is not packaged for retail sale is restricted.

The principal changes from the previous movement controls are to the boundary between the upper half of the North Island and the lower half of the North Island, and to the list of items that are the subject of movement control.

Any person who did not receive a copy of the notice that established the movement controls, and who wishes to do so, should phone 0800 109 383 during working hours.

Permission can be obtained in some circumstances to carry out a movement that would otherwise be prohibited by the movement controls. Any person who wishes to obtain such permission should contact the movement control officer on 0800 109 383 during working hours.

A Head Office Update

ADR's and COI's:
Currently the focus is on following up non-returns or ADR's which will be followed by COI's. There seem to be too many outstanding and by law the NBA is required to follow these up. AgriQuality our AFB PMS contractor have done their bit by the contract, the NBA is now obliged to follow these up.

Standing Committees:
As you know, the Executive has been through it's strategic planning exercise and from this has identified some key areas to work on in the coming months, plus varroa. Executive members are responsible for one or more "portfolio" areas with a committee to manage them. So far a number of people have been approached to join committees and the following list is the committees at this stage. If you wish to help or add your name to a committee, especially the Support, PMS Review, Communications and Environment Committees please contact me at Head Office:

PMS Operations: Murray Bush, Graham Cammell, Ian Spence and Andy Booth
PMS Review: John Berry, Michael Wraight
Library: Tony and Christine Taiaroa
Compliance: James Ward, Frank Lindsay, Peter Ferris and Trevor Corbett
Environment: Barry Foster
Exotics: Peter Berry
Export: Malcolm Haines, Richard Bensemann
Governance: Alan McCaw, Mike Stucky, Steve Olds, Tony StClair (CEO Federated Farmers).
Marketing: Tony Taiaroa, Steve Olds, Barbara Bixley
Support:
Communications:
Finance Op's: Ian Berry, Josephine Lewis (Federated Farmers), Jane Lorimer
Treasurer: Josephine Lewis, Jane Lorimer
Varroa:

Varroa
As part of the two-year plan, government has approved a Rural Support Co-ordinator to help beekeepers in the affected area with any issues they may have. Murray Auld is the man and his contact details are: Jamieson Road, RD 2, Pukekohe. Phone: (09) 238-7122. Mobile: 025 622-1576. Murray is there as a friendly face and an ear at any time. His service is totally confidential and free. The government is paying. Give him a call.

Tim Leslie

Beekeepers' Library

Books, magazines, tapes and slides are now available for issue from the Beekeepers' Library once more.

The library is not completely operational yet as there are still transfer formalities to be completed. The Library Committee, Librarian and the Executive Secretary are doing their best to expedite these. Until further notice, the library will operate under the following broad guidelines:

The loan period is for one month.

Borrowers will pay a loan fee ($1.00 for Class A books, 50 cents for Class B and 10 cents per magazine) plus reimburse the cost of outward postage.

Items not required by another borrower may be renewed at the Librarian's discretion.

Overdue items will accrue fines at the rate of 50 cents per week.

Bronwyn Newton's thesis, "Craft and control: Networks, strategies and ordering in New Zealand beekeeping" is now available for loan. A waiting list may have to operate if there is a demand for the book.

If you are in possession of a library catalogue, please add this title to it.

Many thanks for your patience,
Chris Taiaroa.

Prevention and Treatment of Diseases and Pests of Honey-Bees: The world picture

1. The world spread of honey-bees before and after man's intervention.

The different species of honey-bee (apis) evolved in the Old World - in Africa and Asia - before the end of the Pliocene period about two million years ago.[9] Mammals, including primates, evolved much later. Chimpanzees have been observed getting honey from bees' nests by using various tools they made for the purpose, 10 so it seems likely that when man (Homo sapiens) evolved perhaps 250,000 years ago, he also hunted for bees' nests, harvested the combs and ate the contents. When bees were kept in hives, however, they could be moved from one place to another, and this provided opportunities for bee diseases and parasites to spread to bees in other places.

One type of movement was 'migration', in which beekeepers gave their bees access to extra honey flows. This was already done in the Ancient World,[13] although through quite small distances. If, as was usual, more than one beekeeper used the same migratory site, pathogens and parasites could be transmitted between bees owned by different beekeepers.

A later, and more significant, type of movement of hives was the transport of colonies of Apis mellifera to regions without honey-bees. An Assyrian relief from the 700s BC (Figure 1) records that a certain Mesopotamian ruler 'was the first to bring bees that make honey from the mountains, and to keep them in his garden'.[11]

Relief from the mid 700s BC showing Shamash-res-usur, the ruler of Assyrai who first took bees there and kept them in his garden (Istanbul Archaeological Museum).

The transport of Apis mellifera outside the Old World came much later and had very wide consequences. At the end of the middle Ages honey-bees were taken from Spain or Portugal in Europe to several groups of Atlantic islands previously without them:[12]

	from	*to*
1400s	Portugal	Madeira and Santo Porto
1454	Spain	Canaries
1554	Portugal	Azores.

The transport of honey-bees from Europe to new continents probably started in the 1500s, and it was extended further and further afield until the 1800s:

	from	*to*
possibly 1500s	Spain	Mexico
1617	England	Bermudas
1622	England	what is now USA
1776	Scotland	Canada
1822	England	Australia
before 1830	unknown	Costa Rica
1839	Portugal	Brazil
1839	England	New Zealand.[25]

In all the above receiving countries, the bees were kept in traditional hives until movable-frame hives were introduced there in the late 1800s. After movable-frame hives were in use, the bees were also taken to Pacific islands, for instance:

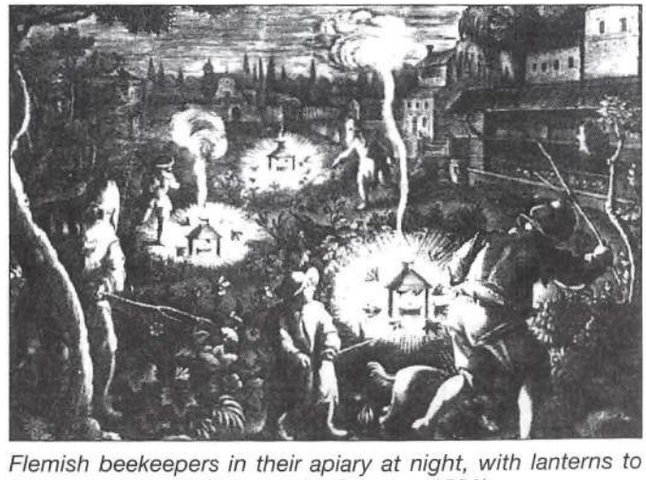
	from	*to*
1857	USA	Hawaii
1962	New Zealand	Nuie

There was much less movement of the Asian hive bee Apis cerana. It is believed that 'some centuries ago' nomadic people took hies of Apis cerana from the lower Indus valley across Baluchistan to parts of Persia near the Gulf.[14]

In 1985/86 Apis cerana was transported along the Indonesian chain of islands, across the Wallace Line and as far as Irian Jiaya, the western part of the island of New Guinea. In 1987 the bee reached the eastern part, Papua New Guinea,[3] and the Australian Quarantine and Inspection Service was alerted to monitor its possible entry into the country.[28] The reason for the alert was the possible contact of Apis cerana with Apis mellifera in Australia and the consequent transfer of mites that can parasitize both species: Varroa, Asian mite, and Acarapis woodii.[7] (trachaes mite acarine Isle of Wight Disease). In addition, Kashmir bee virus infecting Apis cerana can also infect Apis mellifera.

2. The world spread of honey-bee diseases and pests

We know that bee diseases existed, and were treated, in the Ancient World. For instance, between 330 and 30BC Aristomachus in Greece said that the following help should be given to bees which are sick: 'first, all the diseased combs should be removed and entirely fresh food placed for the bees, and then they should be fumigated.' Disorders recognised in Ancient Greece included starvation, dysentery, and failure to rear brood. Book IV of Aristotle's Historia animalium (40.626b) referred to 'a diseased condition indicated in a lassitude of the part of the bees and in malodorousness of the hive', which may have been the bacterial infection later known as European foul brood. In Ancient Rome, Columella recommended the use of light traps near the hives at night in autumn to attract wax moths, and Jan van der Stratt illustrated this activity around 1590 (figure 2).



Flemish beekeepers in their apiary at night, with lanterns to attract wax moths (Jan van der Straat, c 1590)

We do not know much about the spread of bee diseases until recent centuries, when the main cause was the transport of colonies - and later of queens with attendant workers - to distant regions where honey-bee were already present. (When the initial transport had been made, there were no honey-bee to be endangered.) In my other lecture I mentioned effects of some fairly recent introductions of a new race of honey-bee into an area already populated by one race, and some of these introductions have been associated with the spread of diseases or parasites.

However, the arrival of the greater wax moth in the USA around 1800 - presumable with bees sent from Europe - was

documented in some detail. The moth was apparently introduced after 1805. Its appearance was reported by the Boston Patriot in 1806, and within two years it had infested so many hives around Boston that 80% of the apiaries were abandoned.[35] Affleck[1] dated its entry earlier: in the Boston area about 1800, Connecticut 1805, Philadelphia 1812, Ohio 1827. The large number of honey bee nests in trees provided further opportunities for the moth's rapid spread, and in 1831 JVC Smith referred to its ravages throughout the country.

There losses stimulated experiments in designing hives which might reduce wax moth damage. Many such hives had a sloping floor board or other device for removing detritus containing eggs of the wax moth from the bottom of the hive. Nearly 600 patents for 'new' hives were listed in the US Patent Office Index[20] from 1810 onwards, 74 of them before Langstroth's patent in 1852, which also made a similar claim.[19]

Between 1875 and 1880 the wax moth started to infest colonies in Queensland, Australia, and in 1883 Carroll reported that apiculture in this colony has sunk to a very low condition indeed... only a very few individuals... managed to save a few stocks amidst the general devastation'.[21]

When bees come into contact with other bees already carrying disease pathogens or mites, the likelihood that they themselves become affected depends partly on environmental conditions. In general honey-bees in temperate zones - which must survive through a winter period - are more subject to diseases than those in the tropics which can fly all round the year. But bees in the tropics are more prone to attack by predators and other enemies. Since 1982 various members of staff of the International Bee Research Association have published maps and tables every few years, showing the reported distributions of honey-bee diseases and parasites.[5, 29, 30, 34]

In 1922 and 1923, respectively, the USA and Canada enacted legislation to prevent the import of honey-bees, in order to keep out the tracheal mite Acarapis woodii, identified in 1921. This mite did not reach North America until much later, but certainly by 1984.[18] in 1959 Jeffree[27] published a study on the world distribution of this mite. He showed that infestation of colonies with it was linked with certain meteorological factors, especially: a small difference between summer and winter temperatures, and annual patterns of rainfall and day length characteristic of areas at latitudes between 40° and 70° (Figures 3 and 4). The few places satisfying these conditions included New Zealand and Tasmania, the lower part of the St Lawrence basin in North America, and part of the Indian Himalayas where, in fact, the presence of the mite on Apis cerana had been reported at Katrain in 1957,[36] presumably following an introduction of Apis mellifera into the region.

Another transference of mites between Apis species is believed to have occurred in the Pacific Far East region of what was then the USSR.[8] Varroa jacobsoni had been found on Apis cerana in Java as early as 1904, but it was then regarded as of little or no consequence to beekeepers. It was recorded on the native Apis cerana in the Pacific Far East from about 1950, and after colonies of Apis mellifera were transported there in 1904 or earlier,[16] Varroa successfully infested them also. Apis mellifera queens with workers - and the mites - were later sent from the Far East to European USSR.[17] The mites spread from there to other countries through successive transports of Apis mellifera, and were reported in Bulgaria in 1967. By 1993 the mite was known to be present on Apis mellifera in 34 countries and by 1996 in 47 countries[31], it is now likely to have reached still others. In April this year the mite was found in South Auckland, New Zealand, where it may well have been present for a few years.[33]

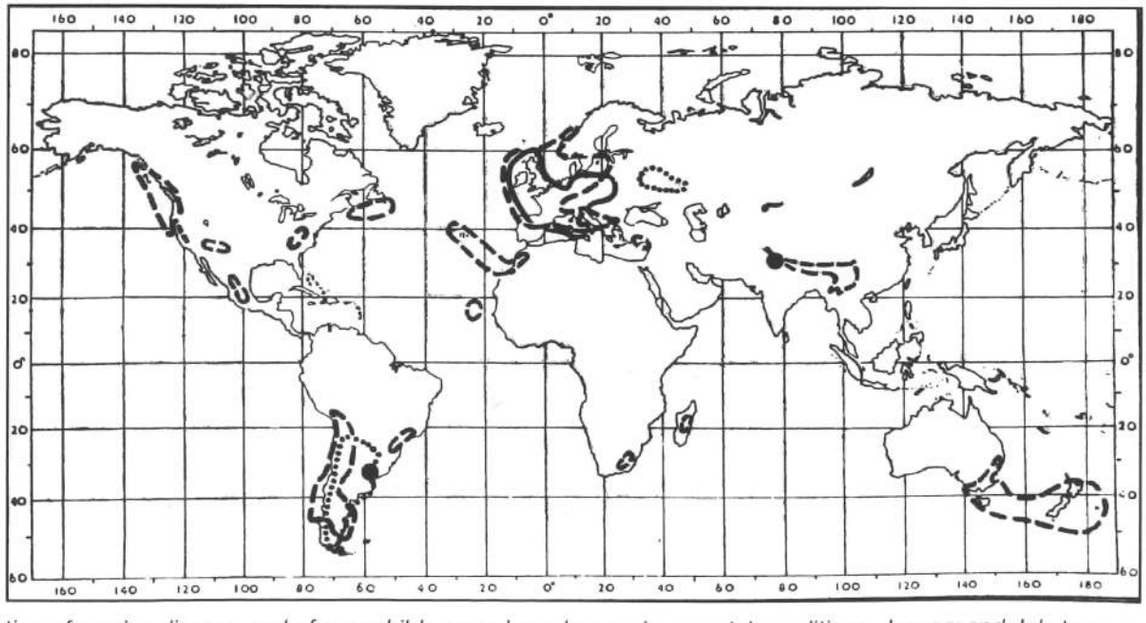
A parasite does not normally kill its host, and colonies of Apis cerana can withstand parasitization by Varroa, through grooming and in other ways. But a parasitized colony of Apis mellifera is likely to die. Beekeepers with movable-frame hives can apply various treatments to kill the mites; although this adds to their work, it enable them to continue beekeeping. On the other hand in traditional fixed-comb hives the brood nest is not accessible for inspection, and the beekeepers may see no signs of the mites' presence for several years. By then the infestation is likely to be so heavy that the colony soon dies. I remember vividly a visit to Turkey in the spring of 1985, when many traditional beekeepers took me to see their apiaries - each with 20 or more hives - only to find the bees dead or dying. Tragically, several aid programmes included the provision of bees, which were sent for instance from Romania to North Africa and from Japan to South America - and (undetected) Varroa mites travelled to new continents with the donated bees.

Unlike Acarapis woodii, Varroa can thrive on Apis mellifera colonies in a wide variety of tropical climates.

3. Transmission, prevention and treatment of honey-bee diseases and parasites

I shall discuss especially the transmission of these diseases as a consequence of the development of world beekeeping. Their prevention depends mainly on two factors: keeping the bees in a suitable environment and under suitable conditions, and preventing contact between them and any other bees carrying a new pathogen or parasite which might be transmitted to them.

Contact between difference colonies of bees can occur within an apiary if hives are placed close together in a long row and



Distribution of acarine disease, and of sucephible areas based on environmental conditions. January and July temperatures.[27]
— distribution of acarine disease
. [blocked in O] limited records perhaps present
.... range uncertain

bees drift from one hive to another. It can occur in a migratory apiary to which bees are brought from different sources. But the worst scenario has followed the introduction of bees carrying a pathogen or parasite to another part of the world where the bees had been free from it.

Legislation and constant vigilance are necessary in any country to prevent the bees becoming affected by a new pathogen or parasite, and it is also necessary for the pathogen to be identified and its mode of action understood. Bees in a continental country are always vulnerable to contagion across a land border, whereas oceanic islands have a special status which I will consider later.

The most disastrous transference for world beekeeping was that of Varroa jacobsoni, and much of the worldwide spread of the Varroa mite occurred before its presence in the transmitting colonies was known. From 1967 or earlier colonies of Varroa-parasitized honey-bees were spread from European USSR to neighbouring countries, and thence to others and to new continents.

Another Asian mite is Tropilaelaps clare-i, whose natural host is Apis dorsata. It can quickly kill a colony of apis mellifera, but it has so far been spread much less widely then Varroa. The development of an effective treatment of diseased or parasitized honey-bees is possible only after its causative organism is identified, and this has necessarily been dependent on advances in various branches of microbiology. The first honey-bee pathogens to be identified seem to have been the bacteria causing the diseases known as European foul brood (in 1885) and American foul brood (in 1907); the names refer to the continent where each was most studied. Current scientific names of the pathogens are Pana alvei and Pana larvae. The fungus causing stone brood was identified in 1909, and protozoa causing nosema and chalk brood in 1906 and 1916. I have listed these and other dates elsewhere.[22]

The breeding of Apis mellifera with an increased resistance to Varroa is one possible way forward that is being explored. But I shall not discuss treatment in detail, because I think that in New Zealand you keep up to date with the scientific advances on which competent treatment can be based.[24]

4. The present important of oceanic islands in world beekeeping

Honey-bees are not indigenous (native) to oceanic islands, and colonies taken to them have had less subsequent chance of contact with other bees carrying pathogens or parasites.

In 1852 the Honolulu Agricultural Society offered a premium to the first person to import honey-bees to the Hawaiian Islands. Early consignments from eastern USA were sent round Cape Horn, but they died in the tropics. A colony sent from California reached Hawaii in 1857, and Italian bees were imported from 1880.[15] Afterwards bees infected with American found brood were taken there, and the disease spread. A period of decline followed, and from the early 1930s beekeeping was neglected. Then in 1949 JE Eckert went to Hawaii from the USA,[23] and he found that surviving bees had developed a resistance to the disease. A queen-rearing enterprise was started in 1976, and by 1993 over 140,000 queens were exported annually.

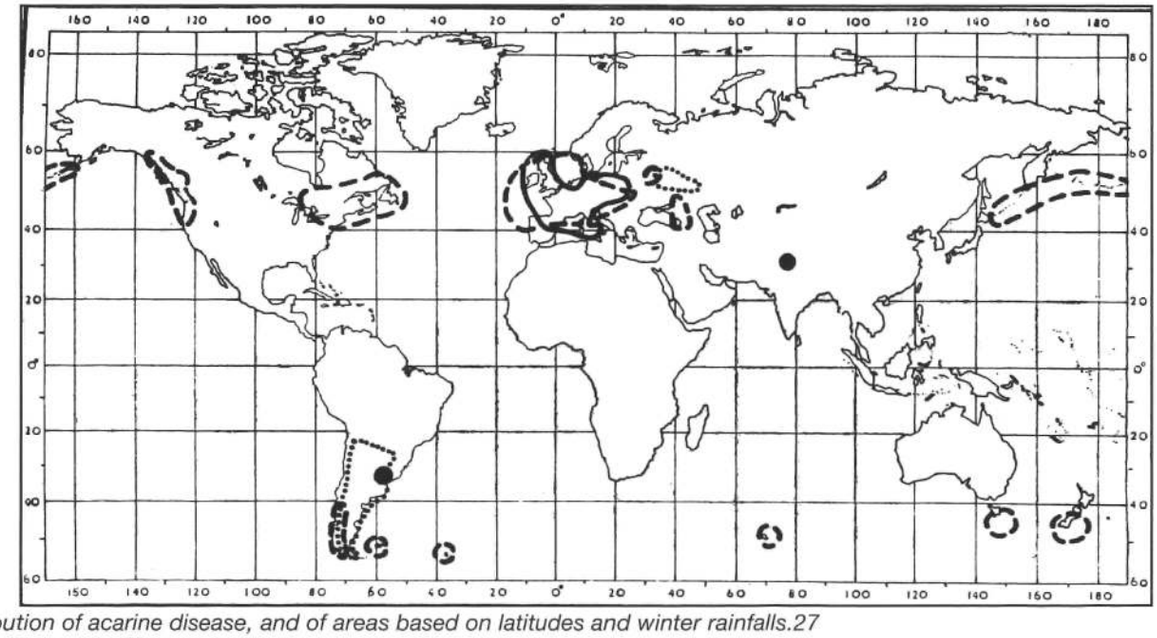
In some other oceanic islands, too, beekeepers have found it more profitable to rear and export queens than to sell honey, since this can yield a higher monetary return and involves lower freight charges. The entry of a new bee disease or parasite in a mainland country given the beekeeper extra work in treating his colonies, and his honey yield may be less. But on an island where the beekeepers' income is derived from selling bees and queens, the industry may collapse because bees reared for sale are no longer acceptable elsewhere.

Prevention of the entry of new pathogens or parasites requires action at several different levels, including effective procedures by relevant government departments. For instance in Australia, a port surveillance project was established in Victoria.[4] At three major ports, a local beekeeper has established sentinel hives in or near the main dock area, and sticky strips placed in the brood nest of his colonies are inspected frequently.

Bee products and beekeeping equipment can also transmit certain pathogens, and many countries have therefore restricted their import. Two beekeepers in New Zealand were recently jailed for attempting to import pollen from China as 'cornflour'.[6]

Apis cerana reached islands off north Australia from New Guinea by 1993, and it was detected in two incidents in the quarantine area of the port of Brisbane, Qld, in 1999.[26] On 16 September a swarm was seen in a ship from Papua New Guinea, from which five bees captured were Apis cerana. On 27 December, a nest of Apis cerana was found on the metalwork of a grader from Papua New Guinea, which contained three queen cells, and Varroa mites were found on some bees and brood. The nearest apiaries of queen exporters were 45km from Brisbane.

The United Kingdom, where Varroa is widespread, had recently not permitted the entry of package bees from New Zealand because of the possible introduction of Kashmir bee virus. However *New Zealand BeeKeeper* for March 2000 announced that the UK would again accept New Zealand bees.[32]



Distribution of acarine disease, and of areas based on latitudes and winter rainfalls.27
— [distribution in O] limited records
.... range uncertain
--- areas based on latitude (for day length) and (log.) winter rainfall limits.
Based on to Jeffrees research parts of NZ feature in both of these maps.

I have every sympathy with beekeepers in New Zealand in your efforts to maintain your export of healthy colonies. I cannot offer any magic solution to your problems, but I know that you keep abreast of new information from other parts of the world that may help you, and that your Ministry of Agriculture is very active on your behalf. I wish you well in your endeavours to maintain the position you have held in the world market.

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From the Colonies

by Frank Lindsay

I'll start this month with a couple of don'ts.

Don't lick at a sting site on the back of your hand to reduce the pain without first checking that the sting has been completely removed. Otherwise you are just transferring the pain to a different area and stings are not all that easy to remove from the tongue.

At 2 am, if you're dreaming you have bees under your arm, don't roll over and go back to sleep. An hour later I woke up again and this time scratched the area and the dream stung me. A particularly painful spot, the armpit and with nothing else to concentrate on the pain was intense. Moral - take notice of dreams and don't bring bees into the house.

This can be particularly important when there are children around. Bee suits and other clothing used while beekeeping should go into the washing machine as soon as you enter the house. Left lying around, the venom on the suit dries and particles circulate with dust around the house. Constantly breathing in venom could lead to sensitivity in some teenagers. Bee aware of the unseen dangers and protect your children as there are too many beekeeper's children with sensitivity to bee stings.

Around the Wellington area, the flowering of the bush seems to be all mixed up. That cold spell in October delayed the flowering of some trees and now they are really getting into gear. Rewarewa *(Knightia excelsa)* is in full flower (it's late), early Whiteywood *(Melicytus ramiflorus)*, Wineberry *(Aristotelia serrata)* is doing well. Kamahi *(Weinmannia racemosa)* has just started (our main flow) but so are all the introduced species like Barberry *(Berberis glaucocarpa)* and Hawthorn (Crataegus oxyancantha). Pohutukawa has budded up well and in some hot areas - along roads is starting to flower, (it normally flowers around Christmas). This means that we could have a real mix of honeys this year.

Another thing I have noticed is that there have been very few swarms so far this year. Lots of hives superceded early in September due to the warm winter and are now headed by young queens. Normally we would be receiving five or six swarm calls a day however we are only coordinating one call every other day at present. If your conditions are similar to ours, keep an eye on your hives, reverse the brood super and give extra room by adding honey supers ahead of time otherwise all the effort and attention you have put into your hives will have been wasted. Some old timers used to tell me that when you see the white wax covering most of the top bars of a super, its time to put on the next. This is far too late. Once the bees start working a flow, keep them working by either adding supers or extracting the honey when it's almost fully capped.

November is a patchy month and there is often a dearth of nectar to keep the hives going. Some hives around the bush fringes and cities have taken advantage of heavy nectar flows and are brimming with bees and have half filled a super in a week of fine weather. We get strong early flows around the city.

In other areas, bees depend upon ground flower species like Dandelion, Wild Turnip and Buttercup, and hedge species such as Barberry, Hawthorn and Boxthorn. As the Gorse finishes, Broom becomes the predominate pollen source. When all these finish there is little to support the bees before the clover starts. Without care, these hives can quickly starve.

November is also a windy month and it is quite surprising the difference a shelter can make. If your hives are exposed, try providing them with shelter. City hives can be placed behind a runner bean frame. As the beans grow up, the bees are forced higher into the air and are less of a nuisance plus the beans screen the growing hive. Otherwise shelterbelt material forms an ideal protection. Bees will fly during windy days provided they can take off and land out of the wind. For a few extra dollars, you can increase your honey production quite a lot.

When you look inside the hives, new nectar is evident all around and about the brood nest. This looks a lot but in fact when reduced down to 17% moisture, it isn't very much at all. Where possible keep at least three frames of honey in the hive all the time. If the hives have less than this amount and the weather changes, feed sugar syrup. I do not visit my hives on a weekly basis and therefore add two scoops using a 2 kg honey pot of raw sugar to the top feeder as an emergency supply. Add a little water to the edge of the sugar and the bees will soon get the idea to use this as a feed source. If another source is available they will work this instead of the sugar. Raw sugar in fact retards the development of the hive, as it requires so much work to convert. Hence this system is not much good for feeding weak or nucleus hives.

Even in the apiaries that require feeding there is the odd hive that is full of brood and still has a fair amount of stored as well as fresh nectar. These are the bees I like (good over-wintering ability and honey production) and show up under these conditions. Mark your best hives and try raising a few queens from them in January.

I learnt another important lesson the other day. Don't work late into the evening. I have been changing frames, clearing away burr and brace comb and piling this into an empty super on the back of the Ute. Next morning this is transferred to bags ready to melt down. Imagine my surprise when I found a queen sitting amongst this rubbish surrounded by half a dozen bees. Some where out there is a hive without a queen, however she was put to good use and has now replaced a rather old girl who was only just holding her own.

Reminds me of another thing I did wrong the other day. I mark queens as I come across them as an indication of age and sometimes it makes them easier to find. This seasons colour is blue. Shows up well on yellow queens but not well on black queens. Anyway I was marking a queen and a blob of water based poster paint went all over her head and thorax. Now a queen has got to be able to see so I immediately picked her up and washed her in the nearby creek. Most came off but when I put her back on the frame she had come off, the bees attacked her. Either the smell of the water (it was rather swampy) or the fact that I had removed all her pheromones meant she was treated as an intruder. I caged her and after finishing with the other hives released her again but she was immediately balled again so left her in a cage for the bees to release later.

The same happens when breeding queens. Checking a hive within a week of the queen emerging will often result in the queen being balled. You see a bundle of bees on the bottom board. I'm not sure whether this is a defence reaction where the bees are protecting the new queen or whether they realise she is a stranger. I do not take the risk and cage her for her protection.

Supering

New beekeepers may have only frames of foundation to put on a hive. Unless the hive is very strong, the bees will not readily go up into it. Encourage the bees to move up by taking a frame of honey from the outside of the super below and placing it in the middle of the new super. Similar techniques are used to get a lot of frames drawn. Interspace these with drawn combs and the bees will come up into the super quicker.

When the hives get above four supers high put the new super above the third, (under supering). They are build out quicker above the second super, however bees tend to store pollen in the third super after a spell of wet weather so if you want nice clean frames, put your new super above the third box.

Swarms. - What to do with them.

Generally we collect a few swarms that are handy but most are collected in bait hives in each apiary. These generally are from feral colonies being black in colour and only cover three frames. I like to get the queen laying before disturbing the hive.

Two reasons.

1. Sometimes a swarm can contain more than one queen

2. Queens are easier to find once they have started laying and less inclined to fly when disturbed.

If left to their own resources, the swarm will gather enough honey to winter on but will never amount to anything because the queen is old. Order a new queen and when she arrives, give her a drop of water to refresh them. Remove the attendant bees by opening the cage slightly (inside) in front of a closed window. If the queen gets out, she can be easily caught and put back in the cage.

Proceed to the swarm hive and find the queen. Use as little smoke as possible and go gently through the hive. Feral bees tend to run off the edge of the frames and once this has started, the only way to find a queen is to force the bees through a queen excluder. However if you are gentle enough you should find her on a brood frame. As you remove each frame, look down on to the surface of the next frame and quite often you'll see her scampering away from the light. When you have found the old queen, don't take your eyes off her and run her through with the hive tool. I have wasted many hours over the years continually looking over a frame for a lost queen. They are very good at hiding when you especially want to find them.

Place the new queen's cage into the hive, candy plug covered and leave for four days. When opening the hive, observe the behaviour of the bees on the cage. If they are all tightly clustered over the cage assume there is another queen or the bees have begun building queen cells so look through the hive again. Dispatch these and either repeat the exercise in another four days time or if you are confident, release the candy cover and let the bees emerge by eating through the candy plug.

One tip I use when putting cages in hives is to half cover the cage by wrapping tape around it. Research has shown that 60% of queens are damaged by bees chewing at their footpads, antenna, etc, which result in the new queen being superceded. Give the queen somewhere to hide and you'll get less damage and greater acceptance.

There are other safe ways to introduce a new queen. One method is to use a push-in cage. After dispatching the old queen, the queen is released under a wire mesh cage that is pushed into a patch of emerging brood. The young bees will feed her and accept her immediately. Another way is to make a four-frame nuc. Introduce the new queen into it and after a couple of weeks when she is laying, kill the old queen in the swarm hive and unite both colonies together (with the new queen colony on top) by using two single sheets of newspaper.

If you do not want extra hives allow the old queen to start laying, dispatch her and then unite the colony under a weak hive. This will boost its strength and give you a honey crop.

Things to do this month:

Check honey and pollen reserves (early morning is best), BL check, raise queen cells, super hives to give room, swarm control - look for queen cells along the bottom bars of the second brood super (remove some frames and bees or split hives once cells have been started). Cull or move old frames to the outside of the supers. Fit foundation in comb honey frames.

Happy beekeeping

Yearly Output Behaviour In Pumpkin, Using The Honey-Bee (Apis mellifera) As Pollinating Insect

Abstract

In certain areas of the '19th of April' Crop Farm, located in the town of Quivican, in the South of the Havana province, an experiment was developed, during the spring campaign, 1992, with the aim in view to appraise the productivity of the pumpkin crop, using the honey-bee (Apis mellifera) as pollination insect. It was thus established that the bigger the distance between the crops and the hives, the lesser the productivity. the largest activity of bees occurred at about 10am.

Introduction

The pumpkin (Cucurbita moschata) is a monoecious plant, which shows both male and female flowers at the foot of the plant; in order the pollination to take place, the pollen should be translated from the male to the female flowers, which is usually done by the bees (Cuba, Minagri).

The agricultural output of this crop in the late years in Cuba is very low. The causes are various, that provoked this situation, among them being mentioned the low effectives of bees in the fields, on account of the deforestation and the use of pesticides.

The present work was carried on with the object of observing the influence of bees, as pollinating agents, on the pumpkin outcome.

Materials and methods

The experiment was carried on in several areas at the '19th of April' Crop Farm, in the city of Quivican, in the summer of 1992, where, during a week, 80ha of pumpkin were sowed, of the RG variety, and the area was divided into eight lots. At one end of the field, a hive with about 50,000 bees was located, and, starting from the hive, 12 separate lots were established, each at 100m from the hive, except the first that was at only 60m from the hive; each lot had an area of 36sqm, and the output was measured in each.

At 60m from the hive the number of bee visits on the flowers was observed during 25 days, from 0600 am to 12.090 hrs, and the same observations were made every half an hour, during 10 minutes each; there were also carried on observations on the flowering of this species.

Results and discussion

A gradual diminution of the output is noticed (Figure 1), as the distance from the hive is increasing, and that is why the bees' activity is lesser at the most far away distance from the hive, thus putting forth buds is lesser, and the fruits are smaller. GIACONI (1993) stressed that, if the pollination is not adequate, the yield is smaller and of low quality. The small output increase that is noticed in the most far away lots could be due to the fact that the total area of the experiment was formed by various lots, one which equal managing was attempted, but it was obvious this could not be achieved, and the crop had different development conditions.

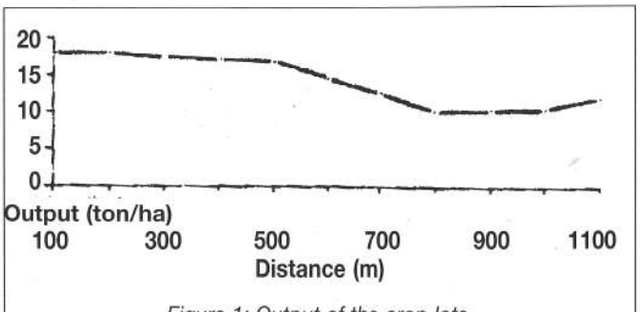


Figure 1: Output of the crop lots, according to the distance from the hive

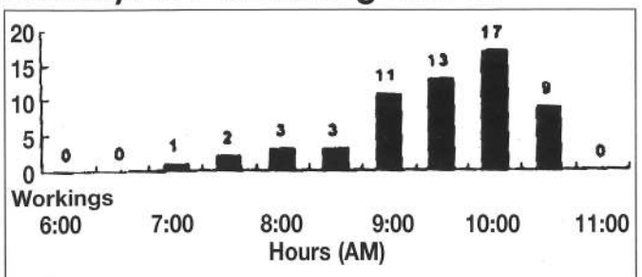


Figure 2: Workings of bees on the male flowers

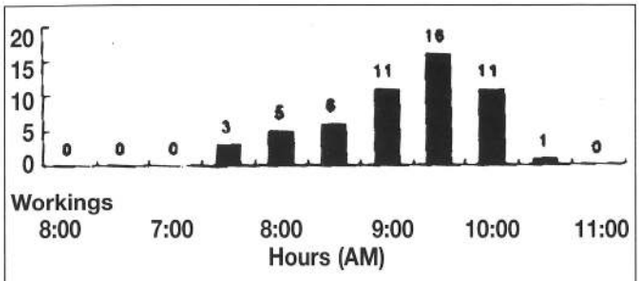


Figure 3: Working of bees on the female flowers

The pumpkin flowers open one hour before the sunrise and begin closing at about 10.30am, ending it at about 11.00am; in the windless days they can remain open up to the afternoon, but there is no bee activity on them. The flowers of the species don't open again after closing.

The bee activity on the male and female flowers show the same trend; the bees start workign the flowers at about 7.00am and end at about 10.30am; the most workings are carried on between 9.30 and 10.00am (Figures 2 and 3); after 10.30am there are not more pllen grains on the anthers of the male flowers. Guenkow (1974) relates the pollination is best achieved in the morning hours, and, according to our observations, it occurs only in there hours. In the technical instructions of the crop, there is recommended to effect the phytosanitary products applications during the flowers period, starting with 12.00 hrs, to avoid damaging the bees; our observations confirm as proper there proceedings. As a precaution, it would be convenient to extend the horary up to 4.00pm. Jean (1989) states the phytological preparactions should be applied one hour before sunset.

In sunny days the bee's workings on the female flowers are 16, and on the male flowers - 185; if the flowers are hidden below the leaves, they are much less visited by bees, which is confirmed by Guenkow (1974) and Santi (1991), who maintain the bees reach very few of the flowers that are hidden behind the leaves; also, when there is cloudy weather, the number of workings on the flowers if smaller, the average being 42 workings on the female flowers, and 18 workings on the male ones. When days are sunny and windless, the number of workings is over 220, and when there are clouds and wind, the bees do not work the flowers.

Conclusions:

1. The largest bee activity on the pumpkin flowers is carried on from 9.00 to 10.00hrs am.
2. The pumpkin flowers open only during one day.
3. The number of bees workigns is bigger on sunny days than on cloudy ones.
4. There is a marked relationship between the productivity and the vicinity of apiaries.

JC Hernadez Salgado
Yasi Lemu Isla
Cuba

No evidence for parasitoid controlling wasps

An article in the September issue of *The New Zealand BeeKeeper* suggested that parasitoids introduced to control wasps could be responsible for their current low numbers. As evidence for this, the article cited some of our work (AgResearch and Landcare Research; Barlow et al. 1998) showing that the parasitoid is capable of increasing about 1.3-fold per year locally. Combining this with a simultaneous increase in its range gives an increase in total numbers of around 3-fold per year. Unfortunately, the article appeared to confuse the two figures. In essence, the 3-fold increase is irrelevant because it simply means that the parasitoid is spreading out, like a puddle growing 3-fold in size every minute from a dripping tap. This does not mean that the depth of water in the puddle under the tap is increasing 3-fold each minute. And it is this that is important for wasp control. No matter how fast the parasitoid spreads, it is the level it can reach in any one place that matters. In practice this level is extremely low - around 6 - 10% of wasp nests parasitised (Beggs, unpublished data; Barlow et al. 1998) - with no evidence of an upward trend and certainly no reason to suppose that it will triple each year up to 90% as the article suggests. Nor is the outward spread of the parasitoid likely to be maintained for long, because of geographical barriers or lack of habitat. So there is also no reason to believe that the 3-fold increase due to the parasitoid's spread between 1988 and 1993 will translate to 70 million nests attacked in the year 2000!

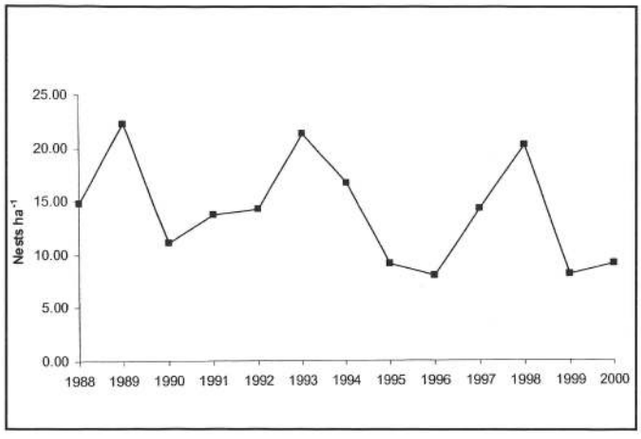
Furthermore, there is no evidence of any parasitoids in the North Island, in spite of wasp collapses there as well and in spite of some thorough searches of nests. The article suggested that parasitoids may be causing unnoticed damage to very small spring nests, but this is highly unlikely. If they were there at all, one would expect the parasitoids to be found infesting other nests later in the year when searches are conducted, as they are at Pelorus Bridge.

It is true that wasp numbers were low this year (1999/2000), as they were last year (1998/1999). But contrary to the article's suggestion, they have been low before. In the beech forests of the northwest South Island, the only place where wasp densities have been systematically and scientifically monitored, numbers were as low in 1995 and 1996 as in 1999/2000, while the intervening years had high numbers (Fig. 1). So if the parasitoid (which only affects a small proportion of nests) somehow caused the low levels in 1995 and 1996, what was it doing in 1997 and 1998 when wasps were as abundant as they have ever been?

It seems, rather, that wasps vary widely in numbers from year to year and there is even a statistically highly significant cycle in their abundance (Fig. 1). So we should expect numbers to increase again. In terms of the parasitoid, not only is a significant impact highly implausible given what we know about its behaviour and that of the wasps, and what we have seen of its performance so far, but there are other explanations for changes in wasp abundance which are more likely and which account for the increases as well as decreases in numbers. An analysis done on the wasp population data of Fig. 1 suggests that two main factors are responsible: self-regulation of some kind; and spring rainfall. Both of these are statistically highly significant determinants of wasp abundance. They are also biologically reasonable explanations.

Although the effect is clear, the mechanisms of self-regulation are less so. One possibility is that when nest densities are high one year, there are more queens the next spring so they meet and fight more often. Their quality (weight) may also be lower, which reduces their survival over winter and possibly their ability to compete in spring.

Figure 1. Changes in wasp numbers averaged over 6 sites in beech forests, NW South Island. If the parasitoid is causing low numbers in 1999/2000, what caused them in 1995/1996? If this was also due to the parasitoid, what was it doing in 1997/1998? The best explanation for changes in numbers is spring rainfall and self-regulation (competition). The parasitoid was released in 1987 and 1988.



Rainfall is an obvious constraint to queens' ability to forage in spring, and they are extremely vulnerable at this time because the workload is so high; single-handedly, they have to raise larvae, forage and construct the nest. The synchrony in low wasp numbers over much of the country at the moment can be attributed partly to synchrony in rainfall (for example, variations in spring rainfall at Lake Rotoiti (St Arnaud) are strongly correlated with those in Warkworth, Auckland and the West Coast) and partly to the negative effect of previous high wasp densities.

As for the apparent regular cycle in wasp numbers, this is less easily explained. Wasps need protein food as well as carbohydrates, and it may be that in years of high abundance they severely deplete their invertebrate food sources. These may then take several years to build up again, during which time the wasps may decline through lack of sufficient protein food. This would represent a classical predator-prey cycle, but the idea remains to be tested.

Introducing the parasitoid was a good bet for biological control, but on average only about 10% of such introductions work, in the sense that they give consistent, high suppression of the target pests. So it is not altogether surprising that this one appears not to have worked; at least, there is no evidence that it has and substantial evidence that it hasn't. Where does this leave us for wasp control? In terms of biological control, other parasitoid strains have been released by Landcare Research and by Barry Donovan, which may prove to be more effective than S. vesparum vesparum, while AgResearch and Landcare Research are working together to investigate possible pathogens. In the meantime, Landcare Research has developed baits which work well on a local scale and have been successfully used to protect the Department of Conservation's 300 ha 'mainland island' at St Arnaud from wasp attack.

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ND Barlow, AgResearch, PO Box 60, Lincoln

From the Taranaki Amateur Beekeepers Club's newsletter

Around the Apiary:

With the weather still very unsettled it is an anxious time for beekeepers especially if you are running old queens or your hives are rural. There are plenty of nectar sources out there but the weather has been either very windy or wet so the bees have had very little 'flying time' in the last month. This has meant as the hives are about a month earlier in development because of the mild winter there are lots of bees in the hive to feed and not so many field bees to forage. This has led to a lack of feed and even in traditionally good areas and in healthy hives that have wintered well.

If you have not done so you should check all your hives for stores as hives can starve in 48 hours if they run out of feed.

If you need to feed, heavy syrup (about 3:1) is probably the most convenient and easily used by the bees but you could try dry white sugar in a top feeder or swap some comb honey if you are absolutely certain there is not disease.

Certainly at this time you should have done your spring cleaning so that you have a good knowledge of how your hives are going, checked for disease and are well prepared for the next event - supering up.

Thankfully of late we have had a spell of better weather that will allow the bees to fly and augment their supply of honey.

Another important aspect is to make certain that your hive is dry. With so many bees crowded into the hive there is every possibility that it will be 'sweating' so make certain you ventilate the roof.

Next field day:

Date: Saturday, 18th November.
Time: 1.00-4.00
Venue: Ken Finer's Apiary at top of Burgess Park Hill. (See honey for sale sign)
Topic: Supering up, pollen collection, update on varroa.
Please note this day takes the place of the one scheduled for Sunday, 29th October.

Queen rearing:

Some hobbists might like to have a go at raising their own queens. The club will arrange a date in Autumn when those interested might like to join with Lester to find out how it is done.

How to be Totally Embarrassed without even trying!!

Being an amateur beekeeper with a full time job I find that I have to confine most of my beekeeping to the weekends in spite of the weather. Not an easy thing to do when one is running over 50 hives. I was grateful for the offer from Paddy Fox to give me a hand last weekend to finish off my spring cleaning and install my new pollen traps. Paddy is a very experienced methodical beekeeper so I had the opportunity of learning as well as a welcome pair of hands.

The first apiary was no problem, the sun shone, the bees were quiet and apart from needing feeding and showing the need for some requeening I thought my hives showed I had some knowledge.

On the way to the next apiary I explained to Paddy how this apiary had been totally requeened in March of this year so should be in good order except for one hive where I had forgotten to remove the plastic tab and the new queen had died and the hive was now queenless as I always killed of the old queen. The other hives appeared to be OK when I had done a couple of quick checks in the winter. Yes the hives were bustling. There were lots of bees and plenty of brood.

You can imagine my embarrassment when Paddy showed me that I had in fact not removed any of the tabs!! Would you believe that in the two of the hives that bees had not only requeened themselves but kept the introduced queen alive by feeding her in the cage for seven months!!

I quess I can count myself lucky that I did not lose all the hives; but I am beginning to seriously doubt my ability and intelligence!

Branch Notes from the South Canterbury Branch

Three weeks of cold wet weather started the season in South Canterbury, making it the wettest Spring in years. Conditions were so boggy, that several businesses have invested in four-wheeled motor bikes to enable them to do some early feeding of hives, as you dare not venture off farm driveways. Thankfully, it has dried out now, and we are experiencing a normal Spring, with hives in good condition.

The outbreak of Varroa in the North Island has created a resurgence of interest at our branch meetings. It's very pleasing as at one stage the branch was very close to going into recession. We realise we need to be united in our approach to Varroa if an outbreak occurs, and are not prepared to accept the 'lets live with it' attitude that some branches have taken. We are unanimously for eradicating Varroa if it arrives in the South Island.

Peter Smyth.

Varroa and Then

lust starts to settle, it is probably time for reflection on : and the future and find a renewed positive direction to unite and to cope with our common enemy: Varroa. ; so much to do and to learn about varroa that the g in our industry (organisation) only aggravates the ı. To be able to do this I think first we have to be able ɜss views without too much finger pointing. I will try to how I saw and see the issues.

ave heard the figures about the value of bees to this when debating what to do about the varroa incursion. ɜs are varying from probably one to three billion dollars This is where bees are instrumental by pollination for ɜperity of industries, such as horticulture and farming ing clover pollination.

l value of bees to the beekeeping industry is something lifferent. A minor part only of the total turnover of the ɔing Industry's $50M is actually derived from pollination ıich are probably around 20% of the total. The major ıe Beekeeping Industry's turnover is from honey, which ɜlated to the one to three billion dollar value to the

ıstry's prosperity, including the individual beekeeper's, ɔends on the $50M the industry turns over, not on the ue of bees to the country at all.

ɔes this mean? If an incursion, like the varroa incursion, :he priority has to be to protect the industry's turnover, ɜ that is where the individuals (NBA Members) get their ity from. In turn that means that the ideal representative ɔr the industry will do anything to safeguard their rs income, by conducting proper risk analysis, using lentiful overseas expertise on varroa, in order to control the economic damage to the Beekeeping Industry and come to a decision based on true figures. An industry can only be protected by protecting its turnover and that can only be expressed in figures. The worst could happen if the industry's turnover was made to shrink while expenditure are certain to go up.

When, before the decision on to eradicate or not, proper risk analysis had been prepared for the whole of the Beekeeping Industry on the North Island, figures would have shown how our Industry's turnover would be affected under the eradication or under the control option and accordingly recommendations to cabinet would have been made. Again I say the value of bees to the country has not anything to do with the Beekeeping Industry's prosperity, when it comes to decision making. The added value from bees to the country only encourage other organisations wanting to help push our course and a willingness from government to listen and help.

Therefore in my view the NBA Executive body, in order to represent the members, should have only concentrated in their decision making on 'how to protect the members' prosperity' by putting the economics of the members first.

I am not aware that any of the above has happened and therefore I really think that the membership was poorly represented. I even go further to say that I was not aware of any representation along the lines described above.

Also with the movement controls on the North Island there seems plenty of emotion but lack of economics. Putting pressure on people so these people face severe cuts in turnovers does not any good to the overall economic picture and flies in the face of any equity.

Why does this all happen. Well, in my view it happened because our NBA's structure allows it to happen. A lot of talk has been about structural changes to our organisation, but nothing so far has been done about it. Bay of Plenty had its proposal a few years back, but that was not taken seriously. In my view and not only mine, time is ticking away to attempt to salvage our organisation. If I believe what I hear then there is not much time left for changes. For myself, I have come to believe that, with respect to the varroa incursion, a structure like the Australian Honey Bee Industry Council, based on representation from industry codes, like honey producers, honey packers, pollinators, queen breeders etc. would have worked a lot better where each industry code would have assessed for themselves what the best economic outcome would have been for the decision to make.

As we have talked so often about structural changes to our organisation, I think now is the time to make these changes and I am sad to hear that the committee starting on this work is only to be operational some time next year. I think there is no time to lose or can't change come from within. As I understand change in Australia was not achieved from within their organisation and I wonder if people within the NBA are really committed to change, then it certainly would get high priority.

So far about the issue on the varroa incursion itself. Sadly there is another incursion in our industry which is probably more damaging than varroa itself and affects the people.

This incursion is called 'Lack of Sense of Reality and Direction'.

The reality is that varroa is here and we have to equip ourselves to live with it.

The whole world copes with varroa and does it well, which we all know is reflected in the price of honey.

It is incredible that figures quoted by local people, no experts on varroa, are adopted as the standard for control of varroa and put fear into people which is worse in my view than varroa itself. That does not give any positive direction to our industry at all.

What happened to the good old positive 'kiwi ingenuity' attitude or is it because varroa does not fall in the 'No 8 wire category' that we are scared stiff and do not spend anything any more in order to survive. At least that is what I hear from Beekeeping Equipment Suppliers, who in turn have hard times and could be lost.

Well aren't we in trouble.

Claims that varroa is breeding in New Zealand much faster than overseas is nonsense and not based on any evidence. Yes we have a long breeding season but so have lots of overseas countries coping with varroa. It means all the information is out there but we seemingly do not want to hear about it. You even can make your own calculations on how varroa can build up in your hives. Why are we more inclined to believe locally initiated gossip of fear which prevent people from to get on planning the future with varroa. Do you run your business based on a worst case scenario year after year? I don't think so. It should be based on real expectations. And I can assure you that not all beekeepers overseas pay $40 to $50 per hive per year for varroa control. Some could do but others pay as little as $5 or even lower. A lot depends on skills and ingenuity.

What direction to take. First our organisation should relay far more positiveness to the membership, because our organisation should recognise that only a positive attitude will help us to prosper. On Branch and individual level it is most important to realise that there is no shame in getting varroa in your hives, because in future every beekeeper will have varroa in each of his/her hives. This means we are all in the same boat and anybody can be open about it. Is there a better concept of getting together in discussion groups, meetings, fielddays etc. with such a common goal.

All I can say is that a negative attitude won't help our future's prosperity. Yes varroa is a new challenge but the world has proven convincingly that it can be overcome and beekeeping still can be profitable. There is plenty proof of that and all the information is available but we have to show the willingness to open up to that challenge and get away from our island mentality. In that sense, varroa has made us part of the bigger world and that is where we can find a lot of answers about how to cope with varroa.

Gerrit Hyink,
Bay of Plenty

Honey Marketing

by Bill Floyd

There is an ancient Chinese saying, "may you live in interesting times". Well, apparently it's Chinese. Anyway: the interesting times referred to are not meant to be enjoyed by the recipient.

And, yes, some beekeepers are living in 'interesting times'. I say some, because I know that there are also some very profitable beekeeping operations in New Zealand.

It is certainly a time to review your business operations if it's getting too "interesting" out there. But if you have the basics of your beekeeping right: if you're producing a good product efficiently and its just not selling, then, as I've said before: It's time to get together with other similar beekeepers.

I always remember the plethora of dairy factories that used to be around New Zealand: so much duplication, so much wasted energy...and so much skill spread so thinly. Then the factories amalgamated and pooled resources: and they've never looked back. Producers amalgamating and combining resources and skills: has to be the way ahead for this industry as well. Otherwise some hard nosed packers will just pick you off.

And if you hear about a honey sale going through at a lower price than you wanted, remember two things: this is a free-market. And a soft-seller can sell for whatever price he gets offered and is soft enough to take (that's his problem!)...you aren't bound by it. But if you want more, you have to think strategically, you have to plan as a business: and these days that means being more than a beekeeper.

Is honey good for you: time to fight the good fight!

In this month's *BeeKeeper* we've reprinted the NBA's submission to the Australia New Zealand Food Authority on their review of Health Labelling on Foods. We've taken a fairly aggressive stance: but it's certainly warranted!

Like most people, I've fallen into the trap of saying that New Zealanders themselves can't eat any more honey: we have to export to grow.

And I do believe that exports are the key: but there's still plenty of scope in the local market. At the Ashburton NBA Conference Ian Berry remarked how New Zealanders "ate 2kg of honey a year, and that was good, as honey goes. But they also ate 100kgs of sugar a year each. So there's still some room for honey to grow" I've not forgotten that, Ian.

Try this little logic: four million people in New Zealand: two million have three cups of tea or coffee each day: if on average there is one teaspoon of sugar in each drink (some more, some less) that's 10,950 tonnes of sugar eaten in hot drinks alone, each year. Now: if 5% of them said "hey...honey is better for my health...or...honey is better for energy before or after sport...or...honey adds a beautiful flavour...or...honey makes skim milk taste creamier and more luscious in lattes and hot chocs...or...etc etc"...then that's another 547 tonnes of honey eaten by New Zealanders each year.

AND: this is the bit I like (and sorry North Island): I think that a good pure white light honey will be the preferred honey type (come on in clover...and the likes of vipers or nodding).

(Don't even think about the result if 15% make the 3C's (clover-carbo change-up): well, in case you do want to: that's another 1,641 tonnes consumption...on top of existing honey sales...clearly it will pay for the strategy not to be too successful!)

So read the NBA's Submission and look forward to some pretty heavy discussions as we try to rest some business from sugar: and because its in the consumers best interest to switch, its fun to do it!

Ten years ago, at Conference in Christchurch, I gave my first presentation to the honey industry. As part of that I held up a drawing of a cute honeybee...and a giant cutout drawing of a menacing sugarcane toad...and said "let's do war"...and here we are!

We've got science on our side: they got huge resources: (but there are times when the Sopwith camel can beat the jet: you just gotta choose the battleground): gonna be interesting!

Who Owns Honey Research

Also in this month's *BeeKeeper* is an article by Professor Molan on honey research. Most of you will not be aware: but every now and then Peter (and his wife Alyson), get told off by some beekeepers, actually usually honey brands not producers, for not doing enough for them personally, or for helping someone else who's showing initiative.

Peter and Alyson know those selfish attitudes are not the industry norm: but Peter has set out exactly how the relationship between the University (and Peter) and the industry is and has to be.

We owe Peter (and Alyson) a huge debt: its sad that some foolish people don't see that.

And my favourite honey this month: again served wet, as per last month!

And this time an absolutely delicious Ginger Beer. Sandee and I had stopped at Kaikoura's best café (Hislops; great honey too!) and I ordered a Phoenix Ginger Beer. Wow...simply terrific.

And the ingredients: Pure water, honey, conc lemon juice, yeast.

Where's the sugar I thought. None! And on the front label, the lovely words: "Sweetened with Honey'. And I reckon the honey makes a difference: adds real body and complexity to the drink. And not too sweet. A great summer refresher: should be in every honeylovers pantry.

That's all from me. (Shorter column because of the other Marketing items this month).

Sandee Floyd Reviews the Honeys of a new Foodie Book-

Mavis Airey is best known for her food writing column in the Christchurch Press. She has just launched her new book, a guide to South Island Food & Wine called "Savour the South".

It should be in all book stores now.

I'm delighted to see that regional honeys have a good profile in the book.

Innovative Mountain Valley Honey from the Nelson region is profiled for it's organic manuka honey, honeydew and blends. Katherine Flanigan takes the opportunity in the book to explain the quality issues of manuka production; how pollen analysis and varietal integrity is important and so are careful extraction techniques, to achieve a top-class health-giving manuka honey.

In Canterbury, chef Michael Lee Richards (North & South magazine foodwriter) showcases the region with a recipe for Canterbury Duck with Cardamon, Honey & Brandied Raisins.

Havill's Mazer Mead Company is profiled well, Leon Havill reminds us all of Mead's naughty but nice legendary values.

And Airborne Honey has an amazing two pages of coverage with a half-page full colour photo of their varietal honeys. (I think Richard must have just kept on talking!) Richard also discusses the issues of floral integrity and explains how their honeys are true to type: his arguments make good reading and I'm sure will be interesting to the average lay-person.

The section on Airborne includes a superb recipe using honey: Cervena with Cracked Pepper, Vipers Bugloss Honey and Balsamic Vinegar. I'll be trying it this summer: seems divine. The recipe is by Christophe Debroas from the Victor and Claudia restaurant in Christchurch.

North Canterbury's Bruce and Jenny McClusker are in the book for their ostrich farming with only a passing reference to beekeeping; which is a pity, they make a nice manuka up in those hills.

Rae Blair from The Runny Honey Company is the star of the Central South Island, (Rae tells about her love affairs with dandelion and buckwheat honeys, well dandelion anyway!) and the section on Symes Apiaries gives a good explanation of that budding Cinderella health honey, our Beech honeydews.

The three generation of Glasson's are a feature of the West Coast's foodie industry. And John Glasson gives a delightfully cryptic explanation of standards and market demand and how his Rata Kamahi blend developed.

On to Dunedin and the book's beekeeping stars are Allen and Marie McCaw from Milburn Apiaries and the comb honey of Southern Honey Exports: a tourist's delight.

And the journey south is capped off with the Stewart Island organic bush honey of Helen and James Bissland. Possibly the most southern beekeepers in the world!

A very interesting book: and ideal for anyone taking a holiday in the South Island. We can only take so much bungy jumping or white water rafting or casinos or even winery tours, and after that its nice to have some real local food experiences to visit: and the book does a great job of providing those.

Only serious omission? Some Marlborough honey houses: Bushes and Vercoe come immediately to mind...lovely regional honeys! And I'm sure there are other superb honeyhouses: but they can't all fit in.

Bill and I are starting on developing a website for the New Zealand Honey Advisory Service. The book has spurred me to think we should create a New Zealand honey trail on it. Will let you know.

I've copied the book's recipe by Michael Lee Richards for brandied raisins below: this is quite easy, and I've a feeling they will be very handy as gifts from the kitchen for Christmas.

Some enterprising beekeepers might try a jar or two in their honey house shops. See how they go! If anyone experiments with other fruits let me know how it goes: and we'll publish the recipes in the *BeeKeeper.*

Brandied Raisins-

700g raisins
400ml water
3 1/2 nips of brandy
1/4 cup mild honey (Bill said to say Clover.)

Heat raisins in water until plump. Drain raisins and add to brandy. Place in two screw top jars. Heat liquid from raisins with the honey and reduce to one cup liquid. Pour equally over raisins and refrigerate.

Innovative Honey Company achieves double award.

Innovative Honey retailing company, BeesOnline, has been awarded two separate awards, a Gold Medal for Culinary Excellence and Innovation and an Innovation Award for packaging, for its unique honey products in its first year of commercial production.

BeesOnline, run by beekeeper Rikki Robins and Maureen Maxwell, a former chef with a winery background, is based at Waimauku on Auckland's West Coast with its hives based from Auckland's West Harbour to South Head and the Kaukapakapa districts.

The Gold Medal awarded at the National Beekeepers' Conference in Gisborne to BeesOnline, was for "Culinary Excellence and Innovation" in relation to its Honeygar and Syrup products. Honeygar is a combination of naturally fermented wine vinegar blended with pure New Zealand honey. It is produced by BeesOnline as a White Wine and Clover Honeygar, and a Red Wine and Manuka Honeygar using barrel aged vinegar which is almost balsamic in character, and which can be splashed over salads, or drizzled over shellfish.

The second award was the Innovation Award given by the New Zealand Institute of Packaging at Packtech 2000, for BeesOnline's innovative approach with its products and packaging. The Award recognised the unique packaging aspect of BeesOnline's Italian stacker bottle with three bottles containing herbed olive oil, honeygar and gourmet peppercorns with pepper-grinder lid presented in a specially made wooden box.

"It's very rewarding seeing our products win such awards," says BeesOnline's Maureen Maxwell. "We've put a lot of effort into ensuing our packaging is unique and that the honeys we produce are minimally filtered and not heat-treated so they retain the maximum flavour and nutritional value. We source our honeys wherever possible from organic GE free sites, and we use organic beekeeping practices."

Maureen Maxwell is also excited about the potential of other BeesOnline products being developed particularly their Honey Syrup. This syrup, with vanilla and citrus overtones, is marketed in an elegant free-pour bottle so it can be easily used by chefs, bartenders and baristas with teas, coffees, smoothies, cocktails and particularly desserts such as crepes, waffles, French toast or fresh fruit platters. It's also available in a one litre catering pack.

Its introduction at the National Hospitality Show 2000 has been a huge success, she says, resulting in it being stocked by selected food retailers, as well as being available through BeesOnline's website.

For further comment: Maureen Maxwell, Bees Online phone: (09) 411-7953 or 021 956-349.

The value of research

There have been various murmurings of dissatisfaction in the NBA Executive about the value of the research funded by the Honey Industry Trust, and the failure of the NBA to make a profit from this research. To help people unfamiliar with scientific research form an opinion on this issue I have put together some relevant points for consideration. Some examples of what has come out of the honey research carried out at the University of Waikato are included by way of illustration.

Research creates opportunities

All scientific research may turn up opportunities for businesses to develop new products. This is especially so with applied research, but even pure research can lead to discoveries that can be developed into commercial products, for example the discovery of semiconductors that became the foundation of the electronics industry. For this reason most large companies run their own research laboratories, to find ideas for new products. Smaller companies often collectively fund industry research laboratories, such as the Meat Industry Research Institute or the Dairy Research Institute. Others contract out specific research projects to research laboratories.

Some may recall the display I put up at the NBA Annual Conference in Wanganui in 1996 showing examples of opportunities for new products made from antibacterial honey: throat lozenges made from freeze-dried honey, Band-aids with honey-impregnated pads, an antiseptic honey skin cream, toffee made from honey without heating so that its activity will protect dental health. A longer list was published a few years ago in the *New Zealand BeeKeeper*: medication for diarrhoea (human and veterinary), sports drink, eye drops or eye ointment, ointment for treatment and prevention of cracked nipples (human and veterinary medicine), ointment for treatment and prevention of nappy rash, lip salve, skin cream to treat sunburn, preservative for meat and meat products, preservative to extend the shelf life of yoghurt. Since then there have been other ideas floated: treatment for tineas (such as athlete's foot), treatment for fly strike in sheep, treatment for mastitis in cows and goats, a sports gel (for energy), freeze-dried varietal honeys as confectionery for enjoyment and as a "sampler" for varietal flavours, freeze-dried honey with whiskey added to restore fluidity (good as a filling for chocolates), use of honey instead of sugar in baked goods to prevent the formation of lipid peroxides which give rise to harmful free radicals. Then there are the opportunities which have been taken up and are being marketed: manuka honey for stomach ulcers, and highly antibacterial honey for infected wounds (but only manuka honey is being marketed so far). Some of these opportunities have arisen from research that has demonstrated potential for effectiveness, others are "inventions" (see below) that have come to mind through the constant thinking about honey that comes from being involved in research on honey.

Research develops expertise

Another reason that most large companies run their own research laboratories is so that they have experts on hand to advise on issues and deal with problems that arise from time to time in their business. Government research laboratories serve a similar function for national issues. Researchers working in a particular field develop an awareness of what is known in that field, and can thus suggest the wisest course of action to be taken when a new issue arises.

An example of this is large number of people in New Zealand selling honey and honey products who have taken direct advantage of the expertise in honey that I have developed from years of research in the field. This has ranged from supplying information to be used on labels and in promotional literature and displays, checking over labels and promotional literature before it is printed, answering queries from retail customers and importers, meeting with importers to educate them about properties of New Zealand honeys, providing advice on technical issues in the development of new products, providing advice on keeping within regulations governing sale of honey, advising AMHIG on the use of the UMF rating system, advising on sampling procedures for quality control, "trouble-shooting" when there are anomalies in testing results, advising on problems with pollen content failing to comply with the standards of importing countries, advising on problems with sucrose content failing to comply with the standards of importing countries, advising on problems with benzoate content failing to comply with the standards of importing countries, advising on problems with phenol content failing to comply with the standards of importing countries.

Literature research and experimentation

Research is not just experimentation - it also involves investigating what has already been published. With there being thousands of science and medicine journals, most of these with a new issue coming out each month, this is a major exercise even using computer databases. As well as being a necessary first step before embarking on new experimental investigations (to avoid wasting resources "re-inventing the wheel"), it can lead to discoveries that can give ideas for new business opportunities. Some examples of such opportunities that have come from findings in literature research are: honey to improve the uptake of calcium from the diet, honey to provide a better uptake of sugar for athletic performance, and the wealth of evidence for the effectiveness of honey as a wound dressing.

The need for publication of findings

Whether the discoveries are from literature research or experimentation, they are only of academic value unless the information is passed on to others. The research may be kept confidential so that a new product can be developed without anyone else knowing. But for there to be demand for the product, the evidence from the research still has to made widely known. Informing the general public can be by way of highly expensive advertising campaigns, or it can be by way of publication in widely read journals, public lectures, and by getting coverage in the news media. The other approach sometimes used is person-to-person transfer of information when selling by hawking or its modern-day equivalent, selling on the internet.

A good illustration is the comparison between manuka oil and manuka honey, both of which, if from the right sites, can have a similar high potency of antibacterial activity. Research was done some years ago that established the antibacterial properties of manuka oil, but this was privately funded and kept confidential, whereas the research on manuka honey was published in respected journals and widely publicised. The demand, and consequently the increase in price, for manuka honey has illustrated the value of the evidence of effectiveness being know. But if someone was trying to sell manuka oil, with no evidence other than an assertion from the vendor then they may just as well be trying to sell snake oil.

Another example of the value of getting information out to the public is the higher price that UMF-rated manuka honey is fetching. The demand for this has come from the public becoming aware of its special properties thorough mention of this in papers published in medical journals and interviews with the news media.

A list of articles published in professional journals and in magazines from the Honey Research Unit is available on the website http://honey.bio.waikato.ac.nz for anyone to see who is interested. This website also contains a large amount of information to educate the public about the potential of honey as a medicine. The creation of this website is but one of the many ways used to make the public aware of the findings from research on honey - see the 'box' in this article for a list of the interviews given to the news media and lectures given to various groups. Then there is also the personal correspondence

with the several members of the public and health professionals who write or phone each day seeking information on honey to help with their various medical problems.

Ownership of findings

Exclusive knowledge of research findings is potentially profitable if from it comes something that nobody else could sell, like a substance or object that could be made in only one way, and if a patent was held on the manufacturing process. But the patent is of no value if it is for a new use of a substance or object that could be obtained from other sources. Say for example that research proved that honey is an effective cure for baldness. (It isn't - I've tried it.) This could be patented as an invention, but it would be the new use for honey that was the invention. Although the holder of the patent could possibly stop others from marketing honey as a cure for baldness, nothing could be done to stop others from selling honey as a food, or to stop the purchasers using it to treat their baldness.

A patent gives exclusive rights to the use of an invention, but a patent will not be granted for something that is already public knowledge. So any research proving the effectiveness of something previously in use, eg honey as a wound treatment, or bee venom to treat arthritis, is of no value exclusively to the person doing the research. But the research finding is of great potential value to everyone producing or selling that substance - if it is publicised.

Occasionally research leads to the development of a product that can be patented, and then this "intellectual property" (IP) becomes of potential value to its owner. (But it is potential value - bear in mind that most patents do not lead to products on the market.) Where the researcher is an employee making the "invention" in the course of the employment then under common law it is the employer who owns the IP, unless the employer has an agreement otherwise. Frequently research is funded from outside research organisations, and as part of such contracts there is prior agreement about ownership of IP. The usual agreement that universities enter into is that where IP is to be owned by the funder of the research then the full costs of the research (including all overheads) are charged to the funder (ie it is a contract to provide research as a service).

The difference between research and invention

Usually it is not the discoveries from research work that are patented, but the inventions that arise from the ideas that the research findings stimulate. However, applied research at the level of product development is often an important part of the pathway to a patent. Where an invention is the result of an idea, and does not come from the use of the facilities and time of the employer, then the IP is the property of the researcher.

Some examples of inventions that are not the result of research but arose just from ideas are freeze-dried honey for throat lozenges and toffees, freeze-dried honey with whiskey, and various forms of honey wound dressings. Examples of products resulting from applied research on their development are the forms of honey confectionery developed in partnership between the University of Waikato and Bee & Herbal Ltd. (funded by Technology New Zealand). The research providing the evidence that will aid anyone marketing honey products for the treatment of sore throats and as confectionery that is safe for dental health, funded from government sources, is available to anyone.

The cost of research

Scientific research is a very expensive investment. Research grants and research contracts are typically of the order of a million dollars. For each research student at a university the New Zealand government allocates around $23,000, and the universities supplement that with student fees (about $5,000 per student) and income generated from other sources such as charges for services.

Where research is provides as a service, the findings to be owned by the organisation contracting a university to carry out the research, universities charge the full cost of the research.

The $20,000 per year that the Honey Industry Trust has been contributing to the Honey Research Unit at the University of Waikato for the past four years equates to providing a scholarship for one research student in support of the student's living costs. The cost of the research carried out by that student comes from the university's funding, the university receiving this funding from the government for its chartered function of advancing public knowledge. All other possible sources of research funding for the Honey Research Unit are followed up, and it is through this that it has been possible to carry out the large amount of research that has been done.

Profiting from research

Those who profit from research are those who develop and market new products or develop new markets for existing products. Where manufactured goods are involved there can be a monopoly in at least a niche of the market, but where it is a natural product all producers stand to profit. The ones who stand to profit most are those who take up the market opportunities. Even those who do not want to get involved in developing ideas into products and investing in marketing still stand to benefit from the increased demand for honey that results from new markets being opened up. But for sales to increase it still needs someone to do the marketing, whether it is of new products or existing products for new uses or benefits.

Research creates the opportunities - profit comes from taking the opportunities created.

How the information from honey research has been passed on to the public

Lectures on honey

For Continuing Education groups for the University of Waikato: in Science Nights series (1990), Over-Sixties Group in Matamata (1991), Over-Sixties Group in Waihi (1991), Over-Sixties Group in Whangamata (1991), Over-Sixties Group in Hamilton (1991), Over-Sixties Group in Taupo (1991), *Science Nights* series at Gisborne (1993), Over-Sixties Group in Hamilton (1997), in "Science Research and Natural Medicine" programme in Hamilton (1998), Over-Fifties Group in Waihi (1999), Over-Fifties Group in Whangamata (1999), Over-Fifties Group in Te Aroha (1999)

For National Beekeepers' Association meetings:
Waikato Branch (1989), Bay of Plenty Branch (1991), Annual Conference (1992), Bay of Plenty Branch (1993), Annual Conference (1996), Waikato Branch (1996), Auckland Branch (1997), Bay of Plenty Branch (1998), Bay of Plenty Branch (1999), Waikato Branch (1999), Waikato Branch (2000).

For meetings of other associations:
Health Leadership Seminar organised by Healers for Peace (1989), annual meeting of the Health and Healers Association (1990), Eisenhower Citizen Ambassador Program (visitors from USA) (1993), Morrinsville Lions Club (1995), annual meeting of the Holistic Animal Therapy Association (1998), Probus Club of Hillcrest (1998), Probus Club of Hamilton (1998), American beekeepers visiting under the Ambassador Program (1998), the 'University of the Third Age' group of Hamilton (1999), Rotary Club of Hamilton (1999), Biology teachers from high schools in the Waikato region (2000).

Public lectures
Royal Society of New Zealand, in Rotorua (2000), seminar series at the New Zealand. Agricultural Fieldays (2000), Hamilton Science Festival (2000), University of Waikato College Tauranga Evening Lecture Series (2000).

Presentations to professional groups:
Naturopaths at the College of Naturopathy, London (1993), workshop on Apicultural Research, Ruakura (1994), members of the Health Food trade (1995), Vascular Workshop at Waikato Hospital (1995), health professionals in the Wanganui region, at Wanganui Base Hospital (1996), School of Biological Science, University of Auckland (1997), seminar organised by TRADENZ on the export marketing of manuka honey (1996), School of Biological Science, University of Wale Institute, Cardiff (1997), Wound Healing Research Unit, University of

Wales Medical School, Cardiff (1997), Waikato School of Postgraduate Medicine (1999), NZ Wound Care Society seminar on Wound management (1999), invited audience of medical professionals in Vancouver, Canada (1999), tourism operators in Rotorua (1999), seminar on wound management at the Royal Newcastle Hospital (Australia) (1999), members of the health food trade in Sydney (1999).

Presentations at medical conferences:
National Wound Care Conference, Harrogate, UK (1996), Australian Wound Management Association Conference, Brisbane, Australia (1998), National Infection Control Conference, Rotorua, New Zealand (1999), Apimondia Congress, Vancouver, Canada (1999), Vascular Conference, Hamilton, New Zealand (2000), New Zealand Institute of Medical Laboratory Science Conference, Rotorua, New Zealand (2000), First World Congress on Wound Healing, Melbourne, Australia (2000).

Other presentations:
Gave a presentation at New Zealand House, London, to approximately 30 reporters from the British news media (1994). Gave a presentation to a group of science reporters from the Hong Kong newspapers (in Hong Kong) (1996).

Magazines and newspapers for which articles have been written
New Zealand BeeKeeper (1985), *The Beekeepers Quarterly* (UK) (1992), *The Institute Journal* (UK) (1993), *The New Zealand BeeKeeper* (1992), *Open Forum for Health Information* (1993), *Chem New Zealand* (1994), *Chemistry in New Zealand* (1995), *Wanganui Chronicle* (1996), *Canterbury Farmer* (1997), *Animal Options* (1998), *The New Zealand BeeKeeper* (1998), *Bee Informed (The Journal of the American Apitherapy Society* (1999), *The North Coast Senior Post* (Australia) (1999), *New Zealand Holistic Veterinarians Society Newsletter* (1999), *Bee Informed (The Journal of the American Apitherapy Society)* (2000), Nurse to Nurse (2000).

Television appearances
TV1 News (1989), *Tomorrow's World* on BBC Television (UK) (1994), ABC TV *Beyond 2000* science programme (Australia) (1994), ABC Television (Australia) (1995), TV1 News (1997), TV3 News (1997), TV1 News (1999), CBC TV News Vancouver (Canada) (1999), CBC TV News Halifax (Canada) (1999), CBC TV French News (Canada) (1999), Prime TV News (1999), SBS TV (Korea) (1999), Prime TV News (Australia) (1999), NBN TV News (Australia) (1999), Channel 7 TV News (Brisbane), Channel 9 TV News (Brisbane) (1999), Channel 10 TV News (Brisbane) (1999), TVNZ *Holmes* programme (2000), *Twisted Tales* series for the Discovery Channel (2000), ABC TV *Quantum* science programme (Australia) (2000), BBC TV *Watchdog Healthcheck* programme (UK) (2000), KWGN-TV News (Denver, USA) (2000), KMGH-TV News (Denver, USA) (2000).

Radio interviews
1 hour on Radio Pacific talk-back (1989), National Radio *Morning Report* (1989), Independent Radio News, National Radio (Sharon Crosby's programme) (1989), Radio Pacific Waikato-Bay of Plenty (1989), Radio Pacific Wellington (1989), Airport Radio (Auckland) (1989), Radio i (Auckland) (1989), Radio Adelaide (1989), *Quintessenz* radio programme (Germany) (1994), Talk Radio, Tauranga (1994), Talk Radio, Tauranga (1994), *Top of the Morning* on National Radio (1995) Talk Radio, Tauranga (1995), Radio Rhema (1995), Radio Pacific (1995), Radio Station 2UE (Sydney) (1995), Radio Station 5AA (Adelaide) (1995), ABC Statewide (New South Wales) (1995), ABC Western Australia (1995), Newstalk ZB (1995), ABC Radio (Newcastle, Australia) (1997), ABC Radio (Australia) (1998), Radio New Zealand *Rural Report* programme (1998), *PM* programme on ABC Radio, Sydney (1998), Radio Pacific (1998), Independent Radio News (1998), BBC World Service *Health Matters* programme (1999), CKWX News1130 (Vancouver, Canada) (1999), AM1040 health programme - 1 hour, with listeners questions (Vancouver, Canada) (1999), ABC Radio News (Newcastle, Australia) (1999), 2HD Radio News (Newcastle, Australia) (1999), TNUR Radio News (Newcastle, Australia) (1999), Prime Radio News (Newcastle, Australia) (1999), *John Clark's Programme* on 2NC Radio (Newcastle, Australia) (1999), *Dr Wright's Health Programme* in the studio of Radio 2UE, Sydney, with listeners questions (1999), ABC Radio (Brisbane) (1999), Independent Radio News (1999), Newstalk ZB (2000), *Earth & Sky* radio show (broadcast world-wide) (2000), *Science Update* radio show of the American Association for the Advancement of Science (2000), radio News (2000), Kim Hill, National Radio programme (2000).

Interviews for newspapers
Waikato Times (1986), *Waikato Times* (1988), *New Zealand Herald* (1989), *Gisborne Herald* (1992), *Waikato Times* (1993), *Marlborough Post* (1993), *Taupo Times* (1993), *Daily Telegraph* (UK) (1993), *New Zealand Herald* (1995), *Waikato Times* (1995), *Bay of Plenty Times* (1995), *Evening Standard* (London) (1997), *Sunday Star Times* (1998), Reuters News Agency (1998), *New Zealand Herald* (1998), *Farm News* (1998), *New York Daily News* (1998), *Business to Business* (1998), *Rural News* (1998), *The Queensland Independent* (1998), *Waikato Times* (1999), *Glasgow Herald* (UK) (1999), *National Post* (Canada) (1999), *Japan Times* (Canada) (1999), *Vancouver Sun* (Canada) (1999), *Sunday Star Times* (1999), *Waikato Times* (1999), *Waikato Times* (1999), *Newcastle Herald* (Australia) (1999), *Melbourne Age* (Australia) (1999), *Melbourne Sun-Herald* (Australia) (1999), *Brisbane Courier* (Australia) (1999), Associated Press (Australia) (1999), *Waikato Times* (1999), *Waikato Times* (2000), *Daily Mail* (UK) (2000), *New Zealand Herald* (2000), *Waikato Times* (2000), *Otago Daily Times* (2000), *Daily Camera* (Boulder, Colorado, USA) (2000), *Colorado Daily* (USA) (2000), *Denver Business Journal* (USA) (2000), *National Business Review* (2000), *NZ Press Association* (2000).

Interviews for magazines, etc
Natural Health (USA) (1993), *New Scientist* (UK) (1993), *Doctor* (UK) (1993), *Consumer* (1994), *Listener* (1995), *Professional Beauty Magazine* (1996), *Woman's World* (USA) (1998), *North & South* (1998), *Chamber Voice* (1999), *Salute* (the weekly health magazine issued with La Republica, Italy) (1999), *Alive* health magazine (Canada) (1999), *Food Labelling & Nutrition News* (USA) (1999), *Taste For Life* (USA) (1999), *New Nutrition Business* (UK) (1999), *Women's Health Advocate* (USA) (1999), *Parents* (USA) (1999), *TWINS* (USA) (1999), *Lets Live* (USA) (1999), *Alternative Medicine* e-magazine (USA) (Posted also on the CNN News Website) (2000), *Burke's Back Yard* (Australia) (2000), *New Nutrition Business* (UK) (2000), *Lifestyle* (2000), *Consumer* (2000), *CBS News HealthWatch* website (2000), *WholeHealthMD Advisor* (USA), *North & South* (2000), *Australian Pharmacy Trade* (2000), *Medizine* (USA) (2000), *Times Higher Education Supplement* (UK) (2000), *Health Magazine* (USA) (2000), *New Scientist* (UK) (2000), *Pacific Way* (Air New Zealand in-flight magazine) (2000), *Cosmopolitan* (USA) (2000), *The Lancet* (UK) (2000), FC&A Publishing for *Healing Foods* book (2000), Health Facts (a public interest advocacy newsletter) (New York, USA) (2000), Odyssey childrens science magazine (USA) (2000).

Peter Molan, Associate Professor of Biochemistry, University of Waikato

In this final part of the trilogy of articles concerning my MA thesis,

Craft and Control: Networks, Strategies and Ordering in New Zealand Beekeeping.

I introduce the last two chapters: Chapter four, where I talk about the introduction of computer technologies in beekeeping; and the methods chapter, where I discuss the ins and outs of doing the research.

The appearance of information and communication technologies in beekeeping, in the form of electronic-mail distribution lists, has provided an alternative forum for individuals and groups to engage in 'flaring behaviour'. The 'NBA' list, for example, is a political tool availed of by players possessing different sets of skills to 'those who lift the lids of beehives." Active participants on this list, usually 'wasps', want to counter formal or established ways of doing things and to challenge official information flows in order to lever control in beekeeping. They are keen to dispute the actions of formal position holders, such as the NBA President and the Executive Secretary, and seek to generate fresh ideas and innovative strategies for organising beekeeping. The following is from one such wasp:

At a time when we have lost many of the formal structures for information sharing - MAF advisory newsletters, Buzzwords, government sponsored seminars etc, the availability of a fast-reaction medium like E-mail is a God-send. Not necessarily for those of us who want to provide a bit of 'ginger' under the tails of our administration, but for all of us to keep in close contact with the sharp end of the beekeeping ship (NZ Bkprs List, 9/10/98).

By comparison, the 'NZBkprs' list has allowed for relatively direct and informal ties to be established between, on one-hand, hobbyist and semi-commercial beekeepers and, on the other hand, research scientists and government employees. Participation on this list breaks down facades of 'formality' surrounding 'public' players, and, thus, traditional ways of imparting scientific knowledge to beekeepers. Being positioned on a level footing with 'beekeepers' and 'wasps', however, means that 'public' players are exposed to higher levels of scrutiny and to 'open' attacks. I argue in chapter four, 'The Lists': Electronic Networks, that commercial beekeepers are disinclined to take up computer technologies because of their practical skills as producers.

Chapter four, accordingly, traces the development of electronic-mail distribution lists in beekeeping. In this chapter, I compare some advantages and disadvantages for players of communicating via computer, instead of face-to-face. I argue that rather that substituting for physical co-presence between people, information and communication technologies actually invigorate these 'real' settings. The chapter also contemplates the distribution lists as a form of counter or shadow organisation to the NBA. I, nevertheless, show how conflict produced through players communicating via electronic mail has both positive and negative consequences for the Association.

In the final chapter, I talk about how I did my research and what I learned from it - both professionally and personally. I

identify myself as a previous beekeeping employee and daughter of a Mid Canterbury commercial beekeeper, as well as a social scientist and relatively young female. The discussion builds on what it means to be a beekeeper because I reminisce about my experiences 'doing the bees' with my father. It also considers some ethical issues and dilemmas I encountered doing my research because participants and subject matters were sometimes known to me. The following are passages taken from one section in the chapter.

The first year I went out on the bees as a 'paid' employee was the summer of 1991-1992. That was the first year I experienced hay fever, probably because it transpired to be a 'ripper' honey season for Mid Canterbury. I remember getting annoyed with my father bellowing whenever he saw a field of clover and practically driving us off the road while admiring how white it was. He used to get similarly worked up with the presence of eucalyptus and nodding thistle flowers. I can only understand his excitement in hindsight, as these are signs of a good honey season shaping up. Field of white clover in such abundance and flowering eucalyptus are not always seen in Mid Canterbury, and nodding thistles are rapidly disappearing.

My father resolved to do his own honey extracting in the early 1990s. He had been contracting another Mid-Canterbury beekeeper with a large extracting plant to do this for him, like a few other beekeepers in Mid Canterbury.

However, the arrangement did not allow him to do his own thing because it meant putting all his honey through at once, ignoring different strains of honey, and paying someone else to do the work. Before that he had been taking his honey to a big outlet in Timaru, but this entailed significant time of the road. When he purchased the necessary equipment and rented part of the former New Zealand Honey Co-operative shed, my summer jobs in between University were helping extract honey. Initially I had one or two co-employees whom I invariably had to supervise as well as the plant.

In social science, an important way in which research involving human participants is validated and made reliable is through acknowledging who the researcher is and how the characteristics of the researcher have affected the research. This included accounting for the researcher's ambitions, experiences, feelings, shortcomings, and so on during all stages of the research process. As the above passages reveal, I discuss ways in which my objectives as social scientist, my social background, and my personal dispositions were knotted together. I also recount some difficulties and advantages of doing the research that stemmed out of this. People responded to me differently because of who they perceived me to be in terms of their own particular interests and capacities. I was seen as both an 'insider' and an 'outsider' in beekeeping and this meant I was used as an asset and a liability by people.

The ways in which I was treated as both an insider and outsider in beekeeping helped unveil and further illustrate some of the dynamics involved in administering the craft. For example, I was branded an 'outsider' by many people during an 'offshore experience' at National Conference when I continued to act as a social researcher. The event was largely regarded as a time and place for people to enjoy themselves and forget about the tensions and conflicts associated with the formal proceedings at Conference. My behaviour in this setting was at odds with what was expected. Another example was what occurred during Canterbury Branch meetings. The following is taken from the chapter:

The existence and sound of my tape recorder, at least initially, continually alerted members of my presence and the fact that proceedings were being recorded. We all grew accustomed to the discernible sound it made when the side of the tape ended, and the noises it would make when I was obliged to change tapes. This caused frequent stuttering - mainly on the part of those 'beekeepers' closest to the tape recorder.

The Canterbury wasps...quickly grew accustomed to the presence of my tape recorder. They made a joke out of it, and proceeded to use it to their advantage. One of the wasps would slow down his speech, speak louder, and incline forward in his seat towards the tape recorder to ensure what he had to say was recorded and could be used.

My MA thesis was awarded a distinction award in February of this year. I would like to take this opportunity to thank all those who contributed in some way to the finished product - whether in interviews, casual conversations, or through being observed. A hardbound copy of the thesis has been sent to the Executive, and should be available to NBA members in due course. I can be contacted via email at b.newton@soci.canterbury.ac.nz, or by telephone, after hours, at (03) 337-1929.

Bronwyn Newton

From the Auckland Beekeepers Club newsletter...

Bicycle Bees

Twenty years after my bicycle bees adventures, my second grade teacher stopped me and said she still remembers the time when was driving down the road and saw me with a hive of bees on the handle bars of my bicycle. I had forgotten those days, but the revived memories inspired me to sketch the drawing of that day many years ago.

The sketch is pretty much the way it was back then - my red bicycle and my smoker strapped to the front. My father has his own occupation that took most of his time and he wasn't interested in beekeeping. So, necessity being the mother of invention, I learned to use my bicycle to transport one hive at a time here and there when making a divide or catching a swarm. And, yes, to answer the question going through your mind, I did have a few mishaps and spills from time to time.

I started beekeeping when I was seven years old. We were playing baseball at my parent's place when a swarm flew by us. When someone mentioned the connection between bees and honey, I started to become very interested. I loved honey and said, "Let's go get them!" However, everyone else said we might get stung and vetoed my idea. That didn't stop me though, because I immediately started looking for the swarm as soon as I could steal away from everyone else. I looked everywhere I could think of - barns, creek bed, banks and trees. It was an exciting day looking for the swarm, but I was not having any luck and the sun was setting. I was feeling down on my way home because I had not found them when the swarm almost found me! Not paying attention to where I was going, I almost walked right into the swarm!

The bees had settled on a Russian thistle bush. However, my next problem was what to do next. For some reason, I had expected to find some honey right away! Not finding any honey and darkness having settled in, I decided to go home for the night and consult my parents. They were relieved to see me home safe and I immediately began chattering about the bees. My mother said she would call a man she knew who had kept a few hives of bees at one time. The gentleman was more than happy to help me catch the swarm that was the beginning of my beekeeping.

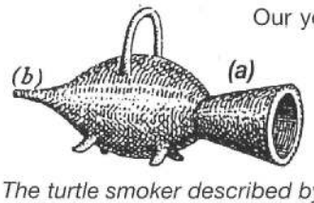
Today I keep bees year-round in California for honey and pollination, as well as migrate with colonies to three other states. I never had a bee suit until I was 18 years old, but for some reason the bee stings never really bothered me much. I do like the bee suits now because, in addition to stopping bee stings, they keep me from getting my clothes so sticky with honey and dirty from the bee work. Even though I have been stung many times in the business (and not always by the bees), I'm still an enthusiastic beekeeper.

I decided to send the American Bee Journal this sketch with the hope that they could use it in the magazine. I hope you like it. I usually do painting. My artwork, 'cowboying' and beekeeping are my three occupations and loves. I sold my first painting when I was 11 years old. Today, some of my works of art have appeared on television and in magazines, newspapers, phone book covers and so on. At the age of 16, I had the first art show every held in Yellowstone Park at Mommoth Lodge in conjunction with the Worldwide Trout Symposium. After years of having showings, most of my works today are commissioned paintings or murals. Some of my paintings are owned by some of the largest ranches and private collectors such as Ted Turner and Jane Fonda, Wayne Newton and others.

I have been getting ready to have a showing again for the first time in eight years - maybe next year of the years after. I have also thought about joining the California Beekeepers Association and perhaps have a showing at one of their meetings. I do enjoy working with bees and seeing the country.

CR Sadler,
Sadler Honey & Cross Diamond Ranch, Sheridan, WY

The History of the Bee Smoker



The turtle smoker described by Della Rocca

Our young beekeepers, who find in every apiary good bee smokers, bee veils and other paraphernalia, have little idea of the hardships of bee handling before the invention of those helps. The bee veil was a very heavy wrap, around head and neck, with a piece of wire screen or sometimes a small price of glass, for vision.

As I was already a beekeeper when the modern implements were invented, I remember well how much trouble it was to smoke bees, so as to compel them to be peaceable, with the use of a stick of dry rotten wood, or of punk, lighted on the end. We used to go punk hunting, splitting what we found into long, narrow strips and putting these in the honey house to dry, for neither wet punk nor wet rotten wood will burn. When we found the right kind, we preserved it carefully for use.

Invention of bee smokers, however, date back a great many years. One of the most ingenious, which I have seen described was that of Della Rocca, used on the Island of Syra - earthen vessel shaped like a turtle, and which he described in his book, as follows:

"A vessel of baked clay is what the inhabitants of Syra use to smoke their hives in beekeeping. The potters of Paris call this a 'turtle', but it is called also 'smoker' and 'heater'. One inserts hot coals in the large opening (a), then some dry horse or cow

Typical Fakroun smoker used by Algerians

dung. If this dung is dry enough, it may be lit without the use of coals, and as fast as it is consumed, one puts in fresh dung. On the opposite end (b) is a small hole which serves to blow the smoke so as to force it out of the opening at (a). There are, at the bottom of the turtle, several holes which furnish the needed air and allow the ashes to fall out. There is a handle at the top to permit the carrying about of the implement, and four legs to support it. This instrument is better than anything else in use to smoke bees, as it does not endanger their life, many times bees and even queens have been known to fall into an open fire vessel."

But it appears that this smoker was not the first made by primitive people to smoke bees. Mr Bernard, of Algiers, an old friend of ours, treasurer of the Algerian Beekeepers' Association and a man of great experience in North Africa writes me:

"The Algerian natives smoke their bees with what they call a 'fakroun', (turtle) because of the great resemblance of the instrument with the shell of a turtle. The 'fakroun', supplied with a handle, has a large opening through which the combustible is supplied, usually (dry cow dung)." In the forward part of the instrument a number of little holes are provided, through which the smoke escapes when air is forced into a large opening. The dimensions of this pot van; between six and 10 inches.

Government arrogance stings beekeepers

National Party MP Anne Tolley, said today that the two year management program for the varroa bee mite went to Cabinet without the promised consultation with beekeepers.

"It is sheer arrogance that the Minister expects the cooperation of these beekeepers, but doesn't involve them in the discussions," said Mrs Tolley.

"This is just what we have come to expect from this Government," said Mrs Tolley, "plenty of talk, raised expectations, and then the decisions made behind closed doors - the 'we know best' attitude of a socialist Government."

Mrs Tolley said the beekeepers needed close involvement with development of the management plan as they wanted to be sure the systems were rigorous enough and practical.

Press statement 11/7/2000

Information from re-testing of Varroa infested sites

Introduction

Immediately after the delimiting survey, which had been conducted in order to determine the distribution of Varroa, various parties expressed a desire to understand the population dynamics of Varroa within hives and sites. A longitudinal study was therefore designed to examine changes in mite numbers over time and between areas. The results of this study will not be available for some time but limited amounts of information have become available from certain sites that had been tested during the delimiting survey and been re-tested 3.5 - 4 months later.

Method

A quick and simple survey was conducted to assess crudely the increase in mite numbers within colonies that had been fully tested twice during an interval of 3.5 - 4 months. During the delimiting survey, only a percentage of hives had usually been tested in a site - from 20 to 100% of hives depending on the risk of infestation. In the Auckland and Hauraki Plains clusters, 20% of hives on site were tested, in the Buffer Zone 50% of hives on site were tested. In the lower North Island and South Island all hives on each site were tested sometimes more than once. The diagnostic test used was fluvalinate (Apistan) strips and sticky board insertion for a 24-hour period.

It was not possible to compare test results if only a proportion of the hives on a site had been tested and found positive because individual hives had not been identified and no comparison could therefore be made with follow-up tests. Useful positive sites ie where testing of all hives on the site had occurred were those apiaries involved in the May 2000 survey for exotic diseases that took place in central Auckland, which was the primary varroa infested cluster. Other positive sites where all hives were tested were outside the primary clusters in the upper North Island.

Some re-testing of potentially useful sites could not be done, usually because bees were dead or dying or because hives were already under treatment. The time period between the first and second surveys for the nine exotic disease survey sites was 3.5 months. For the single site in the upper North Island located outside the Auckland and Hauraki Plains clusters, the time period between the first and second survey was four months.

Results

Three of the exotic disease survey sites showed a decrease in mite numbers. Six of the sites showed an increase in mite numbers. Two of these sites increased by more than a factor 10, and one site increased by more than a factor 100. Heavily infested apiaries surrounded the sites in this primary cluster. It is likely that absconding, robbing and drifting bees significantly altered the mite numbers in these sites.

The single site in the Buffer Zone was not at risk from robbing or drifting bees entering the hives because no heavily infested sites were located around this site in May 2000. Over a four-month period from May to September, the number of mites found in this site increased six-fold.

During the May survey the average number of mites per sticky board over all sites was 570. During the August/September survey the average number of mites per sticky board over all sites rose to 1,181. This resulted in a 2.1-fold increase in mite numbers between the two survey periods.

Discussion

The drawback of this survey was the small number of sites in which all hives could be tested twice. Furthermore, most sites started off with a heavy infestation (>50 mites) detected at the first survey. It is possible that an underestimation of the increase in mite numbers may have occurred in the exotic disease survey sites, because a proportion of the hives were not surveyed as they were dead or very weak. These factors prevented us from drawing inferences from this simple survey on the Varroa mite population dynamics in the areas and season involved. A longitudinal study should give better insight into the population dynamics of Varroa.

It must be noted that regional and seasonal differences in mite growth will exist. The amount of brood in hives at certain times of the year is also a factor influencing mite counts, because the diagnostic test used only detects mites on adult bees. Monitoring of hives on a regular basis will be necessary to forecast the mite build up and to time mite treatment correctly.

Helen J Benard DVM
Exotic Disease Investigator
National Centre for Disease Investigation (MAF)

The varroa mite - a cure in sight

Dr Denis Anderson of the Commonwealth Scientific Industrial Research Organisation (CSIRO), Canberra, Australia, believes he is not too far from identifying bees which are totally resistant to the varroa mite.

The varroa mite has not yet reached Australia, but it is present in neighbouring New Guinea. Since 1989, Dr Anderson has been studying the mite in New Guinea and other regions in order to acquire knowledge that can be used to better control it, if and when it arrives in Australia.

At the time Dr Anderson began his work in New Guinea, the varroa mite had infested European honey-bees (Apis mellifera) almost world-wide, after it had switched-host from its native Asian bee host (Apis cerana) some 50 years earlier. This pin-head sized mite was also thought to be the same as that first found on Asian bees in Java in 1904 and which was named Varroa jacobsoni. In the years following its discovery in Java, mites resembling the Java mites were also found on other populations of Asian bees throughout Asia. The mites that Dr Anderson studied in New Guinea were descendants of the original Java mites, as they were introduced to New Guinea during the 1970's on Asian bees imported from Java.

Dr Anderson and his co-workers monitored the mite in New Guinea for four years and found it could spread from the Asian bees to European bees, but once there, it could not reproduce. They then checked on the mite in Java and found the same situation there. These observations could not be explained from what was known about the mite in other regions of the world. There were three likely causes - either the local European bees in Java and New Guinea were totally resistant to the mite, or the mites' ability to reproduce on those bees was impaired by unique environment factors (such as heat, humidity etc), or that the mites in Java and New Guinea were genetically different those affecting European bees in other parts of the world, even though they looked the same.

To find out whether the European bees in New Guinea were resistant to Varroa mites, Dr Anderson raised 40 sister queen bees in Australia and moved half to New Guinea and half to Germany (where varroa mites were reproducing on the local European bees). The mites did not reproduce on the brood of the queens sent to New Guinea, but in Germany the local mites readily reproduced on the brood of the imported queens. This indicated it was not the bee that made the difference in New Guinea; it must either be the environment or a different type of mite.

In 1994 a change in the behaviour of the varroa mite in Java was noted. It began reproducing on the European honey-bee, initially only in one small location. This reproducing mite looked like the non-reproducing one except for its size: it was much larger. Closer observations showed that the smaller non-reproducing mites and the new larger reproducing mites were present in the same European bee colonies, with the larger mite being more predominate. This indicated that the larger mite had been recently introduced into Java. It also indicated that the reason for the smaller mite being unable to reproduce on the European bee was not environmental, but must have been due to a different type of mite. Dr Anderson then looked at the DNA of the two mites, the larger and the smaller, and found their DNA sequences were miles apart.

To understand what the differences in DNA meant, Dr Anderson took a Darwinian approach - he looked at the mites infesting Asian bees, which are the mites' natural hosts. He reasoned that, because the Asian bees and varroa mites had been evolving together for many thousands of years, he should be able to find the full extent of genetic variation in the mite. He collected mites from these bees in many parts of Asia and looked at their DNA. He found two distinct species. He was able to redefine Varroa jacobsoni as consisting of several strains which were parasites of different strains of Asian bees throughout the Malaysian and Indonesian archipelago. He named the other Varroa destructor and found it included several strains which were parasites of different strains of Asian bees throughout mainland Asia. He also isolated three other unique mites in the complex from different islands in the Philippines, but did not give them names. In total, he found close to 20 different mites in the complex.

Next he had to find which mites were present on European honey-bees world-wide. He collected mites from 32 countries and found they were all Varroa destructor, and not Varroa jacobsoni as had been assumed. Even more remarkable, he found that European bees world-wide were affected by only two strains of the destructor mite. These were the so-called 'Korea strain', which was exactly the same mite he found on Asian bees in Korea, and the so-called 'Japan/Thailand strain', which was exactly the same mite he found on Asian bees in Japan and Thailand.

"These findings were simply amazing" said Dr Anderson. "First, what we thought was a single mite on Asian bees turned out be a complex of nearly 20 different mites. Second, of those 20 or so mites, we found that only two have switched-host from the Asian bee to the European honey-bee and become serious pests of that bee. These two mites do not belong to the species they were thought to belong to, but instead are members of a completely different species which we have named Varroa destructor."

"So the next obvious question is, 'why have only two or the 20 or so mites in the complex become pests of the European bee?' We now know from our studies in New Guinea and Asia that the answer to this question is that the other mites in the complex completely lack the ability to reproduce on the European bee." Dr Anderson believes that finding the reason why those mites cannot reproduce on European bees could present a cure for the varroa problem world-wide.

"If we can find the chemical signal that enables the two strains of Varroa destructor to begin laying eggs on the European bee then we can breed or produce European bees with chemical signals that those two mites cannot recognise."

Dr Anderson elaborates. "The varroa mite does not have eyes to locate individual bees and it can't walk over the ground to invade neighbouring bee colonies in which to feed and breed. Instead, it relies on bees to move it around the environment. Being a true parasite, it is also totally dependant on its bee host for its food and reproduction and gives nothing back to the bee in return. To exist like this, it is necessary for the mite to recognise particular chemical signals that are given off by the bee. These signals tell the mite how and when to act, such as, how to locate bee larvae on which it can reproduce, and when to commence laying eggs. When a mite recognises a particular host signal it instinctively carries out the behaviour that the signal triggers. The mite has no choice about this."

"The reason why a particular mite behaves differently on a different strain or species of bee is that it has evolved and developed its signal-receptors on a particular strain of bee, and therefore only recognises the chemical signals given off by that bee. Different strains or species of bee may give off slightly different chemical signals - either the chemicals differ in their physical structures or, more the case, the chemicals are released at different concentrations and in different 'time-frames' on the different bees. A signal has to be only slightly different or be released at a slight different time for a mite not to recognise it, or to respond to it differently."

"When a mite of the so-called 'Korean strain of Varroa destructor' jumps onto a European worker bee it recognises that bee as a suitable host - in other words, it has recognised particular chemical signals on that bee as being the same or similar to those that are present on its native host strain of Asian bee, in this case, the Korea strain of Asian bee. The mite

then responds to other chemical signals to find its way to the European bees' brood and enters a brood cell just before it is capped. Again, it can do this because it has recognised particular chemical signals as being the same or similar to those on its native Korea strain of Asian bee. About 72 hours after it enters the brood cell, the mite lays its first egg, but only after a meal. So the chemical signal that triggers the mite to begin laying eggs on the European bee must be the same or similar to that which the mite recognises on its native Korea strain of Asian bee. We now know that the majority of mites in the varroa complex do not recognise that particular signal on the European bee and hence do not reproduce. In other words, the egg-laying signals that those mites respond to on their own particular strains of Asian bee must be different from that released by the European bee."

"This chemical signal is likely to be a bee hormone. It is hormones that control the on and off switch of genes. If the hormone is not in the right concentration, or if it is not present at certain times then the 'window-of-opportunity' for the mite will be closed."

"Once we find this signal, we will have to find out how it switches-on reproduction in some mites but not in others. Then we will have to assay a wide population of European bees with regard to their patterns of signal release and find those that do not allow Varroa destructor to switch-on its reproduction. We must find bees that can maintain their resistance to Varroa destructor over many generations and use those bees to breed totally resistant bees."

"Sorting out the taxonomy (defining the species) has been the crucial step in the research. We can see our way forward now."

Honey Bee Facts, Questions and Answers

What is the difference between honey-bees, wasps and bumble bees

Honey-bees are the highest form of insect life, they live in a well organised colony that does not need to hibernate. They produce honey and store it in wax comb and use the same hive from one year to the next. Typical maximum population 35,000-50,000.

Wasps start in the spring with a single queen wasp that has hibernated under leaves or in cracks. The queen wasp builds a new hive constructed from paper and about the size of a golf ball. This hive (bice) builds up through the summer, however no honey is stored. In the autumn the colony organisation breaks down, with homeless wasps becoming an increasing nuisance around bins and rubbish. Typical maximum population 10,000.

Bumble-bees or as the Victorian's called them 'Humble-bees' like wasps only the queen hibernates and survives the winter. In the spring the queen bumble-bee seeks an old mouse or vole hole and builds within it a nest of leaves and moss. She construct nodular wax cells and incubates her young as a bird would. As her first offspring hatch and begin to fly the queen increasingly stays within the hive to produce young. Bumble-bees do make a small amount of honey and store it in one special cup like cell. There is not more that a tablespoon at any time. Typical maximum population only 40-60.

Don't throw those scrapings away!

Most beekeepers scrape the top bars of their hives when they make their first spring visit. But unfortunately, they usually throw the scrapings on the ground.

Hive scrapings can be valuable, as illustrated by this example. Several weeks ago, Andrew was given some beehives by a friend of his grandfather's.

During our initial inspection, we chose one of the hives at random. The hive wasn't anything special, but had been fairly well looked after and was pretty typical of the standard you find in many commercial outfits.

We gave the hive a simple scraping along the top bars, and also scraped propolis from the lid. As we scraped, we graded the material and separated obvious wax in the form of burr comb from the browner, stickier propolis. The whole job only took a couple of minutes.

When we got back to the factory and weighed the scrapings we were amazed to find they weighed 158 grams. Andrew, who is a good judge of these things, reckoned the material was at least 50% pure. So those couple of minutes were worth about $11.85!

Which reminds me of a story. Once upon a time I was helping a beekeeper carry out AFB inspections on his hives. The yard in question was in some scrub and the hives have been put in two lines with gorse and manuka in between.

I started in on one row and the beekeeper on the other, but as I went along, head down and intent on looking at the brood, I kept stepping into big piles of hive scrapings.

The beekeeper had been in the yard only a couple of weeks previously and had done what many beekeepers do - scraped the top bars and then thrown the material on the ground.

Well, I was finding the scraping a bit annoying. Apart from the obvious AFB risk (there was a bit of honey in the burr comb), the heel of one of my gumboots was getting so caked up with propolis and wax that I was beginning to walk around like Jake the Peg.

So I went to the end of the row, and making sure the beekeeper hadn't seen me, I took out my wallet and put a $10 note on the ground. Then I went back up the row and waited for the fun.

A couple of minutes later, I heard a yell, and turning saw my mate grinning from behind his veil and holding the money in his hand.

"Hey, look at this," he cried, "someone's left a tenner on the ground!"

"That's no big deal," I replied. "Someone's left a ten dollar bill in front of every hive in this yard, and the bloody stuff is sticking to my boots!"

As you can imagine, we both had a good laugh at that, and the beekeeper decided that in future he'd carry a tin on his truck and collect his hive scrapings for both the wax and the propolis.

Cliff Van Eaton, Propolis Newsletter August 2000

What's Buzzing

Hive manager's report

We are pleased to report that the Apistan strips are now out after eight weeks. We are now able to treat the hives normally, and move empty frames and put extra supers on. At last!

We have been somewhat frustrated and, though we have looked at the hives, we have removed very few frames.

The Club hives are in good fettle and very strong. Whatever numbers of Varroa were present, the bees managed very well, and with our help will do better.

A beekeeper told me that when the strips were in the hives they tested for numbers of mites. At first there were a number on the sticky boards, but then there were none. They took this as a sign of reducing numbers, if not complete removal of mites.

The future will be interesting. It appears that with the spring over we shall settle with future information from Agriquality and relatively normal beekeeping.

Here's hoping. Onward to the challenge.

Acknowledgement:
Auckland Beekeepers' Club newsletter

VARROA SALE: MK2

Due to the overwelming success (NOT) of our "Huge Varroa Sale," we have (unfortunately) decided to have another one: ●VARROA SALE MK2. The rules are: Cash, cheque or credit card only. First in first served. No returns or refunds. Prices exclude GST. Freight is additional.

Prices valid 16th November to 15th December 2000.

General Equipment	Qty	Current Price	Special Price	General Equipment	Qty	Current Price	Special Price
Queen Excluders Assembled	per 100	1200.00	1080.00	Honey Refractometer Atago 12-26%	ea	578.00	480.00
Queen Excluders Frameless style	per 100	1200.00	1000.00	Honey Refractometer Meopta 0-36%	ea	255.00	190.00
Galv. Roofs sprung ends	per 100	900.00	790.00	Liquid Smoke - pillow pack	per 10	60.00	40.00
Gloves - USA: Medium only	per 2pr	99.00	50.00	Liquid Smoke - 450ml bottle	ea	78.00	60.00
Gloves - NZ: S, M, L, XL	per 2pr	69.00	59.00	Smokers, Italian. 4" Galv smoker	per 2	80.00	60.00
Hats - Woven Fabric	per 2	66.00	50.00	Smokers, Dadant 4" S/S - std or tall	per 2	198.00	149.00
Hats - Plastic Dadant	per 2	69.00	45.00	Storeys F.D. Commercial Std	per 100	1038.00	995.00
Hive Strappers emlock type bare	per 100	560.00	475.00	Frames Hoffman Standard 1000+	1000	735.00	698.00
Jenter Queen Rearing Unit	per 2	299.00	150.00	Beesuits sizes 4 - 13	per 2	227.56	179.00
Honey Gate 47mm Nylon Perfection	ea	60.00	30.00	T-Shirts - Bee Healthy Naturally only	per 3	47.88	30.00
Honey Gate 60mm Brass & Chrome	ea	65.78	48.00	Bee Healthy Caps	per 3	53.34	30.00

Christmas Holidays

Closing: 5pm Friday, 15th December 2000

Opening: 8.30am Monday, 15th January 2001

We wish to thank all of our customers for their support this year and wish them a very Merry Christmas and a prosperous New Year

Books	Qty	Current Price	Special Price	Pumps Continued	Qty	Current Price	Special Price
Books				Drum Heaters - Vertical or Horizontal	1	1260.00	1000.00
Breeding Queen Bees	ea	31.06	23.30	Pollen Dryer with 4 trays	1	347.00	250.00
Contemporary Queen Rearing	ea	33.33	16.67	**Pumps**			
Hive & The Honey Bee	ea	128.00	96.00	Lega 2" 5000kg/hr bare	2	1324.00	1000.00
Honey Bee Diseases & Pests	ea	22.22	16.67	Lega 2000kg/hr single speed	1	1890.00	1700.00
The Classroom	ea	35.51	17.75	**Extractors**			
Honey Bee Colouring Book	per 10	17.33	8.67	4 Frame S/S Lega Extractor	9	576.00	549.00
Honey Bee Study Prints	per 12	79.11	59.33	5 Frame S/S Lega Extractor	1	884.00	799.00
CD Rom: Honey Bees & Other Insects	ea	62.18	25.00	**Packing Machines**			
Wall Chart: The Life of the Honeybee	ea	35.51	26.63	Lega 400kg/hr Complete	1	8500.00	6900.00
Wall Chart: Info on Topbar Hives	ea	19.56	12.00	Lega 400kg/hr Head Only	1	5600.00	4500.00
Candle Moulds - USA Stock			-50%	Lega Cut-Drop System	1	1050.00	900.00
Candle Moulds - European Stock			-25%	**Plastic Goods**			
General Plant				Multi Bins min 10	106	18.00	10.00
Bee Blower Dadant Petrol	2	1280.00	1000.00	Wax Moulds 8kg Rectangular min.20	239	6.40	4.50
Bee Blower Hitachi Electric	1	295.00	240.00	Drum Lids 620mm min.10	43	16.00	10.00

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RECIPES

Crisp Honey Cookies

1/2 cup butter
1/2 cup honey
1 3/4 cup flour
1 tsp soda
1/2 tsp cinnamon
1/4 tsp ground cloves
1/3 cup wheat germ

Cream butter and honey. Sift together flour, soda and spices. Then mix in wheat germ. Combine dry ingredients with creamed mixture. Chill about one hour. Roll on lightly floured board to about 1/8 inch thickness. Cut with floured cookie cutter. Bake on greased cookie sheet in 350°F oven for 8 to 10 minutes. Cool on rack, then spread thinly with frosting.

Makes about 3 dozen

Honey-Mustard Glazed Corned Beef

1 corned beef brisket (about 5lbs)
1 medium sized onion, quartered
2 celery tops
4 carrots, pared and halved crosswise
12 small new potatoes (about 1lb)
1/2 head cabbage (about 3/4lb) cut into 4 wedges and cored
1/4 cup honey
1 tbsp spicy brown mustard horseradish cream (recipe follows)

Place corned beef in a large kettle. Add enough water to cover. Heat slowly to boiling, skim fat. Add onion and celery; low heat; cover. Simmer for three hours. Add carrots, potatoes, cabbage wedges to kettle; cover. Simmer for 30 minutes longer or until meat and vegetables are tender. Preheat broiler. Remove vegetables with slotted spoon to large heated serving platter; cover. Keep warm. Lift corned beef, draining over kettle onto shallow roasting pan. Combine honey and mustard in small bowl; brush over meat. Broil meat 6 inches from heat for about five minutes, or just until honey mixture bubbles and begins to brown. Slice corned beef thinly against grain. Transfer to serving platter with vegetables. Garnish with chopped parsley, if you wish. Serve with horseradish cream.

Horseradish Cream

Whip 1/2 cup heavy cream with 1-2 tbsp prepared horseradish until soft peaks form.

Green Bean Delicious

1 can (1 pound) whole green beans
1/3 cup white wine vinegar
2 tbsp honey
1/2 clove garlic
1/2 tsp seasoned salt
1 tsp minced onion
1 tbsp butter

In a saucepan, combine liquid from beans with vinegar, honey, garlic, salt and onion. Simmer five minutes, add beans, heat; just before serving, add butter. To serve cold, add 1 tbsp salad oil and cool in liquid.

Serves 4

Avocado Salad Dressing

1 fully ripe avocado
2 tbsp lemon juice
1/2 tsp salt
1/2 cup orange juice
2 tbsp honey
1/2 cup mayonnaise
Dash of tobasco if desired
Cantaloupe
Honeydew melon
Papaya
Pears
Strawberries

Remove skin from avocado; dice or mash, and blend with lemon juice. Add remaining ingredients. Beat, or whirl in blender until smooth. Alternate thin lenghtwise slices of peeled cantaloupe, honeydew melon, and papaya on chilled salad plates. Add wedges of fresh peeled pears and strawberries. Serve with Avocado Salad Dressing.

Makes 1 1/2 cups

Skillet Zucchini

4 medium zucchini
1/4 cup honey
2 tbsp water
1 tsp butter or margarine
1 tsp dry French salad dressing mix
1 large tomato, cut into eights

Wash zucchini, cut off ends. Cut into quarters lengthwise. In skillet, combine honey, water, butter and salad dressing mix. Arrange zucchini, cut side down, in honey mixture. Bring to boil, reduce heat and simmer for about 20 minutes or until tender. Add tomato wedges and cook several minutes longer, turning once.

Makes 4 servings

IMPORTANT DATES FOR 2000

BRANCHES SEND YOUR MEETING DATES IN FOR 2000. NO CHARGE.
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DEADLINE **25 NOVEMBER**

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Meet the second Monday of April, June, August and October.
Contact: Mrs Hobson
Phone: (03) 312-7587

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Phone: (03) 693-9189

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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: Maggie James, 21 Humboldt St, Christchurch 8002. Phone: (03) 337-2421.

DUNEDIN BEEKEEPERS CLUB
We meet on the first Saturday in the month September - April, (execpt January) at 1.30pm. The venue is at our Club hive in Roslyn, Dunedin.
Enquires welcome to Club Secretary, Dorothy, phone: (03) 488-4390

FRANKLIN BEEKEEPERS CLUB
Meet second Sunday of each month at 10.00am for cuppa and discussion and at 10.30am open hives.
Secretary - Gwen Whitmore, RD1, Tuakau.
Phone: (09) 233-4332
All welcome - Ring for venue

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Arataki Cottage, Havelock North.
Phone: Ron (06) 844-9493

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For application forms and meeting dates contact
Jeff: (03) 577-5489

MANAWATU BEEKEEPERS CLUB
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Contact: Andrew MacKinnon
Phone: (06) 323-4346

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Meet on the second Wednesday of the month.
Contact Secretary: Neil Farrer.
Phone: (06) 343-6248

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

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

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