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NATIONAL EXECUTIVE BEEKEEPERS' ASSOCIATION OF NZ (Inc.)

President:
Russell Berry
Arataki Honey Ltd, Rotorua Division,
Waiotapu RD 3, Rotorua.
Tel: (07) 366-6111
Fax: (07) 366- 6999

Vice-President:
Terry Gavin, PDC, Titoki,
Private Bag, Whangarei.
Tel: (09) 433-1893
Fax: (09) 433-1895

Executive:
Tony Taiaroa
43 Princess Street, Waikari 8276.
Tel/Fax: (03) 314-4569

Don Bell
Annat Apiaries,
Frasers Road, Sheffield,
RD, Canterbury 8173.
Tel: (03) 318-3869 - Fax (03) 318-3862

Lin McKenzie
Box 34, Ranfurly
Central Otago.
Tel/Fax: (03) 444-9257
Email:lin.mckenzie@xtra.co.nz
Bruce Stevenson
Kemp Road,
Kerikeri.
Tel: (09) 407-7190
Fax: (09) 407-7194
Email:beecrazy@xtra.co.nz

Editor *New Zealand BeeKeeper*:
Harry Brown
National Beekeepers Assn of NZ,
PO Box 3079, Napier.
Tel: (06) 843-3446, Fax: (06) 843-4845
E-mail:natbeeknz@xtra.co.nz

Executive Secretary: Harry Brown
National Beekeepers Assn of NZ,
PO Box 3079, Napier.
Tel: (06) 843-3446, Fax: (06) 843-4845
E-mail:natbeeknz@xtra.co.nz
http://www.nba.org.nz

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BRANCHES

The first named person is the President/Chairperson. The second is the Secretary.

FAR NORTH
Bob Banks
Taupo Bay, Northland.
Tel: (09) 406-0692
Graham Wilson
Waimate Road, RD 3, Kerikeri.
Tel: (09) 407-9068

NORTHLAND
John Gavin
PDC, Titoki, Private Bag, Whangarei.
Tel: (09) 433-1892
Fax: (09) 433-1895
Edna Hoole
Sheddock Apiaries, RD 1, Paparoa,
Nth Auckland.
Tel: (09) 431-7348

AUCKLAND
Brian Alexander
Woodhaugh Apiaries, RD 3,
Kaukapakapa.
Tel/Fax: (09) 420-5028
Jim Thompson
125 Queen Street, Pukekohe.
Tel: (09) 238-7464
Fax: (09) 232-8429

WAIKATO
Lewis Olsen
Ohaupo Apiaries
Great South Road, RD 3, Ohaupo.
Tel: (07) 823-6706
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Tel: (07) 856-9625, Fax: (07) 856-9241

BAY OF PLENTY
Gerrit Hyink
271 Lindemann Road,
Katikati.
Tel/Fax: (07) 549-1223
Email: hyink@xtra.co.nz
Ross Carroll
78 Laurel Drive,
RD6
Tauranga.
Tel: (06) 552-4585

HAWKE'S BAY
Tom Taylor
Box 48, Onga Onga,
Central Hawke's Bay.
Tel: (06) 856-6610
Fax: (06) 856-6611
Ron Morison
6 Totara Street, Taradale.
Tel/Fax: (06) 844-9493
Email:morison@clear.net.nz

POVERTY BAY
Peter Burt
27 Murphy Road, Wainui, Gisborne.
Tel: (06) 868-4771
Email:pwburt@clear.net.nz
Barry Foster
695 Aberdeen Road, Gisborne.
Tel/Fax: (06) 867-4591
Email:bjfoster@xtra.co.nz

SOUTHERN NORTH ISLAND
Peter Ferris
Happy Honey Bee Apiaries
RD 11, Opaki, Masterton.
Tel/Fax: (06) 378-7632
Frank Lindsay
26 Cunliffe Street, Johnsonville,
Wellington 6004.
Tel/Fax: (04) 478-3367
Email:lindsays.apiaries@xtra.co.nz

SOUTH ISLAND

NELSON
Glenn Kelly
Mickells Road, Brooklyn, RD 3,
Motueka.
Tel/Fax: (03) 528-8149
Michael Wraight
15 Titoki Place, Motueka.
Tel: (03) 528-6010

MARLBOROUGH
Mike Taylor
802B Paynters Road, RD 2, Blenheim.
Tel: (03) 578-0749
Hamish Harper
Mahau Sounds,
RD 2, Picton.
Tel: (03) 574-2482

WEST COAST
John Glasson
34 Shakespeare Street,
Greymouth, Westland.
Tel/Fax: (03) 768-4793
Sandy Richardson
Napoleon St, Ahaura, Westland.
Tel: (03) 732-3724, Fax: (03) 732-3774

CANTERBURY
Richard Bensemann
13 Spring Place,
Leeston.
Tel/Fax: (03) 324-4410
Trevor Corbett
80 Glenmark Drive, Waipara,
North Canterbury.
Tel/Fax: (03) 314-6836

SOUTH CANTERBURY
Peter Lyttle
NZ Beeswax Ltd
RD 22, Geraldine 8751.
Tel: (03) 693-9189 Fax: (03) 693-9780
Email:beeswax@xtra.co.nz
Peter Smyth
Templer Street, RD 22, Geraldine.
Tel: (03) 693-9889

OTAGO
Blair Dale
PO Box 23, Middlemarch, Otago.
Work Tel/Fax: (03) 464-3796
Home Tel/Fax: (03) 464-3122
Email:blair.dale@clear.net.nz
Mike Vercoe
Box 241, Alexandra.
Tel/Fax: (03) 448-7811
Email:dmvercoe@xtra.co.nz

NORTH OTAGO
Bruce Steffens
RD 2 C, Oamaru.
Tel: (03) 432-4030
Bryan O'Neil
RD 4 K, Oamaru.
Tel: (03) 431-1831

SOUTHLAND
Carne Clissold
113 Waikaka Road, RD 5, Gore.
Tel: (03) 208-0673 Fax: (03) 207-1866
Email:clissold@esi.co.nz
Don Stedman, Catlins Apiaries,
Pine Bush, RD1, Wyndham.
Tel/Fax: (03) 246-9777

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Notes from the Executive

by Russell Berry

What is the most remarkable quality of a beehive? The ability to work together as a team for the good of the hive and the good of the species and indeed a lot of other species. If they do not work together as a team the hive dies. For example when the queen fails in her ability to lay enough eggs to maintain the hive, she is replaced by supersedure. If the bees or beekeeper doesn't replace the queen, the hive ultimately dies. If the team does not defend itself against intruders or communications within the hive on food sources, it will probably die. Perhaps we have as much to learn from our bees as we have to learn about how to encourage them to work for us!

Encouraging individual performance and improvement is very important to improve the team. What makes a good team? Let us look at some of the very important teams we have in our lives to see if we can have some thoughts on just how important they are and how they can be improved. The most important team in your life is probably the family unit. It can be a wonderful unit but how often is it destroyed by people just not understanding how important it is and how to make it flourish? It can so easily be destroyed by the need to provide food, shelter and education for all its members. Nothing has really changed from the goldmining years of centuries ago, to the present time where both partners feel the need to work to maintain acceptable living standards.

We set out, or are we brainwashed by advertising, into setting standards just beyond our needs and reach. Is the family team in higher income groups any better than lower income groups? I think not. This brings to mind what makes a good family team. I am sure there are many diverse opinions on this, but here are a few of my thoughts.

The benefits to the team (the family) should be as important to the individuals in the team as are the individual's benefits. The family unit should be a sanctuary, a place of guidance and help, a listening ear, separate from the outside pressures and problems placed on the individuals by the outside world. Some people think the family unit has been weakened by TV. We are partially replacing one form of communication with another. TV in many homes has replaced the family time talking around the kitchen table, to the detriment of the family unit (team).

Internet, unless correctly used also has the potential to interfere with good team performance. Equally, it can be said to improve team performance if correctly used. The important thing is to recognise the effect it will have on successful team operations and make sure that beneficial effects are encouraged and detrimental effects are discouraged!

You may think I have drifted a little away from the plot, but beekeeping has traditionally been very much a family business and a strong family team makes a great basis for a strong business team. Many beekeeping businesses are, for much of the time, only a one person team. The one person team normally can achieve agreement on how to do things, but lacks the input of other minds and physical input to really make the most of any given situation. There is normally great satisfaction achieved by all team members when a number of people working together complete the current jobs quickly and as efficiently as possible. It is wonderful to see two people who have been shifting bees together for a few thousand hives, compare with a newly formed team where one lifts the beehive too fast and the stronger person does not take the hive further along the floor to help out the weaker person, when placing hives two high onto a truck, from the ground.

The more reliant we are on each other in the job or the sport, and the more people involved in it at one time, the greater the elation of success. I suspect the one person beekeeping operation misses out on some of this elation. Some people who do not become part of their work team working as a unit to achieve a given goal, really miss out on one of the joys of life. It is always easier to motivate people when you have a very clear and immediate goal to achieve. But what do you do with the individual who does not want to be part of the team? The leader of the team works very hard to encourage participation for the common good of the team and the members of the team must likewise respond. The success of this action will determine the team's success or failure. The failure of a member of an operation to become part of the team will normally mean that that person will leave or be removed from that team. A good, strong team will be able to change and listen to helpful outside comments, but will close ranks to those who try to destroy it.

This applies equally to family, businesses, your NBA branch, your executive or the government and government employees and the beekeeping industry, that we may be in separate teams at times but we also should be all in one team at times working for the good of New Zealand and how about the NBA members working for the good of their fellow members? I know most of you do, but I am afraid there are some exceptions.

National Beekeepers' Association of New Zealand (Inc)

Notice is hereby given that the 1999 Annual General Meeting of the National Beekeepers' Association of New Zealand (Inc) and Conference of Branch Delegates will be held at the Hotel Ashburton, Racecourse Road Ashburton on Wednesday and Thursday 14 and 15 of July 1999 commencing at 9am on Wednesday, 14 July 1999.

A Special Meeting will be held at 8am, Thursday the 15th of July to discuss proposed Rule changes

A second special meeting to discuss the termination of the Marketing activities and an Apiary levy increase will be held at 2pm on Thursday the 15th July at the same venue.

Harry Brown
Executive Secretary

The New Zealand **BeeKeeper**

THIS ISSUE

Letters to the Editor

Letters are invited on the understanding that they must include the writer's full name and address. Nom-de-plumes or initials will not be accepted for printing. Letters should be no more than 350 words, if longer they will be abbreviated. Letters not for publication should be marked NOT FOR PUBLICATION. "Opinions expressed in the magazine are those of the writer and are not to be regarded as representing the opinion of the Editor or Publisher."

Dear Sir

I was very interested in Colin McLean's article "You and Me and EFB" (NZB, April 1999, pp 18-19). Essentially I have nothing to criticise with the paper, it was well thought out and within the space provided contained a mountain of detail.

However, a little of the background to the EFB situation in Australia might help with present attitudes and future proposals for your industry.

EFB has been in Australia ever since the start of this century and may very well have been here longer. It was certainly positively identified in the 1920s and 30s although it rarely made much of an impact. Even in western Australia there are references to its presence in the pre-WWII years although this is now hotly denied. In the eastern states Bacillus pluton was diagnosed in NSW about 1961/63 by scientists using updated technology. But it was a minor disease and apart from some general publicity no serious attention was paid to the findings.

This raises the question of what happened in the mid-1970s to throw the industry into such a turmoil?

The facts are that there had been a disease raging up and down the Murray River system, running through NSW, Victoria and South Australia, ever since the mid-1960s and much attention was paid to it since it was initially mistaken for AFB. It was then 'diagnosed' as a new disease which had gone rampant supposedly due to the peculiar environment of the region. Wrong on both counts.

Its correct diagnosis in South Australia in mid-1976 was brought about by people following the same diagnostic technology imported from overseas over a decade before.

BUT, and here we are still in the realm of conjecture, it appears that the 'new' EFB was a strain different and more virile than previously experienced. Why is this so?

There are two schools of thought;

1. A new strain of B.pluton now Streptococcus pluton and now Melisococcus pluton had been introduced with bees brought in from overseas about this time - thus a claim for compensation due to quarantine breakdown was enthusiastically pursued by many affected beekeepers and supported by some authorities.

2. Equally likely, although not supported due to the loss of compensation revenue, was the possibility that rampant feeding of hives with OTC in both honey producing and queen rearing hives had permitted the perpetuation of hives susceptible to the disease - in other words no attempt was made to weed out susceptible hives and allow naturally resistant hives to build up, a genetic shift in the national species. Incidentally, some attempts were made to bring in resistant stock from the USA but it proved unsuitable - too many colours!

But in spite of this a conference of industry and authorities in the late 1980s generally agreed that a genetic shift had occurred despite many beekeepers then and as recently as 12 months ago continuing to rely on OTC.

There are many advantages and disadvantages to using OTC and I shan't lengthen this letter by listing them. All I want to recommend at this stage is why wait until EFB strikes New Zealand before doing something about it? Australia has many fine breeders of bees whose stock is profitable for buyers and as resistant as possible at this stage to EFB. Why wait until it hits with a "BANG" before taking advantage of this material? Talking and drawing up plans about what to do when EFB strikes is fine but doing something practical about it now when avoiding that period of adjustment that Australia went through for almost three decades.

With Kind Regards,
RB Gulliford, Editor

Letters to the Editor

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Dear Sir

To quote a recent letter signed by Bruce Stevenson and Gerrit Hylink: "this is a very alarming situation and has to be addressed" - indeed! I find it very alarming that a member of the executive, and a branch President, are engaged in an attack on the "structure" of the Executive: the "thing" that holds it all together and gives us our voice!

In other correspondence their clarion call has been "let 'common sense' prevail". If by 'common sense' they mean acting in a basic practical manner; paying attention to obvious realities; not being scared into action by alarmist 'either/or' propositions; and being guided by conventional wisdom; then I suggest it is not 'common sense' to be "changing horses in midstream".

If "the very survival of the NBA is at stake" as they say; now is not the time to be hacking away at the "structure" (foundations). No Builder - acting on 'common sense' - would ever undermine a building during the storm; no divided house can stand; and no driver would unhitch his horses in the middle of the stream in order to hitch up new ones; the risk is too great - storms pass!

Now is the time to support the Executive structure, not undermine it. Contrary to populist "hero" type propaganda, life seldom comes down to the "act now or perish" scenario. Imaginative, creative solutions are needed not desperate frenzied reactions.

Stephen Lee

Dear Sir

AR Taiaroa's letter in the May *NZ BeeKeeper* contains misleading and confusing statements.

The National Pest Management Strategy document that Tony refers to is our application/proposal to the Minister for a PMS - it is not, strictly speaking, the PMS itself. The PMS is not "the base of the commodity levy". The opposite is, in fact, the true situation. The PMS is only one of the three major areas of levy expenditure listed in our levy order.

The 30% limit on disease control spending that Tony refers to was provided as a general indication of the spending levels for the first year of the levy. The Minister's office has confirmed to the NBA that there is no such imposed spending level.

Tony claims that "only 72% of beekeepers voted for the PMS". There were two significant and substantial votes held at NBA Conferences in recent years to gauge support for the PMS. In 1995, the vote indicated 81% support. In 1996 the vote on a similarly worded remit indicated 80% support. The reference to 72% support for the PMS related, in fact, to the results of the support referendum for the Commodity Levies Act application.

Tony refers to a reduction in apiary numbers from 1996 to 1998. When planning for the changes to the levying mechanism, the Executive anticipated that commercial beekeepers would consolidate apiary sites and de-register 10% of their sites. The reduction is, as it turns out, smaller than was expected and planned for. The problem remains that of collecting from the apiary sites on the Apiary Register.

I am confused by most of Tony's arguments against the PMS. Halfway through the letter he changes to describing arguments against the levying system, rather than the PMS. I do not know what he proposes as an alternative to either the levy or the PMS, only that he dislikes both.

It is unsettling that we have two current Executive members either admitting or have been 'outed' as opposing the PMS. I can readily understand why the implementation has been so tentative and seemingly full of concern.

Nick Wallingford

Dear Sir

Here is a chance for some help and support.

Having farmed from the Andes to tropical North Queensland and back, I'm now free to follow my desire in the bee business.

Qualified with experience, 52 years old and keen to work on wages or share in New Zealand or offshore.

Enquire to Kerry
Box 50
Gisborne

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BEEWAY

Viewpoint...

NBA and it's 'Perilous' Financial position by Colin McLean

You know, it seems so obvious to me, that to not consider it from a logical and commonsense approach, would leave me to question the basis of being in reach with reality.

I'm sure most fair-minded people would agree that the current financial position of the NBA is due to the large costs involved in restructuring due to changes to the Apiaries Act, Commodity Levy and Biosecurity Bill and an introduction of a user pays philosophy in Disease Control, Export Certification and other areas.

I'm sure if the task had been given to someone specialising in this sort of thing (re-structuring) the cost would have been substantially higher, and perhaps more credit should be given to those who have worked through the changes.

Current beekeepers are paying for all these costs - changes that will benefit future beekeepers and they are being asked to pay even more, is this fair?

My personal opinion, which seems obvious to me, is that the Industry Trust funds should make a substantial financial contribution to help the NBA through this period of change.

Perhaps it's too hard to make a big decision that you haven't made before. Little decisions OK, Big decisions-no way.

The fact that the Industry Trust funds have grown from $600,000 to over $1.1million demonstrates to me that not only will the industry never spend any of the principle - it will also never spend the interest it is gaining either! If there was ever an important time or situation that needed the support of the Industry Trust funds then surely it is now.

Contrary to what some people believe, or want to believe, it is entirely up to the NBA as to how it wants to use these funds. If you don't believe me then you should ask David Kay (the trustee who manages the funds).

I hope the Trustees have the courage to make a decision to support the future of the NBA and the direction it wishes to go in. I know these people value things like good marketing, education, disease control and good management. I hope they can make that decision as I believe the future of the NBA is dependant upon it.... but then, perhaps it is too obvious.

The only other comment I would like to make is that the polarization of people and the factions they create are very damaging. Their divisiveness perpetuates the status quo and prevents us from going forward. This could equally be applied to both sides of an argument.

Attention all NBA members

We are looking for nominations for the Roy Paterson Trophy for the 1999 Conference

Do you know of someone who fits the criteria below?

The main theme of the award is "Innovation" and at the same time bring recognition to Roy Paterson. It can be for gadgets, inventions, science and technology that assist the beekeeping industry.

Nominations close 5.00pm Monday, 14th of June 1999.

All nominations to:
Vice Chairman Mr Terry Gavin
Phone: (09) 433-1893
Fax: (09) 433-1895

Judge's decision is final and no correspondence will be entered into.

Elimination of American Foulbrood from New Zealand

Mark Goodwin, Hort Research

This article is the first of a series of articles written for the Management Agency for the American Foulbrood (AFB) Pest Management Strategy. The aim of these articles is to assist beekeepers in eliminating American foulbrood from their beehives. Much of the content of these articles will be drawn from the AFB elimination manual.[i]

Part 1. History of American Foulbrood control in New Zealand

It is useful to understand the history of AFB control in New Zealand when considering what we intend to do in the future. The aim of AFB control in New Zealand has changed several times this century. It is difficult to determine the intent of AFB control in the early part of the century as it was unrecorded. However, much can be inferred by studying what people did. An example of this can be seen from the writing of Isaac Hopkins.

The districts in which the Ruakura State Apiary is situated were amongst the worst in the Dominion for foulbrood. The colonies I started the State Apiary with that were already on the farm were affected. By constant attention and treatment we were able to keep the disease from spreading and when we left for the Christchurch Exhibition (1906) there were six out of over 70 slightly affected with foulbrood. When we returned in the following June we found the disease had spread through robbing to nearly every colony. Early in the following season we treated a number of the worst cases and replaced bad with clean combs. As this did not turn out so satisfactory as we hoped, I hoped to treat the whole of the colonies the next spring.[ii]

From the approach taken by Isaac Hopkins it can be concluded that the intent was to control the disease through management rather than to eliminate it. People's ideas on the subject had changed by 1939 as this quote from the Editorial of the New Zealand Beekeeper indicates.

'The disease can and should be eradicated completely. Under the present system which has had many years' trial elimination of disease from all apiaries in New Zealand seems to be as far away as ever and it is certainly high time that something more definite was done about it.[iii]

And in a remit from the executive to the 1939 conference.

'It is also contended that in the event the Department (of Agriculture) got right down to thorough inspection co-opting the services of reputable beekeepers in every district and ensuring that diseased hives were destroyed on sight under proper supervision it could be eradicated from the country within a period of five years.[iv]

From these comments it can be seen that the beekeeping industry in the 1930's and 40's had the aim of eliminating AFB from New Zealand. Also, that disease control was seen as the responsibility of Government rather than of beekeepers. This idea that AFB control is a government responsibility was popular in the industry up to the 1990s.

Some time between 1940 and 1990 the idea of eradicating AFB from New

Zealand seems to have been lost. Although beekeepers attempted to eradicate AFB from their own outfits the official Government AFB control programme talked about control and containment rather than eradication. With the increasing disease levels between 1960 and 1990 (Fig 1), the programme was not even achieving the goal of control.

When, in the early 1990's the Government announced it's intention to repeal the sections of the Apiaries Act, which was being used to control AFB, the National Beekeepers' Association, and beekeepers, were forced to recognise that they were responsible for AFB control. Beekeepers have always accepted responsibility for eliminating AFB from their own hives (some better than others) but now they had to accept responsibility of AFB in other beekeepers' hives as well. Previously this was seen as a MAF problem. The Association had to decide on a strategy for dealing with AFB, or face the prospect of no legal controls on AFB.

The NBA established a committee to formulate a goal for AFB control in New Zealand. The committee asked for submissions from the industry and from these decided that elimination of AFB from New Zealand was the most reasonable approach. As can be seen from the above, the goal was of course nothing new.

So why choose eradication for a Goal? I think the best explanation I have come across is because every beekeeper (well almost every) is already trying to eradicate AFB from their own beekeeping outfit. The NBA had to have the same goal as the members of the NBA.

While deciding on the future of AFB control in New Zealand, beekeepers have come to accept, perhaps for the first time, that AFB control was never a responsibility of Government. More than 95% of AFB control has always been carried out by beekeepers with Government Inspectors only making a very minor, although valuable, contribution.

So, is the goal of eradication possible? As some beekeepers have successfully eliminated AFB from their own hives it is possible for most, if not all, beekeepers to do the same. The Pest Management strategy recognises that beekeepers are the only people capable of eliminating AFB from New Zealand and endeavours to provide beekeepers with the tools to carry this out.

Incidence of American Foulbrood in New Zealand

American foulbrood was first recorded in New Zealand in 1877, 38 years after honey bees were introduced. Within 10 years, the disease had spread to all parts of New Zealand and was being blamed for a 70% reduction in the nation's honey production.[v]

Information on the numbers of beehives infected with the disease was not recorded during the early period of beekeeping development in New Zealand. Part of the reason was that beekeepers attempted to manage the disease rather than destroy infected hives.

In 1950, it was decided that the incidence of AFB could not be reduced further if shook swarming continued to be used. Beekeepers were therefore instructed by the Department of Agriculture to "destroy the contents of diseased hives and to sterilise thoroughly any remaining hive equipment by approved methods."[vi]

The first reliable report on the incidence of AFB in New Zealand was in 1947, when 74% of hives were inspected and 1.7% were found to be infected with AFB. In 1950, 78% of the hives were inspected with 2.02% found to be infected.

There were no reliable AFB disease statistics collected between 1950 and 1960. By 1961, however, the incidence of AFB had reduced to 0.23% of hives. The decline in disease levels during the 1950's was probably due to the move away from shook swarming (managing AFB), and the adoption of the practice of destroying diseased hives.[vii]

The percentage of beehives reported to have AFB increased over the next 30 years, reaching a peak of 1.2% in 1990 (Fig 1).

The NBA instituted an American Foulbrood Control Programme in 1991. The programme included the inspection of approximately 4% of the nation's apiaries by government inspectors, voluntary inspections carried out by NBA branches (called 'diseaseathons'), the counselling of beekeepers with AFB problems, a research programme elucidating the factors contributing to the spread of AFB and an extensive education programme. During the seven years the programme was in existence, the reported incidence of the disease decreased by an average of 12% per annum, reaching a low of 0.38% in 1998, the last year of the programme (see Figure 1).

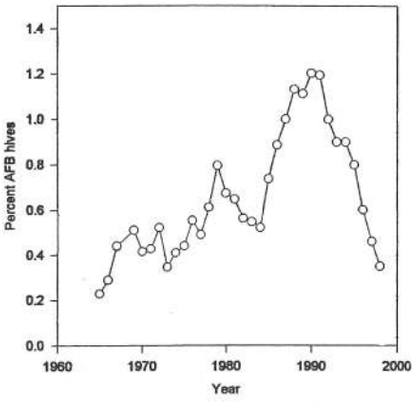


Figure 1. The percentage of hives in New Zealand reported to have AFB each year.

Although New Zealand's AFB disease statistics are more comprehensive than most, the information must still be treated with caution. The figures rely heavily on information provided by beekeepers to the Ministry of Agriculture. Even though it is a statutory requirement in New Zealand for beekeepers to report diseased colonies, in the past:

- Not all beehives were inspected,
- Not all AFB infections were detected in those beehives that were inspected, and
- Not all cases of AFB were reported when found.

New Zealand AFB statistics are therefore an underestimate of the actual disease levels.

The decrease in disease levels does however appear to be real. This can be seen by looking at the percentage of AFB hives found by MAF over the last 7 years (Fig 2). The percentage of AFB hives found are higher than the national statistics because the MAF inspections were carried out in areas that they expected to find AFB hives. They have however been decreasing, as have the national statistics.

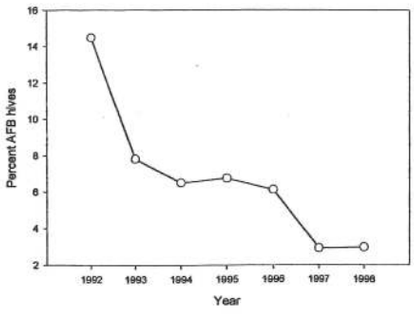


Fig. 2 Percentage of hives inspected by MAF each year that had AFB.

Relationship between AFB hives and hive holdings

Commercial beekeepers often assume that beehives belonging to part-time beekeepers are more likely to have AFB, since many of these beekeepers have limited experience in AFB recognition and inspection.

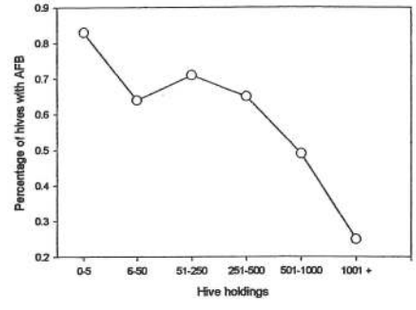


Figure 3. Annual percentage of AFB hives found for beekeepers with varying numbers of hives.

This assumption is supported by an analysis of New Zealand AFB statistics that shows that the fewer beehives belonging to a beekeeper, the greater the percentage of those hives are likely to be infected with AFB (Fig. 3). Beehives belonging to beekeepers with a less than 5 hives had a 0.8% AFB incidence compared to hives belonging to beekeepers with more than 1000 hives that only had a 0.25% AFB incidence. However, the beehives belonging to beekeepers with 5 or less hives only account for 5% of the AFB hives reported each year (Fig. 4).

Because commercial beekeepers with more than 500 hives own most of the beehives in New Zealand, these beekeepers also have over half of the AFB hives. Beekeepers with larger hive holdings tend to also have more experience finding AFB, since 70% of them find at least one of their hives infected with AFB each year, compared to about 1% of beekeepers who own less than five hives.

In conclusion, we have the lowest incidence of AFB we have had for 30 years, and if the current trends continue, we will likely have the lowest incidence we have had this century. We are now destroying 2,700 (69%) less hives than

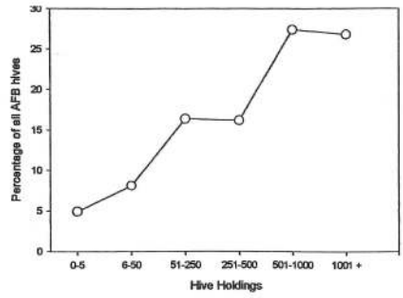


Figure 4. Annual percentage of hives reported to have AFB that are owned by beekeepers with varying hive holdings.

we were destroying nine years ago. This is a saving of $270,000 p.a. in hives which does not include the cost of destroying these colonies or lost production from them. The necessary powers and responsibility to control AFB has now been taken away from Government and placed in the hands of beekeepers with whom it should always have been vested as beekeepers have always done the majority of disease control and are the only group that could ever eradicate AFB from New Zealand.

I've really got a problem with starting an AFB eradication manual with reports of successful control of AFB using shook-swarming. What message are you trying to convey to readers?

[i] Goodwin, R.M.; Van Eaton, C. 1999: Elimination of American Foulbrood without the use of drugs, a practical manual for beekeepers. National Beekeepers' Association of New Zealand (inc.) 78p

[ii] Hopkins, Issac. 1915. Forty two years of beekeeping in New Zealand 1874-1915, some reminiscences. New Zealand Farmer reprint, 38 pages. Serialised in New Zealand Beekeeper. 1974. 36(1):35-43; 36(2):60-66; 36(3):44-47.

[iii] Anonymous 1939 Editorial, Disease control: New Zealand Beekeeper April: 1-7

[iv] Anonymous 1939: Disease control twenty years ago and now. New Zealand Beekeeper July: 12-16

[v] NZ Parliament, 1891. Foul brood in bees. Hansard. Wellington, NZ. August 19.

[vi] Anonymous. 1950. New Zealand Beekeeper 12(3): 16.

[vii] Winter, T.S. 1954. Conference address by Mr. T.S. Winter, Superintendent, Beekeeping Industry. New Zealand Beekeeper 16(3): 19-24.

**** Please don't tidy my mess, you'll only confuse me and mess up my life!!***

Trade Show of a Lifetime

The **ApiExpo'99** trade show will be an international event that every beekeeper will want to experience!

ApiExpo'99 is an integral part of the 36th international beekeeping congress, Apimondia'99, to be held September 12-18, 1999 Vancouver, Canada. This year, the ApiExpo trade show will be bigger and more comprehensive than ever! Held in the Exhibit Hall of the spectacular Vancouver Trade and Convention Centre, ApiExpo'99 will showcase the diverse business activities and educational activities relating to beekeeping, honey, and other hive products. The range of products that can be viewed at ApiExpo'99 will make this the largest single display related to beekeeping ever held in North America.

Interest in ApiExpo'99 to date has been exceptional. Booths have been rented to participants from 26 countries from throughout the world, including 12 European countries, Australia, New Zealand, and several countries from Asia, Latin America (4 countries), South Africa, and the USA and Canada. Participants will display all types of beekeeping equipment from general beekeeping supplies to specialised extractors and hive loaders; equipment for comb honey production; honey and beehive products; queens and queen-rearing supplies; pharmaceuticals; bee venom and medicines; perfumes and cosmetics; books and magazines; and national and educational displays.

Don Dixon, chair of the Apimondia'99 organizing committee, comments, "The opportunity to view such a wide range of products and businesses under one roof will be extremely exciting for Apimondia'99 participants. There has never been an ApiExpo with this much diversity."

Paul van Westendorp, the ApiExpo coordinator, is impressed with the strong sale of booths. "We redesigned the display area several months ago because of heavy demand, to increase the number of booths available, and by April 15th we had rented 85% of them. At the current level of sales, we expect to sell out by July! I am thrilled and amazed at the interest in ApiExpo'99. We are dealing with a truly global event!"

Entrance to ApiExpo'99 is included in the registration for Apimondia'99 along with the entrance to all presentations. If you have not yet made plans to attend Apimondia'99, act now because the deadline for early registration is June 1, 1999.

The floor plan for ApiExpo'99, including currently registered displayers, and registration forms can be accessed from the congress website:<http://www.apimondia99.ca>. Registration materials can also be obtained from Venue West Conference Services, #645-375 Water Street, Vancouver, British Columbia, Canada V6B 5C6; e-mail: <congress@venuewest.com>.

Canterbury Branch

Notice of Remit Voting Meeting

June Evening Meeting

Date: Tuesday, 29 June 1999

Time: 1.30pm sharp

Venue: Burnside Cricket Clubrooms
Burnside Park, Avonhead Road
CHRISTCHURCH

Programme:
1. Voting on Remits for Conference
2. Election of Conference Delegates
3. General Business

Supper provided at $1.00 per head

YOUR VOTE

Your vote on matters concerning your industry is vital for its future direction and prosperity. The only way that your democratic vote can be recorded at national level is by registering your vote a the branch meeting on Tuesday, 29 June 1999.

If you cannot attend this meeting, and I would sincerely urge you to do so, please fill in the attached proxy form and post it to the branch secretary or alternatively give it to the local member who will be attending the meeting. Proxy forms must be received to count.

Remember **WE NEED YOUR VOTE** - at last year's meeting we only received 177 votes to conference.

TW Corbett, Secretary

The International Bee Research Association: 50th Anniversary

The 24th January 1999 will be the fiftieth anniversary of the foundation of the International Bee Research Association. In this article Dr Eva Crane, who has been Honorary Life President of the Association since 1985, summarises its history and achievements during the half century.

During the Second World War, bee scientists and beekeepers in many different countries were cut off from each other, and after it ended in 1945 they had an urgent need for information about new research and developments that could help them in their own research and beekeeping. The British Beekeepers' Association had set up a Research Committee, but this type of work was outside its scope and finances. So, at the instigation of several Members of the Committee, the Bee Research Association was formed on 24 January 1949.

At the 13th International Beekeeping Congress in Amsterdam in August 1949*, the first to be held after the War, Graham Burtt and I presented a report on the newly formed BRA, whose Members were already some 600 bee scientists, beekeepers and others with a special interest in research on bees and beekeeping.

To mark its 25th anniversary, the Association published *Bee Research Association, 1949-1974: a history of the first 25 years*. Professor Karl von Frisch had been President from 1962 to 1964, and in the Introduction to the book he commented: 'One great service rendered by the Association is that, within its own special field, it seeks out and fosters ...contacts, and many individuals have thus been led out of their isolation. In doing this, the Association not only helps and sustains the individual, it expands their horizons and those of others, leading to an increase in mutual understanding.' Enterprises undertaken before 1974 are still continued, although the emphasis has shifted in line with new needs of beekeeping and bee research, and with new advances in information technology.

At a BRA Members' Meeting during the 25th International Beekeeping Congress in 1975, one Member proposed that the word 'International' should be included in the name of the Association, since its membership, character and work were international. This proposal was supported unanimously at the meeting, and later by the Council, and the necessary formalities were completed at a meeting held on 25 March 1976 in the lecture room of the Linnean Society in London. Here, on 1 July 1858, Charles Darwin and Alfred Russell Wallace had 'made their first communication on their views on the origin of species of natural selection'.

**At this congress, the formation of a permanent International Federation of Beekeepers' Associations was discussed, and this came into being as Apimondia a few years later.*

Publication of journals

The journal *Bee World* had been passed on to us by The Apis Club in 1950, and the Association had published it for 49 years.

Apicultural Abstracts, started in 1950 to report new developments and research findings, was published first in *Bee World*, and from 1962 as a separate journal. In that year *Journal of Apicultural Research* was also started at the request of Members in different countries, and it has now published refereed research papers related to bees and beekeeping for 37 years. Since 1993 Dr Tom Rinderer (USDA) has been editor of the *Journal*.

The year 1969 saw the beginning of computer operation of the Association's information services. The fact that we were so early in the field was due largely to the initiative of Professor Gordon Townsend at the University of Guelph, Canada, who was then Chairman of BRA Council. With the co-operation of that University, abstracts in current and earlier volumes of *Apicultural Abstracts* were entered in the University's computer system. In 1976 William Dawson published Index to *Apicultural Abstracts 1950-1972*, under author and subject, by Eva Crane and G F Townsend. As far as is known, this was the first computer-generated cumulative index of an abstract journal to be published.

From 1961, financial support for *Apicultural Abstracts* was received from the Commonwealth Agricultural Bureau, and from 1973 the journal was produced in the CAB computer operated system. More recent developments within CAB (now CAB International) led to the phasing out of our financial support by 1994. CABI has continued to process records for *Apicultural Abstracts* within its system, and these have been put on disk quarterly for each issue. However, it is now more cost-effective for IBRA to do this in-house, and the change will be made in 1999. Page 139 of No.3 *Bee World* gives more details.

Library and special information services

The IBRA Library, which from the start incorporated the Library of the Apis Club, has been built up over the decades by the addition of new books, beekeeping journals, and reprints of relevant publications in scientific journals. In addition, some Members and others have given or bequeathed their own collections of early books, and a list of gifts up to 1974 is on page 102 of the *BRA History*. The IBRA Library, which was named the Eva Crane IBRA Library in 1987, is now probably the most important and valuable library on bees and apiculture in the world, and it is widely used. Any duplicate material received has been passed on, for instance to Branches of the IBRA Library which were set up in North and South America, Africa and Asia from 1959 onwards.

With the aid of its Library, BRA was able to locate special information requested by members. This was done at first through cumulative indexes to subject (UDC) and to author, and later by computer searches using keywords and search profiles.

Publication of books

IBRA has published or co-published a number of books, and a subvention was obtained towards the cost of production of many of them. The following are among the more important:

- 1952 Dorothy Hodges, *The pollen loads of the honeybee* (latest reprint 1994)
- 1953 C R Ribbands, *The behaviour and social life of honeybees*
- 1958 HM Fraser, *History of beekeeping in Britain*
- 1962 HA Dade, *Anatomy and dissection of the honeybee*
- 1962 DJ Campbell and G P Henderson, *The Bee World: Index to Volumes 1-30 (1919-1949)*
- 1971 Dorothy Galton, *Survey of a thousand years of beekeeping in Russia*
- 1974 BRA, *Bee Research Association, 1949-1974: a history of the first 25 years*
- 1975 Eva Crane (ed.), *Honey: a comprehensive survey (in co-operation with Heinemann)*
- 1978 Eva Crane, *Bibliography of tropical apiculture*
- 1979 IBRA, *British bee books: a bibliography 1500-1976*
- *1979 *Beekeeping in rural development* (Commonwealth Secretariat)
- *1980 Eva Crane, *A book of honey (Oxford University Press)*
- *1982 E Drescher and Eva Crane, *Technical cooperation activities:*

beekeeping. A directory and guide (German Agency for Technical Cooperation)

- *1983 Eva Crane, *The archaeology of beekeeping* (Duckworth)
- 1983 Eva Crane and Penelope Walker, *The impact of pest management on bees and pollination*
- 1984 Eva Crane, Penelope Walker and Rosemary Day, *Directory of important world honey sources*
- 1984 Eva Crane and Penelope Walker, *Pollination Directory for world crops*
- *1986 IBRA, *Tropical and subtropical apiculture* (FAO)
- 1986 Margaret Adey, Penelope Walker and P T Walker, *Pest control safe for bees*
- 1986 Jane Ramsey, *A directory of nectar and pollen sources found in Canada and the northern USA*
- *1990 Eva Crane, *Bees and beekeeping: science, practice and world resources* (Heinemann Newnes)
- 1992 Andrew Matheson (ed.), *Living with varroa* (Conference proceedings)
- 1994 W Kirk, *A colour guide to the pollen loads of the honey bee*
- 1996 Andrew Matheson (ed.), *Forage for bees in an agricultural landscape* (Conference proceedings)
- *1997 Andrew Matheson, *Practical beekeeping in New Zealand* 3rd edition (GP Publications)
- 1997 Pamela Munn and Richard Jones, (eds.) *Varroa: Fight the mite* (Conference proceedings)
- 1998 Pamela Munn (ed.), *Beeswax and propolis for pleasure and profit* (Conference proceedings)

In press:

- 1998 Richard Jones and Pamela Munn (eds.), *Habitat management for wild bees and wasps* (Conference proceedings)
- *1999 Eva Crane, *The world history of beekeeping and honey hunting* (Duckworth)
- 1999 Leslie Goodman, *Form and function in the honey bee*

**By IBRA or a director or past Director, but published elsewhere.*

From the outset, IBRA worked to help beekeepers and bee scientists in different countries to overcome the language barriers between them. With the co-operation of multilingual members and publishing organisations in a number of countries, eleven volumes of the *IBRA dictionary of beekeeping terms* were published between 1951 and 1993, giving translations of over a thousand bee-related terms between English and 19 other languages: Arabic, Chinese, Czech, Danish, Dutch, Finnish, French, German, Hindi, Hungarian, Italian, Japanese, Norwegian, Polish, Portuguese, Romanian, Russian, Spanish, Swedish. These volumes enable a term in any of the languages to be translated into any other.

IBRA published a series of bibliographies, many annotated, from 1963 onwards. Most were on subjects of topical importance or interest. The most recent is No.48 *Unifloral honeys 1992-1996*, and others range from *Varroa, tracheal mites and plant oils 1990-1996* (No. 41) to *Africanized bees 1990-1996* (No.44).

Improvement of tropical beekeeping

In 1976, on the initiative of a Member in Lebanon, Sheik Najib Alamuddin - and thanks to his financial support - IBRA organised the first International Conference on Apiculture in Tropical Climates, in London. This proved to be a seminal development in many ways, and it led to a great extension of IBRA's services to developing in many ways, and it led to a great extension of IBRA's services to developing countries. Further Conferences in the same series have since been held every four years: in India, Kenya, Egypt, Trinidad and Costa Rica, and the *Proceedings* are published in full. The next Conference will be in Thailand in 2000. At the 1976 conference, the Overseas Development Administration (UK) was represented by Tecwyn Jones; he quickly recognized the value of IBRA's work, and played an important part in it for the next 17 years. He served as Chairman of Council from 1983 to 1993, and is now in charge of BioNET-INTERNATIONAL consultative Group, based in the UK.

In 1978 the International Development Research Council in Canada funded IBRA's preparation and publication of the *bibliography of tropical apiculture*, which provided a solid foundation for further beekeeping development in many developing countries. Special funding from the ODA enabled IBRA to appoint an Information Officer for Tropical Beekeeping, Margaret Nixon from 1980 to 1983 and then Dr Nicola Bradbear; the post was continued until 1993, after this funding had ceased.

International meetings

In 1974 Members in 15 countries organised special meetings to mark the 25th anniversary of the Association. In addition to the six International conferences on Apiculture in Tropical Climates, IBRA has organised a number of others, including the five whose *Proceedings* are listed above.

Encouraging historical research

Starting in the 1950s, the Association assembled a Collection of Historical and Contemporary Beekeeping Material (Chapter 11 in the *BRA History*). Items form the Collection have been used for research and for educational displays, but it has not yet been possible to obtain funds for a fuller permanent display.

IBRA has had an important role in encouraging historical research on bees and beekeeping, especially after vessels excavated in Greece and Spain were identified as ancient hives. There have been many finds from more recent centuries, mostly in Britain and Ireland, France, Greece and Spain.

Premises and people

In 1961 the Bee Research Association launched an International Appeal for funds with which to purchase premises for headquarters. Sir David Bowes Lyon inaugurated the Appeal at a meeting in the Hall of the Wax Chandler's Company in London, and in 1966 we were able to purchase Hill House near Gerrards Cross in Buckinghamshire, England. This move initiated a period of great expansion for the Association, during which increasing grant-support was obtained: from the UK Development Commission, The Royal Society, the Commonwealth Agricultural Bureau and other sources.

In 1986 Council accepted an invitation from University College, Cardiff, part of the University of Wales, to purchase one of its buildings for headquarters. The move, made in September, was financially advantageous because the market value of Hill House had increased greatly since we purchased it twenty years earlier, and investment of capital from its sale increased IBRA's income considerably. But as a result of moving to another area IBRA lost a number of longstanding staff members, including Penelope Walker, Rosemary Day, Annette Crownshaw and Inge Allen, who between them had been responsible for much of the work on IBRA's publications and in its Library. Two long-term members of staff worked at both Hill House and Cardiff: David Lowe from 1973 to 1998 (Editor of *Apicultural Abstracts* from 1984) and Karl Showler, Administrative Officer from 1970 to 1987. At Cardiff, Dr Pamela Munn has been Editor of *Bee World* since 1988, and Salma Zabaneh Librarian since 1986.

I had been Director of the Association since its foundation in 1949. When I retired at the end of 1983, I was succeeded by Dr Margaret Adey, who had a background in environmental sciences and had done research on plant-bee relationships. When she moved to another post in 1987, Vince Cook was appointed; he had been Head of the Ministry of Agriculture National Beekeeping Unit. He died suddenly in 1988 and was replaced temporarily and at short notice by David Francid (1988-1990), who had held appointment relating to United Nations rural development programmes. In 1991 Andrew Matheson, Apicultural Consultant to the New Zealand Ministry of Agriculture, was appointed. After he had to return to New Zealand at the end of 1995 he was succeeded by Richard Jones who had been Development

Director at Atlantic College, and international centre situated in Wales.

During the Association's fifty years, its Members have been drawn from over a hundred countries. Many of them played an important part in the Association's affairs - working on a voluntary basis, without payment - as well as in the advancement of beekeeping and bee research. Some have been Regional Representatives in their own countries, and others participated in a specific part of IBRA's work such as abstracting; many made gifts of money or helped to find new sources of financial support, or donated publications or items of equipment. Others provided useful suggestions and ideas, especially during their visits to the Association's headquarters of IBRA visits to different parts of the world. As voluntary Publications Secretary, Betty Showler was in charge of book sales from 1970 to 1985. Of all the Association's voluntary officers, the record for long service is held by Judge David Smith, who was appointed Honorary Secretary in 1963 and still holds this office. He was one of the authors of British bee books, the bibliography published by IBRA in 1979.

An appraisal

As the Chairman's Report to the Members' meeting in October explains (page 165) Council has decided that 'in view of the continued annual financial losses' severe cuts must now be made in IBRA's expenditure. The finale of the Association's half century has thus become a very sad one, and it is worth trying to identify factors which have led to the present situation.

The Association's history falls into three separate parts. From 1949 to 1965 the Association owned no premises and much of its work was done without payment. The annual expenditure never exceeded £10,000, and there was an average annual net surplus of £271. Between 1966 and 1985 the Association occupied Hill House - purchased as a result of an International Appeal for funds - and the annual expenditure grew to £226,802; the balance between annual income and expenditure fluctuated between about +£8,000 and -£6000, with a small average net loss (£311). From 1986 to 1998 the Association's premises were at Cardiff, and their lower cost made extra working income available from invested capital. In the 12,years completed so far, the annual expenditure has been lower (£158,917 in 1997), but there has been an average annual loss of about £26,000; in 1997 it was £34,548.

In spite of our present difficulties in maintaining an adequate income, IBRA is still a valued and influential Association. When the Association was founded in 1949, no other organisation in the world was attempting to provide a scientific information service on apiculture and honey bees - or on non-Apis bees, many of which are important pollinators and by request were soon included in our frame of reference. The following outside changes have had a significant impact on the Association's financial well-being in the years since 1949.

- From the 1950s onwards, travel between countries became increasingly easier and more rapid. Many more international meetings could be held, and present-day beekeepers and scientists can much more easily meet each other and exchange information in person.
- During the 1960s and 1970s, early developments in computer operation were of great assistance to IBRA, and the use of e-mail has now increased the number of paid requests to the Library for information.
- Recent advances in information technology have led to on-line availability of much new material from sources other than IBRA, thus reducing the number of individuals and institutions relying on IBRA journals and Library material in hard copy.
- Since the 1980s, the amount of government and other funding for research on agriculture and related subjects has greatly decreased. This has affected IBRA both directly and indirectly. Direct funding for IBRA activities - which had grown from £4,250 in 1966 to £85,128 in 1986 - dropped to £1,277 (contract income) in 1997. Indirectly, reduced government funding in many countries now supports fewer bee research workers; also, the world spread of the varroa mite, wide availability of imported honey and other social and economic factors have lead to a substantial decline in the number of beekeepers in affluent regions. Both these change have reduced the number of potential IBRA Members.
- When the Association was started, it was maintained by enthusiasm, voluntary (unpaid) help and financial support, largely from within the UK. The proportion of voluntary work is now much less and, although IBRA is increasingly used and valued worldwide, there are many obstacles to the provision of core funding for it's headquarters in the UK from other countries.
- In 1997 and 1998 the state of the world markets resulted in a substantial decrease in the value of our investments, and in the income derived from them.

I should especially like to see the following projects implemented, although all need funds which are not at present available. The first is completion of the computerized Library catalogue, by the addition of all the publications which have no computer entry through the *Apicultural Abstracts* system. The second is to input the text of rare publications that are not obtainable on-line from other sources: for instance early beekeeping books, and other documents such as these, from different countries. The third project is a substantial extension of the IBRA World Wide Web site in such a way that IBRA can be reimbursed for each use of it.

A Members' Meeting will be held during the 36th International Apicultural Congress in Vancouver, Canada (13-18 September 1999). The 50th Annual General meeting of IBRA is fixed for 2 October 1999, and I very much look forward to meeting Members there. Meanwhile, Members and others who have suggestions for remedying the present situation should send them without delay to Richard Jones, the Director.

Whatever happens in the future, IBRA has been a much loved institution for half a century, and one which - in its own specialised sphere - built a bridge that spanned the period between the end of the Second World War and the developments which now allow the wide transmission of information through electronic technology.

Eva Crane,
Honorary Life President of IBRA,
Woodside House, Woodside Hill,
Gerrads Cross, Bucks SL9 9TE, UK.

Beekeeper's 270 million workers feel pinch

If things had gone to plan this year, beekeeper Peter Irving would have been "in clover" - and so would his workforce of about 210 million honey bees.

But a severe drought has made clover a precious commodity in much of his catchment area around Kurow, 68km northwest of Oamaru, and denied him his goal for the year - to produce 150 tonnes of honey for export to Europe and Japan.

When the weather is suitable, his honey bees collectively fly an estimated 2,772 billion kilometres each day in search of nectar they gather for that lucrative export trade.

Mr Irving also produces certified organic honey from hives in areas remote from intensive farming, such as the Upper Waitaki and Hakataramea Valley.

Establishing an export market has been a team effort by Mr Irving and his wife, Kate, who has also established her own thriving business creating television commercials for overseas companies.

This has involved, among many things, establishing and developing communication skills and credibility with European and Chinese businessmen.

Mrs White put these skills to good use seven years ago. Dissatisfied with the domestic honey market, she advertised in Europe and secured initial orders of 20 tonnes for Waitaki Apiaries' product.

The market mushroomed from there and within three years the pair were exporting their entire crop.

In her search for new markets, Mrs White became increasingly convinced that organic honey had a brilliant export future. A decision to become a supplier of certified organic product was made four years ago.

Product demand now outstrips supply and, had this honey season been reasonable, the pair would have comfortably achieved the export target.

To their credit, they are both realists and philosophical about their fortunes. They appreciate the vagaries of climate which apiarists have to endure.

"There will be good years ahead," Mr Irving said.

"And when they come, we are now in a position to capitalise on them," Mrs White added.

Acknowledgement, Sunday Star Times

Apimondia

IHEO

Time is running and as we recommended in one of our last IHEO market reports, it's very important to make hotel reservations as soon as possible.

A great number chose the waterfront Centre Hotel, Lloyd Smith from Australia made arrangements at the Terminal City Club Tower Hotel and the Apimondia headquarters is the Hyatt at Vancouver.

We made reservations in advance for the Malaspina Meeting Room (for 50 people) but in case less people show up, a week before the meeting we will change to a smaller one, without any problem or cost.

Up to now attending fee will be C$50,- (US $35,-) per person, which includes conference room rental charge, coffee break, stationary as photocopies and files for the country reports, name tags, as well as proportional fax expenses to arrange this meeting.

It's also intended to get loudspeakers and microphones for better understanding.

A screen and projector can be added if some of our members want to give us a short look into his country and daily work.

The attached form is only to know

who is willing to join us at the coming IHEO meeting?

We have often only contact with one company in each country, but behind this one are 3, 5 or more exporters, which help to make the market reports possible.

IHEO Secretary, A Meier

Frank reflects...

by Frank Lindsay

Quite often for relaxation after working an apiary, I look around and see what's flowering near the apiary. Regional Councils are gradually reducing possum numbers and the affect of this is now showing in the new growth of many native trees. Apart from the extra honey coming in, it has had a beneficial affect on the native birds. Last year was a good breeding year for them, as I wandered along a streambed; I was surrounded by families of fantails swooping on any insects I disturbed as I went along. At a safe distance, a family of kingfishers was perched and noisily calling while overhead, a pair of paradise ducks honked and whistled a warning to the whole valley.

I had an alternative motive for my wandering this day as the farmer last year had lost a number of deer into the bush adjacent his farm and there were signs, close to the hives. While working the bees I smelt one that had come down to investigate what all the noise was about. Although I picked my way carefully around the reverting farm and bush fringe, (with a camera), it was obviously long gone, but I did notice a number of spring and summer sources that were flowing totally out of season.

Do we blame this on the hole in the ozone layer upsetting their biological clock or just the long warm autumn, for fooling them into thinking it was summer? Most prominent was the Crimson Rata Vine in full flower and being worked by the bees and wasps. A lot of shrubs in my garden are budding up also and yet winter is only days away. I wonder how this will affect next season's honey flow.

As I touched on last month, now is the time for planning. It was easy while removing the honey crop to assess the potential of the queen when inspecting the brood nest for disease. Spotty brood indicated a replacement is required next season. Hives are marked to indicate a replacement is required and the odd queenless hive was given a frame of brood with a laying queen out of the nucs I have in the garden. The majority of hives are going into the winter in very good condition, full of bees and honey.

Thinking of making up new woodware? Bear in mind that all surfaces exposed to bees must be untreated timber. (Modern forms of timber treatment are toxic to bees and will gradually leach out killing them. It will also leave a residue in the wax and honey). Hence only the base runners and hive stand should be made of ground treated timber.

Now an awful lot of money is spent on bee equipment. A hobbyist can afford A1 clear timber, while commercial beekeepers starting off tend to purchase "seconds" with the odd knot. Both last equally as long if looked after. You can purchase ready made parts from our beekeeping stockist or from several timber business that now produce beekeeping supers as a sideline to keep their employees fully occupied during slack production periods. Or you can purchase rough sawn, untreated timber from any of the portable sawmills now operating. The only problem with this method is that you have to dry the timber (stacked with fillets) for twelve months. Then it has to be dressed to the right width and cut into lengths and processed into supers, etc. A lot of work but enjoyable if you have the equipment and time.

Some mills will dry and process the timber into lengths ready for cutting but this can be a little dearer. It all depends on the price advantages of each source, how much storage space and time you have.

Most of the timber available is from pinus radiata, which with modern methods of Silva culture now produce long lengths of knot free timber. The only problem with this timber is that it is a soft wood and needs protecting against rot. You also have to be careful when selecting timber as some mills have been processing trees that look mature but really need another five years of growing to heart up.

Microcarpa is also available but this timber has advantages and disadvantages. Being a hard wood, heart timber doesn't require preserving, however when dry, it splits easily so needs to be drilled before nailing. If you are going to make your own gear, please practice safety around saw benches. A moment's lost concentration could result in a thumb missing. Don't work long hours; saw blades are very unforgiving.

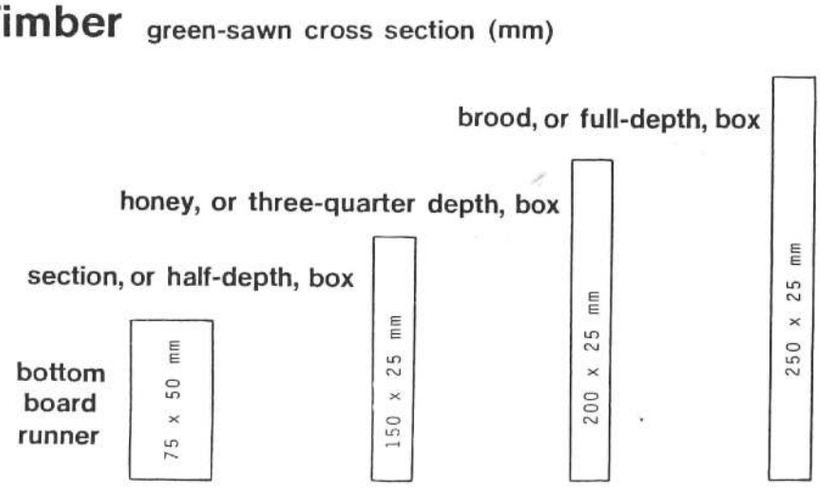
There are a number of non-toxic preparations now on the market for preserving untreated timber. The commercial producer protects his/her timber using a hot paraffin wax dip method. A heavy steel vat is built into a fire and heated to 130 deg C. Made-up supers are fully submerged for five minutes, removed and immediately painted with a water-based paint. As the timber cools, the wax and paint are drawn in forming a sealed, weather protected surface. Generally supers are re-dipped and painted every ten years to give lasting protection.

For the smaller beekeepers you have the choice of water-base or oil-based protectives. Either are painted on or dipped. The longer the timber is dipped the further in the preparation can penetrate.

I used to use copper naphthenate. You can either use mineral turpentine or diesel as a carrier. I preferred to use turps, as the timber was easier to paint when the wood is dry. Mix 4 parts turps to 1 of copper naphthenate.

My method was to use a 44 gal drum cut in half (length wise) and submerge the woodware using weights for 5 to 10 hours (until the bubbles stopped rising). Remove and allow to drain, then seal the still damp woodware in large plastic bags. This prevents immediate drying and allows the preservative to be drawn further into the timber. After a few weeks it was removed, assembled and allowed to air for a further six weeks at which time it is primed and painted with oil based paint. Well-preserved and painted roofs, bases and supers will last twenty years with only the occasional repaint.

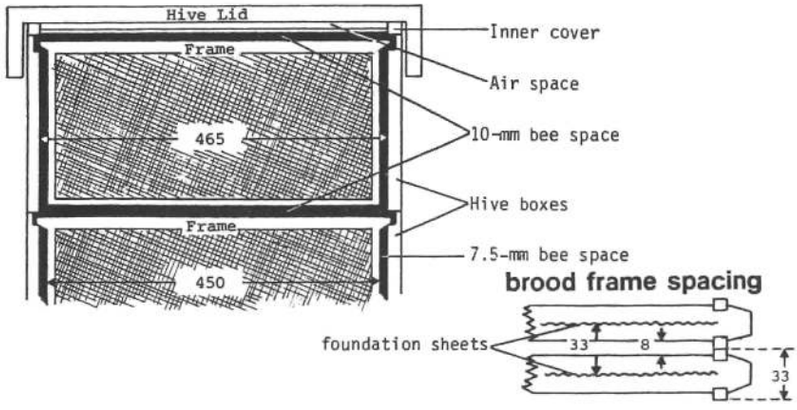
Now most of the books recommend that supers be only painted on the outside as the wood breathes and absorbs moisture given off by the bees. I do not recommend that you do this but I have



The hive

(all measurements in millimetres)

Bee spacing



also noted over the years that some hobbyists completely painted their supers inside and out and yet these have survived in a marvellous state of repair for twenty years or more. One only needs to take note that the hive may require a little extra top ventilation during winter if hives are painted inside and out.

The main thing to watch is to keep a good paint seal on the outside of the hives. Reading the Australasian beekeeper, well painted hives are also the ones that survive quick moving bush fires.

Frames: I tend to purchase all my frames now but in the past have made them myself. One must watch the measurements very carefully, continually checking as you make them. I didn't check a batch of top bars once, and continuing on until I had finished a days run. They looked perfect and it wasn't until they were made up and full of honey that I discovered that the end lug measurement had gradually changed. Now I have 1000 frames that are very tight going through the uncapper.

It can be fun making your own hive but please remember to make everything to the book. The hive is designed to give the correct bee space, in and around frames, super and between supers. Muck this up and you either have frames glued to the side with propolis or tons of burr comb between the frames. If you are new to beekeeping, by all means make your bases, super and roofs but purchase the frames.

Winter is also a time for reading. I devour most books on beekeeping picking out the bits that seem logical and occasionally try new practices. I often reread them and find new information I missed the first time.

First time beekeepers get confused because there seems to be so many different methods for working bees. All work, most of the time. Each year can be different, early spring, late, wet windy, early flows etc. You have to record what's flowering and when and watch your bees. Learn what triggers swarming and learn how to control this and you will nearly always produce a good crop of honey.

Books are available from local libraries and also from our own library (although our librarian is away this month).

Here are a few books I recommend for warm winter reading. Every beekeeper should have a reference book. I have Dadant's "The Hive and the Honey Bee". Another quick reference book is Some Important Operations in bee Management by TSK and MP Johansson

Then read our New Zealand books. Beekeeping in NZ by Andrew Matheson.

For the new Beekeeper there is Beekeeping for Fun by Ray Chapman-Taylor & Ivo Davey. Based on Auckland conditions, it's a very good book that starts from the basics and covers alternate ways of producing honey.

Another good book is "Mastering the Art of Beekeeping" by Ormond & Harry Aebi. This book is a product of years of observations in California, gives good tips, and will add to any Beekeepers knowledge.

A new book on the market, Forty Years with Bees by Donald Sims. Although English, this book gives techniques for both managing hives on early and late flows. A very good book.

Another English book is Ted Hooper's book Guide to Beekeeping and Honey.

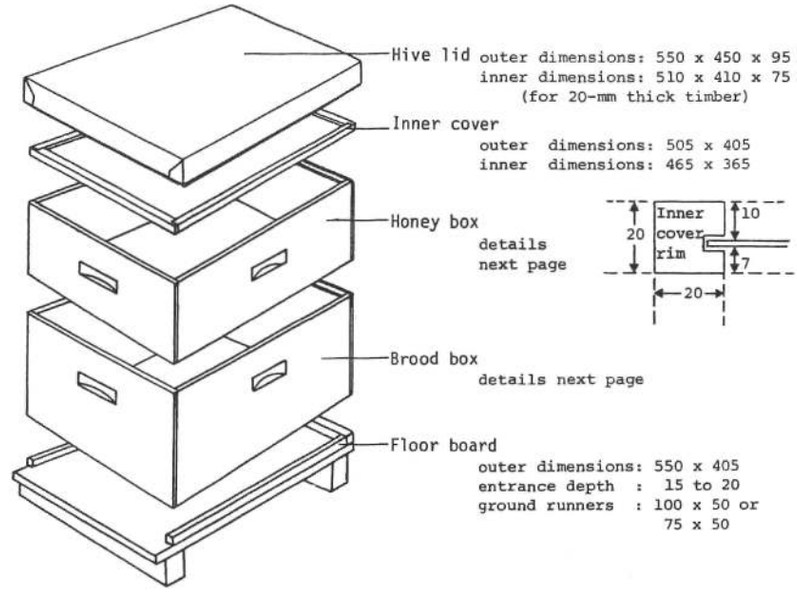
Want to try Queen Rearing? For the small beekeeper, Queen Rearing made Easy by Vince Cook. He spent a few years in NZ as a MAF Officer before moving back to England. This small book covers everything for producing a few queens from one hive.

For the more qualified queen breeder: "Breeding Super Bees" by Steve Taber. During the 1980's he wrote for the Gleanings (articles I still have today), and this book was put together based on these articles. The practices are relevant today as they ever were. (I'd like to see an update from him).

And if you are interested in a little history and a lot of hidden tips, CC Millar's Fifty Years among the Bees. This is a gem written early in the century but was reprinted again in the eighties.

These are but a small sample of the hundreds of book written about bees. They all have something to offer, happy reading.

Hive parts



Otago Branch Season Report

(Better late than Never)
Some will ask what season, we haven't had one yet.

It is true that some beekeepers in Otago have hives that failed to get winter stores.

Parts of Central Otago are in this situation, others hives sometimes a short distant away have faired better, it seems back to back droughts have meant the sub-soils were very depleted, this coupled with high temps (30-35°C), caused bees to search for water instead of nectar.

Hives at high altitude seemed to do better, all this after a spring that was better than the previous two that had been so slow.

The East Coast was much the same as Central, the easterly weather patterns that bring the three and four day drizzles have been absent for two years, thankfully the wind was far less persistent as well.

As we look further south and west conditions seemed to improve with five ton per hundred being approached and spoken of after a bit of gentle prodding. Some in the drought affected areas were quick enough off the mark to take hives to other districts.

A vote of thanks must go to the people in those districts for their encouragement and help.

Of course the effects do not end with the lack of a crop as syrup tanks are well in use, feeding even now as winter approaches is common this year, but it certainly isn't the norm for Central Otago. (Late January to October makes for a very long winter with nothing coming in), cell raising under these conditions is at best marginal.

Vipers Bugloss is now flowering furiously, of course it is too late but then there is always next season and now is the time to start getting ready for it!

Mike Vercoe

Auckland Branch

Remit Voting Meeting

Date: 24th June 1999
Time: 7.30pm
Venue: 123 Queen Street, PUKEKOHE

REFRESHMENTS AVAILABLE

SEND-OFF FOR PAUL

Bring a plate or finger foods

If you are not able to see Paul off, send a signed proxy indicating who should use them, to Secretary Jim on phone: (09) 238-7464, Fax: (09) 232-8429.

Otago Branch Calendar of Events for 1999

July 2nd	Branch Meeting Voting on Remits, Tecpak 7pm	
July 12th-16th	July 1999 NBA Conference Week at Ashburton	
	Specialty Groups	Start Monday, 12th and 13th
	Seminar	Tuesday, 13th
	Conference AGM	Wednesday and Thursday, 14th 15th
August 6th	Branch Meeting	Post Conference Report, Venue TBA
Sept 10th	Branch Meeting	(To be Advised)

Things to consider
The level of the "Apiary Levy"
The roll of the NBA President
How we treat season apiary sites in relation to the levy
Genetically Modified crops

Come and have your say, share your thoughts, that way the branch can be effective in helping beekeepers.

Questions Call Mike on (03) 448-7811

Grower flags canola crop next spring

Wellington: American company Monsanto says it has run out of time to lodge its application to grow genetically modified canola on South Island farms next spring.

Monsanto New Zealand business manager Murray Willocks said on April 16 that he expected to lodge a formal application in four to six weeks.

Yesterday, he said the company had decided it did not have enough time for a public hearing before the next planting season.

The Environmental Risk Management Authority (Erma) has 80 days to process applications, but has some specific points at which it can extend the process.

Mr Willocks said yesterday the company wanted to make sure there was ample time for a hearing with public submissions, because of the extensive interest in the application.

When it goes to Erma later this year, the application is still expected to be the first for a commercial crop, while most other applications for new organisms have involved experiments in laboratories or 'contained' field trials.

Monsanto planned to plant its genetically modified canola seeds over several hundred hectares between North Canterbury and Southland.

The harvested seeds, which are resistant to the company's herbicide Roundup, were to go to the Canadian market.

Mr Willocks said in a statement that it had taken slightly longer than the company expected to meet Erma's requirements.

"It is most unlikely that we would be able to make the spring planting season this year, if the application was approved.

"We have given ourselves more time to put the application together," he said.

It was the first application for the commercial release of a crop. Once the formal application went to Erma, Monsanto might be asked to provide further information.

The company has already informally outlined its application to Erma last year, to get an indication of what information it would have to provide.

Acknowledgent,
Otago Daily Times 20/5/99

Library News

IN SEARCH OF THE BEST STRAINS OF BEES by Brother Adam has been lost a while ago.

Replacement of this very interesting book appeared difficult but someone has come to the rescue, so we have a copy again.

On the inside front cover the following has been written:

"Donated to the NBA Technical Library, with best wishes, Cliff Van Eaton - In Memory of Ted Roberts, friend of bees and the people who keep them".

Thank you Cliff for your generosity and this very fine gesture. Just wonderful.

Also two papers from MAF:

No 22 PROPOSED COVERAGE OF THE ANIMAL PRODUCTS BILL. Dec 1998, 19pp. NZ.

No 26 RISK MANAGEMENT PROGRAMMES UNDER THE ANIMAL PRODUCTS BILL. Feb 1999, 18pp, NZ.

Apicultural Abstracts is alive and well...

In the dark days of the northern hemisphere December, rumours circulated that this much admired journal had come to the end of the road. Even worse the lie was compounded with tale that the library was to close!

Although fervently denied by senior staff there seemed to be many people out there that were prepared to believe the worst. Well they were wrong.

The first AA of 1999 has been produced in a style and form that is almost as it ever was. What is more, number 2 is well under way.

The library too is running as normal, providing loans to members, and doing searches and document delivery as usual. However, there is one thing that we can't do without your help, please send us your research papers and publications so that we can abstract them in Apicultural Abstracts. Some people seem to have taken ill-founded rumour for truth - so now that we have put the record straight please send us your material as usual.

Journal of Apicultural Research

There is no denying that IBRA has undergone a terrific upheaval and that there have been some problems and delays. JAR has suffered a little but 1998 saw four editions. Indeed the last for the year AND the first for 1999, due out soon... have been bumper editions both in terms of quality and quantity.

Bee World

1999 is a big year for IBRA, as on the 24th January we celebrated half a century of service to apiculture. The year is even bigger for Bee World which reaches octogenarian status, it will be 80 in June.

The first Bee World of 1999 has been published and number 2 ie due out very soon. Remember that is only available to members and subscribers so don't miss out. Make sure that you have done your paperwork and have paid up!

A History of Beekeeping

The really big news of the month must be that Dr Eva Crane's long awaited book is due out any day - "World History of Beekeeping and Honey Hunting", any work by Dr Crane is authoritative and a truly seminal contribution to apiculture. Her new book will be no exception, it will be available through IBRA, the organisation that she brought into being and for 35 years directed so ably. The practice will be in the region of 90GBP or US$150, so place your order with us now AND remember IBRA member's get their usual 10% discount.

This newsletter was produced by Pamela Munn.

Results from the Honey Residue Monitoring Programme for the year ended 31 March 1999

Executive summary

The results of the National Residue Monitoring Programme for Apiculture for the year ending 31 March 1999 indicate that there were no residues found in excess of the maximum residue levels permitted in New Zealand.

Background

The National Residue Monitoring Programme for Apiculture was developed during 1997 to monitor residues in honey as prescribed in Council Directive 96/23/EC.

The programme is essentially an audit of the effectiveness of the current controls and practises to ensure that New Zealand honey is safe and compliant with residue related requirements.

The format of this programme takes into account the annual production of the apiculture industry with sampling at the specified rate of one sample per (beginning) 300 tonnes.

All of the honey samples was taken from honey houses which were randomly selected from the register of honey houses (list of establishments). MAF approved AgriQuality Apiculture Inspectors randomly selected the day and the honey box or honey container sampled for each sample required.

The samples were dispatched to the National Chemical Residue Laboratory which was approved by MAFRA for this laboratory testing. The results were reported back to the programme manager in the MAF Regulatory Authority and collated for this report.

Bee Genetics made simple

by Tony Roper

Introduction

For most beekeepers, including myself, bee genetics appears to be a most difficult and confusing subject. Probably the main reason for this confusion is due to the majority of authors being very knowledgable in biological terminology and assuming the reader is also. To overcome this problem I have attempted to explain the biological terms frequently used with regard to bee genetics in simple language that I have found easy to understand and ***I hope other beekeepers will understand also.***

Basic Biology of Bee Genetics

The basis of bee genetics is the study of heredity. Heredity refers to how various traits are passed onto new generations from their parents through genes. Genes contain genetic messages or chemical instructions that are located on long thin bodies referred to as *chromosomes*. These chromosomes are located within the nucleus of the cells. Moreover a single chromosome has several genes that are linked together.

Normal cell reproduction occurs by division, which is the process whereby bees grow through the replicability of chromosomes in each new cell. In this process which is referred to as *mitosis*, the number of chromosomes will always remain the same. For instance, at the beginning of mitosis both the queen and worker bee will have 32 chromosomes. After mitosis has occurred there will still be 32 chromosomes in both the queen and worker bee. However, with drones there will be 16 chromosomes before and after the process of mitosis.

During sexual reproduction, reduction division occurs in the reproduction cells. This sexual reduction division is referred to as *meiosis*, whereby the number of chromosomes is halved to form *gametes*. The queen's gametes (eggs) contain 32 chromosomes which are halved to 16 chromosomes during meiosis. The original chromosome number of 32 is referred to as *diploid* while the reduced number (as a result of meiosis) is referred to as *haploid* or *monoploid*. However, because the drone is already a haploid there is no reduction of chromosomes in the production of the male gametes (sperm).

During laying, the queen fertilises her egg with drone sperm (obtained during her mating flights) that is stored in her *spermatheca*[1]. Fertilisation results in the combination of two gametes (egg and sperm), with each gamete having the haploid number of chromosomes (16) which combine in order to produce a new female with the diploid number of chromosomes (32).

Normally drones are produced from unfertilised eggs with no sperm and therefore are haploid. This phenomenon is known as *parthenogenesis*. As mentioned earlier, because drones are already haploid there is no meiosis or chromosome reduction when their sperm is produced. The important significance of no chromosome reduction is that all sperm produced from one drone is genetically identical. However, it should be recognised that individual drones from the same mother will still differ, because each haploid drone has been formed by the random selection of chromosomes from the queen's diploid chromosome number under normal meiosis. In fact, the meiotic reduction from 32 chromosomes to 16 chromosomes indicates that theoretically a very large number of variations with drones are possible. Therefore, it is surprising that in actual practice, drones typically show little variability. This lack of variability is probably a result of the practice of selecting breeder queens which are producing even coloured drones.

The Importance of Genes

Genes determine the heredity and variation that a new individual will receive from their parents. A number of important discoveries relating to genes were discovered by an Augustinian monk, Gregor Mendel in the 1860s and are still very relevant to bee breeding today. Mendel studied traits that were passed on to successive generations and found that heredity is controlled by a number of independent elements (now referred to as genes). It is interesting that Mendel did most of his work with crossing garden peas because earlier attempts with bees had failed (due to difficulties in controlling the matings of queens). Furthermore Mendel found that in the F_1 generation[2], the various traits inherited from the parents would be either *dominant* or *recessive*. Moreover Mendel also concluded that the reason genes occur in pairs for each trait is because the F generation contain both genes for the dominant and the recessive traits. It is now understood that because chromosomes occur in pairs, their genes are also paired. In addition, Mendel's research found that the two members of each pair of genes must separate when gametes are formed, and only one of each pair can go into a gamete[3]. When both members of the pair are the same this is referred to as *homozygous* and when the pair contains different genes this is known as *heterozygous*. Because the drone is haploid, as it only has one gene of a pair, this is referred to as *hemizygous*. Each gene in the gene pair is referred to as an *allele*[4]. For example, with the gene pair *Yy, Y* is an allele of *y*, and vice versa[5]. Furthermore, alleles always separate as they go into gametes (eggs). Also, alleles can be thought of as a variation or different form of a particular gene. The paired symbols for genes of a particular trait are known as the *genotype*, while what the trait physically looks like is referred to as the *phenotype*.

An illustration Fig 1 explains the way in which alleles recombine is shown. A yellow queen with the gene pair *Yy* mates with a black drone with the allele *y*. In this example the allele *Y* (yellow) is dominant over the allele y (black).

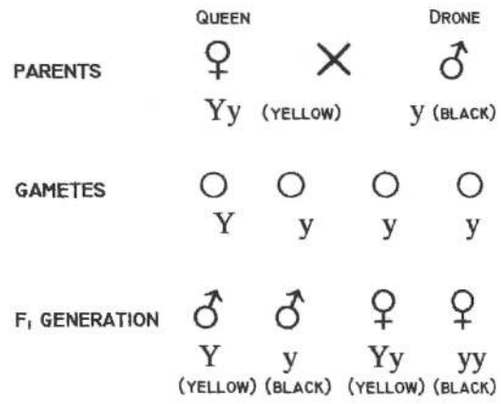


Fig 1.

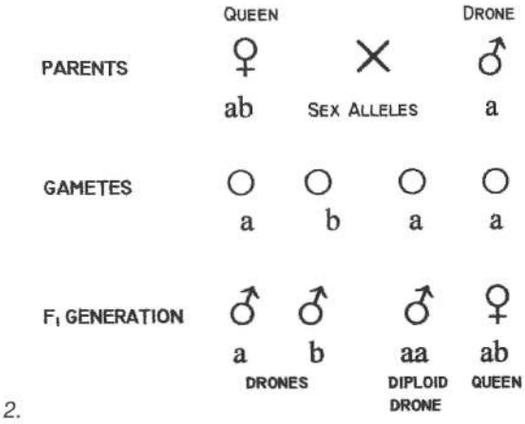


Fig 2.

It is interesting that both yellow and black drones or queens can be produced from the possible combinations of the original genes. Note that colouration in bees can be controlled by many genes and is therefore much more complex than in this simple example.

The Problems Caused by Inbreeding

As mentioned earlier, drones normally develop from unfertilised eggs (parthenogenesis). However determination of sex in bees is somewhat more complicated because sex in bees is determined by a particular sex gene[6]. The alleles of the sex gene are referred to as *sex alleles*. In the fertilised egg, normally the sex alleles are heterozygous (different) and a worker bee will develop. Alternatively, if the sex alleles happen to be homozygous (similar) an abnormal diploid drone will be produced. Diagram Fig 2 illustrates what happens when a queen mates with a drone with a similar sex allele.

In the hive these diploid drones are detected at an early larvae stage and are eaten by the nurse bees. The significance of this to beekeepers is that in highly inbred bees, as much as 50% of their eggs will not survive. This situation can easily arise if a breeder queen is used two years in succession. The first year daughter queens will produce drones with the same sex allele as the breeder queen. If in the following year these drones mate with new daughter queens with similar sex alleles, some of the fertilised eggs will produce diploid drones because the sex alleles will be homozygous.

Implications for Beekeepers

To minimise the possibility of inbreeding, the queen breeder must maintain a large gene pool to ensure a high number of sex alleles and sufficient genetic variation for stock improvement. One of the best ways of doing this is to avoid using the same breeder for successive years or her daughters. In fact as many breeders as possible should be used to ensure a large number of sex alleles in the breeding population.

It is likely that queen breeders over the years may have inadvertently sped up the process of inbreeding by selecting breeders for similar characteristics, such as colour. It is common beekeeping practice in New Zealand to select breeder queens that show an evenness in colour of her drones (and workers). The problem with this approach is that the breeder may be reducing the gene pool available, whereby reducing the number of sex alleles in the breeding population and possibly increasing the risk of inbreeding. It is important to mention that many important qualities such as honey yield are controlled by many genes, known as polygenes, and this is yet another reason why it is important to have as large a gene pool as possible.

An important point that the beekeeper must remember is that bee genetics is only part of the process of improving queens. The other part that is even more important, is the queen's physiological condition. This is determined by the degree of care given to rearing the queen, by such factors as the age of the larva at grafting, and whether there was a surplus of royal jelly in the cell. Even with a superior genetic background, a queen will be useless unless she has been properly fed so that she has reached her full physiological development. Furthermore after emergence, the queen must be properly mated and free from nosema to ensure the queen reaches her full potential.

It is important to remember that often when superior phenotypes show up, such as high honey yields, it can be due to a number of non-genetic factors, such as a more favourable environment. It is for this reason that the phenotype may not always be a reliable guide to the nature of the genotype. Therefore it is extremely important that beekeepers keep good records and average out their top producing hives over different apiaries, and preferably over several seasons, to find suitable breeder queens based on true superior genetic make-up.

References

Knox, G.A., Biological Science - Processes and Patterns of Life. 2nd. Ed. 1971. Govt. Printer, Well. NZ.

Mackensen, O., *Breeding and Genetics of Bees.* Beekeeping in the United States, p 68. USDA Agriculture Handbook No. 335. Washington, D.C.

Matheson, A., *The effects of inbreeding on brood viability and the honey crop.* The NZ BeeKeeper, 189 (1). Autumn 1986.

Reid, G.M., *Drones - The Forgotten Castes.* The NZ BeeKeeper, 35 (2), May 1973.

[1]The spermatheca is the queen's sperm storage organ.

[2]F_1 generation refers to the first filial (offspring) generation or first cross.

[3]This is referred to as Mendel's Law of Segregation.

[4]From the Greek, allelon, belonging to one another.

[5]By convention the dominant gene is shown by a capital letter and a lower-case letter shows the recessive gene.

[6]The sex gene is more specifically a series of alleles occurring at one place on one pair of chromosomes.

Invitation...

The Exotic Disease Investigation Committee will be holding a meeting in the Hotel Ashburton, Racecourse Road on Sunday the 11th of July starting at 10am, you are welcome to attend.

For further information call Peter Berry on
(06) 877-4183

The NO DRAMA Competency Examination for AFB control

Many beekeepers who have entered into disease elimination conformity agreements with the management agency (NBA) are now starting to wonder about the competency test that they undertook to complete, as part of the agreement to obtain their status as "approved Beekeepers".

This article is about the competency examination and how the NBA, as the Management Agency, will be running this process. A number of beekeepers, including some senior members of the industry, have complained that they should be exempt because they already know everything they need to know. Although this sounds reasonable in principle, when asked, the senior members will be the first to admit that not all long time beekeepers know everything they need to know. When asked how you tell the difference between those beekeepers who know everything needed and those that don't, the cheapest answer usually comes back to asking some questions ie a test.

The management agency has always taken the position that the same basic level of competence needs to apply to all members, and this process of education is likely to benefit all members, irrespective of background or experience. Never too late to teach old dogs new tricks, (just ask Lin McKenzie).

Put simply it is basic "in service training". For many the test is a formality, or an opportunity to brush up on their knowledge. But don't forget that new people take up beekeeping all the time, and so from now one should expect all hives to be inspected by people with the necessary skills to recognise AFB.

The Test

The competency examination is a straight forward true/false, circle the correct answer type test. It contains one section with high quality photographs where,the distinction has to be made between healthy and AFB infected brood and brood with other diseases. This ability to recognise the visual symptoms of AFB is critical to competency and a 100% pass on this section is required. The balance of the questions require a 75% correct response to pass the examination. The test is based on the booklet supplied to all DECA holder, "AFB Elimination Manual". A good knowledge of the content of the manual is sufficient to pass the examination.

Who will administer this system

The management agency is responsible for putting in place a system for the competency examination. The executive have decided to contract Mr Richard Hatfield, as the **"examination administrator"** to set up and manage a computer database system. As well as being an enthusiastic amateur beekeeper,,Richard has a background in large information technology project management, and brings with him a considerable range of skills and abilities that will be useful in seeing this contract completed.

A comprehensive set of specifications for the administration of the competency examination has been developed, in conjunction with Richard, designed to ensure aspects such as confidentiality, privacy, security and not least of all confidence that this potentially sensitive requirement of the NBA is handled in a professional manner.

What will this cost me?

The fee set by the management agency is $25. The fee covers system development, maintenance, data entry labour, postage and printing costs. The system is being professionally developed under a royalty scheme where ownership is progressively transferred to the Management Agency,over a two year time frame. This means the Management Agency does not need to make an up front investment.

How do I take the test?

It is anticipated that beekeepers will get together and decide they would like to take the test at a certain time and place. Local branches and beekeeping clubs can organise test sittings, perhaps in conjunction with their own AFB education programs. An exam supervisor is organised, this person may in fact, be a branch office holder or a JP. The specifications for who can be supervisors and the instructions for administering tests will be available from the **examination administrator.** The test can also be taken in conjunction with courses that will be offered by Agriquality or NBA branches.

A written request is forwarded to the examination administrator, at least five days before the test, and the personalised,test papers are mailed directly to the examination supervisor. The database prints the tests, which are randomised,in a similar fashion used for drivers license tests.

Did I pass?

After the test has been completed, the exam papers are returned to the examination administrator who entered each test paper into the computer. If you are a Deca holder, the result of your test will be forwarded to our contractor Agriquality NZ and the information indicating the successful completion of this requirement is noted.

The database will mark the tests, print certificates for all successful candidates, and generate reports to all candidates with details of where incorrect responses were made. These reports will,be referenced to the "Manual" and should be educative to both passed and or failed candidates.

Oh No - I failed !

No need to panic. Your DECA is not revoked and you do not need to suddenly start completing COI's. The Management Agency is only interested in ensuring that everyone passes so there is no limit to the number of times you can attempt the test. The report that will accompany the notice of your result will have information that should mean that you can quickly find out where you have gone wrong, then resit successfully.

When will the test be ready to go?

The majority of the work involved has been done, the test has been written and the contract specifications developed. It is anticipated that the computer data base development will be completed by the end of July and the first candidates should complete their tests and obtain their certificates sometime in August. Details will be advised in this magazine.

From the time in which the test becomes available, the Management Agency hopes that all DECA holders will have taken the test in the following 12 month period.

Beekeeper's Conference 1999

July 12-15

Venue: Hotel Ashburton, Racecourse Road Ashburton

Programme: Monday - Exec and Specialty groups meet
Tuesday - Seminar Sponsors evening
Wednesday - Conference Bus tour

Conference Dinner and Branch Competition
Thursday - Conference

For accommodation contact:
Hotel Ashburton, Phone/Fax: (03) 308-3059

Rates vary: Executive suite $120
Twin, Double, Single suites $80 & $90
Family units $120

Enjoy the atmosphere - stay at the Hotel Ashburton

Provision for disabilities
Allowance is made for people who have reading difficulties, or for whom English is a second language. In those cases candidates will be allowed to have a "reader" accompany them.

Branch run courses
In the July magazine, it is anticipated that details will be released of a course for training people nominated by NBA branches, or bee clubs, who will in turn, be able to run "approved" courses, to assist their members through the process of obtaining the competency certificates. It is envisaged that we will organise one workshop for trainers in the North Island, possibly in Hamilton, and one in the South Island, possibly Christchurch. All branches will be encouraged to ensure that they sponsor designated "trainers" from their region.

Bruce Stevenson PMS Facilitator on behalf of the Management Agency

Administration Service Contract

The minutes of the Executive's May meeting refer to a "Review of the Administration Requirements for the years 2000 and 2001" and the appointment of a sub-committee to pursue this matter (item 25.) Perhaps a little more detail is called for.

Don Bell is conducting a survey of the structure of the NBA and the requirements and needs of the members. This major work is a totally different task and it is not realistic to expect any initiatives to arise from it in the short term.

The review referred to in the project undertaken by the Executive in May involves the needs and requirements to be specified under the contract to be let for the administration of our affairs in the years 2000 and 2001. The project has been broken down into five tasks and a copy of the paper presented to the Executive when the motion was adopted details the timetable approved by the Executive. Tony Taiaroa and Lin McKenzie have been assigned the task of progressing this action with the power to co-opt any assistance they might need.

Any comment or input offered will be very welcome. The timetable is very tight as can be seen, so we need to hear from you by the end of June.

Proposed process for review of the NBA administration services required for the years 2000 and 2001

Introduction:
The major review of the structure and requirements of the NBA, as initiated by the ongoing work of Don Bell, is quite distinct from the process being described hereunder. This is the more immediate process of deciding on the contract specifications for the administration of the NBA's affairs during the years 2000 and 2001.

Task:

1. Appoint sub Committee of Executive to carry out the functions as outlined.
   Who ..... All Executive.
   When ... At the May Executive meeting.
2. Review requirements for the provision of services for the administration of the NBA
   Who ..... Sub Committee of Executive.
   When ... June/July, to be available for consideration and/or ratification at July Executive meeting.
3. Call for expressions of interest, release copies of new specifications for provision of services to applicants.
   Who ..... Sub Committee of Executive.
   When ... August
4. Appoint consultant to brief/interview/vet applicants and to make a written report to executive with recommendations as to appointment.
   Who ..... Executive
   When ... July meeting.
5. Advise all applicants of decision.
   Who ..... NBA President
   When ... October/November

Note: The 1998 Annual Report enclosed should have the word Association after National Beekeepers. I apologise for this.

Harry Brown, Editor

National Beekeepers' Association of New Zealand (Inc)

Notice is hereby given that the 1999 Annual General Meeting of the National Beekeepers' Association of New Zealand (Inc) and Conference of Branch Delegates will be held at the Hotel Ashburton, Racecourse Road Ashburton on Wednesday and Thursday 14 and 15 of July 1999 commencing at 9am on Wednesday, 14 July 1999.

A Special Meeting will be held at 8am, Thursday the 15th of July to discuss proposed Rule changes.

A second special meeting to discuss the termination of the Marketing activities and an Apiary levy increase will be held at 2pm on Thursday the 15th July at the same venue.

Harry Brown
Executive Secretary

NZ Queen Bee Producers

Notice of Annual General Meeting 1999 to be held in Ashburton at the Ashburton Hotel Monday, 12th July from 1pm to 2.30pm

Agenda

- Apologies
- Minutes of last AGM
- Matters Arising
- President's Report
- Financial Report
- Election of Officers General Business

The time allocated for the above is to be no more than 15 minutes, in order for last years decisions of information sharing to be implemented with three interesting guest speakers.

1. Mervyn Cloake speaking for 20 minutes on "Breeder Selection"
2. Terry Gavin speaking for 20 minutes on "Quality Queens"
3. Cliff Van Eaton speaking for 20 minutes on "Artificial Insemination"

This leaves 15 minutes for questions.

I am sure that with such an interesting programme we will have an enjoyable 1 1/2 hours.

Current Financial Members have free entry.

Guests are welcome fee $15.00

Our lives are filled with simple joys, and blessings without end. And one of the greatest joys of all is to have, or be, a friend

Bees might be used to detect land mines...

Richland, Washington: Honey bees equipped with radio tags the size of a grain of rice may one day be used to detect antipersonnel land mines.

As far-fetched as it might seem, a project seeks to train and track entire colonies of bees that may be conditioned to prefer something other than honey, such as TNT, the primary component of land mines.

Ultimately, it may be possible to carry a hive to a site and release the bees to search for explosives or other things, such as methamphetamine-making ingredients or nuclear waste, said Ron Gilbert, who works on electronic systems at the Pacific Northwest National Laboratory here.

"This system is not unique for land mines," he said.

The project, led by University of Montana entomologist Jerry Bromenshenk, depends on several factors - particularly whether bees can smell and be taught to find TNT.

"It's amazing what you can train a bee to do," said postgraduate student Bob Seccomb, who took part in a media demonstration with the bees. "We've got them flying through mazes."

The Red Cross estimates there are 80 million to 120 million land mines in 70 countries around the world and 60 people a day are killed or maimed by buried mines. In some developing countries, thousands of acres of productive land are unusable because they are death traps.

If the bees can indeed be trained to seek out explosives, the next step is to find a way to keep track of them.

That is where the radio tags come in. Several years ago, PNNL developed a first generation of radio-frequency tags for the garment industry to track inventory. The tags are similar to the microchips implanted by veterinarians as permanent identification for cats and dogs.

The researchers brought some 20,000 bees in two hives to Richland for three days of tag testing, which ended on May 22.

Student Jason Volkman carefully glued the tiny hives to the bees. To make them easier to work with, he chills the bees in a college dormitory-style refrigerator for four minutes, then attaches the tags to the bees' abdomens with tweezers.

The tags have a 10-character cod that identifies each bee individually. The tags are read by sensitive instruments attached to a portable hive which records when the bees leave to forage, the direction they go and when they return.

A special spectrometer would be installed in the hive to 'sniff' the bees for the presence of TNT residue.

Mr Bromenshenk has characterised the bees as 'flying dust mops', picking up samples everywhere they go. Land mines leak small amounts of explosives into nearby soil and water, and the TNT residue eventually makes its way into some plants.

In the tag tests, researchers learned that the bees were not dissuaded from returning to the hive by the radio-tag reading equipment, Mr Gilbert said.

They also found that the 27mg tags they planned on using were a little too heavy for the bees; 25mg is better.

"We know how to make them lighter"' he said.

The Sandia National Laboratories in New Mexico, the Oak Ridge National Laboratory in Tennessee and the US Environmental Protection Agency also are part of the project, paid for by the federal Defence Advanced Research Projects Agency.

Acknowledgement,
Otago Daily Times 5/6/99

Editorial standards...

One or two people have been asked for their opinions as to what they would like to see in the journal. Preferences, it seems, come down to the dissemination of information and opinion in the technical, political, commercial and personality arenas (personality, not personal) ie profiles of some of our people.

Articles, in the main, should be written impersonally or in the third party. This removes the opportunity for debate based on personalities and allows issues to be clearly identified and addressed.

Dissemination of opinion and information should be a two-way thing so opportunity for communication between our members is seen as a core activity.

This of course brings us to the vexed question of letters to the editor, or the journal or whoever. These epistles of course are really from the writer to the subscriber via the editor, so we should ask whether the editor should have the right to decide whether they should appear, be abridged or commented on? He has perhaps his most important role to play here. These letters are the interface between readers, contributors and those who put the publication together. As such they are sacrosanct in that they must be credible above all else. Lengthy discussions with the managing editor of a leading provincial newspaper revealed that his paper goes to great lengths in dealing with "Letters to the Editor".

The committee suggests the following:-

The editor (read "organisation"?) has the right to reject any letter, without explanation.

Letters should be brief, 350 words seems to be realistic.

Noms-de-plume or initials will not be accepted, in any cases. In the event the writer puts forward a strong reason that their name should not be used, the words "name with-held" will be used. The editor should go to some lengths to verify names and addresses are correct, and that the letter was indeed written by the person whose name appears with it. Scanning electoral rolls and contacting the writer for verification are but two of the checks to be employed when there is reason for doubt.

As with all material for publication, the editor shall check for legal problems - libel, human rights, race relations and so on. If any doubt arises on these counts he has three choices: edit the letter and publish a note to say it has been abridged; consult a lawyer to have the material checked before deciding on publication; or reject it outright.

A rule of thumb is that if something comes forward that will lower the reputation of a person or company it will be regarded with caution and must be provably true and said without malice.

In law the editor, printer, publisher, and/or owner, and everyone connected with a publication are liable for the content of the publication; usually the owners end up paying because they are the best targets to sue. Therefore our editor needs to be given strict guidelines on his responsibilities and warned if he transgresses.

There should be no reason to ever publish a letter unless the writer is prepared to stand up while the counting is done. If there is any whistle blowing to be done there are probably other ways to do so with protection afforded the blower.

Any letter addressed to The Editor, The Secretary or The Executive should always be addressed very precisely to the intended recipient and it would, of course be prudent to mark it not for publication if that is the case.

These general guidelines will be under constant review. Comment and suggestions from our readers will be welcomed.

From The Publications Committee

RECIPES

It's time to Try Something New! Vegetarian Entrees Meat Eaters Will Love!

by The National Honey Board

We all know we should cut back on fat, and increase fruits, vegetables, grains and beans in our diets. But with hectic work schedules and picky eaters at home, changing eating habits and lifestyles isn't easy!

"The best approach," says Jeanne Sowa, R.D. with the American Dietetic Association, "is to take it one step at a time. We're encouraging people to take a fresh look at nutrition." Start by adding a sprinkle of beans to your salad, sliced fruit to your cereal and diced vegetables on your sandwich. Before you know it you've increased your intake of healthy foods and made them part of your daily routine. Then slowly take away fat. An easy way to do that is by adding a lowfat vegetarian entree or two to your weekly menu. Southwestern Lasagna and A Honey Of A Chili are two vegetarian entrees even die-hard meat eaters will love.

The bland flavour of tofu allows it to absorb the strong spices used in this dish. Once you've prepared the tofu, A Honey Of A Chili takes less than 30 minutes to cook, and gives you 18 grams of protein and 9 grams of fibre! Don't be afraid to make this chili several days in advance - the flavours continue to blend making it even more delicious. For an extra hearty meal, serve it over rice with your favourite chili garnishes.

A Honey Of A Chili

1 package (15oz) firm tofu
1 tbsp vegetable oil
1 cup chopped onion
3/4 cup chopped green bell pepper
2 cloves garlic, finely chopped
2 tbsp chili powder
1 tsp ground cumin
1 tsp salt
1/2 tsp dried oregano
1/2 tsp crushed red pepper flakes
1 can (28oz) diced tomatoes, undrained
1 can (15-1/2 oz) red kidney beans, undrained
1 can (8oz) tomato sauce
1/4 cup honey
2 tbsp red wine vinegar

Using a cheese grater, shred tofu and freeze in zippered bag or airtight container. Thaw tofu; place in a strainer and press out excess liquid. In large saucepan or dutch oven, heat oil over medium-high heat until hot; cook and stir onion, green pepper and garlic 3 to 5 minutes or until vegetables are tender and begin to brown. Stir in chili powder, cumin, salt, oregano and crushed red pepper. Stir in tofu; cook and stir 1 minute. Stir in diced tomatoes, kidney beans, tomato sauce, honey and vinegar.

Bring to a boil; reduce heat and simmer, uncovered, 15 to 20 minutes, stirring occasionally.

(Courtesy National Honey Board)

Southwestern Lasagna

1 tbsp vegetable oil
1 medium onion, thinly sliced
1 clove garlic, finely chopped
1 tbsp chili powder
1 tbsp paprika
3/4 cup water
1 can (6 oz) tomato paste
1/4 cup honey
1/4 cup fresh lime juice
1 can (15 oz) black beans, undrained
1 can (12 oz) vacuum packed whole kernel corn
6 medium corn tortillas, cut in quarters
1 package (15 oz) part skim ricotta cheese
1 can (7 oz) whole green chilies, cut lengthwise into 1/2-inch strips
1/2 cup (2 oz) shredded Monterey jack cheese

In a medium saucepan, heat oil over medium-high heat until hot; cook and stir onions and garlic 3 to 5 minutes or until onion is tender. Add chili powder and paprika; cook and stir 1 minute. Stir in water, tomato paste, honey and lime juice; stir until well mixed. Stir in black beans and corn. Bring to boil; reduce heat and simmer 5 minutes.

Spoon 1/3 of sauce into 1-1/2-quart rectangular baking pan; arrange 1/2 of tortilla quarters evenly over sauce in pan. Spread with 1/2 of ricotta cheese and arrange 1/2 of green chile strips evenly over cheese. Repeat with 1/3 of sauce, remaining tortillas, ricotta cheese and green chilies. Spread remaining sauce evenly over top of lasagna; sprinkle evenly with shredded cheese. Bake at 350°F 20 to 25 minutes, or until heated through.

(Courtesy National Honey Board)

Honey-Kissed Vegetables

Makes 6 servings

2-1/4 cups acorn squash, pared, seeded and cut into chunks
1 turnip, pared and cut into chunks
1 cup julienned carrots
1 small onion, halved and quartered
1/4 cup honey
2 tbsp margarine, melted
1 tsp grated orange peel
1/4 tsp ground nutmeg

Steam squash, turnip, carrot and onion over water in covered skillet about 5 minutes or until tender. Drain. Combine honey, margarine, orange peel and nutmeg. Drizzle over vegetables and toss; serve.

Turkey Citrus Salad

6 cups spinach, washed leaves
2 cups cooked turkey, cubed
3 cups fresh grapefruits, cut in sections, drained, juice reserved
2 cups oranges, cut in sections, drained, juice reserved
1 tsp honey
1/2 tsp dry mustard
1/2 tsp paprika
1/4 tsp garlic powder
1/2 tsp poppy seeds
1 dash ground ginger
1/4 cup lowfat mayonnaise

Arrange spinach leaves on four salad plates. Arrange grapefruit and orange sections alternately in spoke-wheel fashion on spinach. Place 1/2 cup turkey in centre of each fruit wheel.

Dressing recipe: In a small bowl, measure 1/4 cup reserved orange juice (adding grapefruit juice to equal 1/4 cup). Add remaining ingredients and mix thoroughly.

(Courtesy National Honey Board)

Honey-Orange Marys

Makes 4 servings

32oz(4 cups) tomato juice
1/2 cup orange juice
1/4 cup honey
2 tsp. prepared horseradish
1/2 tsp. celery salt
Hot pepper sauce, to taste
Worchestershire sauce, to taste
Freshly ground black pepper, to taste
Celery stalks, for garnish.

In a large pitcher, whisk together tomato juice, orange juice, honey, horseradish and celery salt until well blended. Season to taste with hot pepper sauce, Worchestershire sauce and pepper. Serve over ice in tall glasses garnished with celery stalks.

(Courtesy National Honey Board)

IMPORTANT DATES FOR 1999

BRANCHES SEND YOUR MEETING DATES IN FOR 1999. NO CHARGE.

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

COMING EVENTS...

EXECUTIVE MEETING DATES

12th July 1999 ASHBURTON

1999 BEEKEEPERS CONFERENCE

JULY 12th to 15th 1999
AGM - 14th, 15th of July

Hosted by the South Canterbury Beekeeper Branch of the NBA at the Hotel Ashburton, Racecourse Road, Ashburton.

Hotel phone: (03) 308-3059 • or Peter on: (03) 693-9189

2000 Conference GISBORNE

—18th-22nd of JULY - Contact Barry on: (06) 867-4591—

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

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AUCKLAND BRANCH
Call: Jim (09) 238-7464

AUCKLAND BEEKEEPERS CLUB INC
Editor: Colin Bell
Phone: (09) 818-4325

NORTH CANTERBURY CLUB
Meet the second Monday of every month March to November inclusive.
Contact Mrs Hobson
Phone: (03) 312-7587

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

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

CHRISTCHURCH HOBBYIST CLUB
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 Margaret Cooper
Phone: (03) 383-0368

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

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

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

MARLBOROUGH BRANCH
Meets every second Thursday in every second month.
Call Jeff on: (03) 577-5489

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

NELSON BRANCH
Phone: Michael (03) 528-6010

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

OTAGO BRANCH
Phone: Mike (03) 448-7811

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

POVERTY BAY BRANCH
Contact Barry (06) 867-4591

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

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

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

WAIKATO BRANCH
Call Tony (07) 856-9625

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

WELLINGTON BEEKEEPERS ASSOCIATION
Meets every second Monday of the month (except January) in Johnsonville. All welcome.
Contact: James Scott, 280 Major Drive, Kelson, Lower Hutt.
E-mail: JLscott@clear.net.nz

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