

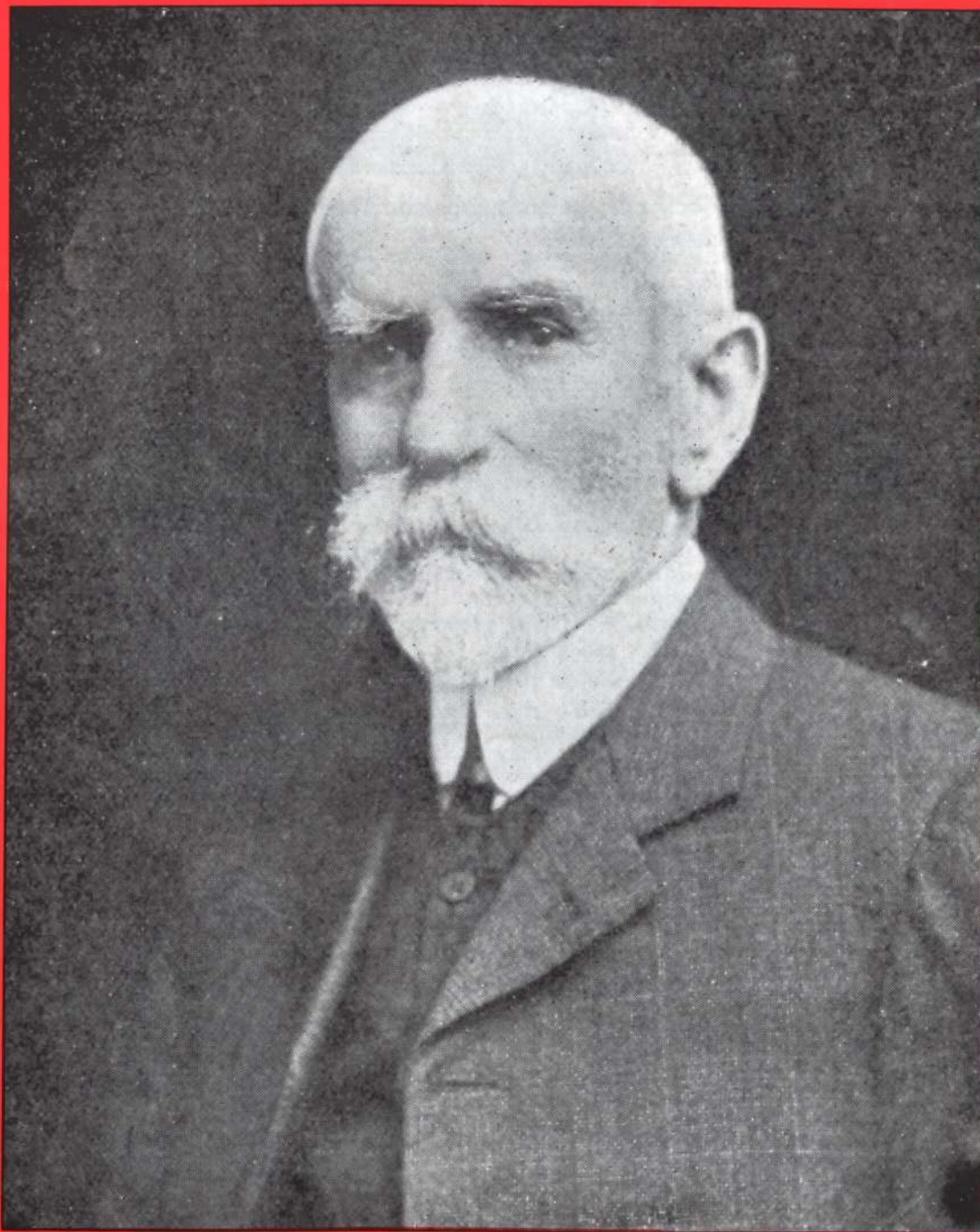
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The New Zealand BeeKeeper

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ADVERTISING RATES ON REQUEST

The New Zealand BeeKeeper is published eleven times per annum; February to December. All copy should be with the Editor by the 1st day of the month of publication except for December when copy should be received by 20th November.

Notes from the Executive

I have before me a fax sent to Terry Gavin on 21st September, a Saturday morning. It was passed around Executive members, with the exception of the President.

The fax copied to me did not bear a signature but the 'fax byline' read "From: Wallingford ph/ fax 64-7-5781422".

I quote:

"The following has appeared in the NZ Kiwifruit Journal. The first half is a story, the second half is an advertisement.

Russell has overstepped the mark by a considerable margin, he has blatantly used his position as President to promote his own company - that is bad enough. Worse is that his advertisement is clearly 'comparative' - he is taking his advantage by claiming his bees and pollination hives are better than those of other beekeepers. Coming on the half of the page below the article, you can be assured that this is going to cause considerable consternation among the beekeepers who are NBA members who supply bees for pollination in this area! Russell is using the credibility he obtained from the article to promote his own services.

This is unacceptable behaviour for an NBA President. What are you going to do about it? Want to wait for a formal complaint from some of our beekeepers around here or do you want to do something pro-active? This is not what I see as promoting harmony..."

Then followed a passage from page 18 of the NZ Kiwifruit Journal, September/October 1998 under the heading:-

Bees' Role Shouldn't Be Belittled.

What I saw was a well presented report of an interview with Russell Berry in his role as the national leader of an industry very much in the minds of kiwifruit growers at this time of year. In this interview report we have Russell giving our industry a push; outlining recent happenings within the industry, particularly involving our Pest Management Strategy, stating the case as regards the few diseases and pests present in New Zealand, and emphasising our wish to have this happy state of affairs continue. It then goes on to a small personal and company profile of the man being interviewed. In my humble opinion a fair and balanced report of an interview.

It could be seen as unfortunate that an Arataki pollination advertisement appears on the same page but I see nothing sinister here, it happens every day in most newspapers around the country. Indeed, I refer you to page 24 or our September *BeeKeeper*. The punchline however is that this same advertisement has been used for at least the last three years in this same Kiwifruit Journal.

So let us have a look at this 'comparative' advertisement.

"Better pollination hives? Service? At cheaper prices?" Better than what I ask? Better than last year? Better than the pollinator down the road? Better than the hives left in the paddock? Better (than what?) for the particular orchard they are servicing? Cheaper prices? Cheaper than what? Or cheap and nasty? Clumsy perhaps, but not sinister I submit. Is it being suggested here that taking up the National



Lin McKenzie

Presidency of the NBA should preclude one from operating one's business in a normal manner?

What I do consider as sinister is the imposition on Executive members' time and the additional administrative costs imposed on the NBA. I spent over four hours on the telephone that weekend on this issue; over four hours and at last count five toll calls. This does not include time spent by other Executive members on the issue and it does not include time spent thinking the issue through.

Enough, I feel, is just about sufficient. I do not mind spending time on issues of importance, that is the nature of the job, but when my time is diverted to this sort of thing I object. In fairness I must add that there was a little consternation in kiwifruit country and at least one NBA member checked things out for himself, coming, I understand, to the same conclusion I did.

On reflection a far more important question arises. Why are members who have demonstrated a commitment to our industry exposing the Executive to this sort of trivial stuff? Events leading up to the Nelson conference were certainly corrosive, hurtful and in some eyes unforgivable. Those happenings will not go away, much as many might like them to. At this distance the water is still pretty muddy and I certainly would not offer to make a judgement call about the rights and wrongs of the whole sorry affair. I do know that Nick Wallingford did a splendid job of conducting that conference under circumstances that must have been trying in the extreme.

Obviously Russell Berry is perceived in certain quarters as having some qualities less than desirable in our President. I am not going to enter debate on this subject, I offer the Executive Chairman the same loyalty I expect from any committee I may from time to time chair.

If there is some sort of agenda here to divide the Executive then it must be said it is having the opposite effect. Members are supportive of each other in the extreme in the face of what is seen as unwarranted attack from "them". Or is there a plot to have the Executive spend

all their time in a defensive mode, thus not being able to achieve the goals and reach the objectives expected by the membership, and so be held to account at election time as being non-achievers, unfit to hold office?

If there is this darker side to events then it should be alarming in the extreme to most members and I suggest it should be abandoned right now. Implementation of the PMS, sorting out problems with costs of the residue testing and dealing with the financial deficit staring us in the face are matters too important to be shelved because Executive are on the defensive against continual attack. I thought it was supposed to be "us beekeepers against the world".

Please stop it.

Just a quick work about the magazine. Tony Tairoa is chairman of the Publications Committee but I feel I speak with his authority. There is unfortunately a conception in some quarters that there is a wish to stifle the expression of opinions and without a full knowledge of the reasons for refusals to publish, this feeling can be perhaps justified. We are still in the throes of sorting out guidelines and it is not realistic to expect a problem that has been around for some time to be resolved without discussion. Certainly *The BeeKeeper* belongs to the membership and should be their forum for robust debate. Robust within the bounds of reasonable feeling for the feelings of others though, and certainly truthful. Perhaps a page devoted to "my opinion," is the way to go? Or perhaps lift the current limit on the length of letters to the editor? That limit has been imposed along the guidelines used by newspapers and we are not running a newspaper.

Now what about harmony? It is getting to be in short supply around my household right now!

Lin McKenzie

STOP PRESS

Please note the print deadline is the 1st of the month (except for December issue, which is the 25th of November), if you miss this date you are late.

The New Zealand **BeeKeeper** THIS ISSUE

3-4	Notes from the Executive
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Front cover...

Isacc Hopkins - Grand Bee Master.

Founding father of modern beekeeping in New Zealand. Photo taken about 1906.

National Beekeepers' Association Sub Committees

Sub-Committees and Personnel from Sept 1998 to Sept 1999:

Nature	Name	Members
Sub-Comm of Exec	Marketing Committee	Jane Lorimer, Phillip Cropp, Steve Olds, Peter Bray, Tony Taiaroa, Bill Floyd, (Advisers/consultant), Harry Brown (Sec).
Sub-Comm of Exec	Apicultural Research Advisory Committee (ARAC)	Mark Goodwin,(Chair), Michael Wraight, Gerrit Hyink, Frank Lindsay, Ben Rawnsley, Lin McKenzie, Russell Berry, Harry Brown (Sec).
Sub-Comm of Exec	PMS Review Committee	Bruce Stevenson, (Chair), Terry Gavin, Richard Bensemam, Graham Cammell, Murray Bush, Richard Hatfield, Peter Sales, Ian Spence, Cliff Van Eaton, Mark Goodwin, Harry Brown (Sec).
Sub-Comm of Exec	Exotic Disease Investigation Committee	Peter Berry (Chair), Gerrit Hyink, Frank Lindsay, Don Bell, Russell Berry.
Sub-Comm of Exec	Library Committee	Keith Herron, Allen McCaw, John Heineman.
Sub-Comm of Exec	Publications	Tony Taiaroa, (Chair) Allan Richards, Don Bell, Lin McKenzie, Harry Brown (Editor).
Exec resp	Branch resp (Far North, Northland, Auckland)	Terry Gavin, Bruce Stevenson, Russell Berry.
Exec resp	Branch resp (Waikato, Southern North Island, Hawke's Bay)	Terry Gavin, Bruce Stevenson, Russell Berry.
Exec resp	Branch resp (Bay of Plenty, Poverty Bay)	Terry Gavin, Bruce Stevenson, Russell Berry.
Exec resp	Branch resp (Marlborough, Nelson, West Coast)	Don Bell, Tony Taiaroa, Lin McKenzie.
Exec resp	Branch resp (Canterbury, South Canterbury, North Otago)	Don Bell, Tony Taiaroa, Lin McKenzie.
Exec resp	Branch resp (Otago, Southland,)	Don Bell, Tony Taiaroa, Lin McKenzie.
Exec resp	IHEO USDA, statistics	Keith Herron.
Exec resp	NZ Queen-Bee Producers Assn	Terry Gavin.
Exec resp	Pollination Associations	Russell Berry.
Exec resp	Foundation for Research Science and Technology	Bruce Stevenson.
Exec resp	Trusts and Trustees	Russell Berry.
Exec resp	Federated Farmers Land User Forum	Don Bell, Tony Taiaroa.
Exec resp	Landcare (wasps and possums)	Don Bell.
Repr of Exec	Agricultural Security Consultative Committee	Terry Gavin.
Repr of Exec	Agricultural Security Consultative Committee (Invertebrates)	Lin McKenzie.
Repr of Exec	Residues Board	Don Bell.
Repr of Exec	Ruakura Apicultural Research Unit (RARU)	Jane Lorimer.
Repr of Exec	Conference 1999	Don Bell.
Repr of Exec	Methyl Bromide	Terry Gavin/Bruce Stevenson.
Repr of Exec	Agricultural Compounds and Veterinary Medicine Advisory	Don Bell.

Note: Pesticides Board has now been absorbed by the Agriculture Compounds Veterinary and Medicines Advisory Council. As the NBA is not a major user of Chemicals it would no longer qualify for a seat on this Council. Environmental Risk Management Agency. (ERMA) is now responsible for the Beekeeping industry. Though a watching brief will be retained until the change over has taken place.

A very special thanks to all the people who have, and continue to assist the Executive by serving on these Committees.

DIARY NOW 1999 CONFERENCE

Venue: Hotel Ashburton, Racecourse Road, Ashburton

Dates: Monday, 5 July to Thursday, 8 July

Organising Committee:

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Secretary: Peter Lyttle Ph: (03) 693-9189 (work)
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Committee: Peter Bell Ph: (03) 435-0562
Fax: (03) 435-0562
Peter Irving Ph: (03) 436-0813
Fax: (03) 436-0813
Email: <k.white@xtra.co.nz>
Peter Smith Ph: (03) 693-9889
Phill Sutton A/h: (03) 686-1513

MAF MQM Changes: Update

The current workload of MAF Quality Management (MQM) is to be transferred into two state-owned enterprises (establishment date is 1 November 1998).

One - MQM Food - will handle some or all of the services provided by MQM's Livestock, Dairy, Plants and Animal Health Laboratories businesses. It will provide TB screening and other services to the livestock industry, and quality assurance services for a wide range of food products.

The other - MQM Meat - will provide front-line meat inspection services and other services to the meat processing industry.

Two boards have been set up to oversee the establishment of the two SOEs. The MQM Food establishment board is chaired by Sue Suckling, and the MQM Meat establishment board by Barney Sundstrom.

The two Chief Executive Officer designates are Hugh Lynch (MQM Food) and Terry Pierson (MQM Meat).

Acknowledgement, MAF Policy

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 200 words, if longer they will be abbreviated. Letters not for publication should be marked NOT FOR PUBLICATION. Opinions expressed in the magazine are not necessarily the opinions of beekeepers in general.

Dear Sir

The Apiculture Society of Korea have invited me to present a paper on "Advanced Technologies in Apiculture" at the '98 International Symposium on Apiculture Science from 3-5 November in Suwon, South Korea.

I would like to present an overview of the technology that is currently utilised in the New Zealand beekeeping industry and would thus welcome any information on any innovative equipment, practices, developments or research that has advanced the way we undertake beekeeping practices in New Zealand.

If possible I would like photographs (or slides would be preferable), diagrams, information and the name of the person who invented, discovered, researched, designed or put into practice the technology or research. The names of these people would then be cited in the paper presented. I do not wish to capitalise on the peoples inventions but I would welcome the opportunity to provide a picture of the way modern beekeeping is undertaken in New Zealand.

If any beekeeper would like me to promote any equipment or products, they may like to forward to me the relevant promotional material. Obviously I will have limited space.

Your early attention to this request would be appreciated as I have short deadlines to finalise details of the paper to be presented.

David Woodward, Telford Rural Polytechnic, Private Box 6, Balclutha, New Zealand. Ph: +64 (03)-418-1550. Fax: +64 (03) 418-3584. Email: telford.polytech@telford.ac.nz

David Woodward, Head of Department of Apiculture

National Pest Management Strategy for American foulbrood

Do you have unwanted beehives?

The Pest Management Strategy (PMS) for AFB provides a six month Amnesty Programme for unwanted beehives (Clause 19.6.7).

Call the Management Agency on: (06) 843-3446 (Harry), or fax: (06) 843-4845

Dear Sir

I have a brother (Professor of ematology) visiting NZ in January February 1999 and would be extremely grateful if he could visit some beekeeping operations in NZ. Please contact me on: (03) 225-7416

Dear Sir

During the Annual Meeting in July, NBA President, Russell Berry indicated that he would not accept a nomination for President or Vice-President for a member who had been elected during the previous Executive election. He said that he had received legal advice to back that position.

Frances Trewby and I, both former NBA Presidents and Executive members, disagreed with this stance, and reported that the NBA had received a contrary legal opinion in 1993 indicating that such a nomination was in order.

The President and Vice-President have traditionally been elected from the six members of the Executive for the coming year. Russell Berry's attempt to restrict nomination to the three members who have completed this first year on the Executive is not consistent with history or the wishes of the membership. It is not supported by a reading of the NBA rules, which make a distinction between being 'elected' to the Executive (which makes the person eligible for nomination) and 'taking office' for the Executive.

Beehive Woodware Assembly Service

contact:

Ray Mackie,
81A Muritai Street, Nelson.

Phone: (03) 548-6004
for price list or
fax: (03) 548-6019

I have subsequently written to the NBA twice to obtain the opinion the President claimed to have. He has not been willing to respond to me, nor has he supplied the opinion he referred to in the Annual Meeting.

I would like to ask Russell Berry through the pages of the magazine;

1. Was the advice he received a written opinion of a solicitor?
2. Was the advice obtained from the NBA's solicitors, Morrison Kent (Wellington) or did he take his advice from some other source?
3. What are his reasons for not making the opinion available to the membership so that we might discuss and debate the issue?

Nick Wallingford

Dear Sir

In response to the Executive's impassioned plea for support, (from the pen of Terry Gavin), NO WAY!

The NBA lost my support when it accepted that 73% of 6% of beekeepers represented a valid mandate to lawfully extract a levy from all beekeepers, (refer NZ BeeKeeper, July 1996, Notes from the President).

It lost my support when it moved to undertake a national goal for the eradication of American Foulbrood and determined that in order to achieve that goal, (an objective that I do not personally share, believing it to be as fraught with folly 'as chasing the wind'), it granted itself rights into the operation of my outfit which I do not FREELY give it!

So to the NBA I say: I will not resist you but neither will I FREELY support you!

Stephen Lee

FOR SALE

8 Pollen Traps

Never been used,
painted, paraffin waxed.

\$40 each ono.

Phone: Chris Taylor
(03) 684-7543

TIMARU

Marketing

In this Issue...

Watch out for packers making the best of a confused situation...

From aprons to recipes to fancy brochures: We want your comments and needs on industry resource material

Honey and wound healing trials underway in the Waikato...

My honey of the month a real lesson in Mediocrity

Chefs go to town with comb... and some amazing results!

Peter Molan under real pressure... and can't have 5000-plus bosses

Honey Part of the Olives Food and Health Trust Symphony of Food Festival

And Allen and Mike Bow Out From the Marketing Committee

Watch out for packers making the best of a confused situation

There's some fairly strong downward pressure being exerted by some packers on manuka honey prices. It's a free market and of course they can offer what they want. Some also panicked last year and brought up more than they needed, at top prices.

Demand keeps increasing (and prices keep rising!) for manuka honey (see last months *BeeKeeper* for supermarket sales of New Zealand honeys) but with there being no definition of manuka, some of that demand is being met with manuka produced more on the label than at the flower!... and those people can cut their prices in the marketplace and still make good profits.

The answer of course is an agreed industry definition (and, standards!) but that's a long way off. In the meantime we as an industry should support those brands and packers that do care and are educating consumers themselves... and maybe the good guys can try and shame the others by telling them straight what 'you' think of them on a one to one basis. Can the Marketing Committee do anything right now: unfortunately not. If we accused someone of ripping off consumers and the industry we'd just have a legal battle on our hands and without agreed industry consensus, couldn't win.

From aprons to recipes to fancy brochures: we want your comments and needs on industry resource material

In this month's *BeeKeeper* is a Questionnaire regarding Promotional resources for our strategies next year... please help us by completing and faxing or posting back

Honey and wound healing trials underway in the Waikato...

A Clinical Trial has been started to test



Bill Floyd

honeys against leg ulcers and other serious wounds. The Trial will be carried out by District Nurses based at Waikato Hospital. Results will be some months away but if the Trial results replicate the experimental work done to date it will be very good for the honey industry.

My honey of the month a real lesson in Mediocrity

Was down in Christchurch last week for a Food Festival and wanted some honey for my crumpets. Went to a local supermarket and thought I'd try something different...so brought the supermarket's own house brand clover honey (marketed as a premium House Brand too!).

And it was appalling... slightly bitter and generally dirty tasting... so bad it was good news for independent packers and brands, because I can't see it getting significant repeat sales.

Someone somewhere in this industry must have got the packing contract and is filling it with honey to match the price they got negotiated down to. Hopefully customer complaints will eventually make the supermarket buyer question dealing with that packer again.

Chefs go to town with comb... and some amazing results!

We've just completed a Bakery Cooking Class with 18 Senior chef students at Christchurch Polytechnic. The students had to make a range of products with comb honey... no butter, no sugar, no oil!

Brilliant results and we now have a real focus for the commercial opportunities for comb products.

We can produce sponge cakes and the like: But the real value is in health food muffins and superb moist healthy bread loaves rather than cakes... although heavier and moister cakes such as carrot and banana lend themselves well to the comb substitution.

But the two finds of the day for me were, firstly, the range of ethnic breads

produced with comb honey... Barbari, focaccia and Naan. Beautiful breads with a lovely warm honeyyeast flavour: full bodied and yet completely fat free!

And then... I got presented with a thick custardy creamy mix that was pure ambrosia... and it turned out to be a *creme anglaise* but made with comb honey instead of butter and sugar... delightfully decadently rich tasting... but fat free!

I'm getting copies of the recipes for publishing in future copies of the *BeeKeeper*.

Some of the ideas are brilliant for the home chef but aren't commercially viable... simply because of the cost factor of comb honey... but the *creme anglaise* concept: that has huge commercial potential... because it would be a topend luxury product... and it gives such a superb richness to the cream but no butter at all! (We likened the 'richness' to that of old-fashioned clotted cream... but even thicker!... it's a winner.)

Peter Molan under real pressure... and can't have 5000-plus bosses

Peter Molan's successes have created a real problem: Everyone wants to talk with him and get his help... which always ends up being for free. But the problem is that he only has a few hours available each week and in helping individual companies he's not getting the research time in for the Honey Research Unit. So, sorry everyone but he can't be available for product development advice and background information/help... in future Peter will refer you to Sandee and I and we will have to formalise any help or advice with cost recoveries to the Marketing Budget... because that's the only fair way for all the other members of the NBA.

Honey part of the Spring Festival of Food, Wine and Health

We were approached by the Festival organisers to be part of the event... and so honeys were used in a number of dish presentations. Ten of Christchurch's top chefs each presented a three course meal. Very impressive, from a honey perspective, was Lakshman Jayawardena's menu which included Fruit Aspic, manuka honey tofu icecream and manuka honey tuilles... huge full flavours and lovely mouthfeel yet (unabashedly healthy and low-fat and) good for you ice cream! Lakshman is the Executive Chef of the prestigious new Christchurch Convention Centre.

What is coming through at many of these events now is that chefs who have attended our Honey Tasting classes are incorporating named honeys in dishes; and making real use of the different varietal flavours.

The public cooking demonstrations at the Festival featured Gwen Kerr, well known food writer and food consultant: Gwen gave delightful presentations of honey as part of a healthy everyday range of easy-to-prepare food dishes.

Gwen's recipes for Honeyed Figs Stuffed with Walnuts and Honeyed Citrus Treats will be in next month's Beekeeper. Perfect dishes for those summer days (that we hope are) coming.

Errata... I think they call it:

*Oooops! Called Neil 'Mike' in my column last month, sorry. (I keep forgetting that Neil's the quieter but brighter one... well, that's what he said, Mike!)

Big changes on the Marketing Committee

And Neil has now retired from Chairman of the Marketing Committee. I was clearly so distraught at knowing I was about to lose his abilities on the

Committee I wasn't thinking straight as I wrote the column.

Allen McCaw has also retired from the Committee and I'd like to take the time to thank both Neil and Allen for their contribution to the industry's marketing efforts.

Allen was the first Chairman of the Committee and has been involved in the development of the industry's Marketing Plan from its inception. In the first years Allen gave us (Sandee and I) just the right amount of rope to explore some fairly radical concepts and strategies: he had the background knowledge to ensure that the programme could work and was an excellent chairman and, in this last year, committee member.

Neil, appointed to the Committee soon after its inception, became Chairman last year.

Neil has always been a quiet but able Committee member. When he became

Chairman he showed a very astute understanding of the key marketing issues facing the industry, and gave sound, competent and intelligent advice and leadership.

We've enjoyed working with both Allen and Neil, and we'll miss their contributions as key industry people, however, the new Committee has Jane Lorimer as Chair, plus Tony Taiaroa as Exec member and Peter Bray, plus new members Phillip Cropp and industry stalwart Steve Olds from Tecpak.

That's a very good balanced committee representing a very wide gamut of industry knowledge and needs; and Sandee and I look forward to working with them! Good to see women heading key Committees in the industry: Packers and Marketing now!

Regards

Bill Floyd, Marketing Committee

Observations...

Have you noticed that whenever you visit an apiary it appears that the activity reduces? Bees keep arriving, but fewer seem to leave.

After a while it dawned on me that as well as me looking at the bees, they in turn were watching me. If you don't touch the hives, very soon activity will return to normal.

It makes sense. If the hives are being disturbed there is little point in bees going out to gather a crop for a hive that could be destroyed on their return. Much better to accumulate forces for a possible attack.

Supering is another aspect that took me a while to fathom. Eventually it occurred to me that bees will only use energy cleaning up combs required. So if the bees are seen right across a new super a few days after it has been put on the hive (not the same day), then the bees expect to fill the super fairly soon. Likewise if they only cover a few frames, they are not expecting a heavy flow.

What this means, if the bees are right across a super, then it would be worthwhile adding a second.

Obviously the bees have a better view of floral abundance than we do from our horizontal plane. Like us they sometimes make a mistake, as weather conditions change or animals may eat off pasture etc.

Collecting pollen can also give you a new insight into your hives. When

I first put on traps after keeping bees for 20 or so years, I came across brown pollen. It was only then that I realised that white clover had brown pollen. I always thought it was yellow.

What I find fascinating is that each hive seems to work quite independently of its neighbours. Hives often work different sources of pollen even though you think they are all working the same source. It must depend on what flowers the scouts locate. It emphasises that each hive is an individual in its own right.

Have you ever wondered why black bees seem more successful than Italian at applying stings to exposed anatomy? Apart from the basic temper, their method differs.

Italians usually grasp a hair to give leverage to sting. Feeling the hair being pulled, gives us the chance to kill or dislodge the attacking bee before it stings.

In contrast, black bees use the kamikaze method. They dive at full speed using their speed to push the sting home.

In time, I believe that we will see that our bees have a basic intelligence that adds a great deal to their inherent instincts. In the meanwhile, take time to observe your bees as more as than just a source of income.

Gary

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Precis of the September Executive meeting

September meeting in Wellington was a very full and frank meeting with many issues covered following are some of those issues.

MAF RA advised the Order in Council for the PMS was approved by Parliament and will be in place by the first of October 1998. The PMS Review Committee had put huge hours into this over a number of years. The team of 4 setup towards the end to work on the Draft Order In Council had over 200 pages of faxes via 20 communications over the last month. Special thanks to all the people who have worked on the PMS over the years.

Bruce Stevenson presented the preliminary budget for the PMS over the next three years lower the first year as it is starting later than first planned for.

Tony Taiaroa reported on the magazine budget versus actual to date and it is on target. He also talked about 6 issues per year versus 11 as currently as part of a cost saving exercise. There was an estimated saving of about \$12,000 per year (this is with out the potential cost of lost subscribers, advertising etc). The Publications Committee will have a questionnaire in the magazine in a couple of month's time to gauge the readers feeling over this issue and a number of other issues. The issue of the cost of the subscription and advertising rates was

debated and it was agreed that both would be held at the current rate for 1999.

The six monthly review of the Contractor (i.e. me) was carried out as is required of your Executive. The really satisfying thing for me is, it is a two-way review with me being able to raise my concerns over the Executive performance as well. I came out feeling very encouraged by the review of both parties.

All NBA Committees were re appointed as is carried out each September and these will be printed in the October magazine. A special thanks to those people who have stood down and the people who put their names forward. I guess the saddest one was to see Terry Gavin stand down as Chairman of the PMS but he felt as the Order In Council was approved, he wanted to handle the increased work load to a younger member Bruce Stevenson. Fortunately Terry will remain on the Committee.

One of the questions often asked is what happened to the Remits passed by Conference? The Executive has asked that I keep you updated in each Precis the outcomes of the Remits and the progress achieved. At the December meeting they have agreed to publish the outcome of the previous years Remits as well.

Remit outcomes and actions required.

Remit 7. Canterbury Branch.

That this Conference recommends to the Executive that the apiary rating system be reviewed with a view to improvement where necessary.

Below is taken directly from the Minutes of the meeting.

Don Bell Moved, Lin McKenzie, Seconded, That the Executive acknowledge the concerns expressed by the Canterbury Branch in respect of their Remit 7 recommending a review of the Apiary Rating System. As a consequence of its consideration to date the Executive is acutely aware of the considerable range of opinions attending this issue and feels that the best way to progress this would be to enlist the assistance of the originators of the Remit, in the undertaking an investigation of the issue, and recommending to the Executive a likely course of action.

Motion Carried.

Remit 7 was a real hard one and considerable time was spent on how we could achieve the goal as requested. I will be writing to Canterbury seeking their input to assist the outcome.

Remit 8. Southland Branch.

That this Conference recommends to the Executive that a set of guidelines be established to act as source material for use by beekeepers.



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Outcome.

The Executive secretary is to write to Southland Branch requesting input. He is to include the comments that Terry has circulated.

Remit 11. Southland Branch.

That this Conference recommends to the Executive that they form a Committee to formulate a national code of practice for the beekeeping industry, as a matter of urgency.

Outcome.

Russell to prepare a report for the next meeting. The Executive secretary is to write and request the Branch to also have some input.

Remit 12. South Canterbury Branch.

That this Conference recommends to the Executive that pressure be maintained on Government to retain and improve border surveillance methods for exotic disease detection and funding be met by the taxpayer.

Outcome.

Russell Berry to follow up on this with Dr Jim Edwards at tomorrow's meeting.

Late Remits.

That this Conference recommends to the Executive that they take over the running costs of the New Zealand Internet site (known as the NZ Beekeeper Internet Web Site).

It was agreed that we would set up a NBA PMS Web page.

Bruce and Lin will report to the December meeting their recommendations on this item.

Outcome.

This Conference recommends to the Executive that they request the Government to pass legislation prohibiting the feeding of honeyed water to bird life and/or discourage the public from this activity.

Outcome.

It was agreed that Lin would write a letter to Editor for the Straight Furrow magazine re the dangers of spraying honeyed water on to Fruit trees etc.

Costs were revisited and some other costs saving were identified for the NBA. Example Kilometer refund was 62 cents a kilometer and now would be reduced to 50 cents a kilometer.

The Levy collection rate is a head of this time last year and most outstanding levy payers have been rung rather than initially use the expense of the lawyers.

On the Wednesday of the meeting Dr Jim Edwards MAF RA, joined the meeting to update the Executive on a number of issues. Below are some of the issues covered.

Restricted zones for Tutu. How will these areas be controlled next year?

Jim said this was not his area of responsibility but undertook to have the correct person respond to the Executive.

Access for live bees to the US Market.

Jim said the key to starting the process on access to the US market was a buyer in the US to start applying for permits to import NZ bee stocks.

Residue Testing cost recovery.

He said it was a requirement of the EU to test one sample per 300 tonnes of production. It also states that MAF staff must collect the sample (the EU requirement is: a Government officer must collect the sample).

The Chairman said that we are waiting on the information to allow a cost recovery of this expense to the industry rather than NBA pick it up the cost. It was agreed that the exporters should carry this cost, and only MAF knows who the exporters are. Should MAF collect this outlay at the time of export certification?

It was agreed that the export certification Committee should work closer with Jim to push this cause to a resolution.

The cost of gathering samples should be a lot cheaper this year said Jim, he has negotiated the testing of sampling costs down by 1/3rd, it should be about \$10,000. The President undertook to personally advance this issue including a solution of the issue of the debt incurred last year.

Importation of Bee products.

MAF RA is still working on the risk analysis of this issue.

Proposal for the Inspection of Premises by MAF/Health Department.

Jim said he thought this is a move to promote efficiencies of both bodies, but who will actually carry out the function is not yet clear.

AFB use for AFB Dog training.

Lin said the AFB will be radiated to kill the spores, but we need urgent approval from MAF RA to allow the trial to begin before it is too late for the season. Jim will take this message back to the people concerned for a response.

Don had circulated a discussion paper on forward planning to the year 2005, which the meeting agreed for him to develop further for the December meeting. The idea being to revisit the work started in 1988 and to explore the pathways where this can be utilised in the decision making process and to investigate the likely impacts devolving from the restructuring of MAF the PMS and fiscal matters such as revenue generating etc.

The December meeting will be held in Dunedin on the 7th 8th and 9th of December. We are planning to meet the local Branches on the Tuesday evening.

March 1999 meeting will be at Nelson. The venue meetings are the result of a request from Waikato that the Executive meets with the Branches more often. The meetings have been very good value to all.

Kindest regards

Harry Brown, Executive secretary

Handy hint Scraping propolis off boxes

If you are getting supers ready for painting, replaceable blade tungsten paint scrapers are very good at cleaning the tops, bottoms and insides of the box and are also reasonable at cleaning out the rebates with a bit of practice. Unless you are very careful however they are a bit too harsh on supers that you are only cleaning up, but not painting, you have to be very careful not to open the woodwork of the box up to rot infections by scraping off the protective layer of paraffin.

Peter Berry

Library News

Varoa Jacobsoni by P Sutton (MAF Timaru), 27 pp, 1998, NZ

A very timely paper describing this serious pest to honey bees, now present in the greatest part of the world. It gives info regarding the measures at present available for controlling the mite. Stating what is being done by MAF and border control to keep it out of New Zealand and the action to be taken in case the mite arrives here. Perhaps we may be able to stop it from establishment if we are vigilant, fast and thorough. Let us hope so for New Zealand and Australia can still call themselves fortunate to be free of this menace. Each beekeeper here has the duty to familiarise him/herself with the looks of this nasty bug. This paper is a help.

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This issue of "The BeeKeeper" marks the final sunseting of the Apiaries Act, versions of which have protected beekeepers since 1906. It also heralds the implementation of our new Pest Management Strategy for American foulbrood which is law from 1 October 1998.

User's guide to the Pest Management Strategy

Prepared by Mark Goodwin, Peter Sales, Bruce Stevenson and Nick Wallingford

Background to the strategy

The Apiaries Act provided the legal powers to control American foulbrood for over 90 years. It was replaced in 1993 by the Biosecurity Act, and using this Act, the National Beekeepers' Association has created the Biosecurity (National American Foulbrood Pest Management Strategy) Order 1998, which came into force on 1 October 1998.

The aim of our strategy is to eliminate American foulbrood disease (AFB) from New Zealand.

The PMS will be used to both encourage and require beekeepers to rid New Zealand of American foulbrood disease for good. Elimination of AFB can be achieved - we are already well on the way. Using the principles of the PMS over the last few years, we are progressively ridding the country of AFB.

Beekeepers who put honest effort into reducing AFB will be encouraged to rid their hives of this disease through the agreements (called 'DECAs') they have with the Management Agency. They will be able to call on all of the expertise and information we now have available to help them.

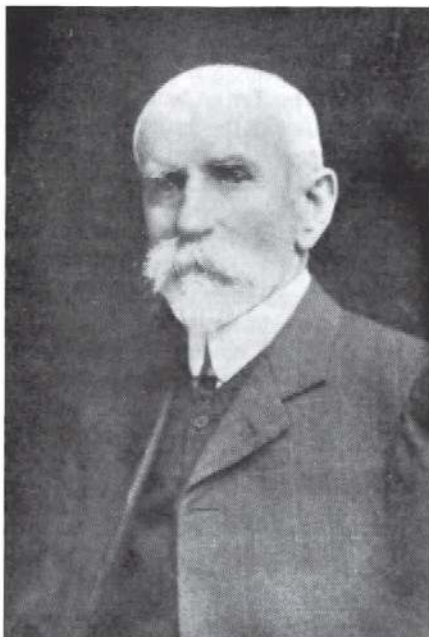
Those very few beekeepers who fail to control AFB in their hives, whether through neglect or ignorance, will no longer be able to avoid their responsibilities. They will not be allowed to perpetuate the problem that affects the entire beekeeping industry.

Put simply, if you don't attempt to do the job right, someone will do the job for you and send you the bill. The choice is yours...

Purpose of this guide

This guide has been written to make beekeepers aware of their obligations under the new legislation. Most of these obligations are the same as, or at least equivalent to, those in the Apiaries Act. The Guide is not intended to provide all the detail covered in the Biosecurity Act and the PMS Order in Council, but rather to attempt to isolate out most of the important points.

Legal jargon has also been avoided to make it more understandable. This Guide is only a summary of selected parts of the Act and the PMS Order and should be treated as such, rather than as a legal document.



Founding father of the first Apiaries Act 1906 - Isacc Hopkins.

The Management Agency

The legislation names the National Beekeepers' Association as the Management Agency responsible for implementing the strategy.

In fact, the Management Agency employs contractors to carry out many of its duties under the Pest Management Strategy. The main contractor is AgriQuality NZ (formerly MAFQual). Any questions you have about the operation of the PMS should be directed to your local AgriQuality NZ officer.

If you are not able to contact them, you can contact the Management Agency directly. Any time you need to write about an 'operational' aspect of the PMS (such as for registering hives, gaining permissions, notifying AFB or notifying actions you have taken, etc.) the correspondence should be directed to AgriQuality NZ (unless you are instructed to do otherwise).

AgriQuality NZ will pass on to the Management agency any of your correspondence that is required by the Management Agency.

Additional information

If you require additional information on the strategy or AFB control, the following documents are available:

The Biosecurity Act 1993, from

bookshops that supply government publications

The American Foulbrood Pest Management Strategy from the Management Agency

The AFB disease elimination manual from the Management Agency

"Starting with Bees" booklet from the Management Agency

Education and other services

The Management Agency is putting in place several educational opportunities that beekeepers should try to participate in. These include:

annual branch AFB elimination field days held throughout the country

AFB Disease Recognition and Destruction courses, and

Disease Recognition and Destruction Competency Tests

You will be contacted about these when they are held in your area.

The Management Agency also provides a laboratory service if you need confirmation of a suspected case of AFB. If you wish to use this service, contact your local AgriQuality NZ (formerly MAFQual) Apicultural Officer who will tell you what you need to do to use the service.

What is a 'DECA'?

A Disease Elimination Conformity Agreement, or DECA, is a formal agreement between you as a beekeeper and the Management Agency. The agreement sets out a 'code of beekeeping practice' to ensure that the incidence of AFB in your hives will reduce to zero over a period of time and remain at that level once achieved. Scientific and case study knowledge show that this goal is attainable if beekeepers follow the correct procedures.

The DECA agreements will be tailored to suit each beekeeper's particular circumstances. If you have little or no AFB you won't need to change your beekeeping procedures much, if at all. Beekeepers with progressively more serious AFB incidence in their hives will need tighter controls and more attention to detail in order to reduce the incidence.

In consultation with the Management Agency or the contractors, you will be able to review your procedures over time to ensure that the goal of AFB elimination

is reached. The aim is to use these agreements to ensure that you get all the help and advice available to eliminate AFB from your beehives, and hence, from all beehives in the country!

Who should have a DECA?

Hopefully nearly every beekeeper, however many hives, will eventually have a DECA. Remember, the PMS applies to any and every beekeeper, hobbyist and commercial. There will be some who, for a number of reasons, will not enter into an agreement to control AFB.

If you take up the offer of a DECA, you will need to show your proficiency in AFB identification and control by passing a Disease Recognition and Destruction Competency Test. This test can be sat "cold" or after completing a Disease Recognition and Destruction course. These courses will be made available to all beekeepers at centres throughout New Zealand.

If you enter into a DECA and pass the test you will have Approved Beekeeper status and you will receive a Certificate of Inspection exemption. You will not have to complete a Certificate of Inspection each year for your hives.

Without a 'DECA'?

Those beekeepers who fail to respond to the Management agency's offer to enter into a DECA agreement will be, for the purposes of the PMS, "unapproved" beekeepers. These beekeepers must furnish a Certificate of Inspection each year for their hives.

This certificate must be completed by an Approved Beekeeper, or by Management Agency personnel. Most beekeepers will incur some cost to have this work done for them.

Providing the Certificate of Inspection is not optional. If the beekeeper fails to arrange for this to happen the Management agency will authorise a contractor to do that work and the beekeeper will be liable to pay for the services.

Beekeepers who do not pass the competency test must furnish a Certificate of Inspection each year, again completed by an Approved Beekeeper, or by Management Agency personnel. These beekeepers will need to complete the Disease Recognition and Destruction course and pass the test before a DECA will be issued.

Obligations for all beekeepers

AFB - Exposure. You must not allow honeybees to have access to any hive, equipment or products that have come from an AFB hive. You must not extract the honey from an AFB hive

AFB - Destruction of Hives. You must destroy by burning any of your hives that have AFB within 7 days of it being found, unless you have written permission from the Management Agency to do otherwise.

AFB - Moving Hives. You may not

transfer ownership of any AFB hives or infected equipment or products or remove the hives or equipment from the place where it was found without permission of the Management Agency. You may move the diseased hives or equipment, however, if you have a provision in your DECA allowing you to transport diseased hives to a safe place for destruction.

AFB - Notification. If AFB is found in your hives you must notify the Management Agency in writing within 7 days.

AFB - Sterilizing. This can only be done with permission of the Management Agency, using methods that they have approved.

Annual Disease Return. Before 1 June each year you must, on the form mailed to you by the contractor::

- record the number of hives you have
- the number of AFB hives found during the previous year (if any), the dates on which they were found and where they were found, and the dates that you destroyed them.
- any changes to the apiary information you have supplied to the Management Agency
- the dates on which you transferred the ownership of any of your hives to someone else, providing the name and address of the new owner.

Apiaries - Registration. An apiary is any group of your hives that are more than 200 meters from any other apiary that you have registered. The apiary must be registered with the Management Agency if hives are to remain more than 30 days. When registering the apiary you will need to state:

- your full name and address
- the number of colonies in the apiary
- the name and initials of the occupier of the property
- the road name and address of the property
- a written description of where the apiary is on the property
- a 260 map series grid reference
- whether it is seasonal (stating the months it is usually occupied) or permanent.

If you have a permanent apiary site that has been unoccupied for 30 days or more you must deregister it. You will therefore need to deregister all your permanent apiaries that are not occupied between 1 October and 1 November this year, or alternatively change them to seasonal apiaries if you intend to use them in the next 12 months.

Approved Beekeepers. Any beekeeper can become an Approved Beekeeper by: having an American foulbrood disease control plan (known as a 'DECA') for their hives that has been approved by the Management Agency and

having sat and passed, or agreed to sit and pass within a specified period, an AFB Disease Recognition and Destruction Competency Test.

Certificate of inspection. Unless you are an Approved Beekeeper you must ensure all of your hives are inspected by an Approved Beekeeper between 1 August and 30 November each year. You must complete the Certificate of Inspection form, which details the inspection, and forward it to the Management Agency within 14 days of the inspection. The Approved Beekeeper that carries out the inspection will need to fill out parts of the certificate, including signing off the form.

Change of ownership. When you transfer the ownership of your hives you must remove or deface all of your codes on the hives and notify the Management Agency that you have done it. You also need to give them the name and address of the new owner of the hives.

Code numbers. The current beekeeper code numbers will continue and new beekeepers will be given new code numbers. The code number must be marked on the outside of one hive in each apiary or on a sign in the apiary. Only the beekeeper who was allocated a code may remove or alter the code (without written permission from the Management Agency).

You should not have any other person's code number on your hives, or any other number that could be confused with a code number. In reality many beekeepers have equipment in their apiaries they have purchased from other beekeepers over the years. Considering the difficulty of removing code numbers while equipment is in use, it will be considered sufficient in the meantime to remove any confusion by erecting a sign in the apiary with the correct apiary code number.

Compensation. No compensation will be paid by the Management Agency for any losses occurred by beekeepers in having to comply with the Pest Management Strategy.

Drugs. You must not feed any substance to your bees that has the effect of obscuring AFB or attempting to 'cure' it.

Hives - access. You must ensure that the area around your hives is kept free from vegetation to allow normal access.

Hives - moveable frames. You must keep your bees in moveable frame hives. Exemptions may be granted by the Management Agency for research, queen rearing, package bees and public display.

Unregistered/abandoned hives. The Management Agency will take reasonable steps to find the owner of unregistered apiaries. If they are unable to locate the owner they may destroy the hives.

To ensure that the Pest Management Strategy works for the benefit of all

beekeepers the Management Agency may have to enforce compliance of the above obligations. This enforcement may take the form of any or all of

- canceling beekeeper's approved status
- conducting the above obligations on behalf of the beekeeper and sending them an account for the work done, and
- bringing a prosecution under the Biosecurity Act.

You will have notice that you may need to contact the Management Agency to gain permission for a number of things that you have been doing already (e.g. keeping bees in non-moveable frame hives, wax dipping, moving AFB hives to a central location to deal with them etc.). This is not a change, as you have always required permission. It was just that it was not enforced before so people didn't bother. The best policy would be for beekeepers to seek permission in writing early on. Indeed, it is an integral part of the DECA agreements that most beekeepers will have with the Management Agency. In most cases the permission will be granted automatically as part of your DECA, although the permission will probably be conditional.

So what do I have to do?

Because of all of the changes and the short time frames, the 1998 season will be challenging for both you, the beekeeper, and for the Management Agency.

Obviously, since the system is just starting, there are currently no Approved Beekeepers. Don't be concerned, having read the information about the PMS in this Guide, that you are suddenly breaching the rules and will have action taken. It isn't going to work that way...

During the spring of 1998, you will get the opportunity to complete a DECA application form. In the meantime, you should inspect each of your hives (as has always been your obligation) and report and destroy diseased hives within 7 days of finding them.

For many/most beekeepers, you can expect a confirmation of acceptance of your DECA application within a short time. As the whole system is new, though, more complicated DECAs may not be accepted until later in the season. You will also be contacted regarding AFB field days, the AFB course and the test within the next 12 months.

All beekeepers will need to complete an Annual Disease Declaration form when it is sent to you next autumn.

Conclusion

The prospect of being able to keep bees in a country free of AFB is exciting. It will save the beekeepers of New Zealand millions of dollars, and much stress and heartache. Almost every beekeeper in the country has had to deal with this disease at some time or another. We would all love to see the end of it. It really can be achieved. So let's do it!

Handy hint Buckled plastic feeders

Despite Stuart's best efforts you do occasionally get a buckled feeder because it is too long to fit in the box, this causes them to push the frames to one side and also leaves unsightly gaps for burr comb to form in. The feeders I'm writing about are the black plastic rotationally moulded ones sold by Ecroyd's and I hasten to add that these feeders are the best I've ever tried, they are virtually unbreakable and after what must be at least ten years I can't recall even one being thrown out for any reason (well alright any reason apart from the odd foul brood). There are the odd buckled ones in the hives though and although they only represent one or two percent of the feeders they can be a nuisance. So just get a very sharp knife (you should only own very sharp knives) and cut a slice off one or both ends where they fit into the rebates, put one end of the feeder onto the truck deck and lean on the feeder hard until the buckle is straightened out and hey presto you have a straight and fully serviceable feeder back in action.

Peter Berry

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Sterilising beekeeping equipment infected with American Foulbrood Disease spores

Mark Goodwin and Heather Haine, Hort Research, Ruakura

Beekeepers use a wide variety of products to clean and sterilise gloves and other equipment that have come in contact with a colony infected with American foulbrood disease. These are used to either kill spores of *Bacillus larvae* (the causative agent of American foulbrood disease) and/or to physically remove them.

The aim of this study was to test the ability of a range of products to kill *B. larvae* spores. We asked beekeepers which substances they used to sterilise equipment. The most common were sodium hypochlorite, methylated spirits, Dettol® and Savlon®. We tested these products along with ethanol and Virkon®. It must be noted, however, that under the new Pest Management Strategy for American Foulbrood disease, any method used to sterilise equipment contaminated with *B. larvae* spores needs first to be approved by the Management Agency of the Strategy (National Beekeepers Association).

Sodium hypochlorite

Sodium hypochlorite is a commonly used sterilising agent. It is the active ingredient in Janola®, which contains about 3% sodium hypochlorite. *B. larvae* spores were added to sodium hypochlorite solutions of various concentrations (0, 0.5, 1, 1.5, 2, 2.5 and 3% a.i.) and left for a range of times (0, 30, 60, 90, 120, 150, 180, 360 min and 24h). Two samples of 5 mls of each suspension were passed through a Millipore filter to remove the spores. The filters were then flushed with sterile water to remove any remaining hypochlorite, and placed on growth media to determine spores viability. The number of colonies growing was counted and averaged for each suspension.

No *B. larvae* colonies grew on any of the filters other than the control (0% hypochlorite, indicating that the lowest concentration (0.5%) and shortest time (30 min) tested was sufficient to deactivate spores. The trial was repeated with lower hypochlorite concentrations (0, 0.1, 0.2, 0.3, and 0.4%) and shorter times (30 sec, 10, 20, 30 40 and 50 min).

The time required to prevent colony growth decreased with increasing hypochlorite concentrations (Fig. 1). Short exposure to hypochlorite (less than 1 minute) increased spore germination.

Concentrations of 0.3-0.4% hypochlorite deactivated *B. larvae* spores in 20 min. However, to ensure a safety margin it is probably better not to use concentrations less than 0.5%. Care needs to be taken with the types of materials being treated. Some plastics and metals may degrade in hypochlorite solutions. You should run a small trial first to ensure the hypochlorite will not dissolve what you want to sterilise. It is not possible to predict how frequently the hypochlorite solution should be changed. This will depend on how clean the equipment you are sterilising is, how much

equipment you are sterilising and what is being sterilised. If you were sterilising large amounts of equipment it would be best to use higher concentrations of hypochlorite and longer times than that recommended above. Hypochlorite needs to be kept in the dark as it is broken down by sunlight and should be replaced after use.

Ethanol and Methylated spirits

Spore suspensions were added to either drum ethanol (98%) or methylated spirits (100%) and the spores tested for viability after 10 min and 24h using the methods described for the sodium hypochlorite. Colony growth still occurred (>100 colonies/plate) after the spores had been in either ethanol or methylated spirits for 24h, indicating that neither are effective at deactivating *B. larvae* spores.

Savlon®, Dettol®, and Virkon®

B. larvae spores were added to Savlon® (90%), Dettol® (90%), and Virkon® (90%). After 1 hour, each of the suspensions was centrifuged for 1h, and the spores resuspended in sterile water. This was repeated twice to remove the Savlon®, Dettol®, and Virkon®. The spores were then resuspended in water and each sample split into two. One half was spread onto growth media while the other half had further viable *B. larvae* spores added and spread on growth media and incubated for 3 days to determine if there was any of the original solutions present that could have inhibited colony growth.

Growth was recorded with Dettol® and Savlon® after the suspensions were centrifuged (Table 1) both with and without additional spores added. Growth was only recorded with Virkon® when additional spores were added. This indicates that Virkon® is effective at deactivating *B. larvae* spores while Savlon® and Dettol® are not. This needs to be retested to determine if Virkon® can deactivate spores at lower concentrations and exposure times.

Summary

Of the products tested only sodium hypochlorite and Virkon® were effective at deactivating

B. larvae spores. Some of the other products tested may, however, be useful in physically removing spores through washing if they are used in large quantities.

	-Spores		+Spores	
	Average	S.E.	Average	S.E.
Water	64.75	17.23	52	4.38
Dettol	52.67	16.94	44.33	9.6
Virkon	0	0	24.88	1.36
Savlon	63.17	17.69	79.33	13.87

Table 1: Average number of *B. larvae* colonies per plate (average) and standard errors (S.E.) for water, Dettol®, Virkon® and Savlon® both without (-spores) and with (+ spores) additional *B. larvae* spores added after centrifuging.

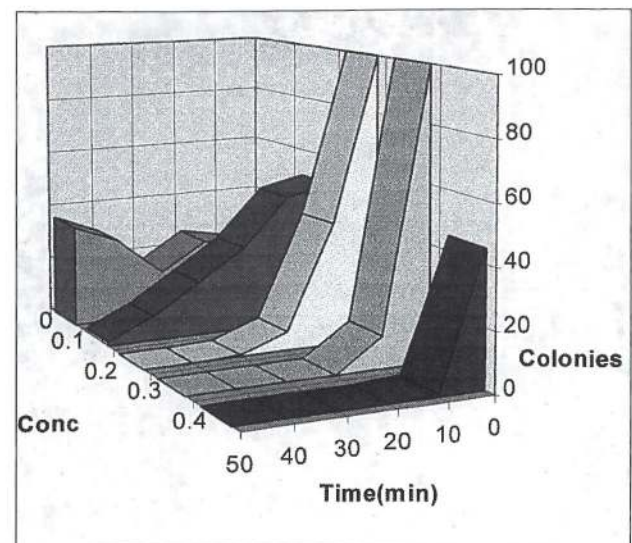


Fig 1: Average number of *B. larvae* colonies (colonies) per filter disc after the spores were in hypochlorite solutions of varying concentrations (%) for a range of times (Time).

Building a better bee

by Karen Wright

Scientists are grooming a new champion pollinator to relieve a honey-bee population under siege.

Every spring for the past 20 years, a quiet experiment has played out in Alvin Hamson's orchard in northern Utah. While the snow melts and the grass greens up in the fertile Cache Valley, hundreds of sleepy bees emerge from wooden shelters and fly off in search of provisions. If the apple and pear blossoms aren't open yet, then dandelion flowers will do.

So what's the experiment? Anywhere else in the Beehive State — indeed, anywhere else in the country — the actors in this tableau would most likely be honey-bees. But the bees in Hamson's orchard don't make honey. They don't have black and yellow stripes, and they live in holes, not hives.

In fact, most people wouldn't recognise them as bees at all. Meet *Osmia lignaria*, the blue orchard bee. To a small group of scientists a mile or so south of Hamson's orchard, these insects represent nothing less than a stronghold against famine and pestilence. The scientists work at the United States Department of Agriculture's Bee Biology and Systematics Laboratory in Logan. Fifty years ago, the lab was charged with a mission considered vital to the health of American agriculture: to "recruit" bees other than honey-bees for the purpose of crop pollination. And like the creatures they study, the Logan bee biologists have been toiling in obscurity ever since.

In Hamson's orchard, however, their labours have quite literally borne fruit. Newly domesticated blue orchard bees have dutifully descended upon Hamson's cultivars to help produce thousands of bushels of apples and pears a season. For orchard crops at least, the blue orchard bee might be a much better pollinator than the honey-bee.

But it's a long road from Hamson's backyard to the apple factories of eastern Washington or the Uberfarms of California's Central Valley. To make the big time, the blue orchard bee will have to prove it can be as dependable and easily managed as the honey-bee, which was domesticated thousands of years ago. And any alternative pollinator will have to break a monopoly of sorts in one most important aspects of agricultural production. More than 100 cash crops are pollinated by winged insects — apples, pears, cherries, oranges, peppers, tomatoes, cucumbers, almonds and garlic, to name a few — and the great majority of these are currently serviced by honey-bees. Each year, growers rent more than a million honey-bee colonies from commercial beekeepers, and, by one estimate, honey-bees pollinate at least \$10 billion worth of crops.

That is precisely why some bee biologists are looking for alternatives. "We've gotten so dependent on honey-bees that if anything goes wrong with them, we're stuck," says Suzanne Batra of the USDA Bee Research Laboratory in Beltsville, Maryland. Defenders of honey-bee supremacy insist that the beekeeping industry is thriving and resilient. But a combination of deadly parasites and severe weather has now begun to pose a serious threat to *Apis mellifera*. In some parts of the country, almost all feral honey-bees and more than half the



commercial colonies have been wiped out. Growers are nervous, and the Government is hedging its bets.

So, while most bee biologists are dedicated to the study of honey-bee habits and disease, a few have devoted themselves to the search for alternative pollinators. Five of this latter species of scientist can be found in a single-story lab in Logan, Utah. On a cool spring day, their pet project flits between fragrant blossoms and rough-hewn blocks of Federally subsidised housing. It may be the future of American agriculture; to the untutored eye, though, it looks something like a half-grown housefly.

Domesticating an animal is an art, not a science, and in the late 20th century it pretty much qualifies as a lost art. No one knows how long it took our distant ancestors to persuade honey-bees to live in boxes, but it has taken one man most of his adult life to get blue orchard bees to do the same.

When Phil Torchio came to the Logan bee lab in 1963, he was 29. His first assignment involved a pollinator called the leafcutter bee, which was already on its way to resounding success. The bee had been recruited by Torchio and his mentor, WP Stephen of Oregon State University at Corvallis, to help boost the production of alfalfa seed for sale to the Midwest dairy crescent as well as to international markets. Growers were typically getting about 100 pounds of seed per acre using honey-bees as pollinators. When farmers in the Pacific Northwest began using leafcutter bees around 1960, those yields rose more than tenfold.

A close examination of the pollinator's modus operandi showed why. An alfalfa flower stays closed until an insect visitor "trips" it open. At that time the stamen, the male part



A swarm of pollinators (left to right): The **honey-bee**, the longtime leader of the pollinator pack; the **hornfaced bee**, which lives in wood holes and specialises in pollinating orchard crops; the **leafcutter bee**, friend to alfalfa farmers; the **black carpenter bee**, which may someday be used to pollinate tomatoes and eggplants; the **alkali bee**, a Western dirt-dweller that prefers alfalfa and other legumes; the **bumble-bee**, which adapts well to greenhouse living.

of the flower, bops the insect on the back, dusting it with pollen. This is a one-time event for each flower. Because honey-bees don't like getting whacked in this manner, they figured out how to rob alfalfa flowers of their nectar without tripping the blossoms — or collecting any pollen. For whatever reason, leafcutter bees don't seem to mind the spanking.

The success of the leafcutter established an important principle: that honey-bees aren't generalists, and as such they lack the technical skills and motivation required to penetrate certain kinds of flowers. They also have some inconvenient preferences, agriculturally speaking: they prefer dandelions to apple blossoms, for example, and aren't remotely interested in blueberry blossoms. What's more, their method of harvesting or "packing" pollen actually interferes with the pollination process: unlike most bees, honey-bees mix pollen grains with nectar and saliva, compromising the pollen's viability and making it less likely to rub off on other flowers.

The ideal pollinator would be one that specialises in a particular crop and isn't distracted by every other posy within striking distance, one whose most fervent period of foraging coincides with the crop's peak bloom, and — most important — one that can be raised and managed in relative captivity. These were the factors on Phil Torchio's mind when, in 1970, he set out to find a better bee for orchard crops. Over several years, he surveyed native plants and abandoned orchards in Utah, Idaho, Washington and Oregon for insects with pollinator potential. Everywhere he looked he saw a smallish, iridescent blue-black bee with horns just above its mandibles: *Osmia lignaria*, commonly called the blue orchard or orchard mason bee.

In order to take his pollinator, Torchio had to think like one. In the wild, blue orchard bees live in holes in wood: beetle burrows in dead trees, nail holes in fence posts. And, like almost all bee species, they live alone. (The sociability of honey-bees is exceptional.) When they emerge from dormancy in the spring, blue orchard males do little more than mate. But the females build nests in their holes, making mud compartments, laying one egg in each and stocking the brood cells with provisions of pollen.

Torchio found that he could entice the bees to nest in wooden blocks drilled through with holes. But not just any hole would do. Size was important: one-quarter inch wide by six inches deep. The sides of the block had to be painted to prevent light from entering the holes, because the bees like to nest in the dark. One end of the holes had to be closed off with aluminium foil in order to fend off parasitic wasps.

It took Torchio nearly a decade to design nesting blocks that satisfied the blue orchard bee. In the meantime, he began greenhouse studies, encouraging the bees to nest in clear glass tubes so that their activities could be easily monitored. He housed the tubes in a box large enough to accommodate himself as well as the nesting bees; Torchio sat inside the dark box for hours, spying on the bees with the aid of an otoscope — the instrument doctors use to look in patients' ears. "I watched them coming and going with their pollen loads," he says, "deciphering exactly how the provisions are constructed in the nests, and so forth. This is the kind of work that's required to manage pollinators."

Torchio spent another four years determining if and how the bees could be moved from one orchard to another during nesting. But once he got them out in the field, he was encouraged by what he saw. Blue orchard bees become active at lower temperatures than honey-bees, which means they emerge from their nests earlier in the day and earlier in the growing season. For apple growers, that headstart is significant, because it improves the chances of pollinating the so-called king bloom — a tree's first round of blossoms, which produces the best fruit. Blue orchard bees also pack pollen dry, thumping their bellies against the stamen and forcing pollen grains into the angled hairs there — a vast improvement on the honey-bee method. *Osmia* females can work a flower twice as fast as honey-bees; and whereas

honey-bees tend to confine their foraging to a single row of trees, blue orchard bees move indiscriminately among rows, ensuring more thorough cross-pollination.

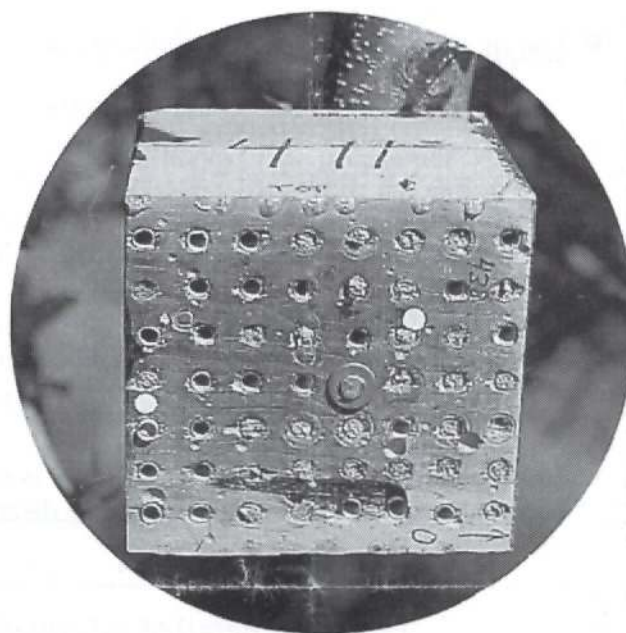
But the blue orchard bee's greater efficiency might actually undermine its acceptance by growers. Because far fewer bees are needed per tree — about 10, as opposed to some 300 honey-bees — pollination by the solitary bees is relatively "invisible," according to Torchio, and that's not necessarily a good thing.

"It's just like pest control," explains Bill Kemp, director of the Logan bee lab. "People like to see a lot of bodies."

Now in semi retirement, Torchio is refining his *Osmia* protocol to meet the demands of commercial agriculture, while suppliers are already selling blue orchard bee starter kits to backyard gardeners. But Torchio's bee is only one of several alternative pollinators being groomed for the farm of the future. In East Coast orchards, Suzanne Batra is promoting the hornfaced bee, a cousin of the blue orchard bee that has been used in Japan since the 1930s. Stephen Buchmann, a biologist at the Carl Hayden Bee Research Centre in Tucson, is doing field experiments with black carpenter bees. The leafcutter bee is now a fixture of alfalfa-seed farming, and the soil-dwelling alkali bee is also being used by alfalfa growers, though with less success. Bumble-bees have been pollinating hothouse tomatoes since the late 1980s; before that, growers had to pollinate tomato flowers by hand, using tuning forks to "buzz" the pollen free of the stamen.

Despite the success of alternative pollinators, the scientists who champion them are still struggling for legitimacy. To help remedy the situation, Buchmann and a small cohort of like-minded enthusiasts formed the Forgotten Pollinators Campaign in 1995. The campaign has a conservationists' agenda, stressing the dependence of many threatened or endangered plants on native pollinators that are themselves becoming increasingly rare. But it also makes the practical argument that America's reliance on the honey-bee is unhealthy, and that the nation's food supply will not be secure until the stable of insects that can serve as reliable pollinators is expanded — "diversifying the pollinator portfolio," as Buchmann puts it.

The campaign's argument has seemed acutely relevant in recent years, as two kinds of parasitic mites, which invaded the United States in the mid-1980s, attacked honey-bee colonies across the country. Africanised "killer" bees pose



The best nesting unit for attracting blue orchard bees, a six-inch cube drilled through with holes one-quarter inch wide.

another peril: recent reports of cranky, intractable honey-bees in Arizona and California suggest that managed colonies are already interbreeding with descendants of the aggressive swarms that entered the United States in 1990. Beset by these problems and the economic hardships posed by imported honey, many beekeepers are going out of business; the number of commercial beekeepers and beehives in the United States has been declining for decades.

"Growers are always asking me, 'What's going to happen if we can't get honey-bees?'" says Ron Bitner, a bee broker and entomologist at International Pollination Systems in Caldwell, Idaho. "It's taking a lot more work for beekeepers to maintain their colonies, and the price is continually going up." Indeed, the current fee for renting a honey-bee colony — about \$45 per bloom period — has doubled in the past decade.

Some apiarists say the alternative-pollinator contingent has exaggerated the plight of the honey-bee to further its own interests. It's true that, at present, honey-bees have at least two significant advantages over other pollinators: their services are subsidised by honey profits and a robust infrastructure is

already in place to maintain hives and efficiently distribute them to growers.

"If there's a shortage of honey-bees anywhere in the United States, an emergency situation, beekeepers can respond immediately," says Roger Morse, a semi retired professor of apiculture at Cornell University. "You just can't do that with any of the solitary bees."

Not yet, anyhow, Batra concedes. Indeed, she warns that Western blue orchard bees don't adapt well to different climates; gardeners have complained that bees shipped from Seattle won't make it through a New England winter. And when blue orchard bees finally make their debut in big-time agriculture, they will be more expensive than honey-bees, maybe by as much as a third. But the increased cost, Torchio says, will be offset by increased yields, and with prices for honey-bee rental rising, the disparity won't last.

Ultimately, the nation's growers will decide which is the better bee. And in the deciding, says Batra, one tangible benefit of the blue orchard bee and its solitary comrades should not be ignored: "They don't sting worth a darn."

Acknowledgement, The New York Times Magazine

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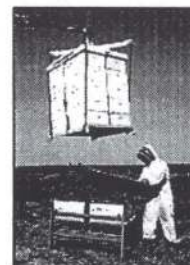
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Frank's column...

How I manage bees

by Frank Lindsay

Hello, I'm Frank Lindsay.

Before I start, I thought I would give you some background on where I'm from and how I operate my bees. I'm not an expert and are sometimes not very articulate so bare with me.

I started beekeeping exactly 29 years ago this month. I purchased one hive from an old beekeeper and proudly brought it home and put it in the garden. This hive was designed for Wellington conditions - concrete base and lid. Heavy but could withstand the ravages of storms beautifully.

My first problem was convincing my wife that these things were lovable little insects that wouldn't hurt a fly. (I hadn't bothered to tell her of my plans beforehand because she wouldn't have approved). Then there was the problem of storing queen-bees in the hot water cupboard before they were introduced - bees in the house! That poor hive hardly produced any surplus honey as I had my head in it every few days seeing what was going on. Despite my actions, it actually survived the next winter and my beekeeping operation was under way.

At the same time I joined the Wellington Beekeeping Association and the NBA. I used to go to the branch meetings just to listen to the commercial beekeepers at lunch time discuss their problems and how they solved them. I also pestered a Taranaki beekeeper to take me out on weekends to watch him work his bees and ask why he did things that way.

I gradually built up to 10 hives and stayed at that number for 10 years then increased to 150 until four years ago when I increased to 350 hives, (early retirement from Telecom).

A lot of people have helped me through the years, countless MAF personnel and others like Chris Dawson, who taught me to rear queens when he was passing through Wellington. I still have the tapes and slides but try out different methods just for fun.

I prefer to work my hives as individuals and leave plenty of honey on them for winter stores. My reasons for doing this are twofold. First, I breed my own queens from my best producing hives so selection is important. You have to monitor a hive for two years against other top producers before selecting breeders. If I equalised hives in the spring as most beekeepers do, top producers wouldn't stand out the same.

Secondly, I prefer to leave a lot of honey on the hives, wintering in two to three full depth supers. We have an early bush flow in the Wellington area which means you have to have strong hives early. By leaving lots of stores on, it saves me extra running around and gives me time to devote to queen rearing in September.

My main method of swarm control is to make a four frame nucs, (in October) from most hives and combine these back on the main hives, just before the December flow or use them immediately as replacements for old failing queens. Consequently we replace about 1/3 of our queens each year.

Wellington, despite the wind is fairly damp. Hives without top ventilation will be drenched by spring with outside frames all mouldy. Nosema can be a problem with some very severe cases, (15 millimetres deep of dead and dying bees outside the hive),

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so replacing dark frames is essential. Honey brought in from bush areas tends to have a high moisture content, 19.5%, so it is dried in the frames by using a household dehumidifier. It takes a few years to get confident in beekeeping. When I started, I devoured all the beekeeping books I could find, picking out bits of information that looked worthy of investigation. Some worked, others didn't. Basically you need to learn the geography of your area, what flowers and when, and adjust your beekeeping to suit. Jot these down in a notebook, what bees are visiting, as well as the general weather conditions - (monthly).

There is a booklet available from the NBA on "Nectar and Pollen Sources" by Walsh. Although there are hundreds of books available on beekeeping, a new beekeeper only really needs one - "practical Beekeeping in NZ" by Andrew Matheson. All the rest can be borrowed from the NBA Library at minimal cost.

The only problem with books is that most don't tell you the author's failures, ie - I did this and this happened. Don't be put off when everything doesn't go right for you in the first year. Everybody makes mistakes, a queen cell missed and off goes your honey crop. Good beekeepers remember their mistakes and try not to repeat them. Learning can be enhanced by teaming up with a competent beekeeper. He/she gets a labour unit and you get the benefit of years of experience. After a while you get into a system where you work with the bees and the weather. Then it becomes fun.

Beekeeping is expensive to get into, but there are savings to be made if you know a sewer. I hope to pass a few on as we go.

Beekeeping really starts in the winter when you purchase (or make) and assemble all the woodware. Everything except the frames should be protected against rot, (as we use untreated timber).

There are a number of treatments available that are not harmful to bees. Apply or dip, whatever your method, and allowed to dry before painting. With everything made you are ready to start beekeeping. (It pays not to embed foundation on to the frames until just before you are ready to use it otherwise it could sag

when the bees warm it up).

October is a great month to start. Early spring sources are flowering, pussy willow, willow, tree lucerne, Spanish heath, five finger and many others, especially in the bush and around the city. There's a hum in the air, everything is alive and wonderful. Start small with a nuclei (nuc), a four frame hive, feed it and you build confidence as the bees expand into a full size unit.

Elsewhere in this issue are some of the notes taken from the Southern North Island Branch, "Camp Rangitikei Weekend" on acquiring bees.

For those with established hives, spring inspection should have been completed, rotten woodware and old heavy frames replaced, hive stands checked. String hives should have had a four frame nuc taken off them and a new queen introduced. Once the introduced queen is laying (10 days), the nuc can either be used as a replacement queen, (unite the nuc to the hive using a sheet of newspaper after killing the old queen), used for an increase, as two queen unit or to strengthen a weak hive!

Another method of strengthening a weak hive is to give them a frame of emerging brood from a strong hive. Check both hives do not have BL, give it a light shake to remove the field bees, check that the queen is not on the frame, spray the rest of the bees on the frame with a weak solution of warm sugar syrup and pop the frame into the brood nest giving the rest of the bees a spray with sugar syrup to stop any fighting. Put a replacement frame on the outside of the brood nest of the strong hive, (not in the middle). Repeat every two weeks if required.

Hives in an urban situation can generally be left to build up on their own as there is a constant dribble of nectar and good pollen sources available. However, they still need attention to prevent congestion of the brood nest, (reverse the brood supers in October when brood is in both supers, and add another super on top so the bees have somewhere to put that incoming nectar). Stores should be maintained at a minimum of three frames of honey, (one week's reserve for a strong hive). Check every 10 days for queen cells, (tilt the top super back and look along the

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bottom bars for developing queen cells). Once queen cells have larvae in them, kill all the queen cells, then artificially swarmed to reduce the population, (swap the hive with a weak one during the middle of the day when all the bees are flying). Consider making another nuc.

Queen cells can initially be used to make another nuc but should be replaced as soon as possible, with a mated queen from non-swarming stock.

For those with hives in rural areas, quite often there isn't enough nectar and pollen sources to sustain a continuous build-up. Hives are stimulated by feeding sugar syrup in the hope that the bees will do the rest. Pollen reserves are often overlooked. There should be a thin layer of pollen between the brood and honey, (likewise frames of pollen indicate a failing queen). Another indication of a well fed hive is the development of drone brood. If in doubt, feed back a little of your frozen pollen (mix it with sugar syrup and dribble it across the brood frames), or make up a pollen substitute using pollen and brewers yeast, 50/50 and sugar. Wet and make into dough, or buy ready-made patties. Place this between the first and second super. The results will be immediate. The brood area increases, less spotted brood, more royal jelly under new larvae, the bees start to develop queen cell buds and drone brood. If they need it, continue to feed them. The weather during late October/November is often unsettled and brood production can be effected in November by a nectar dearth. It's a good idea to monitor honey reserves until the main flow starts in December. Remember, the bees produced in October and November are the ones that bring in your honey crop in December.

Reference material for further reading: Some Important Operations in Bee Management by TSK and MP Johansson, (uniting colonies, establishing and using nuclei, feeding sugar and pollen to bees).

If anybody has any questions, or want some aspect discussed within this article, drop me a line or email me - lindsays.apiaries@xtra.co.nz



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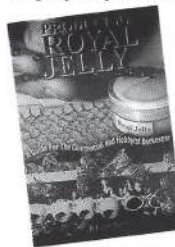
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KEVIN BUCKLEY

What is beeswax?

Beeswax is a secretion of the worker honey bees used for building combs and sealing stores of honey. It is produced by four pairs of glands on the underside of the abdomen. The glands become active when the bee is eight to 17 days old.

Comb building is a communal process rather than individual. The temperature of the hive must be 33-35 degrees centigrade, there must be a surplus supply of food and enough bees of the right age for secreting wax.

The bees need to eat between 8-13 kilograms of honey to produce 1 kilogram of wax. The bees also need pollen in their diet.

Worker bees about to secrete wax gorge themselves with the honey and hang together in clusters or chains across the space to be filled. After 24 hours wax is produced by the glands. A liquid at first, the wax soon hardens to a small white flake. Using a spine on the hind leg, the bee removes each flake in turn and passes it to the mandibles (jaws) where it is chewed and mixed with glandular secretion. The manipulated wax flake is normally passed to other workers who mould it into shape and push it into place on the growing comb. A single flake takes about 4 minutes to process.

Bees wax is always white when first secreted regardless of food consumed by bees. Pigments of pollen incorporated with the secreted wax change the colour to yellow. Brood rearing darkens the wax after each brood cycle. This colouration comes from used pupal cocoons and accumulated larval faeces in the cell.

Beeswax is a very stable substance and does not alter significantly with storage. The melting point of beeswax is 64 degrees centigrade, the highest of any known natural wax. Its specific gravity is .96 which means that it floats on water.

Sources of beeswax

There are three main sources of beeswax for a beekeeper -

cappings, scrapings and old or damaged combs. Wax from old combs should be kept separate from other types of wax. Lighter wax is worth more than dark wax.

Cappings - the uncapping of honey combs provides the beekeeper with the greatest quantities of wax, approximately 14-18 kilograms per ton of honey. Scrapings - beeswax can also be scrapped from the hive parts, such as burr comb from frames, queen excluders, or the inside of boxes.

Two good reasons for removing the wax

1. If allowed to accumulate it is difficult to manipulate frames and hive management becomes time consuming.
2. Wax should be salvaged from the hive as it is a valuable product. About 1/2 kilogram of wax can be scraped from a hive. Wax scraped from the hive should not be discarded in the apiary as it could spread disease and provoke robbing.

Cull combs

Old black brood combs with frames in bad disrepair.

Frames with broken lugs and frames full of old pollen.

Old frames also act as a reservoir for nosema apis spores - by replacing old combs regularly this helps to control the disease. As a rough guide replace three combs/frames per year per hive. The average yield of recovered wax is 1.6 kilograms per 10 full depth frames. Beeswax must not be rendered out of diseased frames because of the dangers of robbing. The Apiaries Act - Biosecurity Act requires that all diseased frames be burnt and then buried.

What to do with the wax?

Cappings

The cappings contain honey also - firstly as much honey as possible must be removed. Drain or strain most of the honey from the wax through a basket made of cheesecloth or nylon mesh. Not all the honey will drain out. Some beekeepers wash

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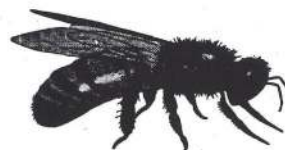
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out the remainder and make mead with the honey-water mixture, or feed it back to the bees. Never feed the honey with cappings in the open as this causes fierce robbing and can spread disease.

Method - Put wet cappings into a large dishpan inside an empty box-super on a hive. Turn the cappings occasionally. A second method is similar to the first but requires boxes of wax cappings placed above a large tray/dish/pan on chicken mesh/queen excluder. The bees gain access through the above removing the honey - the dry wax falls down into the removable tray. Remove wax when dry.

Solar Wax Melter

By far the easiest method for rendering small amounts of cappings, scrapings and old combs is to use a solar wax melter. The size of the solar wax melter is not important as long as the basic principles are followed.

A solar wax melter has five parts

- wooden body
- glass lid
- large metal tray on which the crude wax is placed
- piece of wire mesh to strain the molten wax
- small pan/dish/tray in which to catch the molten wax

The wooden body can be made of 20mm timber or ply. Glue and screw all the joints to prevent buckling with the intense heat. Paint the outside black to absorb the heat - white on the inside to radiate heat.

The glass lid should be double glazed, with a 10-15mm gap between the sheets of glass. The large metal tray should have one or two spouts at the lower end for the molten wax to run out into a small container. Wire mesh/chicken wire is placed in front of the spouts to filter out impurities and debris in the molten wax. Make sure the lid fits snugly with no gaps - if there are any, seal them up.

Place the solar melter in a sheltered warm sunny position as wind greatly reduces its efficiency. Tilt on an angle to face the sun. Cheap and easy to make and costs nothing to run.

Dry wax cappings, scrapings of wax, cull frames and queen excluders can all be put in a solar melter.

Hot Water

Using hot water in a large pot or billy (something that is not going to be used for food again), heat the water to about 90 degrees centigrade and slowly add the cappings. Take care not to boil the water or let it cool down too much. When all the cappings have been melted leave the mixture to stand until a fine film forms on the surface before pouring into mould.

Water Bath

For dry wax cappings or honey and wax cappings. Put the wax in a container, preferably stainless steel (to help transfer heat), place inside another container that holds water. Heat the water. The heat transfers through the second container and melts the wax. When the wax has honey in, stir occasionally, and when the wax has melted, remove the container from the hot water, cover with a cloth and leave the wax to set on top of the honey. The honey is okay for cooking.

Hot Water Wax Melter

A hot water wax melter can deal with beeswax from cappings, old combs and other sources. It has an electric immersion element in the bottom to heat the water and wax. Once the melter is full and the wax melted, a mesh screen is placed over the wax and water mixture. Pouring a quantity of hot water into the funnel inlet forces the wax up through the screen (which filters out the impurities) and out into a mould.

What to do with your wax now?

Light and dark wax should be processed separately, as the price depends on the colour. Blocks of wax can be sold to a merchant or swapped for comb foundation. A conversion fee and freight will be charged. Use the new foundation in new frames for the hives. Make beeswax polish for furniture and floors. Use sheets of foundation to make candles, or use the blocks of wax melted down again and poured into candle moulds - add dye and scents.

Peter Ferris



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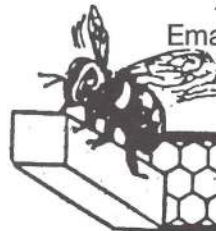
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By-products of a hive - Propolis and pollen

There are many different products available from a beehive, apart from honey - beeswax, pollen, propolis, royal jelly, bee venom, larvae and adult bees, products which are increasingly valued for apitherapy, nutrition, or pharmaceutical purposes. This paper focuses on propolis and pollen.

Propolis

1. Definition - Propolis is a sticky plant-derived material, a mixture of beeswax and resins collected by the bees, particularly from leaf buds and flowers of willow and poplar. It is used by bees for caulking, sealing, lining, strengthening, repairing, preserving, and repelling inside the hive and around their entrance. Its antibacterial and antifungal properties protect the colony against contamination and diseases.

2. Physical characteristics - The colour can range from yellow to dark brown.

It is soft, pliable, and very sticky at 25-45°C, at less than 15°C and as it gets older, it becomes hard and brittle.

3. Chemical composition - This varies according to the sources of plant resins, gums, exudates utilised by the bees and the collection methods used by beekeepers. Excluding beeswax, propolis consists of a mixture of resins, terpenes and volatile oils, and miscellaneous materials. The resins are usually sticky and insoluble, and terpenes and volatile oils are compounds that have fragrant odours. The active constituents of propolis are found in fractions soluble in solvents such as alcohol. The most important compounds are the flavonoids, various phenolics and aromatics.

4. Health benefits - The curative potentials of propolis has been recognised by ancient civilisations. Aristotle and Pliny, the Roman naturalist both wrote about it. In recent times there are many published articles referring to its efficacy in the treatment of a variety of ailments - sore throats, colds, skin problems, viral infections, stomach ulcers, burns, haemorrhoids, gum diseases and wounds but there are insufficient carefully controlled experiments. Propolis is clearly antibacterial and antifungal, and some of its constituents produce anaesthesia which in one study showed it to be 3 times as powerful as cocaine. It is capable of scavenging free radicals and thereby protecting lipids and other compounds (vitamin C) from being oxidised, destroyed or turning rancid. General medicinal uses of propolis include treatment of cardiovascular and blood systems, respiratory apparatus, dental care, dermatology, cancer treatment, immune system support and improvement, digestive tracts, liver protection.

5. Caution - Propolis can cause allergic reactions, mostly in the form of contact dermatitis. Therefore small quantities should be tried at first to test reactions. Prolonged chewing of large amounts of raw propolis may lead to nausea.

6. Collection - The average production of propolis per colony per year has been described as 10-300g but this depends on the bees, climate, forest resources and trapping mechanism. Contamination with wax, wood chips, paint etc need to be avoided. To obtain the highest grade and purity, special inserts are placed in the hive. They provide spaces that mimic cracks or holes in the hives, encouraging the bees to fill them with propolis. In the simplest forms this can be an inner cover under the hive lid, having a large hole covered with nylon fly screen, raised above the frames to reduce wax contamination. Light and air circulation stimulate propolis production and therefore it is better to prop open the lid. Newly established colonies should not be used for trapping. The propolis can be removed by freezing the screens for a few hours, until the propolis is brittle, and then pulling over a table edge.

7. Storage - Propolis should be stored dry, in airtight containers in the dark, preferably at less than 10-12°C and away from excessive and direct heat. Keep separate the fresh and high quality "trapped" propolis from the old propolis scraped from hive boxes and frames.

8. Extraction methods - The propolis should be prepared by removing coarse debris and excessive wax, chilled until it is brittle and broken into small pieces or ground to a fine powder. Choice of the correct solvent is very important if the product is to be used for human consumption. In commercial preparations usually ethanol, or in some cases, glycol, is used. For home processing intended for internal consumption, gin, rum, arrak, or other clean, locally distilled liquors are acceptable even though they usually contain less than the optimal percentage of alcohol .70% ethanol has

given the best results in several studies which tested the extracts for their bacterial and fungicidal effects. The simplest method is to put the propolis and the solvent into a container, seal the top and shake briefly once or twice a day. Leave it in a warm dark place for at least three days, but preferably 1-2 weeks. Filter the liquid through a clean, very fine cloth or paper filters. It should be a clear liquid, free of particles and dark brown or slightly reddish in colour and kept in clean, dark, airtight bottles. A second filtration can increase its concentration. Other simple methods, less effective in terms of recovery of active ingredients, but still exhibiting bacterial and fungicidal effects, are to soak the propolis for several days in water, following the same procedure as above; or mix 10g of cleaned propolis with 200ml of olive or almond oil, or 100g butter, or 100ml food quality linseed oil, heat in a water bath for approximately 10 minutes to not more than 50°C, stirring constantly and filter and store the extract in the fridge.

9. Market outlook - The market for raw material and secondary products containing propolis will probably continue to grow as they find more acceptance in medicinal uses and as more cosmetic manufacturers realise their benefits and marketing value. One of the main impediments to market development is the difficulty of establishing uniform rules and quality control standards.

10. Contacts for sale - Comvita NZ Ltd, Old Coach Road, Te Puke Tel: 7 533 1426 Fax: 7 533 1118 NZ Herb Pharm Ltd, 126 Aranui Road, Nelson Tel: 03 540 3312, Fax: 03 540 3313 Requests clean, DRY propolis, free of all paint flakes. Suggests that a box of wood be made to hold 1 kg of propolis, lined with a strong plastic bag, fill and press in the propolis, close the lid and tape. It should hold its shape and make packing in a cardboard box easier. Price from Comvita is \$120 per kg pure - the crude of good quality propolis is usually from 40-50% pure, so the return is approximately \$50 - \$60 per kg. This, of course is dependent on the quality.

Pollen

1. Definition - Pollen is the male reproductive cell produced by the anthers of flowering plants for the purpose of transmitting gametes to the stigma of receptive female flowers. Pollination thus achieves the production of seeds.

For the bees, pollen supplies all its nutrients for brood rearing, as well as for adult growth and development. Without adequate pollen supplies which are obtained either through foraging or from stores in the form of "bee bread", a colony could not long exist. By consuming a mixture of different types of pollen, bees tend to have a better nutritional balance and to dilute potential toxins.

2. Physical characteristics - Bee-collected pollen consists of a blend of pollen grains derived from many plant species in a given locality and thus varies greatly in size, colour, shapes and surface structure. Most pollen grains have a very hard outer shell which is very hard to digest but it has been proved that there are germination pores which allow for the extraction of the interior nutrients.

3. Chemical composition - Pollen is not a uniform, distinct and easily characterised product and thus only a generalised composition, based on many reported analyses, can be made. Protein is a major component with an average value of 24.96, though contents of above 40% have been reported. Carbohydrates constitute about 27%, consisting mostly of the simple sugars fructose and glucose. Much of this sugar is added by foragers in the form of nectar or honey which is used to bind the pollen grains together and allow them to be packed into the pollen baskets on the hind legs. Some pollen, especially from grasses, also contains starch, up to 18%. Pollen contains only about 5% fat which is in the outer coating and as this is poorly digested by humans it would contribute few calories.

Pollen is most noted for its mineral and vitamin composition, containing substantial quantities of potassium, calcium, magnesium, as well as high levels of iron, zinc, manganese and copper, and is extraordinarily rich in most of the B vitamins.

4. Health benefits - It has been claimed by some that pollen is the "complete and perfect food" for humans. This is not only unscientific but also potentially damaging to the bee industry. Evidence shows that pollen contains none of the essential lipid-soluble vitamins D, Kt and E. Nevertheless it has potential as an excellent food source when compared to seven common highly nutritious foods, ranking 50% more protein than beef, and less than one quarter the fat than beef.

The calcium levels of pollen is the highest for all other foods listed except cabbage, but to equal the food energy, you would need to eat ten times as much cabbage as pollen.

Apart from pollen's nutritional value, the best documented and accredited medicinal research shows its benefits in the treatment of chronic prostate problems. Consumption of pollen have been shown in several studies to reduce inflammation, discomfort and pathology of such patients. It is thought that this relates to the high concentrations of zinc in pollen, a key element in prostate gland function.

Another benefit of pollen is its ability to help against the adverse effects of x-ray, especially for cancer patients undergoing radiation treatment. It is reported in a well conducted clinical test, that pollen-fed patients were found to have suffered fewer side-effects as measured by changes in blood factor chemistry.

The consumption of pollen or unrefined honey containing traces of local pollen is often accredited as reducing symptoms of hay fever, although it is less reliable for severe cases of allergies and asthma. There have been studies suggesting that pollen, with its high levels of carotene, can help reduce or cure some types of cancer, but this research is still in early stages.

Perhaps the greatest fame of pollen is based on claims that it improves one's physical stamina with many reports of improved performance, but this also lacks rigorously controlled tests.

5. Caution - The major adverse reactions reported by people who consume pollen are stomach upsets. In some studies as many as 12-33% experienced some problems and this is the main reason for the recommendations to consume only small amounts of pollen, at least initially.

Surprisingly, the potential for allergic reactions to orally ingested pollen is very slight, probably much smaller risk than those posed by such foods as peanuts, milk, eggs, shellfish and wheat.

6. Collection - Pollen pellets are removed from the bees before they enter the hive. There are many designs of traps, some easier to clean and harvest, others more efficient or easier to install. The collected pollen should be free of contaminating insect parts, wax moths, debris, mould etc and must be kept dry. The trap must not unduly stress the colony by taking too much pollen. Traps that remove about 60% of the incoming pollen during heavy nectar flow appear about optimal.

Extreme care must be taken that pollen is not contaminated by bees collecting from flowers treated with pesticides - since a pollen pellet is collected from many flowers, even small quantities of pesticides per flower can be accumulated rapidly to reach significant concentrations.

7. Storage - Pollen should be collected daily in humid climates but less frequently in drier conditions. To avoid deterioration of the pollen and growth of bacteria, moulds, etc, pollen should be dried quickly, to less than 10.96 moisture content (preferably 5-8%) as soon as possible after harvest. A simple method uses a regular light bulb suspended high enough above the pollen carton or tray so that the pollen does not heat to more than 40-50°C For solar drying, the pollen should be covered to avoid direct sunlight and overheating.

After drying, the pollen needs to be cleaned of all foreign matter. A tubular tumbler made out of a wire mesh with a fan can clean considerable quantities of pollen pellets.

Storage of dry pollen in dark glass containers is ideal and it will maintain its properties for months. To extend its life refrigerate at 5°C or freeze to -15°C and it will keep for many years without quality loss as tested by feeding to honeybee colonies and recording brood rearing rate.

8. Market outlook - The bulk pollen consumer market seems to be growing in industrialised countries, mainly for human nutritional supplements feeding to bees, and even as an animal food -race horses in particular). Nevertheless, the pattern of demand in New Zealand has shown very marked fluctuations in the past few years. Following telemarketing and Radio Pacific promotions, the demand exceeded all supplies last year, only to slump to an very low demand this year.

9. Contacts for sale - Comvita and Arataki were keenly seeking pollen last year, but at present they have sufficient stocks. Herb Pharm also has some interest in pollen from time to time.

Peter Ferris

Marketing honey overseas

Being so isolated from world markets has always presented New Zealand beekeepers with problems.

To overcome these problems, we have resorted to various marketing organisations, the last of which was the Honey Marketing Authority. At one stage before the HMA every pound of honey had to have a honey seal stamp on the carton and the income from these seals was used to promote honey sales.

The NBA more-or-less ground to a halt because high overheads made it less competitive than it should have been. The overheads were in the region of 35 pence a pound while honeydew exports during the same period were nearer three pence per pound overheads.

One contributing factor to the overheads was the importing agent, Kimpton Bros in the UK charged 7% commission, while other European importers charged between 2 and 3%. Once Kimptons lost their monopoly on the New Zealand crop, the benefits of the lower commissions started to show through as higher prices. To be fair, I think Kimptons tended to obtain a premium for New Zealand clover honey, but other floral sources had little promotion.

Now how do you actually go about marketing overseas?

Assuming you have someone overseas expressing an interest in your honey, what do you do next?

It is usual to supply a sample. If there is some variation in the crop, it is better to send a number of smaller samples, rather than just send one combined larger sample. The smaller samples will show the variation within the line.

If you get an order, there are a few things to consider. If the person is not known to you personally, it is best to obtain a Letter of Credit. Make sure it is Irreversible, Irrevocable and also Divisible. The last part is essential especially if dealing with Middle East Countries where they could refuse to pay for anything if a small part (say, a carton of pottles) was missing from the consignment due to pilfering.

Regardless of who you are dealing with, a written contract can avoid later problems. Your shipping agent will match the shipping documents against the contract to ensure all things are covered.

The EEC countries, in particular may require a Health Certificate which is obtained from your MAF officer. Make sure you sort this out well ahead of the shipping date. Health Certificates usually costs about \$56.25 each. Other costs may relate to clearing apiaries for export which is required by some countries.

As far as the actual shipping goes, you can sell either FOB which means you pay all costs up to loading on the ship. Costs from there to the destination are met by the buyer.

If you sell cif then you have to meet the cost of shipping and insurance charge, so you need to consider this when looking at the price offered.

The abbreviation FCL means a full container load. Usually about 20 tonne, a full container obviously gives cheaper freight per kg but you can always send LCL which is less than a container load. Your produce will be put with other things in the container.

Payment is usually made once the ship leaves New Zealand waters. Not just the port of loading.

Buyers prefer to buy in their own currency, but if they do, you take the risk of currency fluctuations. Your bank can arrange currency cover if you think our dollar may rise against the foreign currency, but if fluctuations are minor, probably not worth the trouble.

EEC countries still have quite heavy duty imposed on imported honey, which explains their preference for bulk honey instead of retail packs as all the packaging adds to the value on which duty is paid.

As long as you have a good shipping agent, and you watch the details, exporting honey can be quite profitable and presents few problems.

Working together in co-operation is often a good way of marketing as this allows you to fill containers etc.

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The antimicrobial activity of Australian honey

Following an extensive screening of Australian honeys for antimicrobial activity in 1997, two distinct groups of 'active' honeys were identified.

This activity was derived from either floral chemicals or from the bee. Both of these active principals are able to control the growth of many bacteria. This is very interesting because many hospital isolates (which are increasingly antibiotic-resistant) have recently been found to be particularly sensitive to these honeys.

The recently described honey with floral activity is generally known as Jelly Bush (or Goo Bush) honey and is collected from a yet-to-be fully characterised *Leptospermum tree*.

Many beekeepers are aware of the peculiar property of honeys from several species of *Leptospermum* to turn to 'jelly' as soon as the bees cap the comb. Beekeepers invariably remove hives from these areas to avoid the problems of unextractable honey.

Not all of these jellifying honeys have the special floral-derived antimicrobial activity. It is necessary for these Jelly Bush honeys to be tested for the presence of the active factor using a special assay (an agar well diffusion assay) used at the Centre of Food Technology (QDPI).

'Active' Jelly Bush honeys are similar to the New Zealand Manuka honeys which are derived from *Leptospermum scoparium*.

Honeys with active principles from the bee appear to be equally able to control the growth of bacteria. The activity in these honeys comes from an enzyme (glucose oxidase) which these bees secrete into the nectar as they convert it into honey. This enzyme produces hydrogen peroxide (an antibacterial chemical) when the honey is diluted with water.

For this reason, these honeys are referred to as 'peroxide' honeys. Since the antimicrobial activity in these honeys is due to an enzyme, any heat treatment is likely to compromise the continued production of peroxide.

The levels of antimicrobial 'activity' in both types of honey (peroxide and non-peroxide) are measured using the same agar well diffusion assay. Honeys from a large range of trees have been shown to have peroxide-based antimicrobial activity.

These honeys offer considerable opportunity for the treatment of wounds (particularly infected wounds). Examples of the areas where opportunity for treatment exist include leg ulcers,

bed sores, and burns.

As well as the antimicrobial activity of honey, all honeys possess a healing potential. This activity is likely to be heat-sensitive and so raw unprocessed honey should be used for wound healing. If a wound is infected, 'active' honeys are likely to enhance the healing of the wound.

A clinical trial in Brisbane hospitals is currently being developed to assess the efficacy of Jelly Bush honey as a treatment for infected unresponsive leg ulcers.

In addition to the wound healing potential of honey, there is also an anti-inflammatory property in honey which requires further investigation. If honey can act as such an agent, there are anecdotal reports of its successful use for eczema, psoriasis, allergy, insect bites, etc.

The opportunity exists for a honey which has hitherto been shunned by beekeepers for its problematic nature to offer the medical world an efficacious natural product. The financial returns to the beekeeper are also likely to improve if these honeys are embraced by the medical fraternity.

I am hoping to better understand the nature and range of these 'active' honeys and would greatly appreciate any samples of Jelly Bush honey.

Although they are currently isolated to a small region of coastal hinterland around Murwillimbah in Northern New South Wales, honeys with a jelly-like consistency have been reported over large areas of Australia.

In addition to Jelly Bush honey, any samples of honey from throughout Australia would help our understanding of the 'peroxide' honeys.

A small sample (40-50gms) is more than adequate. The information relating to the date, location, beekeeper and the likely floral types would be appreciated.

If possible, a sample of the tree pressed in a phone book would also be useful in case the honey tests to be active. Tests for antimicrobial activity take one to two weeks.

Craig Davis, Natural Extracts Unit, Centre for Food Technology, Department of primary Industries, Brisbane, Queensland.

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Beekeeping Memoirs

Honey houses

by Ron Mossop

A friend of mine built his honey house on the side of a hill. He wheeled the honey from his truck into the truck bay landing and then into his extracting room. After extraction the honey passed down through a honey heater into the honey tanks from which it was packed and wheeled out on to the truck in the bottom truck bay. There was not a honey pump in the place, gravity did the whole job very nicely. One day two ladies arrived at this honey house, wearing slacks and well wrapped up so that the bees could not sting them. They wanted to see how honey was extracted. My friend and his helper put on a special act for them and the honey was soon pouring into the tank. It was getting near lunch time so my friend dashed down the stairs to the lunch room to put the electric kettle on for tea. When he bounded into the room he got completely shocked because one lady had her slacks down to her knees whilst the other lady was busy looking for a bee buzzing where it had no right to be. My friend later said that he got out of his lunch room in the fastest time he had ever done in thirty years. Bees can be very sneaky things and it doesn't matter if you are a Mr, a Mrs, a Ms or a Miss, it is all the same to them, the leg, or whatever gets stung.

About 1960 some New Zealand Beekeepers organised a trip to Australia to see how the Aussie beekeepers earned a living. A friend of mine went with them. Everybody had a great time and the experience proved to be a real eye-opener for many of the New Zealand Beekeepers, especially one beekeeper who had the habit of wandering off by himself. At one Aussie honey house whilst the owner was explaining how his extraction plant worked our wandering beekeeper thought he would look around the nearby comb storage room. He soon came running back to the party exclaiming in a loud voice that there was "a bloody great snake hanging out of the rafters". The Aussie beekeeper thought it was a huge joke and explained that it was only his pet non-venomous carpet snake that he kept to keep the rates and mice under control.

During my trips to NSW and Queensland I met a number of beekeepers who told me that some very poisonous snakes have a bad habit of lying under, or beside, beehives and take a very dim view of some clumsy beekeeper putting his boot on their tail. New Zealand Beekeepers have their troubles but we don't have to worry about poisonous snakes or Queensland cane toads. Something we should be very thankful for.



Ron Mossop

We have always had trouble keeping our extraction room floor clean. When we put water on the floor to wash it down most of the water seemed to escape under the drip trays where we could not get at it. On one of our trips to the South Island we visited the Glassons at Blackball. They explained that the packing room floor should be flat but the extraction room floor should have a fall so that water can escape down to a drain outside. Our extraction room floor is about two feet off the ground, and as it was going rotten in places we decided to renew the floor. We cut the floor all round the perimeter of the room with a chainsaw and removed the entire floor together with the bearers and piles. Fortunately we didn't get a strong wind whilst all this was going on otherwise it may not have been so much of a success story. We then put down new piles and bearers at the desired angle and laid 12ft x 8ft of treated flooring down. All the water now runs to the far end of the room and out through a three inch plastic pipe into a sump. We find it very satisfactory as we can turn a water hose on to the floor and windows at any time and wash bees and honey down the drain. Honey on the floor can be very dangerous, as it is very slippery. Where a man is working on an uncapping machine or an extractor, good footing is essential. The floor is painted most years and when the health inspector comes each year he is pleased with the appearance of the place.

About 1950 when I had about twenty beehives I bought another six hundred. I had a lot of honey to extract so I decided to build a better honey house, complete with packing and extraction rooms. I went to some trouble to make it as attractive as I could with four windows and the

walls and ceilings were nicely painted white. Soon I found that the bees I brought in with the loads of honey made a mess everywhere and I seemed to be everlastingly washing walls and windows. Those days there was a page or two on beekeeping in the NZ Agriculture Journal, one page had an article on how to rid your honey house of bees by fitting glass windows with the top corner cut out of them and cones put on the outside to allow the bees out but to prevent them getting back in again. A large vee was painted with black paint on the window to guide the bees up to the corner and out through the holes. It seemed like a good idea to me but it meant that I would have to take all the glass out of the window frames and cut the corners off. I thought there must be a better way of doing the job, then I had one of my brilliant ideas that sometimes work. I went into my house and got my .22 rifle and a hand full of bullets. I asked my wife to keep the children inside for a while as there may be a few bullets and splinters of glass flying about. From the inside of the building I placed the muzzle of the rifle up against the corner of the window, closed my eyes and pulled the trigger. To my surprise the corner of the window disappeared. As I had four windows I shot the eight corners out in rapid succession. If Alf Bennett, the then Waikato Apiary Advisory Officer, had dropped in for a yarn at this time and had been met by flying bullets and showers of glass splinters he would no doubt have wondered what he had done wrong to deserve such a reception. If I tried shooting out the corners of windows where I now live in Tauranga the place would soon be surrounded by the Armed Offenders Squad and I would be told by loud hailer to come out quietly with my hands on my head.

How this country has changed in the last fifty years!!

Marlborough Branch Meeting

22nd of October

7.30pm in the Reap Room

Hear Bill Floyd explain what you can't do with honey

Ph Jeff on: (03) 577-5489

Beekeeping in Malta

Having spent my youth in Pre WW II Malta I am both fairly fluent with the language and familiar with the countryside, so naturally having kept bees in England I made a point of contacting beekeepers on my earliest return to Malta around 1960.

My first beekeeping encounter was with an octogenarian named Pio Sant. This wizened old man, had, during his working life, been the chief apiary advisor. His management at the time was in transition passing from the traditional to the modern. He showed me colonies housed in earthenware pipes located in niches in the stone walls that supported terraced fields; also others in W.B.C. Lanstroth and Dadant hives.

Pio described in detail, how in earlier days, he would transport pipe hives by rowing boat to Comino, a small uninhabited island, separating Malta from Gaza, carpeted in wild thyme in the late autumn. Needless to say, a crop of the true nectar was well worth the effort.

Briefly, the background to the beekeeping industry in Malta is that of a simplistic approach to nature's gifts. One simply housed a swarm in a pottery pipe, left it alone till early winter, then cut out the honeycomb and somehow separated off the honey.

From the earliest recorded history; (e.g. Trading honey for cloth with the Phoenicians) the islands were noted for the autumn crop of the Wild Thyme, similar to that from Mount Hymettus in Greece. Even today, although there could be a substantial crop from the spring alfalfa, the emphasis is placed on

harvesting thyme. This honey, used mainly for medicinal purposes, can demand around \$20 NZ per 500 grams. Unfortunately the annual rainfall can be fickle, fluctuating between five and twenty inches.

Broadly speaking, till recent times farming and related occupations such as beekeeping were considered peasant activities in a class conscious society structured by European noblemen recruited into the Order of St John of Jerusalem as knights. Occupation by the knights prevailed from the middle of the sixteenth century till the British occupation in 1800.

Even today the older generation of country people only speak Maltese, and there being no beekeeping publications in this language, their background knowledge is invariably limited to "word of mouth".

Although such items as wax foundation are imported at a premium e.g. one medium brood sheet around \$3NZ, a variety of moveable framed hives are in use by several enlightened hobbyists and at the MAF apiaries.

Till the mid 1980's Malta had enjoyed the privilege of being a mini apiarists haven. There had been no evidence of AFB, EFB or Nosema. However by 1990 pestilence arrived with a vengeance and AFB, having passed unnoticed for a while, managed to ravage many stocks before being confirmed by Rothamsted Research UK. Then, sadly, varroa found its way there too. Apparently, in a matter of weeks during the late spring it annihilated 90%+ of all colonies.

Knowing the breeding cycle of that pest it might have been very profitable to let all stocks die out, then after a short lapse of time reintroduce healthy packages.

And so "Paradise Lost"!! but maybe, at some future time "Paradise Found". Who knows?

FA Galea

Wanted: Live wasps

Landcare Research Ltd is seeking a supply of live wasps for the research on wasp control it is currently carrying out, and would like to hear from anyone who knows of accessible wasp nests in their area.

The introduced social wasps being sought threaten our native insects and birds, as well as being a nuisance for people working and playing outdoors.

In return for information received Landcare will destroy the wasp nest.

Landcare also supplies wasps to an American laboratory which uses them to collect wasp venom to help desensitise people who are allergic to wasp stings.

More information/information on wasp nests: J Rees, Landcare Research, Private Bag 6, Nelson.

Phone: (03) 548-1082, fax (03) 546-8590, Email:reesj@landcare.cri.nz

Acknowledgement, MAF Policy

Bees, bees, bees...



I was called to a bowling club to remove an over-wintered swarm. The swarm was successfully removed by putting an onion bag around the hive, secured with long sticks through the nest. Four frames of brood were put into empty frames and built up to a producing hive in no time at all.

Frank Lindsay

Doctor Bird Cake (Revised)

- 3½ cups flour (whole wheat or white), sifted
 - 1 tsp baking soda
 - 1 tsp cinnamon
 - 2 cups honey
 - 1 tsp salt
 - ¼ cup cooking oil
 - 1 (8 oz) can crushed pineapple, undrained
 - 1½ tsp vanilla
 - 3 eggs
 - 2 cups diced bananas (should be ripe, approx 3 large)
- Measure flour, baking soda, cinnamon and salt, and mix well. Add the oil, eggs and honey, vanilla. Dice the bananas, measure and add to the batter with the pineapple. The mixture is stirred to blend, but is not beaten. It is then poured into a greased and floured 9-inch tube pan and baked at 350° for about 1 hour and 20 mins.

Date Honey Bars

- 1½ cups sifted flour
 - 1 tsp baking powder
 - ½ tsp salt
 - 3 eggs
 - 1 cup honey
 - 1 tsp vanilla
 - 1 cup chopped nuts
 - 1¼ cup chopped dates
- Re-sift flour with baking powder and salt. Beat eggs till very frothy in large bowl. Gradually beat in honey, adding it in a fine stream. Add vanilla. Stir in flour, nuts and dates, mix well. Spread in greased 9x13x2 inch pan. Bake at 350° for 35-45 mins. Cool thoroughly. Cut into bars. Store tightly covered or freeze. *Yield: About 3 dozen.*

Sesame Apricot Cookies

- ½ cup butter or margarine
 - 1 cup honey
 - 2 eggs
 - 1 tsp vanilla
 - 2½ cups whole wheat flour
 - ½ cup wheat germ or cracked wheat
 - ½ tsp baking powder
 - ¼ tsp salt
 - ½ tsp nutmeg
 - ½ cup sesame seeds
 - 1 (6 oz) packet dried apricots
 - 1 egg white
- In large mixing bowl, cream together butter and honey until fluffy. Add eggs and vanilla. Blend well. In a bowl, stir together flour, wheat germ, baking powder, salt, nutmeg and sesame seeds. Add dry ingredients to honey mixture. Stir until smooth. With floured hands, form 1 tablespoon of dough around each apricot half. Place on ungreased cookie sheet. Flatten cookies with the bottom of a glass and brush with egg white. Bake at 350° for 12-15 mins. *Makes about 3 dozen.*

Honey Banana Bread

- ½ cup shortening
 - ¾ cup mild-flavoured honey
 - 2 eggs
 - 3 tbsps buttermilk
 - 1 cup mashed ripe bananas
 - 2 cups sifted all-purpose flour
 - 1 tsp baking powder
 - ½ tsp baking soda
 - ½ tsp salt
 - ½ cup finely chopped walnuts
- Cream shortening until soft. Continue creaming while adding honey in a fine stream. Add eggs, beat well. Combine milk and mashed bananas. Stir together dry ingredients. Add dry ingredients alternately with banana mixture to creamed mixture, beginning and ending with dry ingredients. Stir in nuts. Spoon into greased 5x9x3 inch pan. Let stand 15 mins. Heat oven to 350°. Bake 1

hour, or until done in centre. Cool on rack 10 minutes. Remove from pan. Complete cooling on rack.

Honey Chilli

- 1½ lbs lean ground beef
 - 1 cup diced celery
 - ½ cup chopped onion
 - ¼ cup diced green pepper
 - 1 (16 oz) can whole peeled tomatoes
 - 1 cup tomato puree
 - 1 (30 oz) can red kidney beans, drained
 - 2 tsp salt
 - 2-4 tbsps chilli powder (to taste)
 - 2 tbsps wine vinegar
 - ¼ cup mild-flavoured honey
- In large deep pan, cook meat until it loses its red colour, drain off fat. Add next 8 ingredients, mix well. Bring to a boil; cover and simmer 1 hour, stirring occasionally. Stir in vinegar and honey. *Makes about 6 servings.*

Caramel Honey-Pecan Rolls

- Honey flavours the roll dough, filling and topping.*
- 3½ cups all-purpose flour
 - 1 packet active dry yeast
 - ¼ cup honey
 - ¼ cup shortening
 - 1 tsp salt
 - 1 egg
 - ½ cup butter
 - ½ cup honey
 - 1 tsp ground cinnamon
 - ½ cup honey
 - ½ cup packed brown sugar
 - 3 tbsps butter
 - 1 cup pecan halves
 - ¼ cup mild-flavoured honey
- In a large mixer bowl, combine 1¼ cups of flour and the yeast. In saucepan, heat together milk, the cup honey, shortening and salt till just warm (115° to 120°), stirring till shortening almost melts. Add to dry mixer bowl, add egg. Beat at low speed on electric mixer for ½ minute, scraping bowl constantly. Beat 3 mins at high speed. Stir in remaining flour by hand. Place in greased bowl, turning once to grease surface. Cover and let rise till double, 1½ to 2 hours. Beat the ½ cup butter, the ½ cup honey and cinnamon till light and fluffy. Divide dough in half. Roll half the dough on lightly-floured surface to 12x8 inch rectangle. Spread with half the honey-butter. Roll up jelly roll fashion, starting at long end, seal edge. Cut into 12 slices. Repeat with remaining dough and honey-butter. In saucepan, mix the ½ cup honey, the ½ cup brown sugar and the 3 tablespoons butter. Heat slowly, stirring often. Divide mixture evenly in two 8x8x2 inch baking pans. Sprinkle with pecan halves over mixture. Place rolls cut side down in syrup mixture. Cover, let rise till double, 35-45 mins. Bake at 375° for 20-30 mins. Cool in pans for 5 mins. Invert on racks placed over wax paper. Remove pans. *Makes 24 rolls.*

Skillet Honeyed Zucchini

- 4 medium zucchini*
 - ¼ cup honey
 - 2 tbsps water
 - 1 tsp dry old fashioned French salad dressing mix
 - 1 large tomato, cut in eighths
- Wash zucchini, cut off ends. Cut in quarters lengthwise. In medium skillet, combine honey, water and salad dressing mix. Arrange zucchini, cut side down, in honey mixture. Bring to boil. Reduce heat and simmer about 20 mins, or until zucchini is fork-tender. Add tomato wedges, cook several mins longer, turning once. *Makes 4 servings.* *Or cook one of these vegetables in season, broccoli carrots, celery, parsnip, or squash.

Honey Bean Salad

- ¾ cup honey
 - ½ cup vinegar
 - ½ cup salad oil
 - ¼ tsp pepper
- Mix well all ingredients. Pour over 1 can of each (drained; green, wax and red kidney beans. Best if allowed to stand overnight.

Acknowledgement, American Bee Journal

IMPORTANT DATES FOR 1998

BRANCHES SEND YOUR MEETING DATES IN FOR 1998. NO CHARGE.

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

COMING EVENTS...

EXECUTIVE MEETING DATES

7th-9th	December	DUNEDIN
1st-3rd	March 1999	NELSON
1999	5-8 July	ASHBURTON
2000	Conference	GISBORNE

—DETAILS AS SOON AS AVAILABLE—

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

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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
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month at 7.30pm.
Arataki Cottage, Havelock North.
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Call Jeff on: (03) 577-5489

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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: Shauna Tate, 6 Martin Street,
Porirua East.