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Notes from the President

Nick Wallingford

Two important issues confronting our industry and association have had major developments in the last several months. The Public Discussion Document for our Pest Management Strategy received a number of comments and has now been revised to present to the Minister. The Commodity Levies Act was amended to now allow us to go forward with a levy based on apiary numbers. The amendment also extended the Hive Levy Act for a further year to allow us time to make use of the change.

These President's Notes are going to be very short, in fact. One of the good aspects of our Executive Committee is that individuals are taking responsibility for important issues — and I can then depend upon those people to report progress to you. Terry Gavin, as Chairman of the Disease Control Committee, has written an article on the progress of our PMS. Richard Bensemann, who takes particular responsibility for ensuring fair and complete collection of hive levies, reports on the levy system for 1996.

Shortly before I first stood for election as NBA President in the middle of 1994, I managed to express my greatest fears about the current beekeeping 'era'. I felt that these years would, when reviewed by history, be a period following some exciting initiatives. That is, the years following the changes that the NBA and beekeeping chose to undertake — formalised industry planning, a commitment to do something about marketing and an industry that had developed a reputation of being able to represent itself to government to make its views known.

I feared that the next few years of NBA activity would be preoccupied with internal matters. That is, we would be obliged to set up a new levy system (not our decision to do so), a new disease control system (again, not our initiative) and internal systems related to the change of administrative service provider.

None of these things of which 'great eras' are made. Rather, I recognised that the best we could hope to achieve for the NBA would be to leave it in a reasonable position to prepare to face the future again. The more we confront setting up a Commodity Levy and a Pest Management Strategy, the more I realise the accuracy of my perceptions at that time.

On the other hand, the opportunities of the next 20 years or so depend on how well we carry out our work in these few years. I regret the level of uncertainty and dissension that these changes bring, but think it is important that we all hold to a vision of the industry as we want it to be, and put all our efforts into that longer term view of 'progress'.

Shoppers Be-aware

If you are in your local grocery store, have a look at what is on or near honey products, is it new? is it imported?

Thanks to a very alert Hawke's Bay lady shopper we were able to note a new honey product from Australia.

We are currently checking to see if it has the necessary import licence.

Yes, this is our industry, and we can not always rely on border control to detect everything that comes in to our country they are stretched and like you and I they are human and may make a mistake.

If you see something on the shelves that may be a risk to our industry, and you don't know what to do, ring me collect on (06) 878-5385 or fax me on (06) 878-6007 and I will follow up on the concern to see if it needs action or not

Please don't take chances.

Harry Brown.

Thieves come unstuck

In Egypt a swarm of bees attacked thieves who were trying to steal its hive and caused such a stir that the men were discovered and arrested. The men stole the beehive from a keeper in Gharbiyeh province, 90km north of Cairo, and were quietly putting it in their truck when one of the men slipped. A swarm of bees escaped from the hive and chased the men, attracting the attention of three rural guards who arrested them.

The New Zealand BeeKeeper

THIS ISSUE

Question Korner

I would like to make this a regular item to answer all the questions you may want to ask about the NBA or our industry.

Just drop me a note with your questions and I will find the answer for you.

One of the commonly asked questions of me is:

*** Why do you have the name in the top right hand side of the mailing label spelt wrong?**

The name in the top right hand corner is the file name, we can only enter eight letters in this field (or spaces). So if your name is nine letters long I have to abbreviate it or if we have more than one person with the same surname we have to find a way of distinguishing between each one. An example is our President's surname, in the top right corner it says Walling not Wallingford as Wallingford is too long to fit into the eight fields.

*** What does this name mean for me?**

I use this code to locate your file in my data base, say your hive levy cheque and form came in, I look for your code, type this in, and the computer brings up your file so I can update your records. A lot easier than trying to work through nearly 1500 names each time.

Next issue: How many people are in the NBA Office in Hastings?

Drink, drive, be lined up against the wall and shot

If you think New Zealand drink/driving penalties are harsh, ponder those in other countries:

- **West Germany:** Automatic three-month suspension of licence with a maximum of a year in prison for 0.8ml per litre. You can also be fined.
- **USSR:** Six-month suspension of licence for the first offence.
- **Turkey:** The police escort you 30 kilometres from town and force-march you back. Much tougher than it sounds. (The people have no money and the jails are overcrowded).
- **India:** Six months in prison and/or a fine of $NZ112. (Very high compared to the National average income).
- **Norway:** A first offender loses their licence for one year, 0.5ml results in three weeks in jail plus a possible fine. Second offenders within five years lose their licence for life.
- **United Kingdom:** First offence is automatic suspension for one year with the possibility of six months in jail, up to $NZ3600 fine and mandatory community service.
- **Israel:** Automatic two years in jail for any drunk driver. (Offences are very rare).
- **South Korea:** If arrested it's automatically two months suspension. If convincted, it's jail for up to one year plus NZ$1400 fine.
- **Japan:** First offenders get up to four months in jail plus NZ$400 fine puls re-education. Licence is suspended for one year and re-issued only after a strict test.
- **Finland and Sweden:** Automatic one-year jail for first offence.
- **Chile:** Two months jail minimum, 18 months maximum for any offence.
- **South Africa:** 10 years in prison and/or $10,000 fine.
- **Malaysia:** Jail for the driver. If married, the spouse is jailed also.
- **Bulgaria:** The first offence penalty is decided by the court. The second penalty is automatic execution.
- **El Salvador:** No re-offending problem. The first offenders are executed by firing squad.

Advertisers and Contributors

Sorry to be a pain ***BUT*** I must adhere to my printing deadlines

The first two issues for me as Editor last year were really difficult, in trying to juggle your needs, with my needs, and the printer's needs. It didn't work either. All that happened was I upset the advertisers, the contributors, the printers, and my reading public.

1996 deadlines are the first of the month.

Except for December, it is 20th November.

Have a great 1996.

The Editor

Letters to the Editor

Any letter I receive for publication that I consider could be contentious and requires an answer, I will contact the person mentioned in the letter for a reply before the article goes to press.

Harry Brown

Dear Sir,

A Canadian beekeeper operating a growing honey/pollen farm of 700 hives and working as an apiculture pathologist in Alberta, is searching for employment in New Zealand's beekeeping industry for the 1996/97 season.

I would like to visit New Zealand during my "off" season to gain experience from others in the industry.

I have a particular interest in queen rearing and honey-bee genetics. Please contact me if you are interested.

Gordon Grant, Northern Nectars, Box 18, Site 4, Hythe, Alberta, TOH 2CO, Canada.

Phones: *Home: 1-403-356-2868,*
Work: 1-403-354-2212
Fax: 1-403-354-8171

Govt to move over farm safety law fears

Controversial safety laws involving farmers' liability for the safety of visitors to their properties will be cleaned up.

That's the assurance Federated Farmers has received from Labour Minister Doug Kidd, who said the Government is willing to legislate to clean up the issue involving recreational users of farm properties.

The Health and Safety in Employment Act currently makes farmers potentially liable for injuries to those on their land for recreation. The federation has pushed for this to be changed.

Chief executive Theo Simeonidis says he is "delighted" Mr Kidd has listened.

Mr Kidd told Straight Furrow: Last week's meeting (with industry stakeholders) was constructive. We identified a range of concerns and we all agreed that people should be able to farm their land and also let others have access to the land for a range of pursuits without fear of prosecution.

"A solution will be found in consultation with all groups involved in the issue and I will progress it."

Acknowledgement Straight Furrow

Dear Beekeepers,

This is a letter of recognition and sincere thanks to all of those who assisted me *(Regan Stirling)* in my Form 7 Economics assignment on the beekeeping industry. I apologise for the lateness of this letter but I have been busy with my Bursary Exams (getting an A Bursary with a scholarship in England), and earning money (in the agriculture sector) to help me go to Canterbury University in a few weeks time.

As the *N.Z. BeeKeeper* is only a monthly magazine, I have had only one other opportunity to thank ALL of those who have spent their time in answering my questions. As a result of everyone's extremely helpful and friendly responses I received 100% for my assignment and therefore gained valuable internal assessment marks.

I would also like to take this opportunity to give special thanks to *Mr Bill Floyd* and *Mr John Heineman* for their input.

If anyone would like to see a copy of this assignment it is available through *Mr Harry Brown (Editor).*

My sincere thanks once again.

Regan Stirling (Miss)

Dear Sir,

Quite clearly the *New Zealand BeeKeeper* is becoming or has become a vehicle of propaganda — being used by the President of the Association as a means of influencing the industry. This use of the journal is obvious in the unscrupulous President's report of the May issue 1995, where members of the executive were scandalously lambasted for implied but unproven non-fulfilment of essential roles, on the eve of the executive elections, right down to the last (November) issue where we are all being warned about the "vocal minority" (no doubt a role I will now be cast into) seeking to "cast doubts on the P.M.S. as a strategy".

This has gone on long enough. It is patronising, paternalistic and insulting!

Stephen Lee

Apology

In the December N.Z. BeeKeeper magazine the Obituary for Norm Keane contained several errors.

The name was inadvertently spelt wrong and one of the sons names Barry, was left out.

To Mrs Keane and family I offer my sincerest apologies for these errors.

Harry Brown , Editor

AUSTRALASIAN BEEKEEPER'S TOUR OF USA JULY/AUGUST 1996

The Aussies are coming, we need some more New Zealanders.

The itinerary is as diverse as the US continent - visits are arranged to spend time with Queen producers in Hawaii, Sacramento Valley and Texas; honey producers in North and South Dakota; processing plants of Sioux Honey and Dutch Gold; the Africanised bee programme, the White House, Grand Canyon and much more.

The US guides are Professor Roger Morse and Dr Eric Mussen and the Tour Leader is Trevor Bryant. Estimated cost for 18 days:

Minimum 10 persons	$7600 per person
Minimum 15 persons	$6900 per person
Single supplement	$600 per person

All enquiries to:

Trevor Bryant, P O Box 430, Te Puke, Phone: (07) 573-6188

Tour minimum is approaching 15. Your costs will be significantly reduced.

"The last Hive Levy ever 1996"

Due to some poorly written legislation in the Commodities Levy Act (Coms Levy), and delays with getting the Act changed to be able to collect a levy based on apiaries, the "National Beekeepers Association" has been granted an extension to the Hive Levy Act for one more year. The association has, from the first instance of preparing a Commodities Levy application, sought advice from M.A.F. Policy as to how and what would be levied and in our case our levy was to be based on apiaries and not hives. Problems arose when apiaries were not specifically mentioned in the legislation but hives were even though we had informed M.A.F. Policy that we intended to raise a levy based on apiaries. Advice was sought from M.A.F. Regulatory Authority (M.A.F. R.A.) and the way the legislation was written meant it couldn't be used by us to raise a levy on apiaries without the Act being changed by Government which could take some considerable time.

So here we are once more and hopefully for the LAST TIME using the Hive Levy Act to raise money to run your Association.

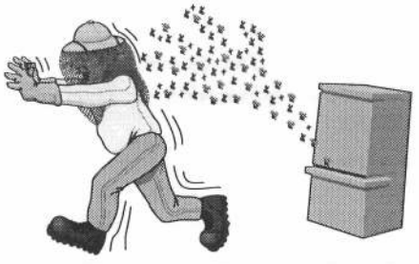
Nothing has changed in regard to that Act so it will be collection as usual. Let me remind you that we have had a number of prosecutions under way and also people paying on the day of the court hearing costing the association a substantial amount of money to collect what is owed to it to run your affairs. Nevertheless we will collect all the money due to the association. A few people are costing all of us in non payments, legal fees and wasting valuable resources. If you can see that you are having difficulty paying your levy there is a provision for deferral under the Act but this must be applied for before March 31st otherwise it goes through the procedure for collection. A number of larger beekeepers have made use of this provision but unfortunately it was abused by some. Since it is by the discretion of the association that provision will not be available again to those persons.

Once again, if you are having problems making your payments communicate with the Executive Secretary before we have to hand the problem to our lawyers because it is only before then that we can try and accommodate your needs.

Call before the 31.1.96, it saves all of us a lot of hassle, and we will do our best to accommodate your needs.

Phone: (06) 878-5385 or write, the address is on the inside front cover.

Richard Bensemann



Royal jelly warning after death

SYDNEY. — People with asthma or allergies have been strongly warned not to take royal jelly, after a 23-year-old woman died in Sydney after taking the bee product for her asthma.

National Asthma Campaign spokesperson Dr John Weiner said although he could not comment on whether royal jelly was responsible for the woman's death, royal jelly had caused severe allergic reactions in 11 Australians in the previous two years and had killed an 11-year-old girl.

A police spokesman said the woman who died on Tuesday night after taking royal jelly was Julie Hardaker, from Preston in Victoria.

Ms Hardaker had been holidaying with her family on Sydney's North Shore when her boyfriend gave her some royal jelly (a nutrient-rich substance fed to a queen bee in the hive) for her asthma, police said earlier today.

Ms Hardaker took one capsule during a meal on New Year's Eve, police said.

A short time later she suffered an asthma attack and her heart stopped.

Ambulance officers gave her cardiopulmonary resuscitation but she lapsed into unconsciousness.

She was taken to Hornsby Hospital where she died without regaining consciousness with her family at her bedside.

The woman's body had been taken to Westmead Morgue for a postmortem examination.

Police said there were no suspicious circumstances and the funeral would be held on Monday.

Dr Weiner, an allergy consultant at Melbourne's Alfred Hospital, said there was no way of predicting who would have a life-threatening allergic reaction to royal jelly, even if they had previously used it without side effects.

"We can't predict who's going to suffer, that's why we make the blanket recommendation that all people with asthma and severe allergy should avoid royal jelly," Dr Weiner said in an interview.

"We would strongly suggest that nobody with asthma should ever take royal jelly," he said.

"Just because it's natural does not mean it's safe."

Formed in glands in the heads of worker bees, royal jelly is rich in vitamins and proteins and turns bee larvae fed exclusively on royal jelly into queen-bees.

The proteins and pollens in the jelly may both contribute to potentially fatal allergic reactions in people with asthma or allergy, Dr Weiner said.

"The allergy brings on a sudden attack of asthma," he said.

"When someone has asthma as well, part of the severe asthma allergy is a severe asthma attack and this can be very difficult to reverse."

In January 1994, three experts reported that Deanna Straatmans, 11, of Cooma, in Southern New South Wales, died 20 minutes after being given royal jelly as a tonic after a bout of tonsilitis.

Miss Straatmans who had fluctuating asthma, was the first royal jelly linked death reported in Australia.

Dr Weiner said it was unfortunate there was no legislation which guaranteed what such substances contain.

"Anyone concerned about the safety of any alternative drugs should speak to their GP or specialists," he said.

Taking off honey using Benzaldehyde

By Peter Berry Hawke's Bay

From what I've heard of other methods of bee removal Benzaldehyde suffers from pretty much the same failings. It doesn't work nearly as well when there is brood or unsealed honey in the box and it is adversely affected by extremes of weather, particularly cool or drizzly conditions.

There are two factors which influences the efficiency of Benzaldehyde use:

1. *Benzaldehyde Board*
2. *Smoke*
3. *Temperature*
4. *Amount of Benzaldehyde*
5. *Timing of each operation*

The Benzaldehyde Board

Made of one inch square tubing (25mm) with a short piece of wire welded across the inside at each corner about two-thirds of the way down with a sheet of heavy galvanised iron or aluminium pop riveted on top to make it airtight. It should have the same outside dimensions as a super and be square and flat. Each day a new sheet of newspaper is folded to fit inside and held in by curtain wire stretched diagonally from each corner. Dispose of the old papers carefully as they are very flammable.

Smoke

Benzaldehyde won't work at all if you have not smoked the hive properly. The bees need to be awake and actively moving away from the top of the box. If you just stick the board down on top of the bees without getting them moving with smoke they will just sit there getting gassed and sick from the fumes.

Temperature and amount of Benzaldehyde

The colder it is the more Benz you need to use but you apply it less frequently and vice versa. It is the fumes that drive the bees downwards so on a hot day you might need a light sprinkle every two to four hours. On a cold day a good soaking of Benz may last for ten or more boxes and to get it to work you may need to puff warm smoke under it as you put it on. If you are using too much the bees become gassed and confused and just sit there so using little and often is usually the best policy.

You sprinkle the Benz on from a bottle that can resist the Benz (some plastics melt) with a few small holes in the lid. You need a thin nail to keep these holes clear as the Benz forms crystals which block the holes up. In between yards you should put a good cap on the bottle to prevent spillage and because Benz is very volatile and will just evaporate expensively away.

Timing

Benz works well if you get all the factors working well together. If you leave the board on too long the bees will come back up. If they are not awake and moved by the smoke they won't go down at all. The bees move out faster when it's warm and need less time to wake up. The bees leave the fourth box faster than the third.

If you take an example of four-storey hive on a warm day, all full and sealed and being resupered up to three high again, the procedure is this:

When you arrive at a yard, light smoker, lightly smoke the first two hives. Get a board ready, undo a rope or two, smoke the first hive again across the top and down between fences a little (don't use excessive smoke as it taints the honey). You sprinkle a bit of Benz on the paper and run it from side to side so it won't drip and contaminate the honey and place it on hive one. It doesn't take long. Stack a couple of boxes down or undo some string then smoke hive two (there should be very few bees sitting on top when you put on the hoard). Move the board over from hive one. Crack the box of honey from the back and look underneath for brood or remnant bees which, at a pinch, you can brush off with gloves or hive tool. Load it on the truck. Smoke hive one and move the board across to it. Throw the second box of honey on to the truck and then, because the trick is to always have two boxes of honey available ahead of the board, you smoke hive two then open and lightly smoke hive three. Take the third box off hive one then check it for foul brood. Open hive four and resuper hives one and two when you take the fourth boxes off hives three and four. Put on fresh Benz after taking the fourth box of honey off.

When it is a bit cool you need to open and smoke further ahead of yourself. But be careful with comb honey as the bees will know holes in the cappings.

Gosh! That did get a little complicated didn't it. But to recap:

— Change the paper each day.

— Wake the bees up with a little smoke then smoke again before putting on the board.

— Don't use too much Benzaldehyde and reapply often.

— Don't leave the board on the hive longer than necessary.

— If you leave your board behind, you can, at a pinch, get away with a sheet of newspaper under a division board. Not, of course, that I know this from experience.

Have a nice day, and only do it on a nice day.

Literature/Research — Honey-bees: Earthquakes and Volcanic Activity

I am currently trying to determine the effects earthquakes/seismic activity and volcanism may have on the behaviour of honey-bees.

Mr P.M. Illgner
Dept. Zoology and Entomology
Rhodes University
Grahamstown
South Africa 6140

Trivia

Did you know a Tupperware party is held every 2.7 seconds somewhere in the world! Oh boy! **Ed**

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Notes for Beginners and Others

Sorry folks, my December notes missed the boat, arrived too late at the Editor's desk. So you had to go without my Season's Greetings but I still wish you all the best for this year 1996.

It is now the 22nd of January and we are experiencing some fine summer weather here in South Otago. There is still a good bit of clover about, manuka is putting on a good show this time and kamahi has yielded well. While on a tramp in the Mt Aspiring region the river flats were showing up white with clover and there was also Lotus major and subterranean clover in abundance. Noticed only one site with hives and could not help but think about all that nectar going to waste, that is, given the right weather. But that has been like a yo-yo. A Kerikeri beekeeper just told me that it is the same up north. Nothing we little humans can do about those conditions, just have to accept them. Let us hope that we all receive some reward for our endeavours, perhaps a little more than we expect. No matter how nice these last few days are, the honey season will soon end and has probably already finished in other parts of the country. By the time you read these lines it will certainly all be over. So it is time to get the harvest home. Don't delay taking off comb honey. The longer it is left on the hive the greater the risk of travel stain. The sooner extracting of surplus honey can be completed the better. Don't strip Jack naked, winter is coming and greed on the part of the beekeeper never pays. Leave plenty of tucker on the hives to see them right and also put something aside for next spring. Very good to have those combs on hand for a needy colony or for making up some nucs.

But before removing any honey from the hives PLEASE INSPECT FOR ANY SIGN OF B.L. (American foulbrood) and if it shows up don't play around with it. Please, please do the right thing even if it hurts. If you don't it will hurt more next season, not only you but others too. We are trying to rid these islands from this curse but can only succeed if every beekeeper plays ball.

Now is also a good time to do some autumn re-queening and/or make up some tops (division, nucs) to carry over the winter. They are the spare wheels or can be used to increase numbers. Good value anyway.

After the main honey flow is over certain minor sources may still produce some nectar for the bees to gather. One of these is ragwort, a well known weed prevalent in cattle country and sometimes on waste land or along forest margins. Bees will work it and may gather considerable quantities of nectar from it. Let them keep it, for the stuff has an undesirable flavour and will contaminate good quality honey if it is mixed in.

The WASP SEASON is round the corner. Nests are reaching their peak in late summer and autumn. "Wasp Times" no 23 (Dec. '95) the wasp research newsletter from Landcare Research predicts that wasp numbers this season should be moderate, that is to say a nest density of about 10 per ha. in honeydew beech forest. In the past it has been as high as 17 p. ha. Still very considerable.

Landcare Research advises to use only wasp control products registered with and approved by the Pesticides Board. Safety and environmental concerns are the main reasons for this. Many of us have sinned by using carbaryl powder 80% (available as a garden spray). This is meant to be diluted with water and is far too strong when used undiluted. Thus it will unnecessarily contaminate the environment and is also very wasteful. It is much better to use Rentokil Wasp Killer, a carbaryl based product (5% carbaryl) which comes in a puffer pack.

Other recommended products are: Permex Insect Dust (Environmental Health Products) and Wasp Killer Squeeze Dust (Yates N.Z. Ltd.). Both these products are permethrin based, are of very low toxicity to mammals and rapidly degrade in sunlight and have a low potential to accumulate in the environment. However permethrin is toxic to fish so must not find its way into water courses.

Recommended amounts must be used to be effective.

The above named products are available from the distributors, garden centres and some hardware shops. Try to locate the nests and get rid of those pesky wasp colonies.

A few facts: An average wasp nest produces between 1000 and 2000 queens, 99% of tham fall by the way side during hibernation and nest initiation, a queen wasp may fly up to 70km in search of a nest side after emerging from hibernation in spring.

Firms urged to ready for age law

Employers and workers should be preparing now for the end of compulsory retirement, says South Island Human Rights Commissioner Ross Brereton.

Under the provisions of the Human Rights Act 1993, compulsory retirement will be abolished from February 1, 1999. All mention of compulsory retirement in employment contracts will be unlawful.

Mr Brereton said in a statement employers would need to look at alternative employment practices that helped ease older employees into retirement, such as phased or partial retirement options.

Age discrimination in employment became unlawful in February 1994. Over the past 12 months the Human Rights Commission received more than 400 age in employment related inquiries and investigated 17 formal complaints.

The commission said 80 percent of inquiries related to discrimination against workers over the age of 50 and about half of the complaints investigated were upheld.

Mr Brereton said many employers still saw age as a barrier to successful employment.

Employers needed to focus simply on the ability of the individuals to do the job.

The abolition of compulsory retirement provisions from February 1999 would help to make employment practices fairer for older workers, he said.

Acknowledgement NZPA

The birds and the bees

A beginner's guide to why your fruit trees need a little help from some friends.

Like the cookery books that inevitably assume you know how to boil an egg, many gardening writers assume you know that trees must be pollinated in order to set fruit.

Although it's a fairly simple subject — the basic birds and bees story we all learned in school — pollination problems are still the main cause of crop failures, especially for beginners to fruit growing.

A perennial question goes something like, "I have an old apple tree that used to produce big crops but has suddenly stopped fruiting. Is it dying?"

Probably not. Chances are that the problem is pollination: that old tree just doesn't have much of a sex life anymore.

The explanation can be simple. Although a lone apple tree can set crops if the weather at blossom time is nice and sunny and there are plenty of bees around, apples produce much better crops when cross-pollinated.

A tree growing in an older area of town — in suburbs where most gardens once boasted a few fruit trees — may have previously enjoyed the benefits of cross-pollination from other apple trees in neighbouring gardens.

Get a bit of in-fill housing development in the area and those trees, and subsequently the bees, may well have disappeared — and your crop of apples with them.

Pollination is critical to fruit set but it's also the weakest link in the chain of events from flower to fruit harvest and is dependent on many outside factors.

The process is pretty simple. Basically, pollination enables male pollen to successfully transfer to the stigma of the female flower. The male pollen grain will then germinate and send out a pollen tube, which grows to meet the ovule deep inside the ovary.

After fertilisation the ovule develops into a seed, which is enclosed in the ovary. The ovary, and sometimes other structures associated with it, then develops into a fruit.

There are exceptions. Some trees (like the common fig, *Ficus carica*) develop parthenocarpic fruits; producing female flowers only, the fruit develops without fertilisation.

Nature has organised things so that there are various ways in which a plant can get itself pollinated.

Some fruit trees are self-pollinating; their flowers having both stamen and stigma. Pollen from a single flower can therefore fertilise the ovary of the same flower. Peach and citrus are two examples. In theory, a gardener need only plant one peach or lemon tree to enjoy good harvests.

Most fruit trees or vines however carry their male and female flowers separately; either on the same tree, or with male flowers borne on one variety, female on another. These species need cross-pollination to set seeds and develop fruit.

Cross-pollination simply means that pollen is transferred between male and female flowers by a pollinating agent — bees, birds, insects, or the wind. Pears and cherries are two species for which cross-pollination from other trees is usually essential.

Nature is careful to avoid in-breeding and most fruit trees are self-sterile, needing pollen from a different variety of the same species to set fruit. The two (or sometimes more) varieties must be compatible genetically and both must be in flower at the same time.

That could present problems for the home gardener with limited space. Fortunately, plant breeders have solved both the problem of size — by grafting heavy cropping varieties onto dwarfing rootstock — and pollination. Many fruit trees can have a limb of a suitable pollinator grafted onto the tree; in effect, you have two or more different varieties growing on the same stem. A gardener can order just one plum or cherry tree and, by specifying that it be multi-grafted, ensure adequate pollination.

Apart from those clever trees which have the whole thing organised, cross-pollination is mostly the role of the birds and the bees.

Pollen is carried from flower to flower by either bees, insects, birds or the wind. In the case of some imported varieties the grower has to do it by himself by hand, either because our climate prevents the male and female flowers being receptive at the same time, or because the specific pollinating agent is not present in this country.

Of all the pollen agents, bees are the most vital. Without them we simply wouldn't have very much fruit. In parts of New Zealand we have altered the landscape to such a degree that there are no longer sufficient nectar producing plants to support a bee population. Orchardists must bring in hives from outside and site them in the orchard when pollen is available.

For the home grower the solution is simpler: include as many nectar producing plants in your garden as possible. That can present some problems however; bees often prefer the flowers of anything but your fruit trees.

Pear blossom for example contains little nectar and the bee is not stupid enough to laboriously visit every pear blossom if there are better pollen prospects around in the flower garden.

Other insects are also useful pollinators and birds also play a major role. Which can also be a problem. On the one hand, you need to encourage birds to assist pollination of some species but you'll often end up competing with them for the fruit.

The other pollination agent is wind. Most nut trees are pollinated in this way. A very chancy business, with male trees needing to produce millions of pollen grains.

Successful pollination is essential to good fruit and nut harvests and many things can go wrong. The home gardener can reduce the odds of failure by keeping trees healthy. Flowers growing on vigorous, healthy shoots contain more pollen and the female part of the flower will remain receptive longer.

The best way to ensure strong flowers is to make sure the tree has ample nitrogen and water available when the new flowers are forming — usually mid-summer.

Choose your trees carefully. If you have the space always plant more than one specimen of those varieties needing cross-pollination. If space is at a premium, specify multi-grafted

Continued on page 13

Water diminishing resource, says experts

Water as a "diminishing resource" is fast-becoming an international issue, making contact between local water scientists and their overseas counterparts vital, says Palmerston North scientist Brent Clothier.

The HortResearch environmental physics group in Palmerston North last week hosted visiting scientists from Japan, France and Britain. All three specialise in finding new ways of using irrigation water more effectively.

Dr Clothier said horticulture was increasingly having to compete with industry and domestic users for available clean water.

Tradable water rights — known as "economic instruments" — were already in use overseas. Growers now had to produce evidence that their irrigation water was being used efficiently.

Proof also had to be given that cropped land was not being over-irrigated, leading to nitrate contamination of groundwater. Such controls could in future be applied in New Zealand.

"Some of our groundwater is already not all that crash-hot," he said.

Mothers breast-feeding babies around Lincoln, Christchurch, were advised not to drink the groundwater.

Dr Clothier said in a post-Gatt trading environment, New Zealand could also expect countries with tough environmental standards — such as The Netherlands — to introduce new environmentally-based trade barriers.

If proof was not given that fruit, cereals and vegetables were grown within a sustainable production method, additional taxes could be expected, lowering profit margins.

HortResearch this week hosted Professor Tetsuo Sakuratani from Japan, Dr Philippe Revol from France and Dr Derek Rose from England. All were working in joint projects with HortResearch scientists.

Dr Revol had developed a mathematical theory to describe how water and dissolved fertilisers moved through the soil from a drip-feed irrigation system. Computer models could be used to concentrate water around the root zone and minimise infiltration to groundwater.

Dr Rose, working in Bangladesh, had compared shallow and deep rooting crops in high low water table areas. Water uptake comparisons were compared to yield. Results provided a model for fine tuning production.

Dr Clothier said New Zealand science was becoming increasingly reliant on international cooperation. In the last budget the Government had put an extra $400,000 into establishing international science links.

The Beauty of Beekeeping

By Keith Waterhouse

First we observe and then we read about an insect small,
A quirk of nature which she's produced which has enthralled us all.
Living within a community that's balanced to the last degree
That flies throughout its territory with some semblance of being free.

From some dark centre creation begins, the egg, the core of life
And with slow division in cellular dark it joins the eternal strife.
A miraculous birth, still misunderstood, it grows within its womb
Of golden waxen glory from the gland that did the young entomb.

To watch its growth is sheer delight as life begins its quest,
Outwards now towards the light it fights to join the rest
Of brothers, sisters and its queen without whom it could not survive,
To search for succour, warmth and food, satisfying survival's drive.

About the nest the daily tasks must ever be completed
Just as the forebears of us all the cycles e'er repeated.
To keep all clean, free from disease, ensures health and pleasant living,
Pure trophallaxis from the food in the taking and the giving.

And so to flight, some lead the dance, to guide their masses the one true way
For pollen, nectar, propolis they forage through the sunshine day,
For work's the main thing in an ordered life, the fundamental binding thread,
A raison d'etre for us all, a weaving ensuring that each is fed.

Divide and rule's a natural key to ensure the strong's survival;
And swarming is this division which salutes the new arrival
Of virgin queen and colony, new vigour wild and free,
To continue the new generation of the industrious honey-bee.

And like ourselves the urge inbred to live and work goes on,
To serve our own communities and ensure a colony strong.
And follow nature's patterns of which only nature knows the cause
And effect in our brief existence the world's old unwritten laws.

Continued from page 12

trees where possible or, check around neighbourhood gardens. Cross-pollination can occur over quite long distances. A good rule of thumb is that if you can see a suitable pollination from your own garden there's a good chance your tree and your neighbour's will cross-pollinate..

Encourage bees and nectar seeking birds to your garden by planting a broad diversity of species. But unless you're prepared to give them a lot of care and attention, don't attempt to keep bees yourself. Bees are delicate creatures. Populations can be decimated by rapidly spreading diseases and problems have come from amateur beekeepers who have lost interest and allowed their hives to deteriorate.

Despite all your efforts, fruit set will not always be what you hoped. Weather plays a critical part. Bees are not very active during rainy or windy weather. Some chemical sprays are fatal to bees and other pollinating insects. Don't spray your garden while bees are active.

If worse comes to worse you can always hand pollinate by collecting male pollen grains and applying them to receptive female flowers with an artist's paintbrush.

Mostly you will only need to be careful to plant the right varieties and keep them healthy. Nature will do the rest.

Acknowledgement Growing Today

Answers in the upwelling

"If the world is to sustain its people-carrying capacity and maintain its environment then we need to develop clean energy resources and useful materials that fit into the natural order. Deep seawater is a resource that fulfills this requirement."

by Toshimitsu Nakashima

DEEP seawater is found at ocean depths where sunlight, required for photosynthesis in phytoplankton, does not penetrate. Although the depth varies from region to region, generally water below 150 to 200 metres is regarded as deep seawater. Approximately 71% of the earth's surface is covered by oceans having an average depth of 3800 metres, which means about 95% of the total volume of water in the seas is deep seawater.

The huge quantities of deep seawater are a tremendously valuable resource. Deep seawater far surpasses the surface water we are usually exposed to in terms of its richness in nutrients, purity, and low temperature stability. The concentration of such nutrient salts as phosphates, nitrates, and silicates - inorganic substances required for phytoplankton and seaweed growth — is several tens of times greater in deep seawater than in surface water. This phenomenon is caused by bacteria that decompose the remains of surface-inhabiting fish and plants into inorganic substances as the remains sink into the deep layer where the substances accumulate.

The purity of deep seawater is much higher because a scarcity of organic matter, the nutrient source of micro-organisms, prevents pathological germs from reproducing. The amount of organic matter and such pathological bac-teria as vibrio and E. coli, the main causes of pollution, is 1000 to 10,000 times less in the deep layer than at the surface. And although surface water is warm in summer and cool in winter, with seasonal differences of more than 20°C in some locations, the temperature of deep seawater is stable throughout the year, remaining at 1°C to 10°C at a depth of 300 metres, depending upon where in the world it is located.

Deep seawater is continuously recreated through a natural process. While scientists have yet to completely elucidate this mechanism, they believe the deep waters are created within a few months in the material cyclic system through biological processes such as photosynthesis, the food chain, and decomposition. On a global scale, deep waters are formed following in the southern offings of Greenland, from which they flow into the Pacific Ocean through the Atlantic and Indian Oceans. In the Northern Pacific, the deep seawater permeates upwards, ebbs past the equator as it moves into the surface layer, and then returns to the Indian and Atlantic Oceans. Scientists say it takes a thousand years or longer for the water to complete its voyage from the Northern Atlantic to the Northern Pacific. Deep seawater is created by the natural material cyclic system and by the great circulation of ocean waters, so it is a resource which is in no foreseeable danger of drying up.

Deep seawaters were important to the fisheries sector long before scientists began researching them. The deep waters do not normally mix with surface waters, but there are times when the natural forces of wind or sea currents cause them to swell up and mix with the surface waters in certain areas. The region where the waters meet is termed the upwelling sea area, and phytoplankton teems when the sun strikes the nutrient-rich deep seawaters. Zooplankton feed on the flourishing phytoplankton and are in turn eaten by sardines and mackerel, which are then consumed by Schools of tuna and bonito, creating a highly productive fishing grounds. Large upwelling sea areas can be found off the shores of California and Peru and along the western coast of Africa. About half the total fish catch comes from such fishing ground even though they occupy no more than 0.1% of the world's total ocean area.

An old idea

The idea of using deep seawater as a resource surfaced in the latter part of the 19th century. At the end of the 1880s, French scientists announced an idea for producing electricity by utilizing the temperature difference between the cold deep waters and the warm surface waters.

The principle behind the idea was to boil ammonia or some other substance with a low boiling point in the surface waters and then to return the gas to the liquid state by cooling it in the deep waters. The scientists theorized that repeating this process over and over would drive a turbine and generate electricity. The idea carried over into the present, as members of the National Energy Laboratory of Hawaii Authority (NELHA) have conducted a large-scale experiment since 1981, and researchers at Saga University in Japan are now engaged in similar work.

In Japan, with its huge fisheries industry, much research and development concentrates on the use of deep seawater as a fisheries resource rather than as a means of generating electricity. In 1976, the Japan Marine Science and Technology Centre (JAMSTEC) began research on deep seawater, and in 1989 the Kochi Artificial Upwelling Laboratory (KAUL), the first research centre to focus on testing of deep seawaters, was completed.

KAUL, which faces a natural upwelling sea area, is the site of deep-seawater research in a number of fields. Every day, 1000 tons of deep seawater is pumped to the surface from a depth of 320 metres. The temperature of the water is 13°C throughout the year, the concentration of nitrates is about 23 micromoles, and the water contains an abundance of eutrophic substances. Equal quantities of this and surface water are drawn up into two collection tubes with an internal diameter of 12.5 centimetres and a length of 2.6 kilometres. The water is used for comparative tests on surface water and deep sea water and mixtures of the two waters.

Research at the facility can be divided into two fields: fisheries and energy. In the fisheries field, research focuses on fish culture, where clean water is indispensable, especially for the cultivation of fry. The use of surface waters involves huge costs and much

Continued on page 15

Continued from page 14

energy to filter the water mechanically and subject it to ultraviolet light to remove the pathological bacteria. Another major expense is cooling the water in the summer to prevent the retarded growth or death of the fish. Utilizing deep waters dispenses with the need for such treatments.

KAUL researchers have succeeded in raising a stable supply of phytoplankton for use as food for the fish. The research centre has raised flounder and abalone, which are extremely difficult to farm off the coast of Kochi Prefecture because its surface water is warm, and has cultivated cold water seaweed and Atlantic salmon, all with good results. Researchers have realized a high survival rate for juvenile spiny lobster and sea urchin, both very susceptible to disease, and have artificially cultivated deep sea coral, which normally lives at depths of 100 to 300 metres, for more than two years. In other areas of research, phytoplankton has been raised and such medically useful substances as beta carotene, thought to be an effective anti-cancer agent, successfully extracted.

ENERGY AND THE ECOCRAT

The other pillar of deep-seawater research at KAUL is that being conducted on the recovery of energy. Controlling the temperature of seawater is one example.

In cultivating fish and sea plants, deep seawater is carefully mixed with surface water to obtain the desired temperature, while a heat pump or heat exchange processes are used to adjust the water temperature. Such processes have lowered electricity costs by 30% to 50%. Using deep seawater at its normal, low temperature for air-conditioning is now being tested. In this method, deep seawater flows through a small-diameter conduit in the ceilings throughout a building to air-condition the rooms. Other tests involve the production of fresh water using the purifying properties of deep seawater.

Another area in which deep seawater is receiving much attention is medical treatment of atopy. Seawater baths are said to be effective for treating skin diseases, but many recent cases have shown that ocean pollution produces the opposite effect. Directly applying deep seawater to affected areas on a person's neck, shoulders, or elbows cures the itching and rashes in two to three weeks, with a 60% to 70% success rate. Scientists anticipate application of this treatment in ocean water health therapy (thalassothérapie) when its effectiveness is proved scientifically. As special products of Kochi Prefecture, health food manufacturers even use deep seawater to produce noodles, jell, beverages, and salt.

Deep seawater is a resource for which the possibilities grow as more and more research is conducted. In recognition of the potential of deep seawater, local governing bodies are striving to activate local economies by researching deep seawater that makes good use of regional characteristics. Toyama Prefecture this year completed construction of Japan's second deep water research facility and is now testing the cultivation of the firefly squid and the Masu salmon. Okinawa Prefecture, in the group of southern most Japanese islands, plans to construct similar facilities.

Surrounded by seas, Japan, while poor in most natural resources, can collect water from great depths at distances not far from shore, certainly a blessing for utilizing deep-seawater resources.

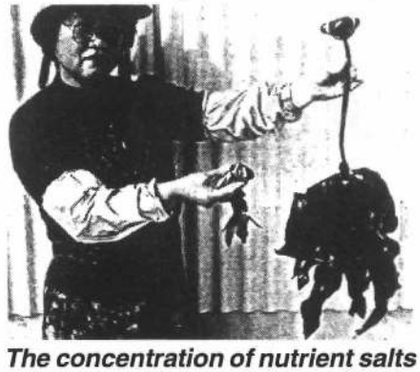
Researchers are making progress not only in Japan but also in the United States, Taiwan, Great Britain, and France. In the near future we can expect deep seawater to be used as a clean resource in many fields and in every region of the world.

From his very beginnings, Man has continued to grow intellectually, progressing from an agricultural being to a manufacturing one after the industrial revolution, and finally to the technocrat of the modern age. The technocrat is a species who attempts to solve everything through technological might. The world is now confronted with environmental problems brought about by an increasing world population accompanied by a rise in resource consumption. The technocrat must evolve into an "ecocrat" for the human race to continue to prosper and thrive.

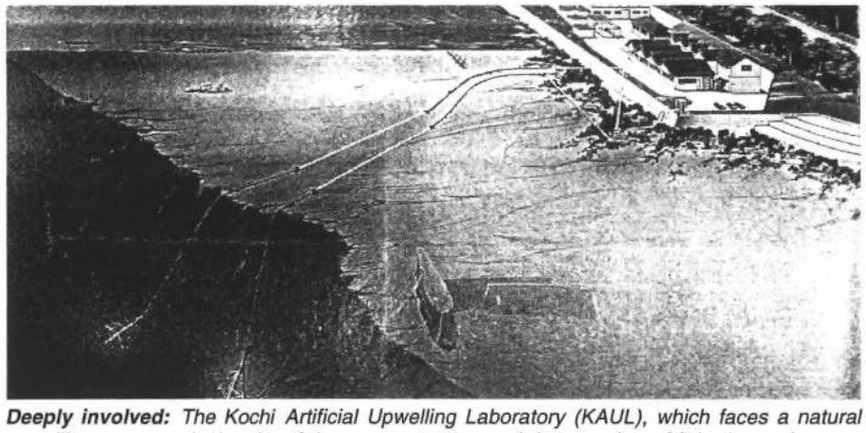
The ecocrat is an individual who lives his life in accordance with the laws of nature and makes rational use of the technological forces he harnesses to achieve that purpose. The resources required by the ecocrat are those that draw on the natural circulatory system, whose energy source is the sun. This all means that the useful technologies created by recirculating the clean, deep seawaters may become a source of hope for the future of mankind.

The author is an associate senior scientist at JAMSTEC. Born in 1948, he has a BS and MS in fisheries science from Nagasaki University, and in 1992 was made a Doctor of Science in biological oceanography by the same university.

Acknowledgement Look Japan



The concentration of nutrient salts is several tens of times greater in deep seawater than in surface water: *Seaweed prefers the deep.*



Deeply involved: *The Kochi Artificial Upwelling Laboratory (KAUL), which faces a natural upwelling sea area, is the site of deep-seawater research in a number of fisheries and energy fields. Everyday, 1000 tons of deep seawater is pumped to the surface from a depth of 320 metres.*

Library News

Donated by Mr I. Dunstan, Stewart Island, an interesting little book:

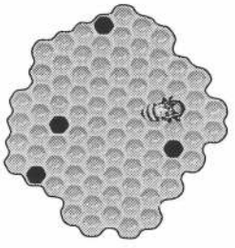
"THE BEE COMMUNITY" by F.H. Metcalf, B.Sc, 1948, 102 pp, U.K. Honey-bees, Bumble-bees and wasps — reproduction, pollination and some diseases are the topics covered. Some very good colour plates and diagrams. This was published nearly 50 years ago but still worth while reading. Good to have it in our collection. Thank you so much Mr Dunstan.

From Landcare Research the "Wasp Times". This is a newsletter reporting from time to time the goings on in the war against the wasp. Landcare obliged by sending us a complete set of back issues and put us on the mailing list.

"BEE DISEASE EDUCATION KIT". The library's contribution to the NBA's endeavour to familiarize all beekeepers and would-be beekeepers with what does threaten the health of our New Zealand bee population at present and also the exotic diseases and pests against we have to guard. A series of large, laminated laser prints clearly showing the different bugs in several stages of their development. Especially recommended for use by branches and clubs when organizing an education session but any library user is very welcome to borrow this set.

It did not come cheap, some $225 is involved, we hope the money has been wisely spend.

The loan fee will be $7. 50 but postage can be kept down to $1.60 as the set will be mailed to borrowers in two separate large envelopes.



Staff changes at Telford Rural Polytechnic Apiculture Unit

News from Telford is that Gavin McKenzie has resigned from his position as Apiculture Course Controller at Telford Rural Polytechnic. Nick McKenzie, Gavin's assistant for the past 2½ years, has taken over the duties of tutor and apiary manager. During his time as assistant, Nick had been actively involved both running the hives and in tutoring.

Nick's responsibilities will be managing Telford's 400 hive production unit, which deals in bulk honey, comb honey, pollen production, propolis gathering, queen rearing and a small amount of pollination, plus the running and tutoring of the full time, one year course (intramural) and the part time, two year correspondence course (extramural). Telford, then, is still in the business of providing training to New Zealand's beekeepers and international students.

Mark Bowen, Telford's Curriculum Development Officer who developed the apiculture course into its new Open Learning format two years ago, is now co-ordinator of all correspondence courses at Telford, and will be working with Nick in running the extramural course. Valerie Bell will remain as secretary for the apiculture courses. However, it is Nick who will be marking the modules, and having the front line contact with students.

Said Nick, "With Gavin gone, it leaves a big hole here at Telford. His reputation was well known in the New Zealand beekeeping industry. However, I am looking forward to this year's challenge in front of me here at Telford and am especially interested in meeting and working with people in the bee industry throughout this year and the future."

"While we have a concern that there are currently no full time students enrolled at Telford, we know we can rely on the support from the industry to improve the awareness and benefits of Telford's courses, and improve recruitment numbers for the full time course. The part time correspondence course is as strong as ever though, with a good number of students working their way through the modules in their own time. And, because the full time students can start at the beginning of any term, and with Telford now running to a four term year in line with most schools and tertiary institutions, there are still opportunities this year for students to commence their training here at Telford, in April, July and September."

From the colonies

Dear Sir

Looks as though we in Hawke's Bay will have a better than average season. Crops in the drier areas have been good with the wetter areas not producing quite so well. Comb honey has been better than most years.

By the end of January calls for wasp destruction were common, with the Asian Paper Wasps doing particularly well.

We just don't remember our Christmas barbecue. It was a disaster!

Readers will be sorry to learn that Jenny Dobson has hung up her quill and will no longer be editing our Buzz Sheets. She has done a marvellous and often thankless task of producing these branch newsletters for more than 12 years. Thank you Jenny. Chris Taylor our new editor has a high standard to maintain and we wish her luck. If you would like to receive copies just send your name and address with $10.00 to our secretary. This will get you a year's subscription.

For those who want to come to our monthly meetings, they are held at 7.30pm on the second Monday each month in the Cruse Club Hall, Lee Road, Taradale. Don't miss the AGM in April, see next month's *BeeKeeper* for the date; not Easter Monday.

Beekeeping cowboys

By Peter Berry. Hawke's Bay

No this isn't about those non-thinking types who trouble every industry. It's about a yard of bees.

Years ago, while looking for a near site in steep country near the bush, you know the type of country, the only flat areas with any shelter have farmhouses on them or no gate, or are two hundred metres down a near vertical hillside. Anyway, we're driving down this road and there on the left is the perfect site. A flat, sheltered paddock with a gate and room to get away from the road, and gate so as not to annoy the farmer.

Being suspicious types we noted that the depression in the middle of the paddock and it had no outlet and looked like it filled up sometimes, so we put the hives in a side gully. This was pumice country so we didn't expect draining to be a problem.

Have you ever seen David Attenborough talking about the swamp deer of India?

They live on great rafts of flooding vegetation.

After heavy rain all the water comes up in a spring under the hives. The layer of grass and roots floating on what felt like a foot of water was like walking on a waterbed with bad leaks. So we moved the hives to the side of the flat part. Come spring they had water up to the top of the bottom box on the lowest hives, so we moved them further back, higher up and I made special pallets to go under the two lowest squares.

Nearly all our hives are pallets with individual hive covers and a big lid over the top with the entrance facing in four different directions. We call them squares.

To get back to the story, the Taupo road had been closed overnight by severe flooding. Four hundred millimetres (16 inches) of rain had just dropped in the area in question. The hillsides were braided with silver runnels and scarred by slips. The local waterfall, which can usually be glimpsed only briefly from the road, was spewing out thirty metres (100feet) before thundering downwards into the valley.

The Waipou bridge shook under the weight of water. Definitely no trout fishing on the way home that night. We pulled up at the gate and stopped! What had been a flat paddock with a small depression was now a lake and, floating in the middle, are six squares. Twenty-four hives had made a good start at running away to sea.

We seriously considered leaving them and coming back another day. It was too deep to wade and far too cold to swim so we sat and had a think about how slacked off we were. Now this is where the cowboy bit comes in. Desperation, being the mother of invention, we made a giant lasso out of one of the truck ropes. After a couple of throws we caught the first square and, pulling it gently so as not to tip it, pulled it slowly to the shore. Here we removed the rope and slid it under the pallet. Then, using some fence posts as rollers, hauled the hives up onto dry ground. The only real problem was the weight of the water laden boxes and the hives at the rear getting a dunking as they were pulled at an angle from the water. Despite only a couple of inches of each square being above water the hives must have been pretty well sealed as the bees were still alive in the top half of the second box.

With much struggling we rescued the other hives placing these on higher ground also.

Then we shook the water out of the comb as well as possible. There was fortunately no silt as if combs have silt in them you might as well throw them away as the bees have a lot of trouble coping with it.

And the end result? Only one hive out of 24 died and after building up, with some sealed brood later in the spring, they went on to become too strong and half swarmed while the other half produced three boxes of honey. There have been no further problems ... so far! No, we didn't have dry socks as we drove home. And yes, it's all true. And no, we didn't have a camera.

PRICE LIST AS A

BEEKEEPING EQUIPMENT

		Excl GST	Incl GST
Bee Blowers			
Lega with stand	each	1400.00	1575.00
Agmurf - Petrol	each	1288.89	1450.00
Spare Hoses	each	65.33	73.50
Spare Nozzles	each	13.82	15.55
Spare Adaptor	each	9.60	10.80
Bee Boost			
10 pack of lures	each	35.11	39.50
50 pack of lures	each	140.00	157.50
500 or more		POA	POA
Bee Escapes-Bare			
Parker Corner Escapes	10	5.78	6.50
	100	52.44	59.00
Porter	each	2.62	2.95
	per 10	23.91	26.90
Round Galvanised	each	3.11	3.50
	per 10	24.89	28.00
Eight Way Plastic	each	3.56	4.00
	per 10	30.00	33.75
Brushes			
Holterman - Nylon	each	8.71	9.80
Holterman - Natural Hair	each	12.00	13.50
Cappings Scratcher	each	13.24	14.90
Drip -Trays - Plastic	each	10.67	12.00
	per 10	98.00	110.25
Drum Heaters-Electrotherm			
Vertical	each	1040.00	1170.00
Horizontal	each	1120.00	1260.00
Electric Generators			
Honeywell Rediiline:			
DA3179: 12VDC - 230VAC	each	1100.00	1237.50
DA3272: 24VDC - 230VAC	each	1250.00	1406.25
Embedders			
Electric Transformer & Leads	each	105.77	119.00
Spare Leads	each	11.51	12.95
Spur Embedder	each	8.44	9.50
Excluders - All wire with wooden frames (26 per Carton)			
1-9	each	12.89	14.50
10-49	each	11.51	12.95
50 and over	each	10.58	11.90
Unassembled 50 and over only	each	10.40	11.70
Extra Wood Frames for above	each	1.56	1.75
	per 10	14.18	15.95
	per 100	132.44	149.00
Feeders			
PLASTIC FRAME TYPE			
F.D. 8 litres and F.D. 5.5 litres	each	9.42	10.60
	10	85.78	96.50
	100	790.00	888.75
F.D. 3.5 litres and 3/4 D. 4 litres	each	8.71	9.80
	10	79.20	89.10
	100	750.00	843.75
Plastic One Piece Twin	10	128.00	144.00
	100	1182.22	1330.00
Plastic Half Top Feeder	10	61.60	69.30
	100	560.00	630.00
ENTRANCE TYPE	each	5.78	6.50
	10	51.56	58.00
Fire Extinguishers			
0.9kg Dry Powder	each	62.00	69.75
1.5kg Dry Powder	each	95.02	106.90
2.25kg Dry Powder	each	125.02	140.65
2.7kg Dry Powder	each	145.02	163.15
4.5kg Dry Powder	each	190.00	213.75
9.0kg Dry Powder	each	227.02	255.40
2.0kg CO_2 Extinguisher	each	320.00	360.00
3.5kg CO_2 Extinguisher	each	365.02	410.65
10 Litre Water Extinguisher	each	255.02	286.90
Fumidil B			
9.5g Bottles	each	110.22	124.00
Gloves			
N.Z. Leather Ventilated (S,M,L,XL)	each	44.00	49.50
Italian Leather non ventilated (S,M)	each	33.78	38.00
N.Z. Rubber ventilated	each	24.44	27.50
American Gloves-Dadant (M,L,XL)	pair	52.00	58.50
Hats Ventilated Bee Helmets			
Woven Fabric	each	22.18	24.95
Moulded Plastic	each	23.96	26.95
Plastic Hat Bands	each	4.00	4.50
Hive Strappers			
EMLOCK TYPE			
Complete with Galvanised Strapping	each	7.91	8.90
	10	75.11	84.50
	100	695.00	781.88
Without Strapping	each	6.00	6.75
	10	54.22	61.00
	100	510.00	573.75
Extra Galvanised Strapping	per length	1.24	1.40
(approx 20kg per coil)	per kg	4.89	5.50
NYLON TYPE			
Complete with Nylon	each	4.00	4.50
Strapping and Plastic Buckles	10	35.55	40.00
	100	320.00	360.00
Hive Tools			
E.B.S. 10" with hook	each	13.33	15.00
'Kelley' 10 Inch	each	10.67	12.00
'Maxant' 10 Inch with Hook	each	17.33	19.50
'Maxkel' 10 inch	each	12.89	14.50
Honey Gates			
BRASS AND CHROME			
47mm OD	each	35.11	39.50
60mm OD	each	60.00	67.50
CAST IRON THREADED			
60mm OD	each	53.24	59.90
75mm OD	each	61.33	69.00
NYLON WITH BACK NUT			
47mm OD	each	20.89	23.50
60mm OD	each	35.11	39.50
INLINE BALL VALVES - 25mm I.D.	each	30.05	33.80
32mm I.D.	each	41.60	46.80
38mm I.D.	each	54.84	61.70
51mm I.D.	each	87.56	98.50
PERFECTION, 47mm, Nylon	each	60.00	67.50
Honey Labels			
'Pure Honey' 75mm x 60mm	10	1.07	1.20
(10 per sheet)	100	8.89	10.00
HoneyStrainers			
28 Mesh Nybolt for Polypail	each	20.27	22.80
Strainer Bags 200 x 600 mm	each	24.84	27.95
Honey Refractometers			
Kikuchi or Atago POA (approx)	each	550.00	618.75
Maps Topomaps '260'	each	12.00	13.50
Metal Rebates	pair	.98	1.10
	per 100	40.00	45.00
Mouse Guards	each	1.73	1.95
	10	15.56	17.50
Nails (Prices per Kg)			
Flat Head Vinyl Coated			
12 x 1.0 200gm jar	each	4.00	4.50
12 x 1.0 per kg	kg	17.33	19.50
12 x 1.0 25 Kg Case	each	389.33	438.00
30 x 1.6 500gm jar	each	6.67	7.50
30 x 1.6 per Kg	kg	12.09	13.60
30 x 1.6 25 Kg Case	each	273.78	308.00
40 x 1.6 500gm jar	each	6.22	7.00
40 x 1.6 per Kg	kg	11.20	12.60
40 x 1.6 25 Kg Case	each	253.33	285.00
60 x 2.5 500gm jar	each	2.84	3.20
60 x 2.5 per Kg	kg	4.62	5.20
60 x 2.5 25 Kg Case	each	93.78	105.50
Flat Head Galvanised			
50 x 2.5 500gm jar	each	4.36	4.90
50 x 2.5 per Kg	kg	7.82	8.80
50 x 2.5 25 Kg Case	each	163.56	184.00
60 x 2.5 500gm jar	each	3.47	3.90
60 x 2.5 per Kg	kg	5.87	6.60
60 x 2.5 25 Kg Case	each	121.33	136.50
Overalls			
White Cotton or Polycotton, Zip Up Overalls, Sizes 4 to 14 (polycotton available on request)	pair	48.00	54.00
P.D.B. (Paradichlorbenzene) Wax Moth Exterminator			
1 Kg	each	9.40	10.60
2.5 Kg	each	20.20	22.75
25 Kg	each	159.20	179.10
Paraffin Wax			
28 Kg Carton	per Kg	2.93	3.30
Less than Carton Lots	per Kg	3.73	4.20
Pollen Supplements			
Bee Pro, 15kg bucket		71.50	80.44
Pollen Traps	awaiting new model		
Propolis Collecting Mats	10	24.00	27.00
	100	200.00	225.00
Pricker			
Revolving for use with Thixotropic Honey	each	160.00	180.00
Queen Cell Incubators			
Carricell: Small, 70 cells		320.00	360.00
Small, extra foam tray		20.00	22.50
Large, 144 cells		370.00	416.25
Large, extra foam tray		25.33	28.50
Queen Rearing Materials			
Jenter-Complete Unit including 100 Plugs, 100 Cups, 90 Cup Holders and Pre-Drawn Comb.	each	124.00	139.50
Jenter Extra Plugs	per 100	15.73	17.70
Jenter Extra Cups	per 100	15.73	17.70
Jenter Extra Cup Holders	per 50	15.73	17.70
Jenter Queen Clamp	each	18.00	20.25
Plastic Cell Cups	each	.15	.17
	per 100	13.24	14.90
Bozi Cell Cups	each	.15	.17
	per 200	25.07	28.20
Bozi Cell Bars	each	1.60	1.80
Chinese Grafting Tool	each	5.78	6.50
Grafting Brush 000, Sable	each	5.42	6.10
Grafting Brush 000, Synthetic	each	4.27	4.80
Queen Marking Kits - 5 colours	each	20.00	22.50
Queen Cages			
White Two Piece	per 10	4.49	5.05
	per 100	40.80	45.90
Queen Guard Cages	per 10	5.78	6.50
	per 100	46.22	52.00
	per 1000	400.00	450.00
Ratchet Tie Downs			
25mm, Five Metre, 1200 Kg	each	24.00	27.00
50mm, Six Metre, 2000 Kg	each	49.51	55.70
50mm, Nine Metre, 2000 Kg	each	54.00	60.75
Smokers			
3" Galvanised	each	33.33	37.50
4" Galvanised with Shield	each	40.00	45.00
3" Stainless Steel with Shield	each	44.00	49.50
4" Stainless Steel with Shield	each	48.00	54.00
4" Dadant S/S tall with shield	each	72.00	81.00
4" Lega S/S tall with shield	each	56.89	64.00
Replacement Bellows - Dadant	each	30.22	34.00
Ecroyd	each	22.22	25.00
REFLECTIVE SIGNS Dimension			
"Warning Live Bees" 400x 400	each	39.60	44.55
"Warning Live Bees" 250x250	each	24.00	27.00
Imco Sign Holder 400x400	each	39.60	44.50
Imco Sign Holder 250x250	each	24.00	27.00
Stickers			
Lega Bee 100mm	each	.53	.60
	10	4.44	5.00
Lega Bee Large	each	3.38	3.80
Stingose Spray-On Lotion to minimise swelling from stings and bites	each	7.24	8.15
Toggle Clamps			
For Wiring Boards	each	40.00	45.00
Uncapping Equipment			
Electric Uncapping Knife	each	140.44	158.00
Steam Heated 10 Inch Knife	each	79.11	89.00
Plain Medium Duty Knife	each	29.96	33.70
Steam Hose	per metre	4.89	5.50
Veils			
Standard Wire Mesh	each	11.78	13.25
Woodman Wire Mesh	each	12.67	14.25
Round Plastic Mesh	each	14.67	16.50
Hood, Long Sleeved	each	84.44	95.00
Suit, One Piece, Sizes Five to 12	each	113.78	128.00
Top Hood - String	each	39.11	44.00
Top Hood - Zip	each	52.44	59.00
Lega Veil & Hat	each	30.22	34.00
Wasp Killer			
"No Wasp" 250ml Bottles	each	14.18	15.95
Actellic Dust 200gm Jar	each	7.02	7.90
Actellic Dust 5kg Bucket	each	70.22	79.00
* Note: Actellic Dust is used the same as Carbaryl			
Wire 0.46mm Galvanised Frame Wire			
200gm Reels	each	4.40	4.95
400gm Reels	each	7.56	8.50
2.25kg Reels	each	23.41	26.00
4.5kg Reels	each	40.89	46.00
2nd Grade Wire (weak)			
Carton lots of 6 rolls (approx 28kg)	per kg	7.00	7.87
Less than Carton lot (approx 4.7kg each)	per kg	7.70	8.66
Wire Unroller	each	20.00	22.50
Wire Crimper			
Plastic with Metal Wheels	each	17.33	19.50
Spare wheels for above	pair	7.56	8.50
Woodlife II Timber Preservative			
1 Litre Concentrate	each	27.72	30.80
4 Litre Concentrate	each	84.00	94.50
20 Litre Concentrate	each	320.00	360.00

BOOKS AND WALLCHARTS

		Excl GST	Incl GST
Books on Beekeeping			
ABC and XYZ of Bee Culture	each	73.33	82.50
Apiaries Act - May 1987	each	4.67	5.25
Arthritis - Malone	each	33.69	37.90
Backyard Beekeeping	each	22.18	24.95
Beekeepers Handbook- Sammataro	each	51.11	57.50
Beekeeping: A Practical Guide to Beekeeping in School Grounds	each	16.44	18.50
Beekeeping Questions and Answers	each	29.69	33.40
Bees (Education Resource Pack)	each		28.00
Bees, Vision, etc- Frisch	each	29.55	33.25
Contemporary Queen Rearing	each	34.67	39.00
Cookin' with Honey	each	6.93	7.80
Diary of a Honey Bee	each	4.40	4.95
First Lessons in Beekeeping	each	8.44	9.50
Hive and the Honey Bee	each	102.22	115.00
Honey Bee Brood Diseases	each	20.44	23.00
Honey Bee Colouring Book	each	1.33	1.50
Honey Bee Study Prints - set of 12	per set	61.33	69.00
Honey in the Comb	each	29.69	33.40
Honey for Health- Tonsley	each	8.44	9.50
Honey Wines and Beers	each	33.69	37.90
How to make Beeswax Candles	each	8.53	9.60
Life of a Honey Bee	each	6.93	7.80
Making Craftwax Candles	each	8.53	9.60
Making Mead	each	23.07	25.95
Manual for NZ Beekeepers 1848	each	35.11	39.50
Natural Medicine from Honey Bees	each	25.78	29.00
Nectar and Pollen Sources of NZ	each	3.51	3.95
Practical Beekeeping- Chapman- Taylor & Davey	each	35.51	39.95
Practical Beekeeping in NZ	each	31.07	34.95
Putting it up with Honey	each	23.96	26.95
Queen Rearing Simplified	each	21.33	24.00
Seven Health Secrets from the Hive	each	26.22	29.50
The Honey Kitchen	each	24.44	27.50
The Wonderful World of Honey	each	22.67	25.50
Traditional Candlemaking	each	23.56	26.50
The Bee Hive Product Bible	each	26.62	29.95
The Biology of the Honey Bee	each	58.66	66.00
The Beekeeper	each	4.40	4.95
Truck Loading Code	each	15.07	16.95
Wall Charts			
Bees	each	35.11	39.50
Honey Bee Study Prints - set of 12	per set	61.33	69.00
Information on Beeswax - Chart 1	each	19.56	22.00
Information on honey - Chart 2	each	19.56	22.00
Information on top - bar hives	each	19.56	22.00
Information on pollination	each	19.56	22.00
Pollen in Honey Wall Chart	each	39.96	44.95
The Honey Bee	each	19.56	22.00
The Life Cycle of the Honey Bee Family	each	20.00	22.50
Laminating of Posters	each	16.88	19.00

Ecroyd

Distributors, Ex

Telephone:
Fax:
After Hours:
Mobile:

To

1 DECEMBER, 1995

COMB FOUNDATION / CANDLE MAKING SUPPLIES

			Excl GST	Incl GST
Comb Foundation 'Acorn' Weed Process	Sheets per Kg approx.	Carton	Price per Kilogram	
Coloured F.D.M.B. ctn	16	15	12.44	14.00
Coloured F.D.M.B. kg (3kg min)	16	15	14.22	16.00
Coloured F.D.M.B.	10 sheets		10.67	12.00
Prices are for one colour only. Colours Red, green, blue, orange, grape, ivory, black, terracotta, pink,lillac				
F.D. Medium Brood Ctn	17.5 *	12.5	9.96	11.20
F.D. Medium Brood kg	17.5	12.5	10.76	12.10
F.D. Medium Brood	10 sheets		7.02	7.90
3/4 Medium Brood Ctn	23	12.5	9.96	11.20
3/4 Medium Brood Kg	23	12.5	10.76	12.10
3/4 Medium Brood	10 sheets		5.33	6.00
F.D. Thin Super Carton	26.5	16.0	10.53	11.85
F.D. Thin Super per Kg	26.5	16.0	11.83	12.80
3/4 Thin Super Carton	43	15.0	11.16	12.55
3/4 Thin Super per Kg	43	15.0	12.09	13.60
H.D. Thin Super Carton	59	15.0	11.69	13.15
H.D. Thin Super per Kg	59	15.0	12.62	14.20
F.D. Seven Sheet Carton	15.5	13.5	9.82	11.05
F.D. Seven Sheet per Kg	15.5	13.5	10.58	11.90
F.D. Heavy Brood Carton	13.5	16.0	9.64	10.85
F.D. Heavy Brood per Kg	13.5	16.0	10.44	11.75
* F.D.M.B. is also available in a 6 Kg (100 Sheet) Carton				
Yellow Beeswax refined	per kg		9.78	11.00
Yellow Beeswax crude	per kg		7.78	8.75
Bleached Beeswax	per kg		11.56	13.00
Colour Dye blocks	each		4.36	4.90

Moulds				
Wax Mould, Five Rectangular	each		8.44	9.50
Wax Mould, Six Hexagonal	each		13.78	15.50
Candle Mould, Hive	each		17.33	19.50
Candle Mould, Large Skep	each		17.33	19.50
Candle Kits				
Natural, 5 sheets and wick	each		5.33	6.00
Coloured, 4 sheets and wick	each		5.33	6.00
Paraffin Wax				
28 Kg Carton	per Kg		2.93	3.30
Less than Carton Lots	per Kg		3.73	4.20
Wax Moulds				
250gm tin oval mould	each		4.00	4.50
2.5kg tin oval mould	each		12.00	13.50
8.0kg plastic rect. mould		10	76.00	85.50
		100	700.00	787.50
WICK Per Metre	each		.40	.45
Per 110m Roll	each		31.78	35.75

HONEY CONTAINERS AND DRUMS

Drums Food Grade 2nd Hand				
1-9	each		22.00	24.75
10-99	each		20.00	22.50
100+	each		18.00	20.25
Cut Comb Boxes 100gm Round		100	51.56	58.00
		576	247.11	278.00
200gm Round		100	58.67	66.00
		300	146.67	165.00
340gm square (250 per carton)	each		.70	.79
		250	146.66	165.00

Glass Jars (Imported)
Prices exclude GST. Prices include metal twist caps

	Each Cost in pallets of 2500	Each cost in cartons	Quantity per carton	Each price loose
195ml Hex	0.65	0.78	80	0.97
285mls Hex	0.85	1.02	72	1.27
195mls Square	0.71	0.85	96	1.07
285mls Square	0.89	1.07	60	1.34

Poly Jars				
140gm Clear Plastic with White Screw Caps	each		.39	.44
	100		35.11	39.50
250gm Clear Plastic with White Screw Caps	each		.44	.49
	100		39.56	44.50
500gm Clear Plastic with White Screw Caps (Square & Hexagonal)	each		.49	.55
	100		44.00	49.50
500gm Clear Plastic Squeeze Bottle with flip cap	each		.62	.70
	100		53.33	60.00
1 Kg Clear Plastic Hexagonal with White Screw Caps	each		.84	.95
	100		69.33	78.00

Beekeeping Supplies

rters & Importers of Beekeeping Equipment

(03) 358-7498
(03) 358-8789
(03) 358-7137
(025) 323-310

P.O. Box 5056, Papanui,
26B Sheffield Crescent,
Christchurch.
New Zealand.

Free EBS Orderline 0800-33-5056

			Excl GST	Incl GST
SAFE-A-PAK				
500gm Plastic		100	27.55	31.00
Coloured with White Lids		1000	224.00	252.00
1kg Plastic		100	46.48	52.30
Coloured with White Lids		1000	378.00	425.25
2kg Plastic		each	.93	1.05
Coloured with White Lids		180	141.87	159.60
6kg Plastic		each	2.80	3.15
Coloured with White Lids		100	205.34	231.00
POLYPAILS				
30kg White Plastic with		each	12.32	13.85
White Lids		per 10	111.07	124.95

HONEY EXTRACTING AND PACKING

Honey Tanks				
Plastic 30kg with Lid and 47mm Honey Gate fitted	each		33.42	37.60
Plastic 90kg with lid & 47mm honey gate	each		96.00	108.00
Plastic 90Kg with lid & 47mm honey gate	each		84.44	95.00
Honey Extracting Equipment				
Beequip Large Cap Spinner(approx)			5000.00	5625.00
Beequip Uncapper - Standard			3200.00	3600.00
- Chain Feed			4400.00	4950.00
Ecroyd S/S Raffle Tank 1.0mx.5mx.5m			2000.00	2250.00
1.2mx.6mx.6m			2200.00	2475.00
Maxant 1200 Cap Spinner(approx.			3600.00	4050.00
Mobile Drip Trays			100.00	112..50
Honey Extractors				
Lega Three frame Stainless Steel	each		417.78	470.00
Lega Four Frame Stainless Steel	each		528.89	595.00
Lega Five Frame Stainless Steel Motorised	each		1328.89	1495.00
Maxant Four Frame' rev.	each		2000.00	2250.00
Others, 8 frame and up, info on request			POA	POA
Maxant 4 frame Stainless Steel motorised rev.	each		1866.67	2100.00
Replacement Gears for Extractors				
- Nylon	per set		14.67	16.50
- Metal	per set		70.67	79.50
Clear Hinged Covers	per set		32.00	36.00
Green Hinged Covers	per set		32.00	36.00
Honey Packing Machines				
Lega 400kg/hr head only approx	each		4200.00	4725.00
400kg/hr complete with tank stand and bench approx	each		6000.00	6750.00
Lega Cut Drop System	each		1048.89	1180.00
Honey Pumps				
Ecroyd's Gear Type	each		475.00	534.38
Lega 2000kg per hour, comp	each		1555.56	1750.00
Lega 2000kg per hour, bare	each		755.56	850.00
Hose				
Food Grade, Reinforced	38mm metre		22.67	25.50
For Pumping Honey	50mm metre		26.22	29.50

TEE SHIRTS, BEES & BEARS

Bees and Bears				
Mr Do Bee Display Toy	each		16.00	18.00
Mr Do Bee Hand Puppet	each		16.00	18.00
Medium Honey Bear	each		40.00	45.00
Large Honey Bear	each		80.00	90.00
Jumbo Honey Bear	each		160.00	180.00
Buzzy Bee - wooden on wheels	each		17.73	19.95
Buzzy Bee poster - laminated	each		9.73	10.95
Buzzy Bee poster - plain	each		6.22	7.00
Buzzy Bee Jigsaw - cardboard	each		4.40	4.95
Buzzy Bee Jigsaw - wooden	each		9.11	10.25
Buzzy Bee Mobile	each		20.00	22.50
Tee Shirts 100% Cotton, Grey only				
4,6,8,10 yrs (B & D only)	each		13.33	15.00
S,M,L,XL	each		15.56	17.50
XXXL	each		17.33	19.50
Sweat Shirts				
35% Cotton, 65% Polyester, Grey only S, M, L, XL	each		31.11	35.00
XXXL	each		35.11	39.50

STYLES FOR T-SHIRTS AND SWEAT SHIRTS
'A' Bee Healthy - Naturally 'B' Don't Worry - Bee Healthy
'C' If You Can't Bee Good - Bee Healthy 'D' If You Can't Bee Healthy - Bee Naughty

WOODWARE AND HIVEWARE

Bee Escape Boards Complete				
Parker Corner Escape	each		5.96	6.70
mounted in a hive mat	10		56.44	63.50
Porter Escape	each		6.62	7.45
mounted in a Hive Mat.	per 10		61.96	69.70
Round Galvanised Bee Escape	each		7.20	8.10
mounted in a Hive Mat.	per 10		66.13	74.40
Eight Way Plastic Bee Escape	each		8.53	9.60
mounted in a Hive Mat.	per 10		76.80	86.40
Bottom Boards				
Reversible (10 per carton)	each		11.51	12.95
	per 10		104.44	117.50
Commercial Type	per 10		97.78	110.00
with tanalised bearers	per 100		928.89	1045.00
Frame Assembly Cartons	each		5.00	5.63
Frame Assembly		10	4.53	5.10
		100	38.58	43.40
Nuc Boxes		1000	350.00	393.75
Wooden Five Frame Box andBase, no lid	each		14.67	16.50
	10		133.33	150.00
Galv. Entrance Disc	each		1.42	1.60
	10		11.82	13.30

			Excl GST	Incl GST
Frames Hoffman Full Depth, Three Quarter Depth and Half Depth Section Frames Full and Half Depth. Manley Three Quarter Depth				
(100 per Carton)		10	9.69	10.90
		100	72.53	81.60
		1000	659.56	742.00
Note: Full Depth Hoffman Frames are supplied with Three Hole, 33mm End Bars. Frames with Four Hole or 35mm End Bars are available on request at no extra cost.				
Frame Parts				
End Bars		100	16.80	18.90
		1000	152.44	171.50
Bottom Bars		100	16.18	18.20
		1000	146.49	164.80
Top Bars		100	30.13	33.90
		1000	273.78	308.00
Hives - A6 - Complete Two Storey Hive (Consists of 2 F.D.L.C. Storeys, 2 pr Rebates, 20 Frames, 20 Sheets Foundation, 1 Wooden Roof, 1 Sheet Iron, 1 Rev. Bottom Board, **1 Hive Mat, Wire and Nails)**	each		106.22	119.50
Hive Mats (2 per Carton)				
Hardboard with Wood Rim	each		3.96	4.45
		10	36.00	40.50
		100	327.56	368.50
Frames only for Hive Mats		10	14.18	15.95
		100	128.89	145.00
Roofs (10 per Carton)				
Standard Wooden	each		11.47	12.90
		10	103.56	116.50
Iron for standard wooden	each		6.67	7.50
		10	60.00	67.50
Plastic	each		14.66	16.50
		10	133.33	150.00
Tin, galvanised	each		10.40	11.70
		10	84.00	94.50
		100	POA	POA
Ross Rounds Rings	each		.16	.18
Lids	each		.27	.30
Bases	each		.27	.30
Frames	each		4.40	4.95
Sections Fine Sawn Finish				
With Foundation Slit		100	28.44	32.00
		1000	258.67	291.00
		10000	2351.11	2645.00
Without Foundation Slit		100	25.69	28.90
		1000	232.89	262.00
		10000	2173.33	2445.00
Separators	each		.71	.80
		100	60.00	67.50
Storeys LOCK CORNERED,				
Full Depth 1-9	each		14.18	15.95
10-49	each		13.20	14.85
50 and over	each		12.53	14.10
COMMERCIAL TYPE with Half Check Corners and 1/2 Inch Rebates (3/4 Inch Rebates available on orders of 50 and over)				
Full Depth 1-9	each		12.80	14.40
10-49	each		11.64	13.10
50 and over	each		10.62	11.95
Three Quarter Depth 1-9	each		10.62	11.95
10-49	each		9.64	10.85
50 and over	each		8.80	9.90
Half Depth 1-9	each		9.33	10.50
10-49	each		8.31	9.35
50 and over	each		7.56	8.50

Note: Metal Rebates EXTRA, if required, on ALL Storeys

TERMS OF TRADE

Payment
Payment is required prior to despatch unless the purchaser holds an account with Ecroyd Beekeeping Supplies.
Payment of accounts is to be made by the 20th of the month following purchase or delivery.

Interest
Interest will be charged on overdue accounts a rate of 2% per month while the amount remains overdue.

Title
Goods remain the property of Ecroyd Beekeeping Supplies until fully paid for.

Freight
Freight is not included in listed prices and is to the customers' account.

Prices
Prices are subject to change without prior notice and will be those determined and in existence at the time of dispatch.

Returned Goods
Goods may only be returned to Ecroyd Beekeeping Supplies provided Ecroyd Beekeeping Supplies have been notified within 14 days of the goods being received by the customer and that Ecroyd Beekeeping Supplies authorised the return of such goods.

Insurance
While Ecroyd Beekeeping Supplies endeavours to arrange transport of goods for and on behalf of customers, Ecroyd Beekeeping Supplies does not accept liability for goods lost or damaged while being transported. Unless the customer makes other arrangements goods are carried subject to "at limited carriers risk" pursuant to the Carriage of Goods Act 1979.

Minimum amount to be charged to a customers account
Customers wishing to charge goods or services to a customer account of a value of less than $25 per transaction will incur a booking fee of $4.00 plus GST to cover the high cost of processing and postage of customer accounts.

Quarantine Quandary For Australia

THE AUSTRALASIAN BEEKEEPER

Brian Lee

The discovery of the Asian Honey-bee and the two bee mites spreading though Papua New Guinea presents Australian Quarantine Inspection Service (AQIS) and the Australian bee industry with a headache. How much should they worry, and what action should they take!

The Australian food industry has a great deal to lose. Australia's honey production is worth about $160 million at the Farm gate, and the country is the fifth largest honey exporter. Because Australian honey-bees have few diseases, it has been able to develop a packaged bee export industry worth $6 million per year.

In addition our nut, fruits and lucerne crops depend on pollination by feral bee colonies. Economic analyses by Dr Roderick Gill at the University of New England several years ago indicated that annual production worth $1.2 billion depends on pollination by feral bees.

The spread of Asian honey-bees and the bee mites into Australia would have immediate and long term effects on both trade and production. Almost certainly there would be major disruption to the trade in exports of queens and packaged bees from Australia if Varroa or Asian mites enter the mainland from Papua New Guinea even though it appears the varroa mite in Papua New Guinea is a non-virulent strain. This is why it is so important that the genetic studies Dr Anderson is undertaking in the new project in Papua New Guinea prove that the varroa mites are a different strain from those causing so much trouble elsewhere.

Only then would international authorities recognise that the new varroa infection was benign.

It is possible that some time after varroa mites were detected in Australia the initial restrictions would be reduced to cover only affected regions. But in eastern Australia this would not necessarily be much help for the packaged bee industry since the queens are bred in southern Queensland but the worker bees come from nearly 1000 km further south in southern New South Wales. A regional ban could easily affect one of these two areas.

It will be a disaster if Asian mites reach the Australian honey-bee population, since, as with the varroa mite infestation in North America, the whole feral bee population will be wiped out.

The arrival of Asian hive bees from Papua New Guinea would pose two problems. First the colonies all carry varroa mite, but are not themselves affected by it. Secondly they would almost certainly compete with feral European honey-bees, and establish themselves right the way down the eastern side to about the latitude of Sydney, across the whole of the northern 'Top End', and down the western side until the climate becomes too arid. Without human help they probably would not reach the isolated honey-bee populations of the south western corner. However, the swarming habits of this bee make it particularly well suited to being carried inadvertently by sea or by road, since swarms seek shelter in pipes for oil drilling and other purposes. These are frequently carried as deck or truck cargo.

So there is always a danger that the bees will pierce Australia's quarantine barrier, and that without great vigilance they will be distributed quickly once they arrive. Honey-bee swarms move only about 5 or 6 km, and very rarely over the sea. Asian honey-bees apparently can swarm rather further, and they have been recorded landing on ships. We do not know what the consequences of competition from Asian honey-bees would be. Would they, for example, pollinate the same flowers and crops as the European honey-bee. The answer is probably not. The result would almost certainly be reduced pollination for some crops. Others might even gain.

The topic needs urgent study

Finally, if it is found that the Giant honey-bee, Apis dorsata,' the natural host of the Asian mite, has entered the island of New Guinea the implications are also alarming since any thoughts of eradicating the mite from the island would have to be abandoned. We know almost nothing about the biology and swarming habits of this bee, although it is thought that swarms do not normally move more than 5 or 6 km. The mite would become a permanent inhabitant as the giant bees spread.

Any control in Papua New Guinea would have to depend on the costly palliative of using acaricides, and the Australian bee industry would be threatened by mites in the Giant Honey-bee population just to the north. If the Giant Honey-bee ever became established in Australia, then any hope of eradicating the Asian mite would also have to be abandoned.

Surveys by the Australian Quarantine Inspection Services in southern Papua New Guinea confirm that there are no European honey-bees south of the highlands in the lowland Fly River area, the part closest to northern Australia. The nearest European honey-bee colony is apparently on Hammond Island in the Torres Strait close to the northern tip of Cape York. Feral bee colonies also inhabit the northern part of Cape York.

In the absence of the Giant Honey-bee, it seems unlikely that the Asian mite could spread into Australia without a deliberate quarantine breach involving transfer of an infested European Honey-bee colony. However, if the Giant Honey-bee ever spreads across the island of New Guinea, then it would bring the Asian mite uncomfortably close to Australian shores.

Hutt residents warned to bee careful

If a swarm of bees settles nearby, don't panic, says Hutt City Council pest control officer Peter Clarkson.

Definitely don't follow the example of a Hutt man who was stung after hosing a swarm and then attacking it with a borer bomb.

What he should have done was phone the council's environmental health section who would have called in a beekeeper to remove the swarm.

Mr Clarkson has had numerous reports lately of bee swarms on residential properties.

"It happens most years on warm early summer days," he says.

"When they swarm they are usually quite docile and easily handled by a beekeeper. The last thing you do is annoy them. Mostly they stay for an hour or two in the one place and then move off."

If they stay longer and cause concern, Mr McMillan says the beekeeper will take them away at no cost.

Beekeepers fail to keep beetle out

The Department of Conservation has released a heather-eating beetle into Tongariro National Park, despite protestations from beekeepers.

About 250 beetles were released in the park yesterday and on Thursday after being freed from quarantine.

The department regards the heather as a weed which is threatening the survival of other less robust, rare or unique plants.

But beekeepers fear the beetle could move in to a prime honey-producing area. Heather honey is a major product, generating some $300,000 in export earnings annually.

The advisory scientist for the Tongariro-Taupo conservancy, Dr Harry Keys, said extensive research and consultation over a decade had concluded that biological control was the only practical option.

City's bees require licence

MOST people know that dogs need a licence, but it may be news to some in Porirua that the same goes for bees.

Under a Porirua City Council bylaw, a licence is required before beehives can be kept within the city boundaries.

The council's director of inspectorial services, David Rolfe, said beekeeping was generally not permitted within the residential areas of the city.

One prosecution against a resident for keeping bees in the built-up area was pending in Porirua District Court.

Mr Rolfe said the maximum fine for breaking the bylaw was $500.

"We usually resolve most complaints by discussions and negotiations and it's not very common for someone to be taken to court."

Mr Rolfe said bees should be kept in rural areas only, because they created too many problems in urban areas.

Many people were allergic to bee-stings and swarms could pose problems.

Late last year a Lower Hutt man had to be admitted to hospital after being attacked by a swarm of bees.

Mr Rolfe said people living near beehives had to put up with a sticky, waxy deposit on windows, cars and other property. This was difficult to wash off.

To kill a honey-bee

Put in your O.S.H. Manual

This alarming title caught my eye when reading the August issue of Gleanings in Bee Culture. Just occasionally bees really do land somewhere where they are a hazard to other people, such as the swarm in the article which was on a sign above the only door into a busy store. People were queuing to get in and the owner was very irate. To collect the swarm, with the normal risk of leaving lost, possibly cross, stragglers was out of the question. The writer, Buzz Phillips, had been experimenting with the method currently used by swarm control officials in Panama and other Central American countries who routinely, and successfully, eliminate swarms of African bees. They use household detergent and water applied with a pressure sprayer. The article recounts the writer's experiment with eliminating a swarm that had been established in a frameless nuc for two weeks.

The roofs with attached combs were lifted out and the bees sprayed with a solution at one cup liquid detergent to one gallon water, (although he says half a cup of the detergent would be adequate). An ordinary hand held mist sprayer, as commonly used by beekeepers for spraying syrup, does, but a garden sprayer operated by air pressure with a long lance at the end would allow one to operate at a greater distance. Every bee sprayed with this solution was dead within four minutes.

The article goes on to explain how it works. Soap has been used as an environmentally safe, non-toxic insect control for many years. It reduces the surface tension on the hairs of a bee's body allowing the water to cover and soak into each one. This immediately adds a fair amount of weight to the bee. Once the soap penetrates to the skin two things happen. The evaporation process immediately begins to cool the body temperature of the bee which reduces its ability to fly, or even crawl. The wings lose their ability to shed water, becoming wet and heavy. Then a physiological reaction occurs which results in the once water-proof skin no longer being able to keep liquids in or out. Broadly speaking the liquid haemolymph (or blood) can "leak" out while water from the spray "leaks" in. The tracheae are probably blocked as well so the bee can't breathe. The bees drop like stones — "small, wet stones". Nasty I agree, but there could be an occasion when knowledge of this technique would be helpful since bees causing real trouble will always be bad publicity for beekeeping. All the "tools" and "ingredients" are readily available.

Acknowledgement Bee Journal

The Cape Honey-bee problem —

understanding honey-bee biology offers possible solution

by Paul Magnuson

For the past few years beekeepers in much of the country have experienced huge stock losses.

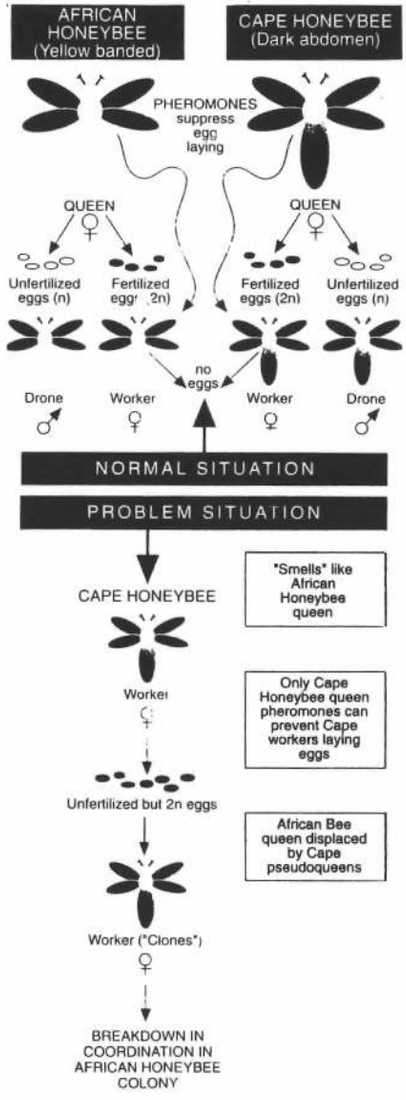
Cape honey-bees *(Apis mellifera capensis)* were inadvertently introduced by bee-keepers into those areas of the country inhabited by African honey-bees *(Apis mellifera scutellata)*. (See *Plant Protection News* No. 30, December 1992). Both are superb beekeeping bees in their own territories but, as we have now learned, cannot coexist in the same territory. Cape worker bees which gain access to African bee colonies destroy the host colonies.

Honey-bee biology — the interesting facts

This very practical disaster illustrates some fascinating aspects of what was previously considered "academic" honey-bee biology:

- Honey-bee workers and queens are both female. Both have the ability to lay eggs. Only the presence of a productive queen prevents workers from fulfilling their female potential of laying eggs.
- Whether an egg develops into a male honey-bee (drone) or into a female honey-bee (queen or worker) depends on whether or not that egg was fertilized. Eggs which are fertilised by sperm, and which therefore have the full number of chromosomes give rise to male honey-bees.
- Scent is probably the most powerful means of communication in a honey-bee colony. It is the queen's pheromones (chemical messengers) that prevent worker bees' ovaries from developing, and therefore prevent the development of "laying workers" (egg-laying worker bees).
- Cape honey-bee workers smell similar to African honey-bee queens.
- When Cape honey-bee workers develop into laying workers, a "fault" in the egg-production mechanism results in their laying eggs with the full number of chromosomes despite never being fertilized. These eggs are viable, and develop into female bees. This is a unique characteristic of the Cape honey-bee; laying workers of all other honey-bees produce exclusively drone brood.

Cape workers are readily accepted into a colony of African bees as "queens". Such a worker requires the presence of a Cape queen to prevent the development of her ovaries. The pheromones of the African queen are,



however, inadequate, and she develops into a laying worker. This foreign worker bee therefore not only smells like a queen, she is treated as one and begins to behave as one too. Although and because she never mates, she effectively clones herself in the African bee colony. Her pheromones, and those of her offspring, overwhelm the signals produced by the real queen. The coordination of the colony breaks down, and the real queen is eventually displaced by the Cape pseudoqueens. From this point, the colony is doomed. It will dwindle to extinction, but usually only after these pseudoqueens have spread to other colonies.

Economic impact of the honey-bee problem

Control measures (Regulation no. R159 of 5 February 1995, under Act no. 36 of 1983) now require the destruction of African honey-bee colonies which have become infested by Cape bees. However, despite these laws and the concerted efforts of the beekeeping industry, the Department of Agriculture and PPRI, the problem is still far from solved. Commercial beekeepers are still losing 75% of their colonies every year. This has a massive potential implication for economically important crops which are dependent on, or which benefit from honey-bee pollination. Such crops are worth some R1,6 billion per annum.

Towards a solution to the problem

Research is being undertaken by PPRI and various universities to try to look for a biological solution to supplement the existing control measures. Two areas in particular are being addressed:

- By understanding the queen's pheromonal signals, it might be possible either to breed African honey-bee queens that are able to suppress the ovaries of Cape workers, or to synthesize an artificial pheromone to do this.
- By understanding the mechanism at the "fault" whereby Cape laying workers produce female brood, it might be possible to prevent their reproduction in African bee colonies.

Acknowledgement South African Bee Journal

We're off to a good start

Firstly, 1995 was a great year. The Marketing Committee kicked off a number of strategies. They are going to work (they are working already!) and we look forward to building on those in 1996.

Could I just say thank you to the Otago Branch for the positive letter they sent me after the article appeared in Food Technology magazine. There's a branch which is very pleased with what's happening with marketing and it was good to get their comments (thanks Bill).

Foodwriters talking honey types

One of our targets is to get people to stop talking about "honey" and start referring to the honey by variety (or blends of course). I'm very pleased to note that that's happening more and more and it's great to see.

Most of New Zealand's foodwriters attended the 1995 Foodwriters' Conference and Sue Jenkins presented to her fellow foodwriters. We have had very good feedback from foodwriters, many of whom didn't really appreciate (or hadn't realised) the incredible variety of flavours that are in different New Zealand honeys, or for that matter, in the same variety but from different parts of New Zealand.

This is an area where we will really focus this year. I look forward to you finding honey being talked about in many magazines and newspapers.

*** Honey packaging comes of age**

I'm very impressed with the new packaging that's coming out as honey marketers create their own identity for their products. Some superbly sophisticated packaging which isn't just adding cost, but is actually adding perceived value for the customer. There's a great range of products that come from the hive; if the marketing strategies create an environment where people are more aware of those products and appreciate that there are differences; then it is up to the individual marketers to corner their share. I am pleased to see that's happening.

*** Honey situation and outlook**

The Marketing Committee are charged with creating an environment where beekeepers can make their own decisions as to what price they want to charge for their product and what profit they want to take from it; or whether they in fact want to make a profit. Although that may sound silly, I know there are some companies who don't seem to mind that they don't make a profit when they set their pricing strategies.

That's their business, it's up to other companies to follow strategies that have people prepared to pay for any difference in price they have.

Every indicator says there is a shortage of honey in the world. The price of honeys in other countries has gone up. It is logical to assume that the price of New Zealand honeys will rise. But that doesn't have to happen of course, because international buyers will pay no more than they have to.

If New Zealand exporters can persuade beekeepers to sell at last year's price, they can on sell themselves at last year's profit margin and everyone, I assume, is happy.

Or, beekeepers whose cash flow allows them to do so, will hold off from selling; and then New Zealand exporters will have to tempt them by increasing the price, and in turn pass that increase in price onto the international traders, who it must be remembered, are getting rather desperate in their search for honey, anyway.

So it all rests with the beekeeper, but that in turn rests with the individuals in the industry and depends on how their own business is financially.

Interesting times! We as a Marketing Committee, can't do any more than explain the way things are; and watch and see what happens.

The price that is set for export honey of course, in turn affects the price on the local market, so I, along with others, look forward to seeing what happens over the next eight weeks because that really sets the price benchmarks for the rest of the year! Although our strategies will enable some beekeepers to focus on niche market higher profit lines over volumes. At the end of the day the industry at large is affected by what the average tub of breakfast honey is selling for.

*** Honey Research Unit**

The Unit is working. Peter Molan has already secured additional funding from the Lotteries Board and from Agmardt, but we still have one amazing and hard to believe problem.

> Despite requesting that beekeepers send samples of their honey to Peter Molan so he can see if there are some values in it that will allow us to have another "manuka-type" success story, no one seems to be interested.

At the time of writing, Peter had had just four samples sent to him. That's amazing; or terrible.

Please, beekeepers, please send Peter a sample of your honey. Make sure it is well packed and well identified! 50 grams, 100 grams maximum is all that is required. Peter will experiment with it and maybe produce another piece of magic.

Until you do that, how can we actually find some tangible, scientifically-proven benefits that will enable your honey to perhaps increase in value; in the same way that manuka honey has?

*** Honey Qualmark and quality standards**

We have made a commitment to present a set of self-regulating, totally voluntary, based standards for New Zealand honey marketers to the NBA Conference in Wanganui in 1996. There are a number of vexing issues but it is something that has to happen.

"Watch this space" as they say.

*** Auckland Museum — wonderful honey**

Auckland members will probably already know that the Auckland Institute and Museum has a "Weird and Wonderful Children's Centre" with a beehive on display. The co-ordinator

Continued on page 24

Continued from page 23

of the centre, Sam Treister, contacted us recently to congratulate the industry on its education kit. We've provided a complimentary copy of the kit to the Auckland Museum and they will be using it to provide activities for children.

Just a reminder to people out there that the kit is a wonderful learning tool for classes and will be really appreciated by teachers. Well worth branches or individual beekeepers/ honey marketers donating one to their favourite school.

Your branch secretary has details on purchasing quantities of the kits.

* * * * *

That's it from us for now. I did say last year that we would include a recipe with each marketing column but Harry Brown has undertaken to provide that within the journal, separate to the Marketing column.

We will however, make suggestions as to the type of honeys that you may like to use in the recipes.

Oh, how many of you tried the recipe for the Honey Christmas Cake? Sandee and Cherryl made it. Sandee used a rewarewa and Cherryl a mild pasture blend. The cake definitely suits a stronger honey. It is mind-bogglingly, stupendously, unbelievably, decadently, rich, magnificent, superb, marvellous... I recommend serving it in thin slices with a glass of mead or your favourite tipple, tea or coffee.

A marvellous cake, thoroughly recommended and boy-oh-boy, it uses 1 cup of honey.

Regards, Bill Floyd

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783: $112.00
786: $47.00
002: $22.00
545: $45.00
757: $86.00
543: $45.00
544: $45.00
822: $87.00
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781: $32.00
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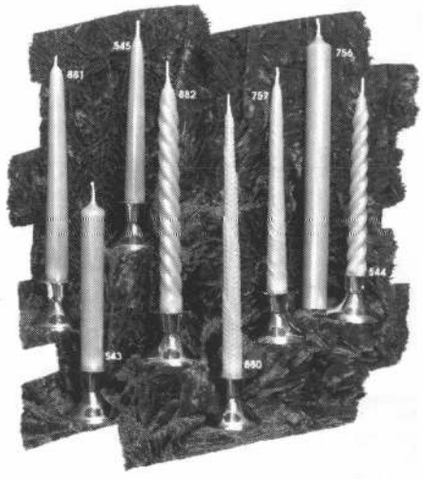
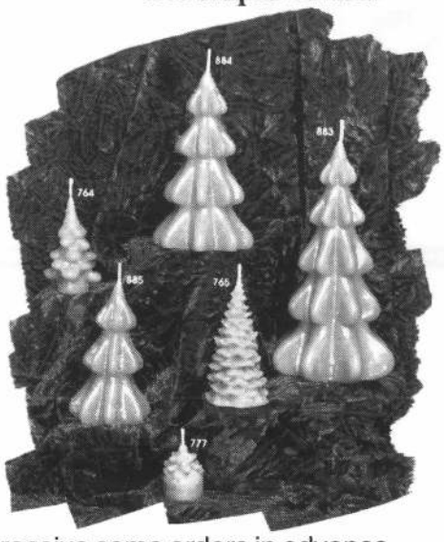
885: $101.00
777: $22.00

Moulds for festive table-candles and candles for churches



Moulds for Easter candles

Moulds for Christmas-tree shaped candles



Note carefully:

At the time of printing, the moulds were not in stock. We wish to receive some orders in advance, at which time we shall purchase those required, plus some stock.

Orders should be placed by the end of March for April delivery. All advance orders received by the end of March will receive a 10% discount.

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RECIPES

* When measuring honey, dip the spoon in hot water first. The honey then slides off easily.
* Cooking with honey improves the keeping qualities of cakes and biscuits. The ability of honey to absorb and retain moisture stops them drying out.
* Light-coloured honey is best for white cakes, biscuits and stewed fruits. Darker honey has a stronger flavour in gingerbread, fruit cakes and chocolate combinations.
* Honey helps baked foods to stay soft and can improve texture and flavour.
* When substituting honey for sugar in a cake recipe, use the same measure recommended but reduce the liquid content by 25 percent. It is also helpful to cook in a slower oven.
* Keep clear honey in a dry place. Freezing does not injure the colour or flavour but may hasten granulation.
* Honey makes an excellent spread when combined with creamed cheese.

Honey Cake

200 ml clear honey
25gm butter or margarine
175gm 100% wholemeal flour
Pinch salt
2.5ml mixed spice
1.25ml ground nutmeg
1.25ml ground cinnamon
1 egg
3.75ml bicarbonate of soda
45ml milk
3 tablespoons flaked almonds

Heat the honey and butter together until the butter has melted. Remove from heat, beat in the flour, salt, spices and egg. Blend the bicarbonate of soda and mix together and stir into the mixture. Turn the mixture into a 23 cm greased sandwich tin. Sprinkle the surface with flaked almonds and bake in the oven at 180°C for 25-30 minutes, until golden and firm to the touch. Cool slightly before turning out on to a wire tray.

Cough mixture

250g honey\125g glycerine
Juice of 2 lemons
1 tot (or more) of whisky

This mixture may be bottled and will keep. It is a remedy for coughs and sore throats and has been known to help in cases of asthma.

Acknowledgement South African Bee Journal

Eureka Lamb

6 lamb chops (forequarter or chump)
2 tablespoons oil
½ cup honey
1 teaspoon salt
½ teaspoon cinnamon
½ teaspoon mixed spice
Small tin crushed pineapple
¾ cup seeded raisins
2 medium oranges peeled or sliced

Brown chops in oil, place in casserole dish. Mix together remaining ingredients and pour over chops. Bake in moderately slow oven for 30-40 minutes or until chops are tender.

Delicious served with rice and a green vegetable.

Sally Ashcroft, Hawke's Bay

Pumpkin Bread

2 eggs
1 cup honey
½ cup oil
1 cup grated pumpkin
2 cups whole wheat pastry flour
1 teaspoon soda
½ teaspoon salt
½ teaspoon nutmeg
½ teaspoon cinnamon
¼ teaspoon ginger
1 cup raisins
½ cup chopped nuts
½ cup water or low-fat yogurt, if needed

Cream eggs, honey and oil together and mix in the pumpkin. Sift the dry ingredients into the wet ingredients. Mix well and stir in the raisins and nuts. Add the water or yogurt if necessary and pour into 2 oiled bread pans. Bake at 350° for 65 to 75 minutes.

Honey And Spice
Lorena Laforest Bass
Acknowledgement Bee Culture

RECIPES

Preserve the tastes of summer

Once again the vegetable garden has produced prolifically; they are cheap at the local roadside stall.

I found it very comforting to open my pantry door and see jars of gleaming, richly coloured, filled with delicious food. In this age when we can go to the supermarket, delicatessens people ask why do you do it? Quality and I know what's in the jar!

Generally I use the sheer honeys: — Vipers Bugloss, nodding thistle, blue borage, clover and Tawari to flavour my preserving. Strong flavoured preserves like plum sauce, even tomato sauce I will use blends of sheer and the mellow honeys.

Piccalilli

— Served with cold meats, cheese and fresh bread.

3kg assorted cucumber, cauliflower, pickling onion and green tomatoes
½ cup salt
4 cups white wine vinegar
1 cup honey
1 tablespoon tumeric
1 tablespoon ground ginger
1 tablespoon mustard powder
¼ cup cornflour
2 cloves garlic, (crushed)
¼ cup extra white wine vinegar

Cut cucumbers into 2cm slices, deseed. Break cauliflower into small florets, peel and halve the pickling onions, chop tomatoes roughly. Put the vegetables into a preserving pan with salt, vinegar, honey, tumeric, ginger mustard and garlic. Bring to the boil and simmer for 15 minutes, stirring occasionally. Blend the cornflour with the extra cornflower, stir into the mixture, bring to the boil and allow to thicken. Pour into hot sterilised jars.

Tomato Sauce

No household would be without tomato sauce. This is one of my favourite preserve recipes.

3kg tomatoes (chopped)
2 onions (diced)
3-5 cloves garlic
1½ tablespoons pickling spice
½ teaspoon celery seeds
¼ teaspoon basil
¼ teaspoon marjoram
pinch paprika
2½ tablespoons salt
2 cups honey
1 tablespoon glacial acetic acid
¼ cup water

Place in a large preserving pan the tomatoes, onion and garlic. Tie the spices in a muslin bag and add to the pan.

Bring to the boil, simmer for about 1 hour. Add salt, and honey, stir until it comes to the boil. Puree. Bring to the boil, add glacial acetic acid and pour into hot sterilised bottles and seal.

Acetic acid is available from chemists.

Reproduction never so easy

White clover has never had reproduction so easy.

In a workshop at AgResearch Grasslands, in Palmerston North, busy hands and busy bees are making life easy for white clover, which, like most flowering plants, has both male and female parts on each flower, but no way of pollinating itself. So in order for pollen to be transferred from one plant to the next — for sexual reproduction to take place, and for seeds to be produced — nature is being given a helping hand.

Two pollination methods are being used at AgResearch Grasslands — bumble-bees and by hand.

Bumble-bee pollination is used from spring to autumn where larger numbers of plants are available, and is used for pair-crossing. Bumble-bees are used because they're more docile than honey-bees and easier to catch.

The bees are captured from around the centre. They're gently washed in a test tube to remove any pollen they might be carrying, and then dried with cotton wool.

They then get released into cages that contain the white clover plants to be crossed.

The other method, hand-pollination, is used in winter when there are fewer bumble-bees available, in summer for pair-crosses where there are a small number of "parent" plants, and in the development of inbred lines.

Technicians, described as "artificial bees" transfer pollen by means of a metal spatula from the flowers of one white clover line to the flowers of another.

Acknowledgement NZPA
Palmerston North

Sawmill finds export niche in beehives

Christchurch — A small Kaikoura sawmill is making big inroads into an export niche market for beehives in the Middle East.

About 2000 beehives consisting of 160,000 pine pieces were shipped to Jordan recently by Kaikoura sawmillers V.L. Smith and Sons.

A downturn in the timber business in the late 1980s forced the owners to look for a better return on their wood.

A Canterbury beekeeper asked them to make a small number of beehives. They then bought out the largest New Zealand producer of beekeeping woodware, Ecroyd Beekeeping Supplies in Christchurch.

"We used the woodware to complement the sawmill business," said Mr Jeremy Smith. "We had to do that to get a decent return, because timber was not making any great waves."

Another large portion of their business is making wooden presentation boxes for purposes ranging from gift packs of honey to fruit pallets.

Timber-milling now accounts for only about a third of the mill's income. The hive business increased profitability and staff.

The firm is also one of only two New Zealand producers of Ultrawood, a form of treated timber with an additive pressure impregnated into it to make it waterproof.

The Smiths' first exports were to Australia and they continue to send a lot of their hives there. About two years ago, a Jordanian woodware distributor tracked the firm down after seeing examples of its work.

Trials, samples and discussions culminated in the firm's first shipment of hives in October.

The mill is also handling inquiries from the Japan and the United States.

The hives are extremely complex and made of a large number of small perfectly formed pieces.

Acknowledgement NZPA

Buying a computer? Try to avoid the pitfalls

"He's got one and so has she, but I'm frightened. All those technical words I don't understand. It's like travelling in outer space!"

Fear not, friend, for once I thought the same. I would wander into a computer shop and, hopelessly, hopelessly ignorant, would stare around and leave. When I did ask a question, the reply left me nonplussed.

Then, magically, everything changed. A kind friend took me in hand, pointed out how ridiculous it was a writer to tap away at a typewriter, or, worse still, scratch everything in pencil, and presto, here I am, in the space of a few months, as lost when the power goes off as I was when, for all those years, I wandered into a computer shop to be assailed by technical mumbo-jumbo.

Mind you, I still don't know the mumbo-jumbo. I don't suppose I ever will. But, now, I'm brave enough to describe in layman's terms what I need, and a sympathetic salesperson translates ordinary English into mumbo-jumbo and, magically, supplies the item.

So, if you are thinking about a computer to ease the stress and strain of farming and daily living — a computer is rather like having an extra person or two working for you — talk to him or her, or he or she up the road and you'll be surprised how quickly ignorance turns into a little knowledge. Also, displaying ignorance to a friend is nowhere near as embarrassing as doing it publicly in a retail store.

With the first hurdle over — a private confession that you don't know anything about this technical monster — take your friend to the store where that purchase was made. It's always wise to have a guide when venturing into unknown territory. If Friend is satisfied the firm is trustworthy, and gives a fair deal, then rest assured you'll be treated likewise.

There are many different brands to select from, but the ultimate purchase will depend on the final use of that system. Write down what you want the computer to do for you. Ask that valued friend to help. There is a considerable difference in buying a package for the home as distinct from the business. While the one for the business will cope the home, the reverse is not always the case. And price? Don't stint. A business computer works hard, and needs to be made of sturdy stuff, and have a larger hard disk for storage and a fast processor to ensure quick results.

Advantage Computers talk in the realm of $4000 (including GST) for a 75Mhz office computer with an 8 Mb RAM (expandable) with an 850 MB Hard Disk Drive and Microsoft Windows. Then, there are the specific extras for your type of farming operation. As a dairy farmer, for instance, you'll be interested in Dairy Man, a Lincoln University software package designed especially for you, or the new HortNet. And, for the accounts, they'll probably talk about CashManager for Windows.

No, don't put the paper down in shock horror. Rather, muster your courage and ask. You'll be more than delighted you have asked, and spent the money, when you see the results you get in a fraction of the time it takes with pencil and paper. Besides, those print-outs look so professional. But, buying that printer to obtain those professional print-outs is another story!

by Ronald Thomas
Acknowledgement Country-Wide

Check that cheque: Don't be caught out

A new law relating to cheques will change the way many in the rural community do business.

The Bills of Exchange Amendment Act passed earlier this year establishes a new kind of cheque crossing which means a cheque with the new crossing should not be transferred.

When a cheque is marked with the crossings approved under the new law, it should be deposited in the bank account named on that cheque. The person or business to whom it is written should not transfer such a cheque to another bank account by signing it on the back in the traditional way.

Any attempt to make a cheque marked with the new crossings transferable in the usual way — by signing it on the back — means that both the endorser of the cheque and the person or business who accepts it have none of the traditional legal protections that apply to transferable cheques.

The new cheque is called a not-transferable cheque and is designed to make life more difficult for fraudsters.

Anyone who attempts to transfer such cheques by endorsing them or who accepts a not-transferable cheque that has been endorsed will not have any of the legal protection that applies to transferable cheques.

However, when correctly used, the not-transferable cheque created by the new crossing virtually eliminates the chance of the person or business named on the cheque, or the crossing writer, suffering loss if the cheque is fraudulently transferred.

The new law, which comes into effect on 1 January, sets out the ways in which a cheque writer can make a cheque not transferable. These are: two vertical or diagonal parallel lines across the face of the cheque within which is written - 'not transferable', 'nontransferable', 'account payee', 'a/c payee', 'account payee only' or 'a/c payee only'.

A brochure explaining the law changes is available from all bank branches.

What's the Internet fuss?

Information super-highway, Infobahn, Cyberspace, the Global Village — no feature on the subject of computers and communications is complete without a mention of the Internet. Here is our jargon-free guide to what it all means.

What is the Internet?

The Internet is a worldwide computer network. One computer is connected to another computer connected to another and soon, generally by telephone lines.

The Internet can be used to send e-mail, transfer files, browse information and talk via newsgroups.

Currently there are about six and a half million host computers connected to the Internet.

This means about 40 million users are connected and this is growing at an estimated rate of 1 million new users per month. Predictions for the turn of the century, I see our global village totalling nearly one billion users.

How does it work?

The advantage with the new technology is you don't have to know how it works. There are a lot of complicated connection methods that are used, but a user is exposed to these. Once set up on your computer it's just a case of clicking your mouse and going on a journey that might take you around the world, but with no international phone bill.

What do you need to get going?

To take advantage of the newer communication technologies it's best to have a computer with moderate specifications. If you want to "surf the net" and take your kids on a tour through the Louvre then you'll need a computer with at least a 386 processor and 8 Mb of memory. PC users should be running Windows 3.1 or higher and Mac users should be on System 7 or higher.

You'll also need a modem, the faster the better, especially when transferring graphics from the host computer. Once you've got the PC and modem organised, you only need a phone line to make the call and an account with an Internet Service Provider in your area.

The last essential item before you go on-line is the application software. The most commonly used software for browsing the web, comes from Netscape Communications Corporation. Their Net-scape Navigator programme was written for ease-of-use and has over a 70 percent stake in the market.

What can you use the Internet for?

The ability of the Internet's World Wide Web to search, organise and present information empowers users to have easy access to a very wide range of detailed and current information. Information can be accessed directly by free search facilities or through lists that group together similar subjects and are organised to provide easy and intuitive access. By searching for "Agriculture Market and Price" all together, you can go straight to the latest market reports on livestock, dairy, grain and a range of others. There are many lists organising Internet based agricultural information.

These cover such subjects as market prices, research initiatives, technology transfer, weather services, pest management and animal health to a very wide range of interest areas both in New Zealand and overseas.

New developments are occurring all the time in this fast moving communications industry and you too can be a part of the growth by getting a connection to the Internet.

Thanks to Straight Furrow

Fact File

Did you know?

An average wasp nest"' produces between 1000 and 2000 queens a season.

Queen wasps fly up to 70 km in search of a nest site after emerging from hibernation in spring

99% of queen wasps fail to establish nests the following spring. Some don't survive hibernation, but many more die at the nest initiation stage when the queen has to work alone building and defending the nest as well as foraging for herself and the first developing larvae

Landcare Research

How to start on an EMS

A increasing number of New Zealand companies are taking steps to lessen their impacts on the environment.

The fact that they are already doing things such as improving their housekeeping, saving water and energy, recycling waste and reducing their emissions is a very good start.

Rather than be put off by the jargon and red-tape requirements of a formal RMS certifiable to ISO 14001, they should take heart in how far they have already come and make the effort to expand and document their systems.

Documentation does not make a system infallible but at the very least it leaves a paper trail for regulators and can be an important factor in reducing legal liabilities. Taking the exercise as far as certification to ISO 14001 is an issue for each company to decide, according to their needs.

A concern of many small businesses is the cost involved in contracting outside expertise to help them through the formal audit and documentation process.

Susan Rhodes, a partner with law firm Simpson Grierson Butler White, specialises in environmental law and confronts this "intimidation" frequently.

What we need is a system that is accessible to small companies — in time, cost and ability to understand it. It is true, in New Zealand and internationally, that the most environmentally proactive companies are usually the larger ones. The great majority of businesses are medium to very small, yet they can be some of the dirtiest and environmentally riskiest."

Rhodes would like to see a more coordinated approach amongst agencies, local and regional bodies, and consultants in devising ways to help small businesses be more environmentally responsible. In the meantime, she recommends some free or low-cost strategies for smaller (or larger) businesses, at least to get them started.

- Tap into sources of free or low-cost information. This is available from sources such as the Ministry for the Environment, OSH (Department of Labour), district and regional councils and industry organisations.
- Do some self-auditing first. Enlist the help of your workforce to identily problem areas in your company and to suggest solutions. Remember the five "R's" (reduce, re-use, recycle, recover, residue management).
- Make the most of your business contacts. Talk to companies who may be larger and have sorted out problems similar to your own.
- Volunteer to be part of a case study through the Ministry for the Environment or Energy Efficiency and Conservation Authority.
- Consider that smallness can be an advantage. There are fewer people to educate and changes can be implemented faster.

"It is better to take small steps which suit your business," says Rhodes, "than to take no steps at all."

Collins suggests that companies need not be so hesitant about contacting private consultants. Often one meeting with an experienced consultant can shed light on issues a company may face and practical steps to take to resolve them.

"You don't have to sign up for the 'full treatment' straight away," she advises, "and in any case you need time to take the usual precaution of checking out credentials before selecting an consultant."

Tradenz says food and beverage exporters should be aware that the current series of workshops on implementing an EMS to ISO 14001 standards are subsidised by the MFE's Sustainable Development Fund. This is a low-cost, practical source of help.

For any exporters seeking more information about EMS and ISO 14001, a resource kit is also available from the Tradenz EIP Help Desk, phone 0800-600-604. Tradenz would also like to hear from companies that have made significant progress on the environmental front.

Poisoned catfood in traps to counter wasps plague

Pet food and sugar are all part of an elaborate trap designed to kill thousands of wasps plaguing Auckland.

Auckland Regional Council bio-security officer Brian Austin said traps would be tried out this summer to control wasps. The insects were a major problem in the region last year.

Trial areas selected were in the Waitakere Ranges, at Karekare and the Cascades, all in west Auckland. The aim was to reduce the wasp population in these areas by 60 percent, he said.

"Last summer Cascades had a very high population of wasps to the point where people couldn't eat their lunch because the wasps were on it first.

"In Karekare last summer again there were many wasps and I understand they considered closing the school at one stage because of the wasps," Mr Austin said.

Poison would be put out in baited traps in January. Wasp numbers would be monitored.

The wasp bait to be used knocked out 90 percent of wasps in trials. Earlier this year a survey among users in the field had shown it reduced wasp numbers by 81 percent.

In the initial trials, organofluorine insecticide was used in a network of bait stations 10-20m apart in sunny areas where wasps are a problem.

Wasps were firstly fed with non-toxic sardine catfood, and the pre-feed replaced with the toxic bait when at least five wasps, on average, fed simultaneously on each bait.

The various traps planned for the Auckland project have been made up of plastic drink bottles with the bottoms cut off, preserving jars, plastic flower pots on sticks and alternate dishes of catfood and sugar.

The catfood provided protein which wasps were attracted to and bees were not, he said.

"By putting the protein out we will get only wasps, not bees."

Acknowledgement NZPA

Wasp Control Products

What product do you choose to get rid of those pesky wasp colonies? There are many insecticides on the market to choose from but only three of them are registered with the Pesticides Board for use against wasp colonies.

They are: Permex Insect Dust (Environmental Health Products), Wasp Killer Squeeze Duster (Yates NZ Ltd), Rentokil Wasp Killer (Rentokil Ltd) .

These products are available from their distributors and some hardware and garden shops.

Permex Insect Dust and Wasp Killer Squeeze Duster are both permethrin-based products (2.5% and 1% permethrin, respectively). We have used Permex Insect Dust and found it to be effective if the recommended amount (40g) is applied in the nest entrance.

The product contains permethrin and a carrier.

Permethrin has a very low toxicity to mammals, is rapidly degraded in sunlight, and has a low potential to accumulate in the environment. However, it is toxic to fish so care should be taken to avoid contamination of water.

Rentokil Wasp Killer is a carbaryl-based product (5% carbaryl) that comes in a puffer pack. It should be used in preference to carbaryl powder (80% carbaryl) registered for other purposes (such as garden sprays). Carbaryl powder is meant to be diluted in water. It is far too strong when used undiluted and unnecessarily contaminates the environment.

Eric Spurr and Richard Harris
Landcare Research

Feds: what's the alternative?

1996 will be a critical year in farm politics. It's probably no exaggeration to suggest that the political structure which has served two generations of farmers is at risk.

With timing perfectly designed to deflate any lingering feelings of festive cheer our Fed Farmers subscription account arrived on the first mail day in the new year.

This year's sub is up 60% on last year. The reason for the rise is, of course, the loss of the Feds' compulsory meat levy.

New farmers will disagree with the scrapping of the levy. We have campaigned consistently for an end to the protectionism and economic compulsion that cost us so dearly in the past.

But it's not hard to imagine many farmers taking a look at this year's bill and then the state of their current accounts and deciding it's one bill they don't have to pay.

There have always been farmers who have refused to join the Feds. As a former branch chairman I had to approach some of them. Their reasons ranged from deeply held conviction or prejudice to the most trivial excuses imaginable.

All too easily a gulf can grow between those actively involved in the Feds and those who are not. Much of this is simply due to knowledge. An active involvement gives opportunities to debate issues, hear expert opinion and meet a wide range of people involved in the industry and politics of farming and in public affairs.

Conversely, many of the most determined anti-Fed views are held by those whose opinions have been cooked up in isolation. All too often they are of the "I know what I know, don't trouble me with the facts" variety.

There is one certainty about the future of farm politics. Without a credible body to speak for us we will become poorer and increasingly marginalised from an urbanised society which shares few of our interests and values.

The alternative to a catch-all body like the Feds is a motley collection of factions and splinter groups all pushing their narrow views and agendas.

These are tough times. My Fed Farmers sub will go to the bottom of the pile and wait its turn. Eventually though I'll pay it...the alternative can only make us worse off than we are.

Acknowledgement Geoff Prickett

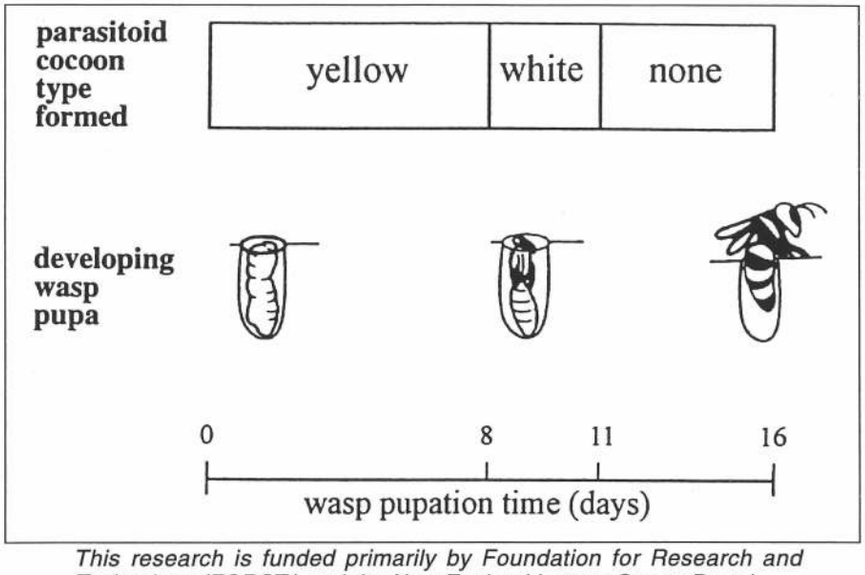
Yellow or white — which will it be?

The wasp parasitoid may be able to choose which colour cocoon it generates. Production of fast generation white cocoons which produce squall adults unable to fly, is the key to the parasitoid flourishing within a wasp nest (colony).

Overwintering yellow cocoons which produce adults that can fly ensure future colonies will be attacked in seasons to come. But what processes control the balance between white and yellow cocoon production?

Research earlier this year has provided some of the answers.

We put parasitoids onto wasp combs (nest layers) containing wasp pupae of various known ages. Parasitoid eggs that were laid on young wasp pupae (up to 8 days old) developed into yellow cocoons. Eggs laid by the parasitoid on older wasp pupae (8-11 days old) developed into white cocoons. Wasps pupate for 16-17 days, but any eggs laid on mature pupae (more than 11 days old) failed to develop. As the wasp pupa gradually develops into an adult wasp there is less of its body available for the parasitoid to consume. So it seems that the amount of nutrition avail-able for the feeding parasitoid controls the type of cocoon that is formed.



This research is funded primarily by Foundation for Research and Technology (FORST.) and the New Zealand Lottery Grants Board.

Do the parasitoids choose the age of the wasp pupae to lay on? Our experiment show-ed that most of the time they do. The very youngest and oldest pupae were avoided, perhaps because both these stages are active inside the capped cell. We don't know what other factors the parasitoid uses to select which cell to lay on (what we do know from bitter experience is that they won't perform for the camera).

So parasitoids do have some control over the type of cocoon produced, but they don't always get it right and some larvae will fail to develop because they can't extract enough food from the developing wasp pupae.

Richard Harris, Landcare Research

Just the bees knees

The bumblebee's virtues as a tireless and effective pollinator are effective pollinator are only now being appreciated and put to work in hothouses throughout New Zealand and around the world. Daily Telegraph staff reporter Kristin Edge talked to New Zealand's biggest bumble-bee breeder, based in Hastings.

The 1990s are shaping up to be the decade of the bumble in the horticulture industry. In New Zealand the first person to try his hand at rearing bumble-bees for use as commercial pollinators was Hastings Nelson Pomeroy, now the country's largest bumble-bee producer.

Nelson remembers his humble beginnings as a breeder.

"I have always been fascinated with bumble-bees. I started keeping hives in my wardrobe as a kid. I had a few hives in my flat at university and it's just gone from there," he says, with a modest shrug of his shoulders.

He recalls moving to Hastings seven years ago and starting up a few hives in the hallway of his home.

"Then I moved them from the hall into the lounge and my experiment got too big; so the hives got shifted outside and then eventually to our commercial premises in Alexandra Street about 1988," he says.

After completing an zoology degree at Massey University and a PhD in Toronto, Nelson returned to Massey as a lecturer and researcher.

At the same time European horticulturists were becoming intrigued by the possibility of using bumble-bees for pollinating crops in glasshouses, and a Dutch company began to sponsor his research.

"It's been a long road," says Nelson, reflecting on the development of his system.

"At home it was a matter of trial and error. Once we knew what to do it was just a matter of gearing to the market."

While on a trip to Holland, Nelson had a chance meeting with fellow Hawke's Bay man Warren Hobson, who was touring Europe and had landed a job in a bee factory.

Since then Warren has joined Nelson at Zonda Resources Ltd, and has worked his way up from helper to general manager.

"You can watch bumble-bees 100 times and still learn more about them. There is always something to observe, it's never really dull," he explains.

The bumble-bee industry is cloaked in secrecy and Warren is reluctant to expose the intricacies of the method of rearing bumble-bees.

It can take 10 weeks to raise a hive containing 50-100 bees, and it has a short "shelf-life" once ready. Warren guarantees the viability of the hives for a month after purchase but some survive two to three times as long.

The model adopted by Nelson was based on research done in the natural environment as well as laboratory experiments.

In the wild the female that survives the winter is the large queen bee. Emerging in the spring, it does not make a burrow of its own but rather seeks out a deserted rodent nest.

A large quantity of wax begins to exude from the segments of the queen's abdomen.

With this wax the bee constructs a honeypot and fills it with up to a thimbleful of nectar for use during the night or bad weather.

Then the queen makes a cell and places a pollen ball in it, upon which the eggs are deposited.

The queen sits on the eggs, and later on the larvae, like a brooding hen, protecting them from the cold; to which they are very susceptible.

Brooding, like the queen's other behaviour, is instinctive.

When stimulated to brood, the bumble-bee broods. If an experimenter removes the eggs, the queen will use any other object, even a pebble, as a substitute.

The first bumble-bee brood develops into a handful of diminutive worker bees, and the queen assists them to cut their way out of their dells.

Once on the scene, these workers free the queen from all duties except egg laying. As the workers work over building and maintenance, the nest's brood cells increase in number and soon form a comb.

These cells are not used for brooding a second time; instead, the workers rim them with wax, converting them into storage tanks for nectar and pollen.

Bumble-bee 'towns' never become as populous as honey-bee 'cities'. A thriving bumble-bee colony may number 1000 or, 2000 by summer's end, but most contain only a few hundred.

At Zonda, bees are kept in plastic containers with a sawdust base. A golden sugar liquid is supplied via a container on top of the cage.

The company can have up to 2000 hives at the peak of the season in September, lining the walls of the specially-monit breeding room.

Warren says the controlled temperature and atmosphere ensure the bumble-bees are being reared in an optimal environment. A map on the wall of the office is divided into areas where the hives are couriered to overnight, all over the country.

It's a big business and the popularity of the bumble-bee as a pollinator is increasing, says Warren, who spends a great deal of time touring the country promoting the use of bees.

Once a hive has been delivered it is placed out of draughts and direct sunlight in a greenhouse. The lid is lifted and the bumble-bees begin their work.

As the world becomes more environmentally conscious, organically-grown produce is becoming desirable. Plants pollinated by bumble-bees are uniform in shape and irregular fruit is rare.

Warren, who has a Bachelor of Agriculture degree, says working with bees is a learning experience. "There's not one that goes past that I don't notice," he says, as he leans back in his chair, which is overlooked by a fluffy toy bumble-bee.

Warren is constantly being asked about bumble-bee stings.

As a bumble-bee crawls across his cupped hand, Warren explains the bees have the ability to sting repeatedly like a wasp. "I've been stung heaps. If a bumble-bee climbs up your trousers it's best to just squash it." So, next time you are picnicking on a sun-drenched beach, savouring a glasshouse-grown tomato sandwich, spare a thought for the hard-working, humble bumble-bee.

Bumble-bee fact file

The importation of bumble-bees from England between 1876 and 1885 made history: It was the first time insects had been introduced to a country specifically to pollinate a particular flower, New Zealand has no native bumble-bees. Red clover is an important pastoral crop and farmers cannot continually afford to keep importing seed to replenish their pastures.

The most widespread species, bombus terretris, is one of four types introduced which has a short tongue ideal for pollinating tomatoes.

Bombus terretris is also useful in pollinating eggplants, capsicums and anything grown inside.

The other three types have longer tongues, but have more restricted distributions.

Bumble-bees are robust and hairy. They average 1.5cm to 2cm in length and are usually black with broad yellow or orange bands.

Their body hair stands them in good stead as it allows them to continue their busy regime in cooler climates than their smaller bee cousins.

While bumble-bees produce honey, the volume does not compare with ordinary bees and commercial production is not viable.

Advantages

When it comes to work, bumble-bees are the draught horses of the bee world.

In a tomato glasshouse, a single bumble-bee is capable of pollinating 450 flowers an hour, taking an average of eight seconds to harvest pollen from one bloom before travelling to the next one.

A bumble-bee's wings vibrate at 200 cycles a second, which is the frequency tomato flowers prefer. The old method of using hand-held electrical vibrators was very labour intensive and only operated at 80 cycles a second, not as efficient as the bee.

Bumble-bees fly and forage in mist, rainy weather, and at temperatures just a few degrees above freezing conditions in which a honey-bee won't budge from home.

Bumble-bees can fly in adverse circumstances because, unlike most insects, they are able to maintain their flight muscles at a more or less constant 34-40 degrees Celsius - well above air temperature.

Glasshouses where bumble-bees are used as pollinators yield more than 20 per cent more fruit than those where hand and chemical pollinating techniques are used.

If attacked by angry bees, run for it

Run for cover if you're approached by angry bees.

That's the best advice of the Wellington Beekeepers Association following a bee attack on a Lower Hutt boy. The boy received dozens of stings. He was taken to Hutt Hospital for an antidote shot and sent home.

Association vice-president Frank Lindsay said the bees came from a hive on private property from which the owner was removing honey. They would have been particularly angry because they were defending their honey and because of the low weather pressure.

"They get a bit moody if a storm's coming and if they're on the defensive they'll attack anything moving. Once a bee stings, it leaves a signal and all the others start attacking as well."

But swarming bees did not usually sting, he said. They swarmed from October to December when the hive was expanding and half the bees left with the old queen to establish a new hive.

"They are generally safe. Because they are full of honey they don't sting. After a few days when they have used up the honey and are defending a new site they may get defensive."

The best thing to do when attacked was to get under cover, out of the light or turn a hose on them.

DISEASE CONTROL COMMITTEE REPORT

Where are we with our PMS?

(Pest Management Strategy)

A meeting of the Disease Control Committee was held in Wellington on December 7-8 to action submissions on the PMS discussion document released mid-October. This document drew nineteen submissions, some expressing full support and others suggesting change.

All submissions were considered, as they always have been, and, where appropriate, were written into the strategy. This took most of the meeting time.

A three hour session was held with representatives of MAF RA and MAF Policy at which several matters were sorted out. After requesting information on the Apiary Register for nearly two years we were finally told we would have to include a budget item for a register for the PMS. After considerable discussion, the committee agreed to add $20,000 to the budget for a data base. This will also supply information for the collection of the Commodities levy and give NBA a listing of all registered beekeepers. There is also a possibility that the data base will be used in export certification. (The use of "Data Base" is to stop confusion with the present Apiary Register).

The word "eradication" has caused MAF RA problems owing to the international veterinary interpretation of the word so we decided to use "elimination" instead.

Additions have been made to the cost-benefit analysis to make it more easily understood.

The alterations and additions have now been made and the National Pest Management Strategy is expected to be presented to the Minister before mid-February.

Terry Gavin

Coming Events ...

National Executive Meetings for 1996 are:
11th and 12th of March
14th and 15th of May
16th and 17th of July
4th and 5th of September
3rd and 4th of December

NBA Conference July 15th-18th in Wanganui.

International Conference on, Bee Products, Properties, Applications and Apitherapy.
Tel-Aviv, Israel.
May 26th-30th 1996
Conference Secretariat, Dan Knassim Ltd, POB 1931, Ramat-Gan 52118, Israel. Fax: (+972) 3-6133341.

Canterbury Branch
Your first meeting for 1996
Tuesday 27th February 7.30p.m.
Merrivale Rugby Football Club, Woolridge Road.
Agenda— General Business, Chemical Poisoning of Bees, Honey vs Pollination Conflict, Eastgate Honey Promotion
B. Lancaster, Secretary

The 1996 Bee Research Conference
January 11th-12th 1997, in Mexico
Apimondia Conference
September 1st-6th 1997 in Belgium
September 13th-21st 1999 in Vancouver
September ? 2001 in South Africa

9th International Palynologic Congress
Houston, Texas, USA
22nd-29th June 1996
Contact: D J Nichols, US Geological Survey. Fax: (+1) 303 236 5690
E.mail: dnichols@greenwood.cr.-usgs.gov

7th International Symposium on Pollination
Lethbridge, Canada
24th-28th June 1996
Contact: Dr Ken Richards, Apiculture and Agri-Food Canada, Lethbridge Research Centre, Lethbridge, Alberta, Canada T1J 4B1. Fax. (+1) 403 382 3156.
E.mail: richards@abrsle.agr.ca

The Sixth IBRA Conference on Tropical Bees: Management and Diversity
San Jose, Costa Rica
12th-17th August 1996
The second announcement of this important IBRA conference is available from: Sixth IBRA Conference on Tropical Bees, IBRA, 18 North Road, Cardiff CF1 3DY, UK. Fax: (+44) 1222 665522
E.mail: ibra@cardiff.ac.uk

Pollination in the Tropics and with Tropical Bees Habana, Cuba
21st-24th August 1996
Make the most of your visit to Central America for IBRA's conference on tropical bees — travel on to Cuba afterwards for a specialist pollination meeting

For more information contact: Lic. Adolfo M. Perez Pineiro, Director Estacion Experimental Apicola, Min. Agricultura (EEA), El Cano, Arroyo Arenas Mun. Lisa, Ciudad de la Habana, Cuba. Fax (MINA-GRI): (+53) 7 335086. Fax (Empresa Cubana de Apicultura): (+53) 7 815428.

3rd Asian Apicultural Association Conference
Hanoi, Vietnam
6th-10th October 1996
'Bees and beekeeping with sustainable agro-forestry development' is the theme of this meeting
For details of the conference, contact: Committee of the 3rd AAA Conference, Ms Nguyen Thu Hang, Bee Research and Development Centre, Lang Ha, Dong Ha, Hanoi, Vietnam. Fax: (+84) 4 352725

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