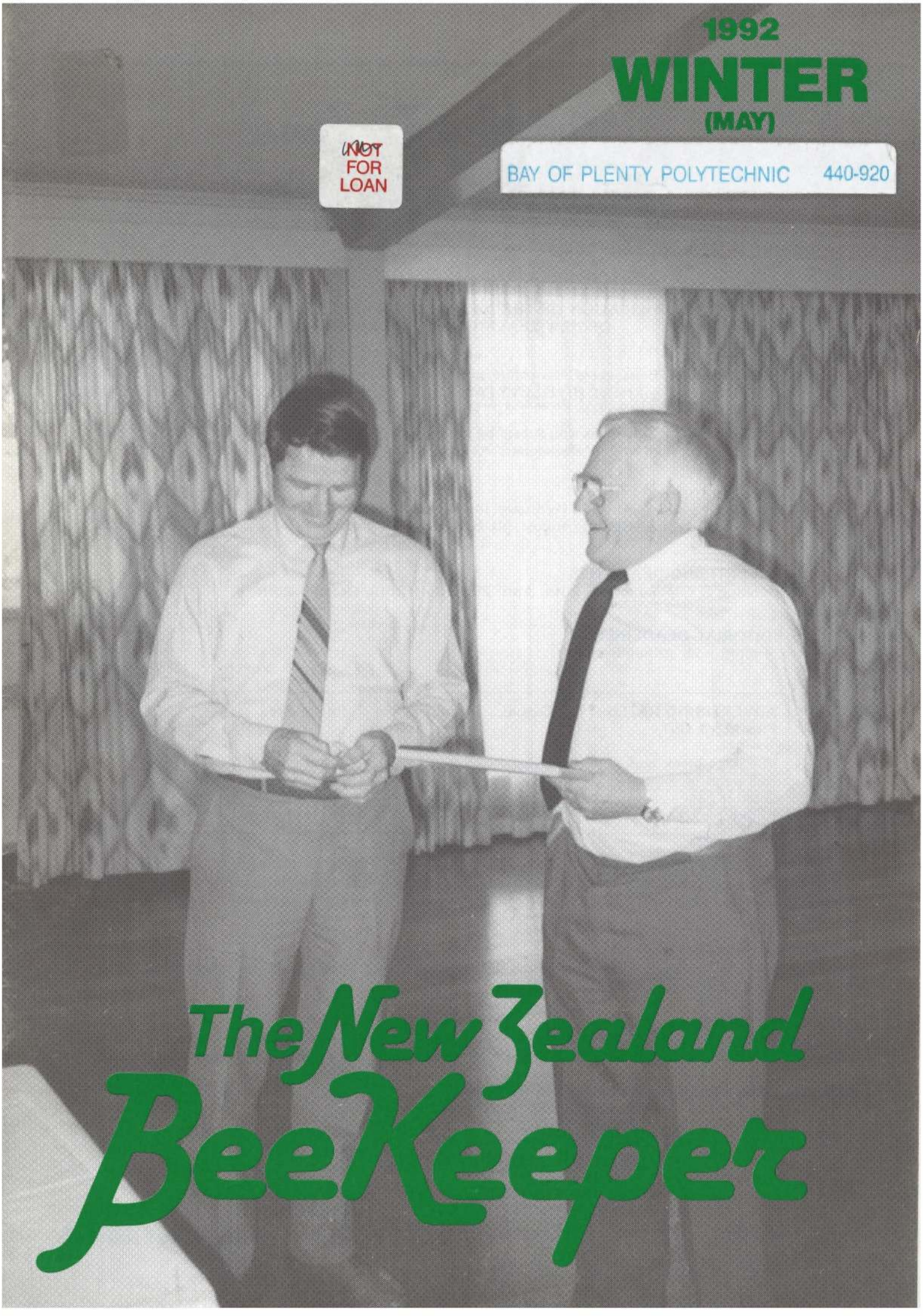

1992

WINTER

(MAY)

The New Zealand BeeKeeper

The New Zealand BeeKeeper

OFFICIAL PUBLICATION OF THE NATIONAL BEEKEEPERS' ASSOCIATION OF NEW ZEALAND INCORPORATED

CIRCULATION, 1,550. . .
To Members of The National Beekeepers' Association of NZ Inc. who own more than 50 hives each and so are legally subject to the annual hive levy. **THESE HIVE-LEVY PAYERS OWN APPROXIMATELY 87% OF ALL BEEHIVES IN NEW ZEALAND.**

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PUBLISHED
Four times a year: **Autumn** (February 14), **Winter** (May 14)
Spring (August 14), **Summer** (November 14)

ADVERTISING DEADLINES
(Booking & Copy) **January 20th, April 20th, July 20th, October 20th**

EDITORIAL DEADLINES
1 month prior to publication.

ADVERTISING RATES Plus 12.5% GST.	Casual	Four Issues per insertion	Image Area
Full page black and white	$500	$450	27cm deep x 18cm wide
Half page (Horizontal only)	$280	$240	13cm deep x 18cm wide
Quarter page	$175	$150	13cm deep x 9cm wide
Eighth page	$125	$115	6.5cm deep x 8.5cm wide

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Advertising copy: Bromides. Copy for which bromides are required, will be charged to the advertiser at net cost. Minimum charge $20.00 (plus GST).

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P.O. Box 2131
WELLINGTON
Telephone: (04) 478-3062 or
(04) 478-9316
Fax: (04) 478-3062

1SSN 0110-6325

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The New Zealand Beekeeper is published by the National Beekeepers' Association of NZ Inc., Dalmuir House, The Terrace, P.O. Box 4048, Wellington. Telephone (04) 472-8102.

Annual subscriptions available from the above address are: New Zealand $30.00 (plus GST). Overseas airmail: Australia & S. Pacific $US19.00; N. America & Asia $US24.00; S. America, Europe, & Middle East $US28.00. All overseas surface $US16.00. Payment by bank draft or cheque only.

Editor: Michael Burgess. Advertising Manager: Elisabeth Burgess. Burgess Media Services Ltd., P.O. Box 2131, Wellington. Telephone (04) 478-3062, (04) 478-9316, Fax (04) 478-3062. Letters, photographs, articles should be sent to the editor. Payment for articles and photographs published is at the editor's discretion. For advertising rates see page two.

BROODING OVER BEES

From Clive Dalton, Media Liaison, EHQ, Nelson

If you had to sum up an operation like the recent ERP at Nelson in a couple of words, it would have to be "Team Work". It certainly was a real live situation, despite a beekeeper from Motueka who reckoned it was all a PR exercise and a practice for foot and mouth! If only he knew!

They say crises bring out the best in people. No doubt about that, as judged by the incredible effort that went into the job. It was not just a team effort within MAF. The combined effort between beekeepers and MAF staff was a special feature. It showed the enormous benefit of all the ground work, of "building relationships" between organisations in good times, for when the balloon goes up.

It is here where the bee industry has such an advantage. In no time flat there were carloads of beekeepers heading for Nelson with a determination to fix the problem, that few other areas of the agricultural industry could match. This was all organised through the Bee Diseases Advisory Committee (BDAC) whose presence in the EHQ was worth its weight in gold in helping to sort out political problems and cool down irate beekeepers.

The people who take most stick in these situations are the poor souls who are carrying on their normal lives when suddenly an avalanche arrives in their office. We owe a great debt to the MAF Nelson folk who welcomed us all.

There have been some long days and weekends that did not exist. Those days started by getting sorted out first thing in the morning to brief and supply field teams.

The acquisition of supplies is always a massive job. The folk in charge had to beg, borrow, hire and buy what they needed. There was an incredible co-operation from local organisations. For example, local labs at the hospital, polytech and a private company loaned high-powered microscopes, incubators, and other equipment.

The admin. people organising paper work, meetings, and reports had their work cut out. It was a great effort by people under a great deal of stress.

Debriefing was probably one of the most important parts of the day. This was when the anomales, the beehives that weren't there, the unregistered hives and the double ups came to light.

Initially the media were hungry for copy. They wanted the bad news, and the TV networks wanted exclusives of the hive burning and trauma. Some of this pressure inevitably landed on the decision makers who had more than enough to cope with.

Nobody involved in this emergency was sorry to see it ended. Negative lab tests were what we all wanted. It was a pleasure to meet and work with such dedicated professional people at all levels of our organisation. We can, I believe, be justly proud of what we achieved.

We have not missed the opportunity to point out to New Zealanders how fragile our agricultural economy is, especially beekeeping and what a great responsibility they they have to protect it. Let's all hope the message has got through. There could not have been a better time for MAF to be issuing its agricultural security package to schools.

LETTERS

Dear Friends,

Doing missionary work here in Manila is not easy. I am hoping to find some high-quality queens. I was told New Zealand Italian was very good but I don't have local addresses.

The temperature here is, of course, tropical and the bees tend to supercede more often than in temperate climates.

Year round production is going on so there is not one time when all is in bloom as during springtime.

However during the rainy season bees slow down. This is when hives are divided and sold. Also this is when they are fed with sugar. After rainy season October-January is when the biggest boom time is. We are having consistent problem with Varroa mites. The T. Varas is also quite menacing here as well.

There is only one very successful apiary and it is with the support of Australian beekeepers.

The industry can expand if there is enough foreign funding and support.

In the USA and Canada bees are allowed to die after honeyflow because their maintenance is not cost effective. This probably too is the case of Australia and New Zealand.

Please inform your members that we welcome input from your citizens, in funding, technology, and bees. Instead of having a seasonal industry in this part of the world there can be maximum utilisation.

Please encourage interested parties to correspond with me and give addresses of recommended breeders.

Eliot Lee
3456 Mag Arellaho
Bacool
Sta Mesa MM
Philippines

Dear Sir,

It would appear that the NBA is fast becoming a Mickey Mouse outfit of no real use to the industry.

With beekeepers seriously affected by the recently imposed restrictions in Nelson due to possible EFB infection we see the executive unable to persuade Government of the importance of maintaining a working relationship with beekeepers in the future by providing compensation.

The lesson we have all learned is never report any possible new disease but do your best to cope as long as you are able to ensure it gets right out of control before control measures can be taken by MAF staff.

The NBA needs to relook at its whole dealings with Government. When we see a country as poor as Fiji supporting its very small industry (not many more than 1000 hives) with a fulltime instructor and a technician with back up from other MAF staff. It must be possible for a reasonably intelligent executive to persuade the New Zealand Government that the beekeeping industry should be supported adequately by tax payers who are the real users and beneficiaries.

I was looking forward to seeing the figures for AFB found during the examination of the 4000 hives inspected in the Nelson district, or was it deliberately kept quiet as it indicated the present idea of diseasathons, etc, is failing miserably in the control of AFB.

As a former apiary instructor I feel Government needs to have pointed out the loss of overseas income related to hives destroyed because of AFB each year. The savings resulting from the activities of an efficient instructor more than covers his wages each year without the need to go to beekeepers cap in hand for contributions they cannot afford to inspect hives they do not own.

One aspect of the present MAF set up is the calling in of inexperienced staff such as meat inspectors, etc, to look for EFB. Perhaps this accounts for the large cost of $200,000 quoted to inspect 4000 hives.

$60 a hive would just about have bought some of the hives inspected. No wonder with those figures Government is reluctant to pay compensation. A good trained instructor in beekeeping could have done half that number single handed in the time taken. Lets relook at the peculiar direction our NBA executive is letting us be taken and redirect ourselves before the industry collapses under the weight of bureaucracy being thrust upon us.

Gary Jeffery

The Executive is doing its utmost to make the government see sense. Until now the government has proved intransigent.

Editor.

Dear Sir,

The enclosed letter arrived here a few days ago - I had not realised that the KGB had me listed in their files!

Their request is not really in my line. I have sent a copy to Gavin McKenzie, at Telford Rural Polytech. Perhaps it would also be appropriate to publish it in the "letters" column of the next Beekeeper as they seem to be looking for paid seasonal work.

In the meantime I will reply to our Russian friend (no longer a "comrade" I presume). The contact may be useful - a great deal of research is done in Russia that we never hear about.

Reg Clarke

The letter from Russia follows:

Dear Sir,

Our Company under the name of APICENTER is a branch of the Moscow Agricultural Academy that has more than 125 years of history.

The APICENTER was established by the Academy's Chair of Apiculture - the leading educational, scientific and research center in beekeeping industry of Russia.

We wonder if you could help us to organize 5-6 month salaried field placement in commercial beekeeping industry of New Zealand the highly qualified, skilled Russian beekeepers (professionals only) under the long-term technical training program.

The APICENTER in cooperation with other interested Russian firms is prepared to bear the whole of the expenses on organization and financing this project, including the expenses on selection and testing pretenders on meeting the qualification requirements of the receiving party, travelling expenses and other expenses according to the agreed contractural arrangements.

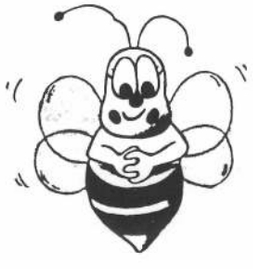
Should you require further details we would be happy to supply this upon request. Please let us know your thoughts on this proposal so that project can receive further consideration. Please reply to fax in Moscow (7-095)292-6511 or telex 411700 ptb su. (Pay attention: it is public tlx/fax booth so your messages should be addressed to APICENTER box No. 13958).

We should consider it most kind if you would help us in this matter.

Sergei Frolov, Apicenter Deputy Director.
P.O. Box 47
Moscow
Russia.

NOTE FOR BRANCH SECRETARIES

There appears to be a belief in some branches that the 'scribe' who provides the 'Notes from the Colonies' is always the Secretary. This is not so. Therefore, when the name of the 'scribe' changes, please advise the Editor. Otherwise the quarterly reminder will continue to go to the last name shown on the 'scribe' list for that branch, which is distinct from that showing presidents and secretaries.



Weight Grading of Queen Pupae: A Cost-effective Quality-control Measure

By Reg Clarke

Introduction

Fo some years I have been studying, and writing about, the range of variation that occurs in queen weight and reproductive physiology. The motivation is that by better understanding of this variability and its causes, we might be able to produce bigger and more productive queens. Confidence in the current excellent quality of NZ bred queens does not excuse us from seeking improvements.

Not everyone believes that bigger is better, whether the subject be boobs or bees. But at least in the case of queen bees, the accumulation of evidence from many research sources is compelling. A qualification will make the assertion more accurate: bigger is better, **so long as** the other genetic components of productivity are not compromised.

Scales — the Electronic Age Breeding Tool

The availability of electronic scales with the required accuracy and speed now makes it possible to grade queens by weight. But at what stage of the queen's development is weight the most accurate measure of her physique? Most research has been based on the weight of mated queens taken from nucleus colonies, and this correlates well with productivity and reproductive organ size. But it is not a commercially viable practice, due to the extraneous factors that affect the weight of a laying queen, and because discarding low weight queens at this stage wastes the resources used in producing them. Some researchers have used the weight of newly emerged virgin queens. A queen's weight decreases rapidly just before and after emergence, so this does not provide the required accuracy, and in any case there are major practical difficulties in using virgin queens.

There is one other possibility. That is to weigh the maturing pupa. In the period one to two days prior to emergance, the pupa is robust enough to withstand being removed from the cell, weighed, and resealed. At this stage, the pupal weight does decrease by about 10 mg. per day. This weight correlates well with mature queen weight, and with productivity. With appropriate care, pupae can be weighed safely and quickly.

Optimum Stage of Pupal Development

The correct timing of the weighing process is of critical importance to survival, and I am not yet sure of the optimum. I aim to process the cells about two days prior to emergence, when the eyes are a pinkish purple, and the head and thorax are either white, or turning to a pale brown. Prior to this, the pupa is excessively fragile. Later, when the body parts are close to their final

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WHY?

New Zealand Post has decided to increase the private box fees from $30 to $80. A jump of 166⅔%, along with a 100% increase in rural delivery fees. That $80 overhead is just too much for this small library with its limited number of users. We would at least have to treble loan fees to cover this extra expense. To have library mail and parcels delivered to our mailbox on the rural delivery route does not seem to be very practical. So after due consideration and consultation with the local Post Shop the library committee finds that the best solution is to have library mail treated as counter mail from now on. We will see how it goes. There is no charge (at present) for counter mail, consequently NZ Post is not going to receive any revenue to all from the library for the use of a box.

Letters of objection to these increases have been written by the librarian to NZ Post, the Minister of Consumer Affairs and to the Hon. R. Gray MP for Clutha.

colour, handling may interfere with wing development. As the rate of development varies, some cells are opened that are not at the desired stage.

Effect of Cell Structure

Plastic cell cups are preferred, as the cell opens more easily at the plastic/wax union. Large boldly sculpured cells are easy to handle, so long as they are not bridged with burr comb. Small cells, thinly waxed, or with an excessively strong silk cocoon, are very difficult to open without damage. When there is no residual food, the silk lining may completely enclose the pupa.

Data and Experience Base

My experience with this technique extends over two years now, at first on a trial basis, and latterly as a standard commercial practice. Data has been gathered on some 6000 queen cells, and includes pupal weight, stage of development, presence of residual food, and external cell characteristics. The % of diseased and otherwise non-viable pupae has been monitored, and I also have good records of the outcome in terms of queens harvested to cells put out. Two problems have been noted, but I am not sure whether they arise from trauma during weighing or from some other cause. There are a small proportion of pupae that die after the final moult, and just prior to emergence. And occasionally wingless virgins are seen. As I have no control data, on unopened cells, I am not sure whether these losses result from the weighing process or some other cause.

With that background, I now feel competent to assess the pros and cons.

THE COSTS AND THE BENEFITS

The additional production costs of this procedure are principally the time and labour involved, plus the capital cost of the scales. This amounts to about 15 to 25 cents per cell. The task is suited to casual labour in the evening and does not need beekeeping skills.

The benefits far outweigh the costs. These include the opportunity to discard non-viable and low weight pupae at the earliest opportunity. A quality standard based on weight can be applied. Pupae of exceptionally high weight can be identified as potential breeders. Production systems, breeder queens and environmental factors can all be assessed by their effect on pupal weight. The technique can be combined with instrumental insemination. Also the folly of judging queen quality by external cell shape is exposed. In a large scale operation, some of the benefits could be obtained by testing representative samples rather than all cells.

Substandard and Non-viable Cells

In any batch of queen cells there will be a number of pupae that are diseased or visibly abnormal in development. Only a few of these can be detected by candling. There will be a further group that are below an acceptable weight standard. Under optimum conditions these discards may amount to only 5% of the total, but 10 to 20% is more usual. When conditions are unfavourable this may rise to as much as 30%. The important point is not the size of the discard pile, but the fact that only healthy and viable pupae of a satisfactory weight have gone to the nucs. Since all of the diseased and abnormal pupae, and many of the low weight ones would not have resulted in mated queens, this can improve the % of queens obtained as well as their average size. Records kept on a group of 52 nucs last season over four cycles, show that 380 queens were obtained from 467 cells (81%), but within this group, the best units produced 100% queens, and the worst only 55%. This suggests that the main cause of failures lay not in defective cells, but in the inferior performance of some nucleus colonies. I do not have comparable records for cells that had not been opened for weighing, but I believe that the gain from culling unsatisfactory cells offsets the losses due to handling injuries.

Weight Standards

The imposition of a minimum weight standard has several beneficial effects. The first is that there is an immediate incentive to improve efficiency and reduce the waste. The majority of low weight pupae come from unsuitable finisher hives. As these are now identified, they can be replaced. The next is that as the weight records disclose the superior performance of some finisher hives, the effect on mean weights of the breeder queen, and changes in production technique, it becomes possible over time to raise the minimum acceeptable weight.

What that standard should be is a matter for each breeder to determine. It will vary with the nature of the operation, and the characteristics of the breeding stock. Initially, I discarded pupae under 270 mg. but after two years progress, a 300 mg. standard is within reach, and 320 mg. may be possible in the future.

The Importance of Breeder Queen Weight

A few pupae will be found of exceptionally high weight. These are potential breeders of very great value. That is because there appears to be a mechanism that links the pupal weight of the mother queen, to the maximum and mean pupal weight of her daughters - though this is obscured by other variables. This may be controlled by egg size as well as genetics. Knowing the pupal weight of most of my breeders queens, I can identify pupae that are heavier than their mothers. By breeding in turn from these progressively heavier queens, the fourth generation breeder now in use has a pupal weight 40 mg. higher than the first. If this affected only the breeders it would be a mere curiosity, but my experience is that there is a proportional lift in the mean weight of all daughter queens. This increase from one generation to the next is possible only when environmental conditions are favourable; even so several such increments can be gained per year. Caution is needed if selecting breeders only on the basis of genes favouring large size. So far, I have not found any undesirable traits to be linked to size, but it is possible. A sound breeding programme must assess all the desired characteristics, of which superior physique is only one.

This progressive weight gain, although so far constant and predictable, must eventually reach some inherent upper limit. That lies somewhere beyond 400 mg., several generations away. To explore the ultimate limits of this aspect of bee breeding is an irresistable challenge.

Inherent Hive Capability

Some cell finisher hives consistently produce heavy queen pupae, and/or cells of good form. I believe this comes from the hive queen, as it remains more or less constant until about five weeks after the queen is replaced. That being so it should be possible to breed a line of bees having superior cell building qualities. The difference between the best hives and the worst is at least 20 mg. on the mean weight, and this cannot be reliably detected by external examination of the cells.

Pupal Weight and Cell Shape

A brief experience of weighing queen pupae will show that there is only a tenuous connection between the size and shape of the cell, and the weight of the pupa within. Large boldly sculptured cells are easier to open, and may impress a customer. But it can be as misleading as fancy packaging on trashy merchandise. I suspect that larval feeding, and cell building, are done by different castes of workers, with the quality of their work controlled by separate genes.

Instrumental Insemination

The most powerful tool we have for the genetic improvement of our bee stocks is instrumental insemination. It can be made more effective by inseminating only virgin queens preselected on the basis of high pupal weight. This would combine the advan-

tages of controlled mating with excellent physique, so that both qualities are passed on to the offspring.

CONCLUSIONS

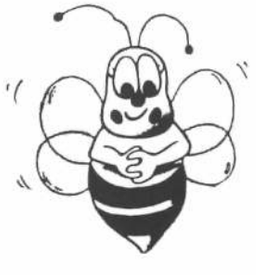
The electronic engineer has given queen breeders a powerful new tool - accurate, rapid stabilising scales. This opens a new path to queen improvement, and can help us to produce larger queens with superior reproductive physiology.

This new technique adds to the production cost of queen cells. But the increase is low when compared to the range of advantages that ensue. Use of a queen cell that contains a defective or undersized pupa, and so does not produce a quality queen can very expensive, in time and lost production.

Those precious few queens - perhaps only a few per thousand - with exceptional physique, cannot be reliably discovered in any other way. From among an elite population of these large queens, it should be possible to find breeders that combine large size with the other desired genetic traits, and can pass both qualities to their progeny.

The techniques described here will be of little use unless widely adopted. My resources are only sufficient to work on one breeding line at a time. What is needed is a genetically diverse bee population which has been physically improved by pupal weight grading over a number of generations.

Queen breeding is a craft with many facets, requiring a wide range of beekeeping and business skills. Grading pupae by weight can enable both breeding stock and production queens to be improved in physique. This adds a new dimension to traditional skills, but it does not replace them.



Grading Queen Pupae by Weight. Guide to Equipment and Technique

By Reg Clarke

Introduction

Queen pupae are very fragile, but they can be weighed without unacceptable losses, if handled with skill and care in a suitable environment.

Facilities

A small clean room is needed, in which temperature and humidity can be controlled. Suggested limits are 25 to 30 C. at about 50% relative humidity. As these conditions are also needed for grafting, a suitable room may already be available.

The room should contain a cell incubator, a work bench, good general lighting and a magnifying lamp. A fairly solid, stable surface is needed for the scales. These are sensitive to vibration, and also to any fluctuation in the mains supply voltage. The scales must be of scientific quality, accurate to ± 1 mg. and should quickly give a stable readout of the net weight of the pupa.

Tools and Accessories

Plastic queen cell cups should be used, as they enable the cell to be opened more easily by breaking the union between wax and plastic. A cutting tool shaped for the task may be helpful. Also a mandrel matching the internal cell contour, for reshaping any distorted cells. Occasionally a small pair of scissors may be useful to cut away surplus silk cocoon lining. A small handling device is needed, such as a modified plastic spoon, on which to transfer the pupa from cell to scales. Finally, make up a foam pad, with holes to receive the cells when weighed. It is an advantage to label the columns for each 10 mg. weight increment; that way the valuable high weight pupae can be kept track of.

Technique

Extreme gentleness must take priority over speed. Open the cell over a soft padded surface in case a pupa is dropped. It may survive a fall of 10 cms. on to a **very** soft surface but not more. Sod's Law dictates that it is the heaviest and most valuable pupa which is mishandled. Do not handle a pupa directly with the fingers. It should be tipped gently from the opened cell on to the handling device, and after weighing be slid back into the wax end of the cell head first. Now reseal the cell with an adhesive tape such as decorators' masking tape or vinyl insulating tape, which will also serve as a cell protector. Be wary of crushing the cell in on the pupa at this stage. At first you will need reassurance that handling has not interfered with normal development and emergence, so protecting the cell from being torn down, with tape or other device, is helpful.

Examine the pupa carefully. Early onset of viral brood disease will be obvious as a dead larva. However, a number of other pupa may be slightly abnormal in appearance or development stage. This may indicate either a sublethal infection or a genetic abnormality. Any pressure on the pupa when opening the cell will dent the still soft exoskeleton, and that will remain as a permanent deformity. All of the above, as well as pupae of below your minimum weight standard, must be discarded. Retain a supply of well formed wax cells from healthy pupa, as replacements may be needed for those damaged beyond re-use.

Record Keeping

Much of the value of this exercise lies keeping good records. I record the weight of each pupa, and calculate the mean weight for each batch, from each finisher hive, together with a number of other details. That enables seasonal trends, and the effect of changes of breeder queen or technique to be monitored. You may not want all that, but at least note sufficient detail to identify the best and worst finisher hives. Knowledge is power. Data showing what is happening in respect of mean weights, disease incidence etc is what allows you now to exercise more control over the process and so begin to improve.

NEW PRODUCT

Nexus Packaging Systems, manufacturers of specially designed products for the honey industry, have added a 350ml pourable-squeezable flask to their range. Nexus says apart from its 'squeezable' dispensing it has a large label area, a high degree of shelf appeal, and flip top closure.

WILD BEEHIVE'S SOUGHT FOR RESEARCH INTO COSTLY DISEASE

Ruakura Agricultural Centre is seeking wild honey bee colonies in an effort to establish the source of a bee disease which results in the destruction of around 6000 commercial beehives in New Zealand annually.

Checking of feral (wild) bee populations for American Foulbrood disease will be a world first, says Mark Goodwin of the Ruakura Apicultural Research Unit. The public's help in locating the feral colonies is needed because the researchers would like to base their work on as many as a thousand different bee colonies.

Dr Goodwin says American Foulbrood is a major cost to beekeeing, an industry worth $20 million a year to New Zealand from honey production and billions more through pollination of fruit, vegetable crops and clover.

"For ease of collection by us we are appealing mostly to people in the Auckland and Waikato regions to contact us with feral sightings but if people elsewhere in the country feel they can manage to send us a sample of bees we would be most grateful," Dr Goodwin says.

He says feral beehives are usually found in trees, holes in walls or roofs. Wasp nests, which some people confuse with beehives, are usually found in the ground. There is also a painful reminder of the difference — wasps can sting several times while bees sting once, leave the sting in the victim and immediately die.

People who feel capable of taking bee samples, and are not allergic to stings, should put a plastic bag over the hive entrance until it contains about 30 bees. The bag can then be put in the freezer to kill the bees and the whole thing then put in an envelope, including contact details, and sent to Dr Goodwin at Ruakura, Private Bag, Hamilton.

Dr Goodwin says if people know how old the colonies are, that information would also be most useful to the scientists.

American Foulbrood is a notifiable disease which attacks honey bee larvae and has been steadily on the rise for the last 30 years. Once detected the only course of action is to destroy the hive with fire. In that way about 2 percent, or 6000, of New Zealand's known 300,000 beehives are destroyed each year.

There are several possibilities for the way the disease is spread and reseearchers are hoping to determine the major cause, Dr Goodwin says. It could be by bees robbing one another's honey; by confused bees drifting between hives (about 5 percent of a hive's bees are known to do this each day); or through beekeepers swapping gear.

The possibility of feral bees being the source of infection has been suggested by beekeepers and the idea gained some ground last year when a survey of the hives of amateur beekeepers showed that 11 percent had the disease, against the national average in commercial hives of 1.2 percent. Amateur beekeepers are much less likely than commercial beekeepers to swap gear, so ruling this out as an infection source.

As well, three years of monitoring paired hives, one of which has the disease, has revealed no cross infection from bees wandering between the hives.

The remaining possibility is that bees, possibly feral ones, carrying the disease and robbing honey are passing the infection.

Dr Goodwin hopes a good response from people reporting on feral hives will greatly further the research. He can be telephoned on Hamilton (07) 856-2839.

A DEER (DEAR) STORY

From Frank Lindsay

While travelling home from attending his hives up the Wanganui River, a well known traffic officer/beekeeper was admiring the late evening scenery and thinking how lovely the world is when he saw two young deer on the side of the road ahead of him.

The startled deer, instead of running for the wilds and freedom, headed straight across the road towards a farm boundary fence. One jumped through but the second caught it's hind leg between the wires and was trapped.

Realising the situation, our beekeeper stopped his landrover and caught the animal with the intention of setting it free. However, thoughts of waking up in the morning to see this majestic animal grazing in the front paddock of his hobby farm filled his head and instead of setting the animal free, he decided to take it home.

Wrestling the kicking, bellowing, terrified animal back to his vehicle, he looked around for something to secure it with. The only thing he could find was a length of heavy tow rope. Not being an expert in animal handling, he trussed it up as best he could and not wanting to distress the animal further, put it on the front seat where he could keep an eye on it.

All went well for approximately half an hour. The animal appeared to have settled down so our man relaxed and concentrated on his driving.

Suddenly the animal gave a mighty heave, freed itself, and started kicking out in all directions. Off came the indicator arm, the front windscreen cracked with another kick. The next kick snapped off the ignition key causing the vehicle to shudder to a holt.

Now determined to get the animal home, no matter what, our man wrestled the animal and managed to pin it on the floor. Holding it down with one hand, and dodging the occasional kick, he finally managed to start the vehicle and proceeded to drive home slowly in third gear.

Not far from home it finally dawned on him. That deer, wasn't going to stay very long in the sheep paddock with his normal size fences, so he decided to deliver it to a neighbouring deer farm. His neighbour offered to swap the nice looking animal for venison, but not liking the meat, he happily accepted $30 and proceeded home feeling very pleased with himself. Incidently, the neighbour put a pack over the deer's head, it immediately calmed and was easily man handled into an enclosure. Now home, our beekeeper set about repairing his damaged vehicle. The indicator switch cost $28, the windscreen and ignition switch have yet to be priced. There are many morals to this story, you can pick one, but now we know why it's so expensive to be a conservationist.

PETER MAURICE PEGRAM 1921-1991

In November 1991 Peter Pegram died. He was a well-known North Island beekeeper, and a man well known for his great love of the outdoors.

Peter lived in Hawkes Bay most of his life. He was educated at Napier Boys' High School — it was here his interest in bees began as the school had its own farm and bees were part of the livestock.

Peter was accepted as a farm cadet at Smedley, where he finished top equal and won a bursary to attend Massey University. From Massey Peter joined the Air Force and served in the Pacific during WWII.

On his return from the Pacific, Peter worked for Mr and Mrs Bill Ashcroft, well-known beekeepers at Havelock North. In 1947 he started his own beekeeping business, firstly based at Tutira, then at Frasertown. In 1951 Peter married Snow Jago and together they built a strong family beekeeping business of over 2,000 hives, now owned and managed by their son Keith.

At Frasertown Peter and Snow were isolated from other commercial beekeepers. Their nearest commercial beekeeper neighbours lived over 80 miles to the south or 70 miles to the north, In both directions the roads were poor and a trip to Napier was something not undertaken lightly. One result of this was the tremendous hospitality offered to fellow beekeepers, apicultural officers, or anyone with an interest in bees who called. Many will remember journeys extended by several days whilst Peter took them up to the Lake (Waikaremoana) to go fishing, or just to enjoy the bush.

Another result of this isolation was the development of independence and self reliance in the beekeeping business. 'Do-it-yourself' was the order of the day when it came to building the honey house, sheds, their home, water tanks, and inventing machinery to extract manuka honey. The original house was formerly the school at Tiniroto. Peter dismantled it single handed, transported it 40 miles over gravel roads, and re-erected it at Frasertown.

Peter was a very skilled timber worker — he had an extensive range of wood working machinery, much of it built by himself. At times Peter cut standing trees to get the specific type of timber he wanted for the end product.

He was a very innovative beekeeper, and was always ready to pass on ideas and to try new ideas. However any new idea had to pass the vigorous lunchtime debate test where it was discussed from all angles.

It was through his reputation as a producer of high quality honey that Peter was known to many of his fellow beekeepers. Over the years he invented many gadgets and devised a deal of methods for extracting manuka honey. He was regarded as one of New Zealand's most knowledgeable beekeepers.

Peter often felt that honey buyers seemed to confuse the terms colour and quality when discussing darker honeys. He would have viewed the current situation concerning manuka honey with great interest.

With the establishment of a larger beekeeping industry in Poverty Bay and Bay of Plenty, Peter was able to give advice to many beekeepers in those areas. He participated in branch activities in Hawkes Bay and Poverty Bay, and he was always a well respected speaker.

He had a great love of the outdoors and his knowledge of flora and fauna was immense. He spent many relaxing hours fishing or botanising at Lake Waikaremoana in the Urewera National Park, or surf casting at the coast. He was always willing to help others learn fishing and bushcraft skills. A long service committee member of the Wairoa Angling Club, he was honoured with its life membership.

In later years he developed an interest in growing orchids and last year was president of the Wairoa Orchid Society.

Peter is survived by his wife Snow, and three of their children, Judy (Mrs Storey, Motu), Keith, and Wendy. Another son, Colin, predeceased him.

GREEN HONEY

Beekeeper Peter Wheeler watched helplessly as thousands of his bees turned green and produced three-quarters of a ton of green honey.

People did not like green honey so Peter could not sell it. And when he tried to make it into marmalade, that turned bright green, too.

The culprit was a cut-price sugar recommended by the Miistry of Agriculture for feeding bees during the winter. But it had a bright green dye added to stop it being used for domestic purposes. The men from the ministry said the dye was perfectly safe and the green honey harmless. 'It's just that people like honey which looks yellow.'

However, they agreed to pay compensation. Mr Wheeler's last word before he expired: 'I have been told that the dye in the sugar was so concentrated that one cupful would colout the Thames from source to mouth.'

TODAY, IT IS DOG EAT DOG

By 'Anon'.

To succed in today's business climate requires knowledge of product, business techniques, people, marketing methods, and a good dose of "nous". The fine dividing line between common sense and sharp practice has become rather blurred, and that is the "nous" factor. Just how fas is it prudent to push those you are dealing with depends upon the driving force to which you respond. Should your motives be pure as driven snow you would soon find that you are considered weak in today's climate. Your demise would follow, sympathy for your foolishness would be shallow and brief. It would last only for as long as it takes for another sucker to be lined up.

Whilst it is fine to tell the judge that you stuck to the principles of good honest trading, it will count for little when you are declared bankrupt. In all probability you will be told that you were too trusting of the business techniques of others. To accept that payment for goods will be made in the following month has all too often a hollow ring to it. To blindly accept the excuses offered for non-payment and continue to give credit is foolishness. That first default is the warning sign. Ignore it at your peril.

Credit management is a skillful art, learned the hard way by most business people. Experts offering an enormous variety of packages designed to assist your business, abound in the community, yet how often does the small, self-employed person avail him or herself of the opportunities offered? "Not enough time", or "I must get around to doing something about that", or "Too costly for me to think about". Which excuse will you offer when your creditors come knocking, their faces impassive, their hearts made of stone, their ability to listen sympathetically a forgotten art?

Buying time for the professionals is expensive, yet take a look at how they operate. Seldom do they give away their time and expertise out of the goodness of their hearts, or because they think you are a nice person and should be encouraged. Each 'phone call is logged, each discussion is detailed, each letter written is listed. Photocopying, that indispensable and everyday item is logged, as is the time to load your business detail into their computer. Their machines spew out reams of paper containing vast detail of your business affairs. Ignore the messages received at your peril.

As a starting point, log your activities for one day of your working week. List the items which consume your time, then instead of watching the box in the evening, analyse your day. Just how much time can you justifiably charge out to other people? Were you travelling around the hive sites, if so, how will you allocate your time and travelling costs? In fact, do you know

what it costs to travel from one site to another? Those 'phone calls you made, business or private matters, impart ing information or just nattering? Cleaning up frames and boxes can all be charged out as a legitimate use of your time. Labour is for hire at a set hourly rate, yet how many beekeepers know in any detail what their time is costing them? The small operator often operates by intuition, with no set timetable, jumpimg from one activity to another as the whim takes him or her. With minimal time spent in looking at what they are doing, their working practices could well be improved, their work throughput increased, and the time lost each day reduced to a minimum.

Losing the enjoyment of the activity is often quoted as a reason why efficiency should not be introduced into the day to day work. Yet failure to be "organised" is too often the biggest killer of small business people. Every kilometre in the truck costs dearly, both in fuel and wear and tear on the vehicle. Develop a travel pattern to minimise undue vehicle useage. That, initially cumbersome to set up and adhere to, but why not try it and see if costs are reduced over a trial period? But remember to resist that impulse which has so often dictated the way you attended your hives in the past. Examine the location of your hives, some resiting may result in added reductions to your travelling costs. Obliging a friend with a few fruit trees is all very well, but does the site produce enough honey, pollen, whatever to justify the travel involved. The proposed yard levy to recover the cost of disease inspection will further add to costs, and require each site to justify its existence.

If, in the long term, you are able to satisfy yourself that the operation you conduct is worth while, the honey flow is good, and that you are able to continue to operate, you are indeed forunate. Without another income source, many small time beekeepers would be forced to close down. Having a good accountant can make or break what you do, as accountans spend their lives looking for tax breaks for their clients. Win some, lose some, them's the breaks with the tax man, and only the accountant can really sort out the fine print for you. Heed the advice you receive, digest the information over a period of time, then make your decisions.

Must leave now, my accountant and I have an appointment with the local tax office to answer a few queries. Seems that they are wondering why each hive has such a thick coat of paint, why I visit the hive sites twice a day, and there is the matter of the rental of the stalls where the honey is sold, not to mention the GST rebate claimed on the timber that my hives are made of. The list they sent us covers over four pages, but my accountant is confident that "we" have the answers to them all.

Incidentally, he is only charging me the basic rate for his attending the tax office. Nice fella eh?

NEW PRODUCT

The Rauchboy Smoker, a new innovation in smokers, is now available in New Zealand.

The manufacturer says its performance is unique because of special air conducting through three separate chambers. The middle chamber is fitted with a downward seal. It is ready for use in a short period, it is economical, and it burns longer, and can be used for several hours without attention. The maker claims that it will not go out after short periods, nor will it have to be frequently cleaned out and relit.

EXPORTING

The NBA has, with the assistance of its members, established an export liaison group. This group will assist members who:

a) may be considering exporting

or

b) wish to discuss an exporting matter with someone else in the industry.

The following members will be pleased to provide information for members new and inexperienced in the export of honey.

ORGANISATION	CONTACT PERSON	TELEPHONE NO.	FAX NO.
Airborn Honey	Peter Bray	(03)243569	(03)324236
Arataki Honey	Percy Berry	(070)775790	(068)774200
Ceracell Products	Stephen Mahon		(09)2740368
Kintail Honey	Dudley Ward	(06)3748301	(06)3748256
	Jane Ward	(0728)58038	
NZ Honey Producers Co-Op	Kevin Ecroyd	(056)48882	(03)6884859
Southern Honey Exports	Allen McCaw	(03417)7198	(03417)7198
Waitemata Honey	Neil Stuckey	(09)4038491	(09)4738556

NATIONAL BEEKEEPERS' ASSOCIATION 1992 CONFERENCE

AGM, CONFERENCE OF DELEGATES AND SEMINAR
HASTINGS, JULY 20
VENUE: ANGUS INN MOTOR HOTEL, HASTINGS

NBA SEMINAR
THEME: "INNOVATION IN BEEKEEPING"
MEDICINAL THOUGHTS — MARKETING — FINGERPRINTING — — BUMBLEBEES — COMPUTING

PROGRAMME:

Monday 20 Specialty group meetings from 9am. Social "Happy Hour" from 6pm.
Tuesday 21 NBA Seminar 9am - 4.30pm. Sponsors' evening 7.30pm.
Wednesday 22 Conference 9am - 4.30pm. Tour for day 11am - 4.30pm. Conference dinner/entertainment 6.30pm.
Thursday 23 Conference 9am - 4.30pm.

COSTS:

Conference Registration	$25	Seminar Registration	$20
Conference Dinner	$45	Tour - To be advised	
Free happy hour' then own expense		Sponsors' evening free	

Please assist us by registering in advance or not later than the **8th June** on the form below.

VENUE: The Angus Inn Motor Hotel is the Bay's leading conference centre with all the best facilities. Modern convenience and comfort is guaranteed in all the rooms which are available at a conference special room rate of $70.00 (one or two people). Hawkes Bay, the "Fruit Bowl" of New Zealand promises you a warm welcome. Come early or stay on to enjoy some of the local attractions.

TRAVEL: Take advantage of Air New Zealand's 30% fare reduction by quoting DOM 605/91 or bring your car and friends. Bus or rail services also operate. Early reservations are advisable. Book now direct to the secretary. Hawkes Bay Branch welcomes you to Conference 1992.

All correspondence including hotel bookings and enquiries to:

Conference Secretary, 6 Totara Street, Taradale, Hawkes Bay. TEL 06-844-9493. FAX 06-877-4200.

REGISTRATION FOR NATIONAL BEEKEEPERS' ASSOCIATION CONFERENCE — HASTINGS

Yes, I will attend the July 20th 1992 conference to be held at the Angus Inn Motor Hotel.

NAME .....

ASSOCIATION .....

HOME ADDRESS .....

.....

PHONE: .....

HOW ARRIVING: CAR: ..... TRAIN: ARRIVAL TIME .....

BUS: ARRIVAL TIME ..... AIR: FLIGHT NO: .....

ARRIVAL TIME .....

DATE .....

ACCOMMODATION REQUIRED: SINGLE ROOM/DOUBLE ROOM/SUIT

NUMBER

SEMINAR	YES/NO
CONFERENCE	YES/NO
CONFERENCE DINNER	YES/NO
BUS TOUR	YES/NO

MAIL TO: Conference Secretary, 6 Totara Street, Taradale, Hawkes Bay.
Telephone 06-844-9493. Facsimile 06-877-4200.

THE AFRICANISED BEE INVADES THE STATES

From The San Diego Union. Sent in by Barry Foster

Weslace, Texas — There is no talk of killer bees at Andy's Cafe 2 here, to panicked calls to the City Hall in nearby Alamo, not even a mention of the bee invasion, in the Beeville Bee-Picayune.

But over the next few years, the Africanized honey bees will have a dramatic impact on beekeepers and agriculture as they cause a reduction in both honey and pollination.

And their long-awaited arrival here in the Lower Rio Grande Valley last week set off speculation about effects on everything from lawsuits to wearers of beeswax-based hair replacement systems.

Still, after years of films like "The Swarm" and "Saturday Night Live" skits of John Belushi in killer bee regalia snarling "Your pollen or your wife", the bees arrival has been something of an welcome anticlimax.

"Here in the Valley, people have been anticipating this for so long, people are just sick of hearing about it," said Dave Mayes, with the department communications at Texas A&M University. "People know more about the bee, and their anxiety level has decreased."

The relaxed response is likely to change as the bees become more prevalent and as stings are reported. Beekeepers view them as a serious threat to the $150 million in honey produced in the United States annually and to the up to $10 billion in American agricultural products that bees help pollinate.

Still, when the first swarm of aggressive bees finally buzzed into Texas, their debut played out here as much as their spread across the country probably will — an epochal event for beekeepers and a real, but minor, risk for the general public.

Officials from the U.S. Department of Agriculture confirmed Thursday that a 3,000-bee swarm of Africanized honey bees was found and then destroyed Monday in one of the department's pulp-paper traps about a mile north of the Rio Grande.

The discovery means that 33 years after African bees were inadvertently let loose in Brazil, the aggressive strain has entered the United States.

Although the Africanized bees' sting is no worse than that of other bees, the bees are extremely aggressive in defending their hives and have the potential to attack and sting in angry swarms.

There are no precise figures on fatalities. The government of Mexico says at least 16 people have been killed by the bees there in the past three years, and some experts estimate that 700 to 1,000 people have been killed by stings since 1957, when the bees escaped from a Brazilian breeding experiment and started heading north at about 200 miles a year.

For the most part, the bees' arrival in South Texas was met with yawns.

"I saw it in the paper, but I just read past it," said Jesse Delgado, manager of Andy's Cafe 2, a popular Mexican restaurant. "No one has even mentioned it."

A hot line set up to give out information on the bees received about 15 calls, most from nervous residents who wondered if hives near their homes could contain the Africanized bees.

But John Thomas, a Texas A&M entomologist, said some people are so panicked by the thought of the bees they are in a constant state of anxiety about their arrival.

"I still get calls, primarily from elderly widows, wanting to know when it's going to get to Corpus Christi, or when it's going to get to Houston, and how far north it will go," Thomas said.

"They want to sell their home and move to St. Louis or Kansas City or Chicage before the real estate market crashes because of the bee panic in San Antonio."

In Houston, Tom Magliaro of Tom Magliaro's Hair Additions, says he worries that Africanized bees attack the 60 to 80 clients of his who have used beeswax to attach new hairs to thicken existing ones in thinning areas.

He raised the spectre of a terrified client driving along in a convertible with a 3-pound swarm of Africanized bees chasing his hair.

In Beeville, where President Bush goes for his annual South Texas hunting trip, Jeff Latcham, general manager of the Bee-Picayune, said his paper found the state of the oil industry and the town's imperiled Naval Air Station more newsworthy than the bees' arrival 200 miles to the south.

When the subject was raised, Latcham joked that the bees might provide an economic opportunity for the town, which, it turns out, was named for the insects, but for Col. Bernard E. Bee, President Sam Houston's secretary of war for the Republic of Texas.

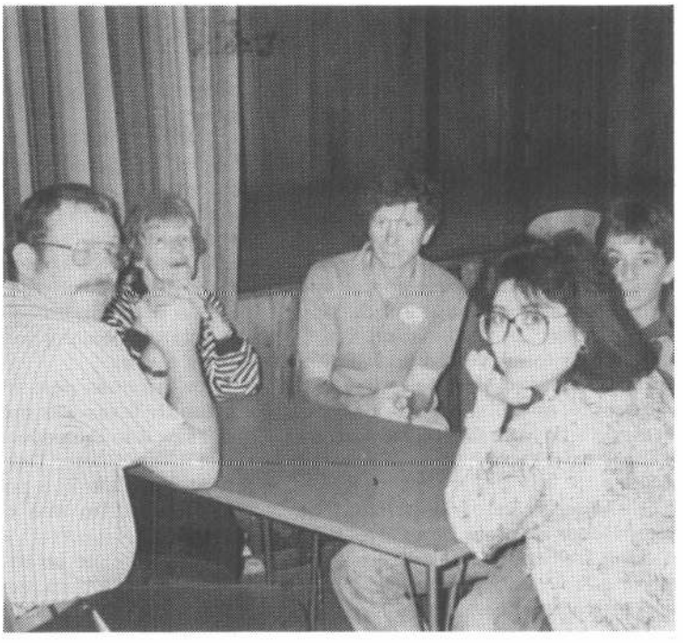
"Maybe we should figure out a way to make some money off the bees, like the pet rock," he said.

A TALE WITHOUT A STING

A beekeeper on the list was recently called to poison a wasp's nest. Nothing unusual about that; just a few wasps going in the flashing at the top of a bathroom window. A dusting of insecticide cured the problem, or did it? A week later the same complainant rang to say that wasp larvae were dropping into the bath. Has anyone experienced this before or can you offer a theory? To add to the intrigue there were no obvious apertures inside. Please let the Hawkes Bay Secretary know if you have an answer.

SOUTHERN NORTH ISLAND'S

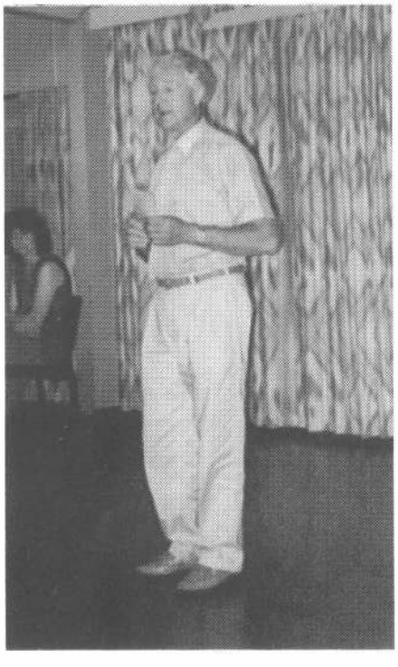
Photo's courtesy F. & M.A. Lindsay



Above Left: Ted Roberts and army in full marching order.
Above Right: The Tweeddales and the Kibbies.
Below: Three generations of Tweeddales. From left, son Mark, father Don, and grandfather, Stewart.

21st BIRTHDAY

Above: Demonstrating the use of a big blower.
Below Right: Playing a game called 'The tramps' tea party'.
Below Left: National President, Dudley Ward, congratulating the branch on its 21st.



SOUTHERN NORTH ISLAND'S 21st BIRTHDAY

Above Left: Ernie Wally, first president of Southern North Island, and current secretary, Merv Farrington, cut the cake.
Above Right: John Brandon demonstrates extracting honey.
Below: The Shop at John Brandon's Honey House.

FOR THE COLD MONTHS

By John Heineman

May again and winter is here, or nearly here. By now your hives should have had all the care necessary to see them through the cold months until spring.

Here is a checklist to see if you have forgotten any essentials.

1. STORES, both honey and pollen. A colony should be left with at least a full depth super (or equivalent) of winter stores. Don't be deceived by the weight of combs full of pollen but containing little honey. They can be fairly heavy. A good supply of pollen is necessary for brood rearing, but the bees cannot survive on it.

If the hives are wintering in two f.d. supers, the feed will be on the top and the cluster below it on empty, or partly empty, combs. Slowly they will "eat" their way upstairs.

Do you feel uneasy about the amount of stores in your colonies? Well, it is late for supplementary feeding but not too late. The easiest and best way to regain your peace of mind is to insert a few well-filled combs into the hive. Now to do this go easy. Don't take the whole hive to bits at this stage. There may be some dry or very light combs against the outside of the top super. Take these out and replace with heavy ones. Anything with a bit of honey in it can go into the bottom super in place of one or two of the outside combs. Avoid removing combs with good pollen. In this way you will disturb the cluster as little as possible.

In the absence good combs with feed honey you will have to resort to sugar feeding. It is certainly a bit late for syrup and I would sooner place the dry sugar on the top super. This is the warmest part of the hives and the bees will work it even on cold days. There is always a certain amount of water available within the hive in the form of condensation, this will assist in dissolving the sugar grains.

If the sugar is just poured on the top bars most of it will fall through and finish up on the bottom board where the bees might not be able to get to it. Spread a sheet of paper over the top bars of the super, puncture it a few times in the centre and dump the required amount on this. Spread it evenly. Place the queen excluder on the sugar. Wriggle it back and forth a few times until its edges are sitting snug again on the super's edge. Crown board on top of this. You will find that in this way it is possible to supplement a hive with a standard three kg. bag of table sugar without the hive lid riding high.

I prefer raw sugar mixed with a little water into a damp (not wet) slurry placed on the paper in similar way and quantity. It is somewhat easier for the bees to work and more attractive to them. But don't dampen white sugar for it will probably turn rock hard before the bees get stuck into it.

The best way to handle the raw sugar slurry is to mix it in a bucket or tub and ladle it onto the paper using a small coal (hearth) shovel.

2. RESTRICTED ENTRANCES so that mice are kept out and the colony can defend itself better against wasps which are still active in some areas.

3. SOUND BOTTOM BOARDS, supers without big cracks or gaps and roofs that keep rain out.

4. HIVES SHOULD LEAN SLIGHTLY FORWARD so that rain water or melting snow will not run towards the rear of the bottom board.

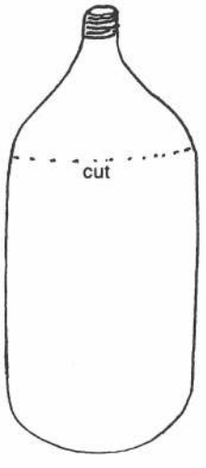
5. ADEQUATE VENTILATION for the hive itself as well as for its direct environment. If the crownboard of the hive doubles as a division board it will have an entrance checked out. Having the board with the entrance on the underside will provide ventilation as long as a telescopic lid does not fit too tightly. Where sack mats are used in place of crown boards the lid will usually have an inner rim. Two of the sticks forming the rim can be cut a little short thus providing ventilation holes in the corners.

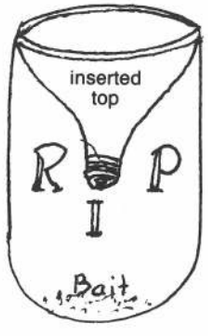
As a "make do" a few small sticks placed between the super edge and lid is better than nothing.

Sometimes special ventilation holes are drilled in the front or front and back rims of the telescopic roof. These are

covered with fine fly gauze to keep out any predators and prevent robbing. I think this is of questionable value and certainly means extra work.

It is just as important that the direct surrounds of hives receive sun in the winter and free air movement is facilitated so that neither the hives nor the side will stay continuously damp. Nothing will make you expensive gear rot faster than long wet grass and weeds touching the wooden hive parts. Floor boards should be raised on treated wooden blocks, bricks, or concrete blocks. This will extend their life span by many year and will help to keep the inside of hives drier. Shelter is of course a very good thing but should not overhang the hives, nor should it be so dense or close to your side that it keeps the sun and a bit of a breeze out. Conifers and our many NZ evergreens are worse in this aspect than trees and shrubs which shed their foliage before winter.





When you open up the hives in spring and find that the underside of the crownboard is wet, the inside walls of the supers damp, the floor board wet and probably the outside combs show mould, you will know that there has been something drastically wrong with ventilation. People living in poorly ventilated and damp dwellings are sitting ducks for colds, pneumonia, rheumatism etc. It is no different for honey bees. Kept under bad conditions they will be under constant stress and diseases such as dysentery and nosema will have a good chance of developing and taking their toll.

An apiary side situated on sloping ground has usually an advantage over one in a hollow or in the bottom of a gully. Cold air is heavier than warm air and so will always sink to the lowest point. It is very pronounced here at our section. House and garden are about 50 m. away from the road but approx 15 m. above it.

Some mornings the road's verge and the paddock next to it will be white with frost while nothing in our vege garden or plants like dahlia show any sign of damage. A breeze will keep frost away as many orchardists know. Those are points worth considering when deciding on the best place to put beehives.

6. NON-DISTURBANCE during the next three months is an important factor contributing to the well-being of a bee colony. That means keep vermin from entering hives, livestock from disturbing them (fence) and the beekeeper keeping his or her curiosity in check until warmer days arrive. Stirring up that cluster could be fatal. One thing to keep in mind is a flash flood. I have seen hives sitting on the edge of a steep creek bank, they may be safe from direct flooding but banks may crumble and hives will get into a precarious position or topple over altogether. Happens more often than you think.

We can do little to protect hives from events like earthquakes, freak gales, or vandals who use them as targets for shooting or for throwing empty beer bottles at. These hazards we just have to put up with.

There is no need in New Zealand to provide extra winter protection to keep out severe cold as is the case in some other parts of the world. At times we may moan about the rotten cold and wonder when the sun will shine again or the wind will go down but our climate is a benign one. No other precautions are needed besides those discussed.

If you are satisfied that all is up to scratch then best leave well alone. But now is the right time to attend to repairs or to make some extra equipment you will need for next season. Then you could do worse things than reading some "bee literature" to widen your views or have a slide or video session (club or branch). The NBA library has lots to offer.

Have you been, or are you still, pestered by wasps intruding into the house or floating round your hives. They try to sneak into the entrances or through any little gap they can find. And, if the bees don't catch them at it, away they go with a stomach full of the colony's precious winter stores. Live and let live? I like them dead!

They came on the scene here all of a sudden around the end of March. When inspecting the hives for signs of BL on the day when removing the surplus honey there were just a few. A few days later a fair number. They were mainly aiming for the three tops I had made as if they knew where to meet with the least resistance in the smaller and weaker colonies. An intensive search to locate the nest failed but hopefully I'll get it one of these days. In the meantime I have resorted to the use of a couple of wasp traps. Cost nothing, are very easy to make and are apparently effective.

Required is a soft drink 1.25 litre plastic bottle. Cut it neatly 850 mm below the top. Place bait into the bottom and insert the cut-off part upside down into the bottom part of the bottle. The bottle neck will now face downward, the wasps will go in but cannot find their way out. It works well seeing the number caught and the fact that now, eight days later, very few wasps are floating round the hives.

Jam is attractive to the wasps but will also claim some bees, but not a great number. A few scraps of fish or mincemeat will have the attention of wasps but bees will not go for that kind of thing. This fish or meat bait is most effective after it get a little "high".

FROM THE COLONIES (Conc.)

Kiwifruit orchardists and mamagers are combining into fewer and larger concerns, though total acreage seems to have stabilised.

Hives are in fairly good shape going into the winter. Most of the autumn queens have mated and established O.K. despite some earlier than usual cold weather.

Nigel Birse

Otago

November was the coldest for the past 50 years, March temperatures have registered about 3°C below normal. While walking the Milford Track in early December we struck 30 cm of fresh snow on McKinnon Pass (what a magnificent view!) and in late March Milford, Routeburn, and Keppler Tracks had to be closed. A metre of snow on McKinnon. A grim picture indeed. But, amazingly, in between we seem to have had a little bit of the right kind of weather. Good enough anyway to accure a somewhat better crop than has been the case for the past two years. However there seems to be a great variation between localities. From very poor to good.

At present a large part of the province is very dry with minimal pasture growth for this time of year.

Hive numbers are in general down on last year, it has not been possible or practical to fully replace hives lost during last winter and spring.

Our AGM will be held shortly.

John Heineman

North Otago

The indifferent weather in the spring did little towards enhancing the honey crop which has turned out about average although much later than usual. The hard winter and lack of nectar also helped to reduce hive numbers in some areas by as much as 10%. That, com bined with the problem at not getting Queens mated till late, if at all, has left beekeepers in this area in a slightly depressed state. However, we look forward to better honey prices and increase nectar for next year.

Algie Lawrence

Hawkes Bay

It has been a good season in Hawkes Bay. Would you believe that one large honey house processed 7,000 tonnes? It must be true: it was reported in the local paper!

Those who haven't completed their harvesting of the bumper honey crop better hurry as the nights are getting colder and the extracting more difficult. At least the cooler weather should stop those 'unstoppable' swarms. They have still been appearing early in April.

Now is the time to zapp those wasp nests before the queens leave to hibernate. Those people on the swarm-collecting list will also poison any wasp nests that are found. This year seems to have provided an increasing number of Asian paper wasps in this area.

Over 40 members and partners attended the Branch AGM which was followed by a light supper. Seems to be the way to drag them in. President Bob Wotherspoon was re-elected to lead a strong committee.

Don't forget to register for conference; now!

Ron Morison

Westland

That was summer, was it? What will winter be like? According to the weather experts we can expect another two years of cooler than normal temperatures. Already substantial snow has fallen to low levels on the mountains, so it appears a long, cold winter is in the offing.

The cool summer greatly slowed the flowering process of all nectar sources, prolonging the time flowers were available for nectar secretion. But, the bees likewise slowed their honey gathering too, with the bulk of the crop being produced during the two to three short spells of sunshine.

We had a good showing of clover this year, but, with low ground temperatures and dull cloudy weather, it was of little benefit to either bees or beekeeper.

The first snowfall for the winter, in mid-March, brought to an end a rather drawn-out season. The resulting frosts and cool weather appear to have checked the wasp population. They are a problem only in isolated spots at present.

Crops varied greatly from region to region and area to area, but overall probably a little better than average would be a fair assessment for Westland this year.

Having been forced to swallow the bitter pill of 'User Pays' to fund MAF with a massive increase in hive levy, it now appears that DOC intends to jump on the bank wagon presented by the Resource Management Bill and glean income by way of a hive levy as a resource rental on native nectar and honey-dew sources!

If they ever get it into their heads to levy farmers for every millimetre of rain they receive a year, calling it too a 'resource' that should be paid for, surely would be the crowning achievement of these 'Ex-spurts' ... (defined as 'has been little drips').

Sandy Richardson

Southland

Another season is drawing to a close and we in Southland have had an average crop of 3½ to four ton per hundred. The El Nino weather caused us to have a cool windy westerly summer with southerly storms putting snow on the tops and frosts beneath to lower soil temperatures. Our summer has been about two degrees below average.

Global warming? A bit of a myth in Southland, and has been for the last three years. Perhaps this westerly weather pattern is the result of global warming. At least the hives have wintered down well with plenty of honey below the excluder.

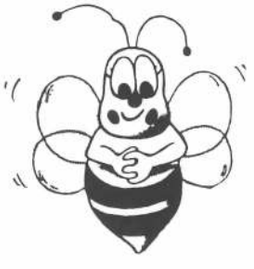
Alister Lee

South Canterbury

Beekeepers seem pleased with this season's honey crop which ranges from above average to better in some areas. We have had an extremely dry Autumn which is ideal for requeening, but is worrying for farmers, who have been feeding out to stock since early March. Rain is desperately needed to boost pasture and winter feed crops.

At our Annual General Meeting, Jan Van Hoof did not seek re-election, so for the first time in seven years we have a new President in Paul Bartrum. I am sure all members will join me in thanking Jan for his contribution to the branch during his term in office.

Members reported on the success of the diseaseathon held last November, and all agree that the personal contact



with hobbyists, and 'hands-on' inspections worked exceptionally well. They are keen to continue in this way. One thing for sure is that members do not want an increase in hive levies.

Peter Smyth

Nelson

The season is called Autumn but it appears to be a misnomer because after March 19 we had a snow fall and a sharp frost or two as a bonus. It put an end to queen raising. If that is a taste of the winter to come to a burned up countryside lashed by south westerlies without rain this moon (Easter) then it paints a dismal picture for future floral growth.

Bees however have gathered a reasonable crop and should go into winter in good shape, thanks to a better part of the year earlier.

Our local wasp population has been patchy, from high infestations to nil in the space of a few kilometres. There has been no regularity in the pattern. I should like to think it was the flood we had between Christmas and the New Year. Perhaps I could offer it again if it was necessary for wasp control.

Motueka, Golden Bay, and areas south of Spooner's Range have fared better. They have had more showers and less of the drying south-westerlies of which the Waimea Valley gets more than it enjoys.

The kiwifruit pollination appears to have been successful from the crops I have seen reaching maturity, but the threat of early frosts still hangs like a threat. If we can get say three weeks of reasonable weather things should be all right.

Ron Stratford

Southern North Island

Nearly all beekeepers in our area are on their final extractions and have just about wintering down their hives. For those in the Wanganui area is has possibly been the best production year for a great many years (averaging 25-40 kg per hive). Coastal areas didn't fair as well because of cold winds through the build up period. Most crops there were below average but some beekeepers managed an average crop by intensive work and by uniting weak hives.

Queen producers have had a fairly difficult time getting queens mated all season. Cold and wet weather during spring and now March has been the worst in forty years. To top it off cold, frosty weather is heralding an early winter.

Hives are going into the winter in good order with plenty of stores. However there are a few question marks on the horizon. Most of our beekeepers are dependant on kiwifruit pollination for a major part of their income. Like beekeepers, a lot of growers have been feeling the pinch during the last two years and have been just hanging on in the hope of a good year. For some, this year has been a disaster. We all share the concerns of those who have lost part or all of their crop to unseasonal spring frosts and hail storms, especially in the Horowhenua District. What happens next year is now up to the bank managers.

On the domestic scene, our Branch meets in Palmerston North for our AGM on May 7. Its been a good year with possibly our biggest turnout ever for our field day in February. Practical demonstrations are always a draw card. At the evening's dinner, Merv Farrington was made a Branch Life Member. Laughter filled the air as each member was required to relate a humorous story as part of 'pass the parcel'. Thanks to those who organised such a successful event.

MARKETING

At this time of the year another age-old problem raises its head. With drums of honey in the shed, one now looks to an increase in price to make up for those poorer years. So far the local market hasn't moved much from last year's price level. There are perhaps three reasons for this:

1. Wholesalers are able to offer low "cash now" prices for honey. They then sell it cheap, on the local market but still make a profit.
2. Wholesalers are marketing at low prices to keep market share. This practice is all very well provided they can prove to the Commerce Commission that they are selling their honey for a profit. A number of very efficient business are able to do this.

Others should be aware that marketing of produces or services is now controlled by sections of the Commerce Act 1988. This legislation was primarily introduced to stop dominant concerns preventing others from entering the market.

Individuals and companies now face very large fines (max. $500,000 for an individual and up to $5 million for a Company) if they contravene the Act by price fixing, cross subsidising, or by restrictive practices, such as dividing up a market. It is no longer possible to balance the books by pooling all revenues and showing a profit. Now each market must stand on its own and make a profit. There is a basic rule of thumb when dealing with any of the above. If it doesn't smell right, check it out.

3. Beekeepers selling weak. Those with a lot of honey are being panicked into selling early at a low price. The other side to this may be that the banks are instructing beekeepers to clear their overdraft now and get what ever they can for their honey. The banks have also been going through hard times lately, losing all that money overseas and there's only one way to make it up: get the small man to pay.

We have been rather fortunate in the lower North Island to date in that all sales have fetched over $2 per kg, with drums returned.

Others have been looking at exporting, but because of the "small" problem with the present NZ export price it is probably prudent to hold off for the moment. The world is not flush with surplus honey and sales are steady. Our dollar is stable, and when all these are put together, our export price must rise.

We can all contribute to a steady increase in domestic honey prices by orderly marketing. Don't flood the market. Put as much aside as one can afford (say 30% of this year's crop) for six months or longer and wait for the price to rise. Don't jump at the first offer you get. Often with slow payments you are no better off. Check things out by ringing around the country. Seek advice from the exporters' group. We produce world class honey - sell it as such.

Happy honeying, hope to see you all at conference in sunny Hawkes Bay in July.

Frank Lindsay

Auckland

A good crop for most of us except for the manuka. Clover was very prolific on the hills; kanuka and pohutukawa also yielded well. One can't help feeling that the higher manuka price will last for the next big crop.

There is frustration in our branch over the increased hive levy. We seem to be paying more and more for less and less. Beekeeping seems to be the only major organisation that hasn't had a major shake up as every other NZ organisation has. We can probably carry on under the present structure, but is it the best system? Even some of our well-established bee businesses are opting just to pay the hive levy and let others bang their heads against a brick wall to try and bring about some changes.

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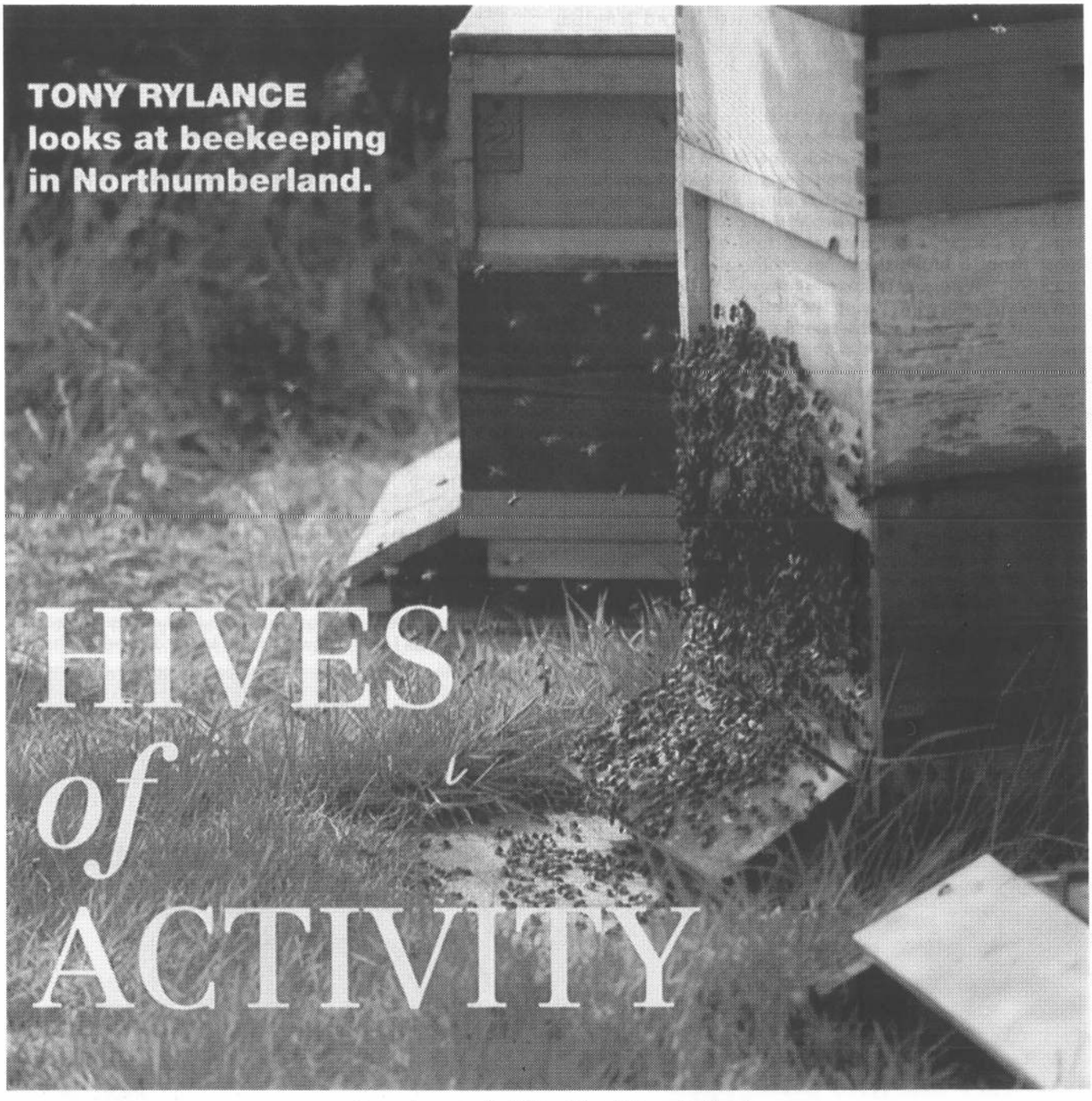


TONY RYLANCE looks at beekeeping in Northumberland.

HIVES of ACTIVITY

Courtesy of 'The Northumbrian'

There was a time, not so long ago, when nearly every dweller in rural Northumberland would keep a hive or two of bees in the garden. He might also keep a few hens, and perhaps a pig, and he looked to them and his carefully tended vegetable plot for the necessities of life.

His bees probably came as a swarm from a neighbour. He kept them in a straw skep, or made simple hives from whatever wood he could find — and he cared for his bees with an inherited countryman's skill.

Times have changed. People's needs and interests have changed, and new farming methods and crops have had an adverse effect. Beekeeping is now a hobby rather than a necessity, but is a hobby that is still very strongly supported in Northumberland, and there are estimated to be about 500 active beekeepers in the country.

You may not see the evidence when you are out and about. Most hives are kept unobtrusively in gardens, and you might not recognise the modern flat-roofed box-hive as a hive at all, if you are looking for the traditional sloping-sided hive, invariable painted white.

You are most likely to see hives away from home in a sheltered corner of a field, or on a heather moor in the late summer.

One person who keeps no bees at home is Willie Robson, the country's second largest commerciel beekeeper. His business is based at the Union Bridge, the 1820 suspension bridge over the River Tweed at Horncliffe. He started with 25 hives in 1966, all made by himself from wood from a local timber yard. Now he has 1,000 hives dispersed up to 50 miles from the Chain Bridge Honey Farm, in the Scottish and

English Borders. He drives 1,000 miles a week, checking the hives and moving them to new locations to take advantage of the season's changing sources of honey.

Willie Robson makes the point that, unlike the farner, the beekeeper has very little control over his stock. The bees, not the keeper, dictate the terms. The successful beekeeper, whose bees produce a surplus of honey even in the bad years, must know all there is to know about bee behaviour and the countryside itself, and, of course, must have the right bees. When is the best time to move the hives to the next high-yielding location? Where is that dry sheltered hollow where the hives will overwinter well and build strong colonies in the following spring? Northumberland is hard, and only the hardiest bees will thrive there.

Another beekeeper in a substantial way is Basil H. Waller. He and his wife Winnie keep 80 hives in a two-acre high-walled garden behind their stone cottage near Bellingham. When I visited him on a warm sunny day in late August we stood in the walled garden and listened to the immensely satisfying sound of thousands and thousands of bees passing above our heads on their journey to and from the 2,000-acre heather moor half a mile to the south.

A retired joiner, Basil makes all his own hives, and became a beekeeper overnight at the age of 10, when two colonies in straw skeps arrived on his doorstep, a gift from the wife of a water bailiff who had recognised his interest in the bees she kept.

Like many beekeepers, Colin Weightman of Riding Mill acquired his first hive while he was still at school, and bees have since been his lifelong interest. He has contributed to the British Bee Journal for 40 years, and is well-known as a judge at honey shows.

My lunch with him in sight of his own apiary continued until after five o'clock, as I listened to his fascinating reminiscences about people who "knew their bees"; railwayman Bob Robson and chauffeur and gardener Frank Cessford, who somehow found the time to keep 100 hives near Riding Mill and sold their comb honey at Pumphreys; Mr Wilson, of Barrasford, who moved his bees from place in a caravan; Bart Miller, who had a sawmill near Thrunton and sold hives made to his own design; and scores of others he meets in his job as Northumberland Bee Inspector for the Ministry of Agriculture.

One person he knows well is Eddie Crozier, of Wallington, who also began early, buying his first nucleus colony by mail order when he was 20 and living in Little Harle.

He has kept bees next to his stone cottage at Wallington since 1945, without interruption until the severe winter of 1963, when he lost all his colonies. Discouraged, he thought of giving up, but the gift of a swarm by the blacksmith at Kirkwhelpington set him going again.

Another well-known bee-man is Henry Whitfield, who lives in Hepple and works as a gamekeeper on Sir John Riddell's Hepple Whitefield Estate. His gamekeeper father kept bees and, despite a still-remembered early discouragement at the age of 12, when a single angry bee chased him 200 yards into the house, he took on his first hive at the age of 16 and has kept bees ever since.

He can see the heather moors on the Simonsides from his house and it is not surprising that he has always been more interested in heather honey than flower honey. In the days when the rail-

Basil Waller (left) examines a frame of honey in his apiary at a meeting of Hexham Beekeepers Association at Hesleyside Gardens.

way ran to Rothbury he regularly sent entries of his honey by rail to the major honey shows elsewhere, and as far afield as Scotland and the South of England. He twice won the first prize for heather sections at the National Honey Show in London.

A close friend and competitor is Willie Gutherson, of nearby Thropton, who carried off a number of the major awards at the National Garden Festival in Gateshead.

In a good year flower honey is plentiful. In the spring and early summer the flowers on the great trees yield honey of their own distinctive colour and taste: lime (greenish, with a tang) and sycamore (dark and rich). Garden and wayside flowers make their contribution: clover, too, in July and August (though rather sweet for some) and then rosebay willowherb (water-white) and blackberry. And there's always oilseed rape early on, unloved by many but plentiful and a good blender.

Moment of truth: judging entries at a honey show.

This article could give the impression that the country's beekeepers are all men, have dauntingly large numbers of hives and live in the countryside. Far from it. The great majority have between one and 10 hives, and many of them are kept quietly in gardens in residential areas, where they can do very nicely. Many novices have been attracted to beekeeping by programmes on television, and should do well if they aren't too ambitious in the early years. Some tasks, such as moving hives to the heather, require two people anyway, but women can keep bees as well as men and (whisper it) with the gentle touch that bees prefer. Amy Nicholson was the county's Bee Inspector for 15 years, and won many awards at the shows.

Bees have always inspired affection in those who know them. In country districts it was the custom to "tell the bees" about any events, happy or sad, in the life of the family. Colin Weightman will admit to tapping each of his hives at midnight on Christmas Eve, to hear the bees sing in celebration, so honouring an ancient custom while at the same time conforming that all is well inside. I am indebted to him for this Irish ditty:

A maiden in her glory
Upon her wedding day
Must tell the bees her story,
Or else they'll fly away.

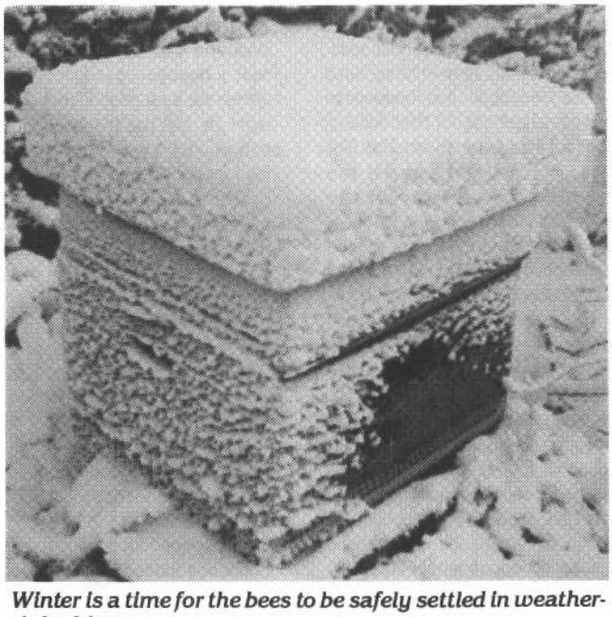
The ancients prized their bees not only for their honey, as food and also medicine, but for their wax and their propolis, the dark brown glue that bees use in their hives. We have returned to those ways, and Willie Robson does an increasing trade in his Cerena range of cosmetic creams made with beeswax and honey from his own hives, and natural oils.

Northumberland's beekeepers enjoy the spring and summer flower season, but their hearts are always set on their pride and joy, the heather season. From the middle of July a close watch is kept on those wide expanses of heather around Allendale, Blanchland, Langleeford and Rothbury. Take your bees there too early, and they will starve, because there is little else for them on the moors: but take them too late, and they will miss ther best of the crop.

The decision is made. At the end of July or early in August, just after dawn or late in the evening, the hive entrances are stopped up and the steady journey to the heather begins. In the old days beekeepers would share an open waggon as transport, and there are still people who can recall seeing these laden vehicles, hives securely strapped down, heading slowly for the distant moors in the dark. Once there, the hives will be tucked tightly against a protecting stone wall or dike, for it can be windy and cold on bad days.

When the bees come home from the heather in September, the beekeeper's year is almost over. The bees have to be fed with sugar syrup, and safely settled in weather-tight hives against the coming cold. For them a period of near-hibernation lies ahead; they will not emerge until the warmer days of February and March.

For the beekeeper, it's a time for reflection, for making plans for the next season, and, of course, for enjoying some of the sweet fruits of the labours of those tireless workers, the bees.



Winter is a time for the bees to be safely settled in weather-tight hives.

GRASS ROOTS POLITICS

By Ham Maxwell

To say that Fred is a know-all would be an exaggeration. To say he lets you know his opinion far too early in the aquaintship would not be an exaggeration. That is how it turned out to be when we persuaded Wally to take up beekeeping.

Wally is a nice bloke. I've known him for years, on and off, as he came and went on his jaunts around the country. He never really seemed to settle down to anything permanent, and could be described as a migrant, seasonal worker. Great bloke to have around when there is a beast to cut up into reasonable portions ready for the deep freeze. His skill with a gas torch has to be seen to be believed, and he can fill in a tote ticket in a flash, something which causes me acute embarrassment on the few occasions I have a flutter. He returned home to take care of his old dad. He did a wonderful job in the last two years of his dad's life, and was left the house and a small property. We all wondered if this was the time to settle down, but he rented out the estate and went off again to the life he knew best.

That's the history part, now let's look at the current events. The people renting his property moved out. A week later Wally appeared, but not alone. Seems he got shot by Cupid's arrow and got married. They cleaned up the house and settled in, and in due course we met the new bride. The general impression was that she was a bit sharp, but nice enough underneath. Like Wally, she had roamed the university of life, and was capable as he in adapting. His restless soul needed to do something, and that is how he decided that beekeeping would be an ideal way of life. Where better to use all his talents and skills. You, like me, go out and buy all the bee gear needed. Not Wally. On the property stood some pine trees, tall and straight, and at the back boundary were some enormous macrocarpas. He set to work and reduced these trees to lumber, using the portable mill he made in the garage. This naturally did not happen overnight, and in the meantime he began reading a programme on beekeeping. His reading was voracious. The few books I owned were soon used up, so he went to Fred, who has a well stocked library. Sure, Fred was only too happy to oblige, and loaned his precious volumes to Wally. Now kindred souls react, and so it was with Fred and Wally. Both had similar backgrounds, were talented in many fields, and better still their spouses got on well together.

Once the timber was seasoned, Wally began to make hive gear. Gear like you have never seen. Every piece of timber matched perfectly with its counterpart, and he used all the offcuts to make the frames. All the woodwork was then dunked in preservative before assembly, and painted after assembly. Soon the barn on the property was fairly bulging with supers full of frames, but not a bee in sight. Wally struck a deal with Fred and I to get some nuc's to start him off. Hive gear was exchanged for nuc's, and we helped him introduce the bees into his hives. He sent for some foundation wax sheets, and soon had an ample supply of complete frames ready to go on the hives. At that time I was getting ready for a trip away for the firm, so could not spare much time to help. Fred soon came to the fore and I went away knowing Wally was in good hands.

A different story unfolded on my return. The first inkling that anything was wrong was when Fred reminded me right sharp that my mate Wally was a bit tardy in returning the books loaned to him. Wally was not at the four o'clock choir practice, which was a bit odd. He was always good for a couple of jugs, never missed his turn. I wheeled around to see him on the way home, and his missus looked at me hard and said "been down with the boozers by the smell of you, you will find Wally down at the shed", then she shut the door. Well, he was down at the shed, making some frames up on the jig, and scowled when he saw me. This was a right position to be in, piggy in the middle. I made with small talk and got grunts in reply, obviously he was in not the best of moods. Taking the bull by the horns, as is my forte when things are not going according the Hoyle, I asked straight up, "what's the matter between you and Fred".

Now Wally is wont to call a spade a spade, not for him the genteel descriptions used by experts. What he called Fred was not fit to print, let alone listen to. From it all I gathered was that Fred had come on real heavy with advice about the organisation of the hives. First the arrangement of the hives in the paddock, next the composition of the supers and their placement in stacking order. He apparently capped it off with remarks about the bees not appreciating the quality of woodwork used to assemble the hives. This latter comment is what got right up Wally's nose. To him, any job worth doing is worth doing well, and because he is skilled in woodwork, he resented Fred's insinuations that the work was wasted on the bees. At the same time it appears that their repective spouses had both turned up at the local CWI meeting wearing identical dresses. In ladies circles this is apparently not done, and so the result was that each male was earbashed at some length about the other female, then when the descriptive words ran out, a new onslaught of the opposition's hubby began. You guessed it. The next day when Fred came around and offered his gratuitous advice it was too much for Wally. He then proceeded to tell Fred that he preferred the advice of the authors of all the books he had been reading.

That was the start of the rot, and by the end of the week Fred stopped calling, Wally ceased attending choir practice, and I walked into the middle of it all, innocent as the day I was born. Wally just about threw Fred's books at me when I mentioned them, so I didn't stick around long. I mentioned that my missus probably had tea on, and if I wanted it hot I had better get moving. Teatime was a quiet affair at home, and it finally transpired that my missus had copped two earfuls, one from each of the wronged wives. At least I had company in my isolation.

Club field day was scheduled for the following Saturday. A barbeque lunch was also planned, giving members a chance to have a family day out and meet other beekeepers and their families. Not looking forward to the event was someting new for the missus and me, as Fred was organised to give a talk about moving hives, and Wally had been scheduled to show his woodwork and describe the construction methods used. Each family provided a parcel of food to cook, and the club president provided the big portable gas barbeque cooker, the sort the cooks a couple of dozen eggs at a time, or twenty sausages or steaks. Setting up this monster was a job in itself, and having lain dormant for a lengthy period, rust had made its appearance. This meant the team setting up the cooker missed the early talks on extracting and packing, but we joined up with the throng just as Fred was starting his talk. It was a cracker, he really pulled out all stops in his presentation, questions

came thick and fast, and the meeting then moved on to the next talk, something to do with introducing queen bees into hives.

Wally's talk was to be the first after lunch, and we adjourned to fill the inner man with refreshment. This time lunch was something different. The ladies had decided to put on their own field day activity, unbeknown to the males, and so arranged a parade of their latest homemade fashions. Rules were formulated, and each contestant had to work to a pre-set pattern, but was to introduce a variation of her own choice. Quality of construction was also to be tested, and the lady in charge of the local school's sewing section was to be the judge. Naturally some of the mannequins were shy, a couple were blase, and one literally flaunted herself in front of the judge, a factor noted by the audience, who offered some ribald comment. Results were to be announced at afternoon tea time.

Eating a sausage held between a couple of bits of bread and trying to stop the tomato sauce from dribbling over the shirt, while trying to watch a parade of local lasses is not an easy job. Kids spilling lemonade and dropping steaks is further distraction, but we finally made it to Wally's talk. He started very hesitantly, obviously not used to being in front of an audience, but the gasps of admiration at the quality of his work soon gave him voice, and he was like a showman at the end of the talk. I noticed Fred listening intently, then sliding up to the front to get a better look at the woodwork being displayed. With everyone having been so busy, their respective spouses had not had the occasion to meet each other until afternoon tea time. When they did the smiles were frosty, but at least they smiled.

Judges at these country groups can be merciless in their comments, and this can be an irritant, causing friction in some camps. We usually arrange for each presentation to be assessed, and the best presenter gets a small prize, a new hive tool, or a reel of wire for frame support. Nothing valuable, but recognition of the effort the speaker made.

Call it coincidence if you like, but the judge of the ladies competition was effusive as to the standard of the garments she had to assess, and awarded dual first prize, unable to clearly differentiate between the winners.

The assessor of the men's presentations came to the same conclusion about the talks, also awarding dual first prizes, and commenting that his decision had been backed by a straw poll taken during the tea break.

There they were, Fred and his missus, Wally and his missus, all beaming smiles down at the audience. Then a strange thing happened. Fred went over to Wally and shook his hand, and apologised for getting up his nose. Wally, a little surprised, thanked Fred and apologised in his turn, commenting favourably on the cracker job Fred turned on in his talk.

At this, their wives looked at each other, burst into tears, and rushed into each other's arms. Onlookers were nonplussed at this display of emotion, and then cheered madly, until cut short by the announcement that the bar was open.

Nothing was said on our way home, my missus was sitting there quietly grinning to herself, and I must admit to having a bit of a smug look across my dial. Finally I stopped the car, and remarked that I could not contain myself any longer. Instead of jumping out and disappearing behind a bush, I burst out laughing. This is not quite characteristic of me, so I was questioned. When I explained, the missus exploded with mirth also, and it was my turn to ask questions. Seems we both had done a little underhand work, in that we aquainted the judges with the situation facing us before the field day. Each had secured an undertaking from the respective judge to assist if possible in remedying the situation. That we had both succeeded beyond our wildest dreams was surely coincidence. But then were not the judges the local vicar and his lady wife, well versed in repairing the vissitudes of local community? Perish the thought that anything underhand should have occurred, but there was an extraordinarily large donation of honey to the local bring and buy held yesterday. Seems it raised quite a large sum for the maintenance fund needed in restoration of the baptismal font. Who said that fate works in mysterious ways?

TELEPHONE NUMBERS

As we all know, Telecom has revamped its exchanges, and many businesses and individuals now have new telephone numbers. Will all branches and members of the Export Liaison Group, please check their telephone numbers listed in this magazine and advise the Editor of any changes?

SWEETEN THEM WITH HONEY BAKING WITH HONEY

From Sue Jenkins

When honey is an ingredient in both cakes and cookies, it is more than just a sweetener.

Honey's secondary functions include flavour, browning, dough fermentation, and humectancy.

Let's explain. Different floral-sourced honey contributes its own special flavour; honey caramelizes during baking, which enhances crust colour as well as providing a natural gold colour; in making yeast leavened breads and crackers, honey supports the fermentation, building volume; humectancy in honey contributes moisture which extends shelf-life. The hygroscopic characteristic of honey reduces the crumbliness and attracts moisture.

All these functional characteristics of honey also enhances the fruity and spicy flavours used in your baking.

Honey should be liquid (warmed a little if necessary) in cooking, adding it in a fine stream to the batter as you mix it, for better volume and texture.

When next making your favourite cake, use two tablespoons of honey. It will give a beautifully tender and less crumbly product. With trial and error, substitute all the sugar with same weight of honey, but reduce the liquid by a quarter. Cook in a slower oven than usual (less 10-15 C).

As a general rule, use light coloured honey for white cakes, and biscuits. Use darker honey for stronger flavouring in gingerbread, fruitcakes, chocolate combinations, etc.

To measure honey accurately and easily, wet (hot water) or oil the measuring utensil first.

HONEY CHOCOLATE-NUT BROWNIES

75g butter
75g chocolate
1 cup honey, warmed a little
3 eggs, well beaten
¾ cup flour
½ teaspoon baking powder
1 teaspoon vanilla essence
1½ cups chopped nuts or saltanas or a mixture

Melt the butter and chocolate together. Mix in the honey, and well-beaten eggs. Sift together the flour and baking powder, add to the chocolate mixture. Add vanilla essence and chopped nuts. Bake in a greased and lined sponge roll tin at 160 C for 30-40 minutes.

MUESLI BISCUITS

1 cup rolled oats
1 cup wholemeal flour
⅓ cup sugar
1 cup coconut
1 cup saltanas or other dried fruit combination
180g butter
4 tablespoons honey
1 teaspoon baking soda
2 tablespoons hot water

Place the dry ingredients in a bowl and mix together. Melt butter and honey together. Combine with baking soda dissolved in the hot water and quickly pour into the dry ingredients. Mix well. Place in tablespoon lots on a greased try, flattening a little. Bake until golden brown at 180 C for 10-15 minutes.

GINGER GEMS

½ cup honey
3 teaspoons ground ginger
2 eggs
100g butter
1 cup milk
2¾ cups flour
1½ teaspoons baking soda

Warm honey in a bowl, add ginger and eggs. Beat together with an egg beater. Add very soft (not melted) butter. Beat again. Add milk, mix again. Add sifted flour and baking soda, taking great care not to overmix. Heat gem irons to 180 C until very hot. Grease. Spoon mixture into irons, about ⅔ fill. Bake at 180 C for 12-15 minutes or until centre springs back. (Makes about 30).

HONEY LEMON AND GINGER SQUARES

175g butter
¼ cup borage honey
finely grated rind 1 lemon
1 cup wholemeal flour
½ cup white flour
2 teaspoons baking powder
1 teaspoon ground ginger
⅓ cup chopped crystallized ginger
2 eggs, beaten
Topping;
1 tablespoon borage honey
juice 1 lemon

Melt butter and honey together in a saucepan, add the lemon rind. Remove from the heat and cool slightly. Sift flours, baking powder, and ground ginger. Add to the honey mixture along with the crystalized ginger and beaten eggs. Mix well. Place mixture into a well greased and lined 18cm square tin. Bake at 170 C for 15-20 minutes or until firm to touch. For the topping, gently heat the honey and lemon juice together. Spoon the syrup over the cake while it is still warm. Cool in the tin to allow the syrup to be absorbed.

UPSIDE DOWN CITRUS CAKE

2-3 tablespoons warmed liquid light coloured honey
250g butter
⅔ cup light coloured honey
1 cup wholemeal flour
1 cup white flour
1 teaspoon cinnamon
¼ teaspoon nutmeg
2 teaspoons baking powder
4 eggs, beaten
2-3 oranges or tangelos

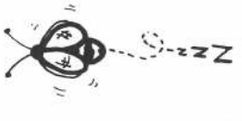
Grease and line a 23 cm square cake tin. Spoon in the 2-3 tablespoons warmed liquid honey to cover the paper. Cut 2 cm thick of orange or tangelos slices, place cut side down in the tin.

Cream butter with runny honey. Sift the dry ingredients and add alternatley with the beaten eggs. Carefully place cake mixture into the cake tin. Bake for 30 minutes at 180 C or until firm to touch. Cool a couple of minutes in the tin before turning out on a serving plate. Eat it warmed and served with yoghurt or cream as a dessert or cold with coffee.

HONEY AND ALMOND SHORTBREAD

250g butter
½ cup honey
1¾ cup flour
½ cup rice flour
½ teaspoon baking powder
⅓ cup flaked almonds

Cream the butter and honey in a bowl until it is creamy. Lightly stir in the sifted flours to form a soft dough. Lightly butter the base of a 20cm x 30cm lamington cake tin and spread on the dough. Sprinkle with almonds on top and bake for 1¼ hours at 160 C. Remove from the oven and cut into 24 finger lengths while still hot. Cool in the tin.



WHY WE NEED EFFECTIVE CHANGE IN AGRICULTURE

Courtesy Agrisearch

In round numbers, New Zealand exports $8 billion of primary products each year. That's about 60 percent of our foreign exchange earnings. With the proceeds, we collectively buy VCRs and pharmaceuticals, Toyotas and Caterpillars, CAT scanners and CDs.

Yet in spite of all the things our primary exports pay for, the percentage of our national economy that is counted as on-farm production is only 6 percent of New Zealand's Gross Domestic Product — a little more than a twentieth of our total economic activity creates nearly two-thirds of all our tradeable goods. In other words, the New Zealand economy is a very oddly-shaped pyramid: the top of the pyramid is very much wider than the base.

This unsettles many economists. It should also unsettle everyone else, but New Zealanders are now city dwellers and we forget our dependence on farming. Because such a high proportion of our national income comes from just one category of export, New Zealand governments, economists and other institutions have looked for decades for ways to strengthen our economy.

Sometimes, this search has prompted some embarrassing enthusiasms. A recent candidate is the idea that New Zealand could become the Switzerland of the South Pacific. On a second look however, the theory fails — it ignores New Zealand's circumstances.

We are very small, even compared with non-giant Switzerland. We do not have land borders with large potential customers and the resulting low transport costs for what we produce. We have not built a tradition of high value-added manufacturing. New Zealand does not have a history of providing customer service.

But although such Swiss diversions are entertaining, the reason for undertaking the search in the first place is as important as ever.

New Zealand's recent economic reforms were put in place to allow resources to flow where they would generate the best returns. Government intervention in the economy was cut to make sure that market signals about optimum returns were not distorted. The first result was that many had a flutter in the finance markets. Now that is behind us, we should see more people getting back to making things and trying to "grow" businesses. But even when they do, we will still need some very serious thought about the way we make our national living.

This is because there are serious questions about the sustainability of New Zealand's economic health, and therefore, New Zealanders' quality and standard of living. Our export income faces some significant threats. Because there are several threats, there are no simple remedies. Another complicating factor is that these dangers will continue to build at a faster rate than we have ever had to deal with before.

Some of the pressures are political. The breakdown of Eastern Europe's planned economies is now fuelling agricultural export drives. Poland, what used to be East Germany, Czechoslovakia and Hungary all desperately need to generate hard currency. Agricultural exports are their most-readily available cash generator. Then there is the EC's Common Agricultural Policy (or the Crazy Agricultural Policy as *The Economist* puts it) that subsidies both production and the export of the resulting production surpluses.

Other pressures on New Zealand agriculture are technological. These developments are outlined in a publication from the OECD called *Biotechnology: Economic and Wider Impacts* (excerpted on page 6). The point made by this report is that New Zealand's natural production "advantages" are of diminishing value.

They are comparative advantages only, not competitive advantages in the full sense of the term. A competitive advantage is that which makes a seller the supplier of choice, for reasons other than lowest price. Without market-led R&D, we lock ourselves into a position where we continue as pricetakers for commodities, fighting for market share against countries with much lower labour costs.

There are biological pressures. Bovine Tb spread by possums may eventually be used as a reason to restrict our exports of beef and dairy products. New Zealand cannot sustain production from land that needs different management because of pests like rabbits or diseases like facial eczema.

Still other pressures on our national income are financial. High real interest rates reduce the amount of technological improvement farmers can afford. But even in the most prosperous times, there is a lag between the discovery of new, more-competitive technology and its adoption.

It is now so complex to farm really well, that more and more training and experience is needed before farm enterprises are able to satisfy new markets and increase income. (Another cause of the lag between the discovery and the use of new technology, is that established farmers often do not take refresher courses in farm management. But the basics of farming have changed enormously in the last fifteen years.

Technology transfer has not been a high national priority.)

Given all these threats to our current (and future) income, New Zealand needs to create genuine competitive advantages. That is the active strategy. Too often, only a reactive strategy is looked at — diversification, whether of products or markets.

However, there are strict limits to the pace of diversification, particularly when the changes are radical. For product diversification, even changing breeds of sheep to produce leaner, higher value meatr is a challenge. Adoptimg more complicated changes, like a switch from animal husbandry to exotic horticulture, is much tougher. Completely changing an entire economy from primary to secondary industry would be infinitely more complicated — this kind of rapid and radical restructuring is therefore not an option.

In marketing, the shotgun approach to opening new markets is expensive. If these new markets do not stay open for long (because there is no genuine competitive advntage), then the exercise i spointless.

So if our income is not at the moment guaranteed, what have we been doing as a country to ensure that we can pay for the goods and services we import? The simple answer is that we have been doing the only two things to protect our national income that we can: we are placing a greater emphasis on producing primary goods that are more desirable and able to command a premium price, while we continue to work at producing export commodities at lower unit cost.

It's trite and true that hese days New Zealand has to compete in a global marketplace. But although global markets are on a "playing field" that's nice and flat for big industrial countries, those fields are rather bumpy for agricultural exporters. GATT miracles aside, they are likely to remain that way.

Some of the bumps can be removed through ongong investment in agricultural research and development. And perhaps, by doing and adopting the right kind of R&D, we will even slope the field in our export favour. But such slopes can be created only by the weight of competitive, not comparative, advantage. A prime source of any competitive advantage is innovation. Which is why New Zealand needs effective change in agriculture.

LIBRARY NOTES

From John Heineman

The following new items have come to hand. Note them in your copy of the cat.

Gulliford, R.B. EXAMINING BROOD CONES, 1989, 14 p, Australia.

Gulliford, R.B. NOSEMA DISEASE, 1989, 23 p, Australia.

(Both the above booklets belong to the Bee Management series, something like our Ag. Links)

Austr. Hon. Brd. THE WONDERFUL STORY OF AUSTRALIAN HONEY; AUSTRALIAN HONEY; HONEY, AUSTRALIA'S LIQUID GOLD.

(These pamphlets are together in a folder. Story, analysis, health, recipes. In attractive colour print, meant for general promotion.)

Willix, D.J. (MAF) THE MARKETING OF HONEY AS A MEDICINE. 1991, 48 p, NZ. Meant as a report to the NBA, a case study covering a wide range of aspects of the honey industry: production, organisation, consumption, etc. in general and especially niche marketing as a health food and medicine with the related problems of advertising regulations and so on. Facts not folk-medicine. A document worth taking notice of.

PLEASE NOTE: Address library mail to: NBA TECHNICAL LIBRARY, NZ POSR, MILTON (Sth. Otago). (For an explanation of this change of address see elsewhere in this magazine).

Plan to recycle refrigerator CFCs

Technology to remove the CFC (chlorofluorocarbon) gases from old refrigerators and freezers, enabling their metal to be recycled without damage to the Earth's atmosphere, is being developed in Britain, where the world's first safe fridge recycling stations are planned to be set up within the next few years.

Behind the plan to develop safe recycling by the end of 1992 is a collaboration between the Bird Group, a metals recycling specialist based in the English Midlands, Britain's giant Imperial Chemical Industries — one of the main producers of CFCs in Europe — and Lindemann Maschinenfabrick of Fed. Germany.

The partnership aims to create the first complete recycling station capable of removing all CFCs from domestic appliances, by the end of 1992. Following successful operation of a pilot plant, it would be possible to set up a chain of gas-tight, pollution-free recycling centres by 1995 to handle 90 per cent of the UK's scrapped fridges and freezers.

The group would also be able to build similar systems in other parts of the world, and the techniques could be extended to recycling other products such as insulating foams used in the building industry.

CFCs escaping from the coolant systems and insulating foram of old appliances as they are broken up are seen as one of the main threats to the world's environment. They destroy both the ozone layer that protects life from harmful ultra-violent rays and contribute to the greenhouse effect causing global warming.

Although manufacturers are now seeking alternatives to the harmful gases, which will enable their production to be phased-out, it is estimated that over the next 15 years more than 22,000 tonnes of CFCs embodied in existing appliances will have to be safely disposed of in Britain alone. The present total of existing potentially recoverable CFCs throughout the world amounts to some two million tonnes.

In the type of recycling station envisaged, the liquid CFC-containing coolant will first be sucked out and pumped into sealed containers, before the appliances are passed into the insulated gas-tight main processing plant. Here, automated machinery would separate insulating foam from other materials which can be taken away for normal recycling.

The foam will be compressed, and the gas it contains extracted. CFCs will be separated out and purified through a complex cooling and condensation process, before being passed to the chemical manufacturer for refinement and eventual re-use if necessary.

Classified Advertisements

Available only to registered beekeepers selling used hives, used plant, and other apiary equipment, and those seeking work in the industry. $17.50 for 20 words (inclusive of GST) payable in advance. No discounts apply. No production charges. Maximum size: 1/6 page. No box number available.

OTHER PUBLICATIONS

INDIAN BEE JOURNAL

International in appeal; keeps you update with beekeeping developments in India and the World. Publishes research on Asiatic Honeybees, tropical apiculture and pollination. Solicites your support and welcomes your subscription:

Subscription	India	Abroad
Individual	Rs. 125/-	US $45
Institution/ Corporate bodies	Rs. 500/-	US $110

Send I.M.O./Demand Draft drawn in favour of **All India Beekeepers Association** to Dr. R.C. SIHAG, Editor, Indian Bee Journal, Department of Zoology, Haryana Agricultural University, Hisar - 125 004, INDIA.

BEE CRAFT

The official monthly journal of the British Beekeepers' Association, covering all aspects of beekeeping in the UK. Annual subscription including postage $37 surface mail $69 air mail to Mrs S. White, 15 West Way Copthorne Bank, Crawley, West Sussex RH10 3QS. Our editor has advised that he has not received a copy of your journal for the last six months. Please could you arrange to resume delivery to him. His name and address are as follows:— Mr R. Young, 23 Beaconsfield Rd, Vincent Park, Sittingbourne, Kent ME10 3BD.

INTERNATIONAL BEE RESEARCH ASSOCIATION (IBRA)

What do you know about the INTERNATIONAL BEE RESEARCH ASSOCIATION? The many books and other publications available from IBRA will deepen your understanding of bees and beekeeping. An IBRA membership subscription — including BEE WORLD, a truly international beekeeping magazine published quarterly in the English language — will broaden your beekeeping horizons. Details and a wide selection of books and publications from New Zealand IBRA representatives, Cliff Van Eaton, MAF, Private Bag, Tauranga or Peter Brunt, Nelson Polytechnic, Private Bag, Nelson.

OTHER PUBLICATIONS

THE APIARIST

A New Zealand Beekeeping Journal. Published every two months. Contains informative and interesting articles on beekeeping in New Zealand and overseas. Subscriptions: Free to all registered beekeepers in New Zealand with six hives or more. $5.00 per annum, if less than six hives. Write to: The Editor, "The Apiarist", P.O. Box 34, Orari, N.Z.

SOUTH AFRICAN BEE JOURNAL

The leading bee journal in Africa for over 75 years. Official organ of the Federation of Beekeepers' Associations, published bimonthly in English and Afrikaans. Primarily devoted to the African and Cape bee races. Subscription, including postage: R35.00 per annum, payable in advance in South African Rands. Apply: The Federation Secretary, PO Box 4488, 0001 Pretoria, South Africa.

AUSTRALASIAN BEEKEEPER

Senior Beekeeping Journal of the Southern Hemisphere. Complete coverage of all beekeeping topics in one of the world's largest beekeeping countries. Published monthly by Pender Beekeeping Supplies P/L, P.M.B. 19, Gardiner St., Maitland, N.S.W. 2320 Australia. Subscription by Bank Draft. $US27.00 surface per annum.

FARMING UNCLE

Magazine for homesteaders! Covering small stock, gardening, bees, and much, much more. Free information or $US8.00 one year ($US12.00 foreign). Money-back guarantee! Farming Uncle, ® , Box 91E92, Liberty, N.Y. 12754, USA.

THE SPEEDY BEE

Keep up with the latest in the United States beekeeping industry with reports of meetings and developments from The Beekeepers' Newspaper. Published monthly. $20.00 per year (mailed First Class). Write for air mail rates. The Speedy Bee, P.O. Box 998, Jesup, Georgia 31545 USA. Write for free sample copy.

OTHER PUBLICATIONS

SCOTTISH BEE JOURNAL

Packed with practical beekeeping. $4.80 a year from the Editor, Robert N. H. Skilling, F.R.S.A., F.S.C.T. 34 Rennie Street, Kilmarnock, Ayrshire, Scotland.

BRITISH BEE JOURNAL

Monthly — Single copies 22p plus postage. OVERSEAS: Annual subscription 4.20 sterling or $18.40 post paid. Keep up to date by taking out a subscription now from us at — 46 Queen Street, Geddington, Northans, NN14 1AZ, England.

GLEANINGS IN BEE CULTURE

Do you have questions or problems about beekeeping in different areas? Learn how to solve them by reading "Gleanings in Bee Culture", the largest circulation English language bee journal, and made up of articles by well-known professors and beekeepers, like yourself, who tell how they have succeeded in beekeeping. For Subscription rates write to: Gleanings in Bee Culture, P.O. Box 706, Medina, Ohio 44258, USA.

BEE WORLD

World renowned, world respected. A truly international beekeeping magazine published quarterly in the English language. Included as part of membership in the International Bee Research Association (IBRA), the world's leading charitable trust providing scientific and practical information on bees and beekeeping. For full details of IBRA services and membership contact: International Bee Research Association, 18 North Road, Cardiff CF1 3DY, UK. Tel: (0222) 372 409 Fax: (0222) 665 522 or New Zealand IBRA representatives, Cliff Van Eaton, MAF, Private Bag, Tauranga or Peter Brunt, Nelson Polytechnic, Private Bag, Nelson.

THE SCOTTISH BEEKEEPER

Monthly Magazine of the Scottish Beekeepers' Association. International in appeal, Scottish in character. Subscription rates from: D.B.N. Blair, 44 Dalhousie Road, Kilbarchan, Renfrewshire, PA10 2AT, Scotland, U.K. Sample copy on request — $1 or equivalent.

AMERICAN BEE JOURNAL

Subscribe now to the oldest bee magazine printed in the English language. Amateur, professional and scientific news makes ABJ an attractive buy for any beekeeper. World-wide crop and market page an outstanding feature. The American Bee Journal is the largest monthly apiculture magazine in the world. Enquiries to American Bee Journal, Hamilton 1U.62341 USA.

HONEY INDUSTRY TRUST

Honey Industry Trust applications close twice a year, on February 15 and August 15.

Application forms are the NBA, Box 4048,

Applications will be considere receipt of recommendations from the NBA Executive.

PRICE LIST
AS AT 1 MAY, 1992

		Excl. GST	Incl. GST
BEE BLOWERS			
Spare Hoses	each	57.73	64.95
Spare Nozzles	each	13.82	15.55
BEE ESCAPES			
Porter or Round Plastic	each	2.62	2.95
	per 10	23.91	26.90
Round Galvanised	each	2.89	3.25
	per 10	26.40	29.70
Eight Way Plastic	each	3.64	4.10
	per 10	33.33	37.50
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Porter or Round Plastic Bee	each	6.53	7.35
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Round Galvanised Bee Escape	each	6.89	7.75
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Eight Way Plastic Bee Escape	each	7.87	8.85
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BOOKS ON BEEKEEPING			
ABC and XYZ of Bee Culture - A.I. Root	each	66.22	74.50
Arthritis - Malone	each	28.66	32.25
Beekeepers Handbook- Sammataro	each	51.11	57.50
Beekeeping Questions and Answers	each	27.60	31.05
Bees, Vision, etc- Frisch	each	29.55	33.25
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Contemporary Queen Rearing	each	33.33	37.50
Cookin' with Honey	each	6.93	7.80
First Lessons in Beekeeping	each	7.20	8.10
Hive and the Honey Bee	each	43.38	48.80
Honey Bee Brood Diseases	each	20.44	23.00
Honey Bee Colouring Book	each	1.78	2.00
Honey Bee Study Prints	per set	77.33	87.00
Honey for Health- Tonsley	each	8.44	9.50
Honey in the Comb	each	20.00	22.50
Honey Wines & Beers	each	28.86	32.25
Honey & Health	each	13.11	14.75
How to make Beeswax Candles	each	6.93	7.80
Life of the Honey Bee	each	6.93	7.80
Making Mead	each	19.38	21.80
Manual for NZ Beekeepers 1848	each	35.11	39.50
Nectar and Pollen Sources of NZ	each	3.51	3.95
Practical Beekeeping- Chapman- Taylor & Davey	each	35.51	39.95
Putting it up with Honey	each	23.96	26.95
Queen Rearing Simplified	each	20.89	23.50
The Honey Kitchen	each	22.67	25.50
The Wonderful World of Honey	each	22.67	25.50
Wall Chart - The Life Cycle	each	22.18	24.95
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F.D. Thin Super per Kg	26.5	16.0	11.38	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

DO BEES			
20cm Display Toy	each	17.73	19.95
EMBEDDERS			
Electric Transformer complete with Leads	each	106.22	119.50
Spare Leads	each	11.51	12.95
Spur Embedder	each	9.42	10.60
EXCLUDERS - All wire with wooden frames (26 per Carton)			
1-9	each	10.58	11.90
10-49	each	9.29	10.45
50 and over	each	8.94	10.06
Unassembled 50 and over only	each	8.74	9.83
Extra Wood Frames for above	each	1.24	1.40
	per 10	10.40	11.70
	per 100	91.56	103.00
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	780.00	877.50
F.D. 3.5 litres and 3/4 D. 4 litres	each	8.71	9.80
	10	79.20	89.10
	100	720.00	810.00
ENTRANCE TYPE	each	3.11	3.50
	10	29.78	33.50
FRAMES			
Hoffman Full Depth, Three Quarter Depth and Half Depth			
Section Frames Full and Half Depth: Manley Three Quarter Depth			
(100 per Bulk Carton)	10	9.33	10.50
	100	66.58	74.90
	1000	594.67	669.00

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 Hoffman			
End Bars	100	15.64	17.60
	1000	142.40	160.20
Bottom Bars	100	15.07	16.95
	1000	137.11	154.25
Top Bars	100	28.27	31.80
	1000	256.44	288.50
FUMIDIL B			
0.5g Bottles	each	17.33	19.50
9.5g Bottles	each	124.00	139.50
GLOVES Leather Ventilated Beekeeping			
Small, Medium, Large and Extra Large	pair	39.82	44.80
HATS Ventilated Bee Helmets			
Woven Fabric	each	22.18	24.95
Moulded Plastic	each	22.62	25.45
HIVES			
Complete Two Storey Hive (A6)	each	86.67	97.50
HIVES MATS (22 per Carton)			
Hardboard with Wood Rim	each	3.96	4.45
	10	34.53	38.85
	100	310.67	349.50
Frames only for Hive Mats	each	1.42	1.60
	10	10.84	12.20
	100	100.89	113.50

		Excl. GST	Incl. GST
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	.98	1.10
	per kg	4.89	5.50
	50kg	195.00	219.38
NYLON TYPE			
Complete with Four Metres of Nylon	each	4.00	4.50
Strapping and Plastic Buckles	10	35.55	40.00
	100	320.00	360.00
HIVE TOOLS			
'Fuller' 10 Inch	each	8.44	9.50
'Kelley' 10 Inch	each	10.84	12.20
'Maxant' 10 Inch with Hook	each	19.42	21.85
HONEY CONTAINERS			
Cut Comb Boxes (250 per Carton)	each	.69	.78
	250+	.58	.65
140gm Clear Plastic Polyjars	each	.36	.41
with White Screw Caps	100	32.00	36.00
250gm Clear Plastic Polyjars	each	.40	.45
with White Screw Caps	100	36.00	40.50
500gm Clear Plastic Polyjars	each	.40	.45
with White Press On Lid	100	36.00	40.50
500gm Clear Plastic Polyjars	each	.44	.50
with White Screw Caps: Square or Hex.	100	40.00	45.00
1 Kg Clear Plastic Polyjars	each	.80	.90
Hexagonal with White Screw Caps	100	66.00	74.25
500gm Plastic Safe-A-Pak	100	26.22	29.50
Coloured with White Lids	1000	213.33	240.00
500gm Squat Clear Plastic	100	33.33	37.50
Safe-A-Pak with White Lids	1000	256.00	288.00
1kg Plastic Safe-A-Pak	100	44.27	49.80
Coloured with White Lids	1000	360.00	405.00
2kg Plastic Safe-A-Pak	each	.84	.95
Coloured with White Lids	200	149.33	168.00
5kg Plastic Safe-A-Pak	each	2.67	3.00
Coloured with White Lids	100	195.56	220.00
30kg Polypails Plastic	each	11.73	13.20
White with White Lids	per 10	105.78	119.00
HONEY EXTRACTORS			
Lega Four Frame Stainless Steel			
Hand Driven	each	528.89	595.00
Ecroyd's Four Frame Plastic Hand Driven	each	381.33	429.00
Replacement Gears for Extractors			
- Nylon	per set	14.67	16.50
- Metal	per set	32.00	36.00
Clear Hinged Covers	per set	28.44	32.00
HONEY GATES			
CAST IRON THREADED			
60mm OD	each	53.24	59.90
75mm OD	each	61.33	69.00
IN-LINE BALL VALVES			
25mm ID		30.05	33.80
32mm ID		41.60	46.80
38mm ID		54.84	61.70
51mm ID		87.56	98.50
NYLON THREADED WITH BACK NUT			
47mm OD	each	20.00	22.50
60mm OD	each	31.56	35.50
HONEY LABELS			
'Pure Honey' 75mm x 60mm	10	1.07	1.20
	100	8.89	10.00
HONEY PUMPS			
Ecroyd's Gear Type	each	475.00	534.38
Honey Pump Unit, Complete	each	POA	POA
Lega, 2000 kg per hr, complete		1600.00	1800.00
Mono, Complete or Bare	each	POA	POA
HONEY STRAINERS			
28 Mesh Nybolt for Polypail	each	20.27	22.80
Nybolt strainer bags - made to order		POA	POA
HONEY REFRACTOMETERS			
Kikuchi or Atago (Price on application) approx.		550.00	618.75
HONEY TANKS			
Plastic 30 Kg with lid and 47 mm Honey Gate	each	31.73	35.70
Plastic 180 Kg with lid and 47 mm Gate	each	84.44	95.00
Stainless Steel, with lid, gate and stand	50kg	149.00	167.63
	100kg	199.00	223.88
	200kg	279.00	313.88
	400kg	499.00	561.38
METAL REBATES	pair	.93	1.05
	per 100	39.07	43.95
MOULDS			
Wax Mould, Five Rectangular	each	6.93	7.80
Wax Mould, Six Hexagonal	each	13.78	15.50
Wax Mould, Three Hexagonal	each	13.78	15.50
Queen Bee Wax Mould	each	21.24	23.90
Candle Mould, Hive	each	20.18	22.70
Candle Mould, Large Skep	each	20.18	22.70
MOUSE GUARDS	each	1.60	1.80
	10	13.78	15.50
NAILS (Prices per Kg)			
FLAT HEAD VINYL COATED			
12 x 1.0 per Kg		17.33	19.50
12 x 1.0 25 Kg Case		389.33	438.00
30 x 1.6 per Kg		9.73	10.95
30 x 1.6 25 Kg Case		222.00	249.75
40 x 1.6 per Kg		10.00	11.25
40 x 1.6 25 Kg Case		228.00	256.50
60 x 2.5 per Kg		4.62	5.20
60 x 2.5 25 Kg Case		93.78	105.50
FLAT HEAD GALVANISED			
50 x 2.5 per Kg		7.82	8.80
50 x 2.5 25 Kg Case		163.56	184.00
60 x 2.5 per Kg		5.87	6.60
60 x 2.5 25 Kg Case		121.33	136.50
60 x 2.8 per Kg		4.80	5.40
60 x 2.8 25 Kg Case		97.33	109.50
NUC BOXES			
Galv. Entrance Disc	each	1.42	1.60
	10	11.82	13.30

		Excl. GST	Incl. GST
Wooden Five Frame Box and Bottom, no Roof	each	12.00	13.50
	10	115.56	130.00
OVERALLS			
White Cotton or Polycotton, Zip Up Overalls, Sizes 5 to 12			
Firsts	pair	48.00	54.00
Seconds* (Slight marks or imperfection)	pair	33.78	38.00
P.D.B. (Paradichlorbenzene) Wax Moth Exterminator			
1 Kg	each	7.11	8.00
2.5 Kg	each	16.40	18.45
25 Kg Bag	each	132.89	149.50
PARAFFIN WAX			
28 Kg Carton	per Kg	2.93	3.30
Less than Carton Lots	per Kg	3.47	3.90
POLLEN TRAPS	each	39.56	44.50
PRICKER			
Revolving for use with Thixotropic Honey	each	190.00	213.75
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	1.29	1.45
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 CAGES			
White Two Piece	per 10	4.49	5.05
	per 100	40.80	45.90
Brown One Piece	per 10	4.00	4.50
	per 100	33.73	37.95
RATCHET TIE DOWNS			
25mm, Five Metre, 1200 Kg	each	19.20	21.60
50mm, Six Metre, 2000 Kg	each	48.00	54.00
50mm, 8.5 Metre, 2000 Kg	each	56.00	63.00
ROOFS (10 per Carton)			
Without Iron	each	8.98	10.10
	per 10	88.44	99.50
Iron Only	each	6.00	6.75
	per 10	55.11	62.00
Plastic Roofs	each	14.66	16.50
	10	133.33	150.00
Tin Roofs	each	10.40	11.70
	10	84.00	94.50
	100	760.00	855.00
SCRAPERS			
Wooden Handles with Metal Blade			
Four Inch	each	13.29	14.95
SECTIONS Fine Sawn Finish			
With Foundation Slit	100	23.91	26.90
	1000	198.67	223.50
	10000	1805.78	2031.50
Without Foundation Slit	100	21.78	24.50
	1000	178.80	201.15
	10000	1625.78	1829.00
SEPARATORS	each	.53	.60
	100	45.24	50.90
SMOKERS			
80mm Galvanised	each	28.98	32.60
100mm Galvanised with Shield	each	37.64	42.35
80mm Stainless Steel with Shield	each	43.20	48.60
100mm Stainless Steel with Shield	each	47.02	52.90
Replacement Bellows	each	21.24	23.90
STAPLES			
Any size as required		POA	POA
STICKERS			
Lega Bee 100mm	each	.44	.50
	10	4.00	4.50
STINGOSE			
Spray-On Lotion to minimise swelling from stings and bites	each	6.18	6.95
STOREYS			
LOCK CORNERED, 3/4 Inch Rebates (Metal Rebates required)			
Full Depth 1-9	each	11.51	12.95
10-49	each	11.07	12.45
50 and over	each	10.04	11.30
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	9.73	10.95
10-49	each	9.02	10.15
50 and over	each	8.22	9.25
Three Quarter Depth 1-9	each	8.09	9.10
10-49	each	7.56	8.50
50 and over	each	6.89	7.75
Half Depth 1-9	each	6.53	7.35
10-49	each	6.18	6.95
50 and over	each	5.56	6.25

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

TOGGLE CLAMPS			
For Wiring Boards	each	32.00	36.00
UNCAPPING EQUIPMENT			
Electric Uncapping Knife	each	132.89	149.50
Steam Heated 10 Inch Knife	each	65.33	73.50
Plain Medium Duty Knife	each	22.67	25.50
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	65.33	73.50
Suit, One Piece, Sizes Five to 12	each	93.33	105.00
WASP KILLER			
250ml Bottles, No Wasp	each	12.00	13.50
100g Jar, Carbaryl	each	7.02	7.90
Two Kg Box, Carbaryl	each	56.00	63.00
WIRE 0.46mm Galvanised Frame Wire			
200g Reels	each	4.40	4.95
400g Reels	each	7.56	8.50
3.0 Reels	each	28.44	32.00
WIRE CRIMPER			
Plastic	each	22.04	24.80
Spare wheels for above	pair	7.56	8.50

NOTE: Freight or postage is additional to the above prices.

Ecroyd Beekeeping Supplies

P.O. Box 5056, Papanui, Christchurch Telephone (03) 358-7498, Fax (03) 358-8789
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