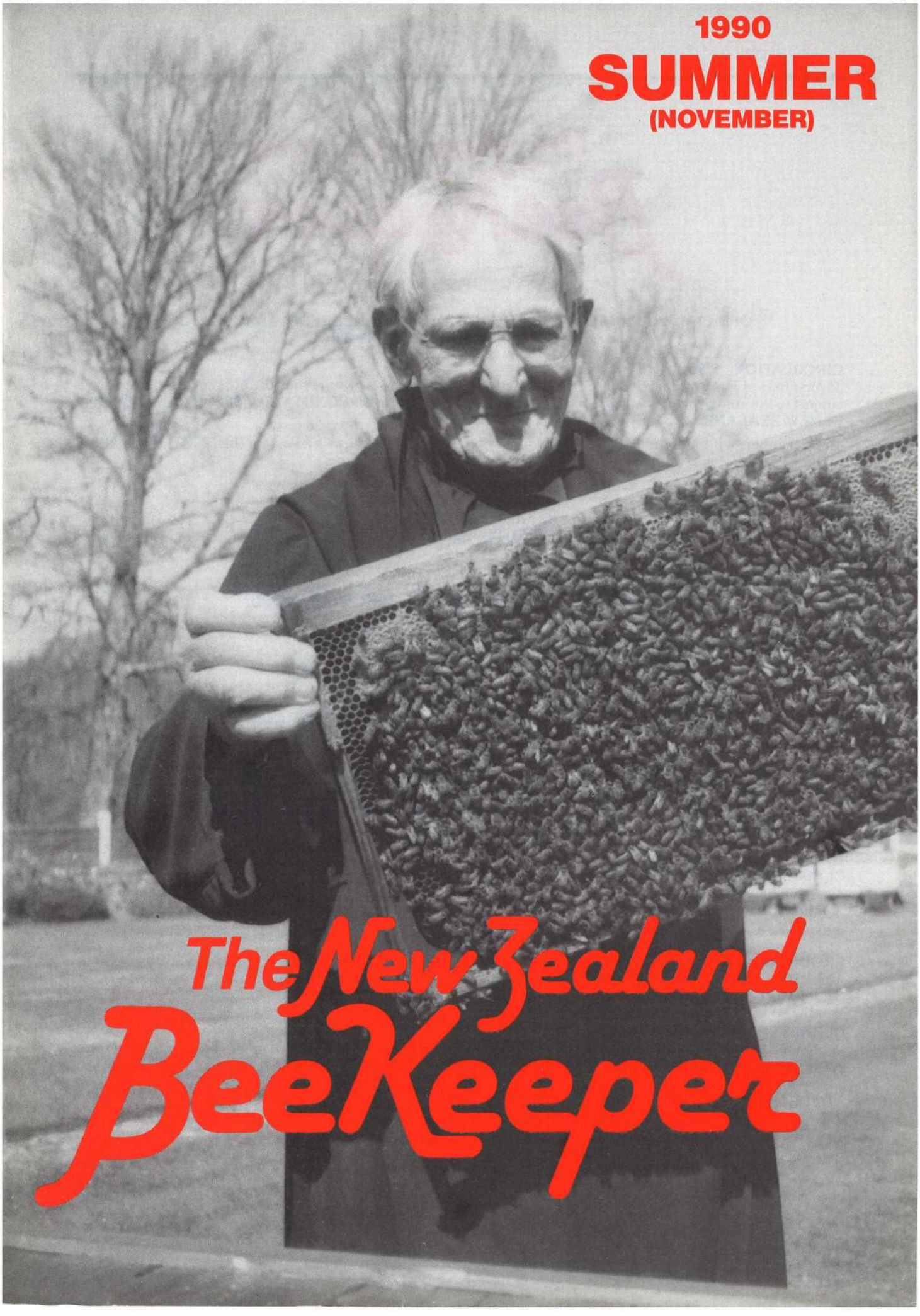

1990

SUMMER

(NOVEMBER)

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.**

To Beekeepers with less than 50 hives who subscribe to the journal at $33.75 a year (incl. GST) which also includes membership of the National Beekeepers' Association of NZ Inc.

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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 Incl. GST payable in advance. No discounts apply. No production charges.

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The New Zealand BeeKeeper

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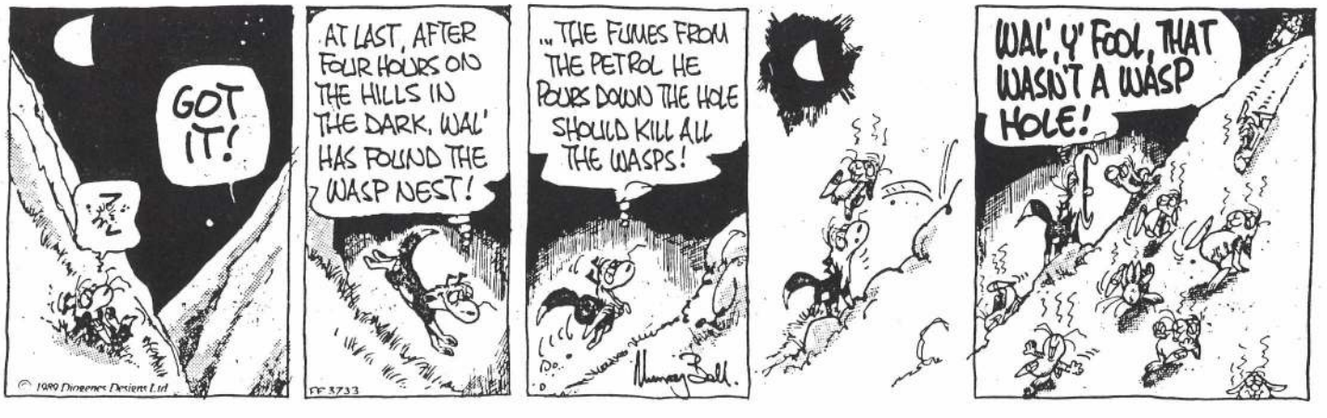

FRONT COVER: Brother Adam *Photo: Mary-Ann Lindsay*

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WATCH YOUR BACK!

By Anon.

A new dimension was added to my life recently. Being regarded as small fry when measured against industry standards, my operation is essentially based upon the personal approach in the sales field. This last season has seen me with more honey than I could handle by my conventional sales, that is contacting past clients and arranging sales according to their needs. By thinking a little, and sounding out the local territory it soon was evident that additional sales were to be had by going out to the public at large. Approaches to the proprietors of local markets soon made me realise that in order to pay the rent asked, my sales per day would not cover the rental and leave me with any profit.

Sharing a stall was the only alternative, and approaches were made, with one existing stall holder reluctantly agreeing to try it out. The first stumbling block was their request for credit, or "goods on consignment", in order to test the market. Now those of you in commerce will realise that credit is always a risk. Letting the goods leave your premises on someones promise to pay at a later date has been the demise of many a company in recent times. The second point was the profit margin they required, like 100%, a figure which to me was not acceptable. Finally, they required sales promotion material, billboard display and posters. Final negotiations resulted in an agreement to supply on a cash and carry basis, a profit margin of one third of the selling price, and my supplying the publicity material.

The stage was set. My product would at long last be on sale to the passing public. The honey and publicity material were handed over, the cash counted, and it was all go. A visit the following week was a shock. My product was on display, but at the rear of a dimly lit stall. The publicity material was being used, but the prices were not the original ones supplied. All prices had had a good feed, and were rather bloated. Pointing this out to the stallholder resulted in a rude response, and the comment that 'the dammed stuff was not selling anyway'. No wonder, when their prices grossly exceeded that of the nearby supermarket.

After a lengthy discussion, the supply of further sales promotion material, and an agreement to move the stock to the front of the stall, all appeared to be right for further sales. Some weeks went by, no orders. Another visit was made to the market, but no trace of the stallholder was found. Enquiries revealed that he had 'folded his tent' and the comment was made, 'don't like your chances of getting any money if they owe you'.

This left me out of pocket, not by much, as the cost of the sales promotion material was marginally more than the original value of the order the stall holder placed, and I insisted he paid for. Thank goodness my no credit policy had protected me to some extent. So much for relying on others, it was now time to mount a direct to the public sales effort on my own behalf, I still had more honey than I needed.

Loading the van with honey, posters, and plenty of change I ventured forth. Wherever the public gathered, there I was, on the side of the road, and soon sold my stock, at near supermarket prices. This has been the policy for the last few seasons, but this year a new and disturbing factor emerged.

A smiling fellow came to the van, looked over the wares, and then loitered nearby until I was on my own. He then approached and asked if I was licenced to sell on the roadside. Naturally I wanted to know his credentials and rights to be able to require that information. It transpired he was not a local body employee, nor an official of any kind, but a stallholder from a nearby market. He then stated that unless my activities ceased forthwith, I might find his large truck had accidentally been parked too close to my van, or the local council might start asking questions, followed by the local health inspector. He then intimated that some of his friends might not wait for all this to happen, as they were rather impetuous.

Now, what does one do in such a situation? To brazen things out may be heroic, but I only have one set of wheels. The fact that I was flying in the face of the local by-laws was indisputable. The implied threat of damage to my stock and my person was something that I have never met before in this country. Now I know just how tough the economic situation is.

The "discussion" with this fellow was conducted on a low key basis, my years of dealing with difficult people in a professional capacity helped a lot in that regard. It transpired that he does not sell honey on his stall, and was not interested in selling my stock. Better to shut me down altogether and have all the money directed to his stall perhaps?

Now I am not looking for sympathy for the loss of a good selling pitch, sympathy that the local by-laws prevent me from street trading without payment of licence fees. What is disturbing to me is the fact that threats of violence toward my person, my stock and my vehicle were advanced. In my life this is something new. A sad commentary of today's economic activity. No doubt there is a legal redress if I care to pursue it, but without a witness my word alone may not be sufficient.

So what did I do? Initially, nothing. I did consider approaching the management of the market, but they cannot be held responsible for the activities of their stallholders off the premises. The cleanliness of the market in question is such that I would not allow my product to be sold there anyway, so approaching other stallholders was out.

An opposition market has recently been established, not all that far away, in fact near enough for my honey label to be regarded as still being a local product. Enquiries made resulted in a welcome I had not experienced before. Costs to operate as an independent trader are minimal, far less than any rival markets. Rental is day by day, with reductions for long term bookings, in fact, a small traders dream come true.

In a sense, the "menace" was to my advantage. Now I am street legal, costs are minimal, and from what I can observe there is a larger throughput of people at the new site. Cleanliness of location is assured by management, who are co-operative and attentive to the needs of their stallholders. So some ill-winds finally blow good.

Still disturbed about the "menace", I have passed information on to a local upholder of the law, who was very interested to hear of the activities being indulged in by his local flock. Apparently information such as this is compiled with other bits of info, and a picture soon begins to emerge. I can only hope that my 'Mr Menace' is indiscrete enough to allow the law to clip his wings before someone gets hurt.

Two wrongs don't make a right. I was wrong in trading as I did. He was wrong in acting as he did. No one was hurt this time round. As the economic bullet needs to be bitten again and again, the next incident may not have the outcome as fortunate as this one.

NATIONAL BEEKEEPERS' ASSOCIATION

CONFERENCE 1991

Come to sunny Marlborough, the 'Gourmet Paradise'

Dates: 15th, 16th, 17, 18th July 1991
Venue: The Blenheim Country Lodge

ACTIVITIES TO DO IN MARLBOROUGH include:

— The wine trail
— Fishing — river and sea
— Boat trips through the Marlborough Sounds
— Visiting Lake Roto-iti and Nelson Lakes National Park
— Skiing at Mt Robert and Rainbow Ski-fields
— Whale watching at Kaikoura
— Visiting the Awatere and Wairau Valleys!

Registration dates, other details, etc in the Winter issue.
Organisers — Marlborough Branch NBA, P.O. Box 307, Blenheim

Dear Sir,

Do honey bees feed on non-plant food sources?

A recent article by Carlos M. Herrera in "Bee World" (Vol 71, No. 2 1990), reviews the literature concerning bees of several species which have been reported to feed on on-plant material, such as carrion, urine, etc.

The species known to have this habit include the common bumble bee *Bombus Terrestris,* but to my surprise do not include our honey bees *Apis Mellifera.* I say 'surprise' because a number of books refer to bees' preference for dirty or contaminated water over pure water. And it was this which led me to research the mineral and trace element needs which might be met by this feeding stratagem. Seveal beekeepers have told me that they have seen bees sucking water from soil mineralised by drainage from cattle salt licks. And one Marlborough beekeeper has seen his bees apparently feeding on the carcase of a dead sheep. I refrain from naming him, as the news will do nothing to help his honey sales!

Some of you may well have seen this behaviour, which is most likely to involve the sucking of liquid exudates from animal excreta, corpses, mineral licks, or perhaps silage pits. If so, you could add a little to our knowledge by writing to the Editor about it.

Reg Clarke

Dear Sir,

It was not my intention to attack Reg Clarke personally in my original letter (Winter '90 issue). I felt, in the interests of the industry that no experiment that involves other people's money and time should stop halfway, which the queen carving competition does. Obviously a queen cannot prove herself in the field unless she has her chance prior to dissection. Reg Clarke seems to have this theory — the bigger the queen, the bigger the crop. Whilst I would agree that an undersized queen may not have the capacity to produce as much brood as a normal sized queen, I am satisfied that from swarm size up there is very little if any difference between sister queens ability to produce brood, despite some impressive figures which would say I am wrong. Please don't tell the bees they don't know what they are doing.

The swarm box method of starting queen cells is in my opinion the most reliable method if a large number of top quality queen cells is required. True I wouldn't double graft but I would first transfer the royal jelly from a larvae of the same age as the one I was about to transfer. You see that takes the guess work out of using jelly from older cells and it saves a day. Nor would I start only ten cells, I would aim at 70 or 80 per swarm box. The hives would not be virtually destroyed because the bees could be returned in two or three days if required. Black drones are prepared to mate with queens at lower temperatures than Italian so it would be a shame to spoil the chances of a champion myth becoming a champion mythical because of a couple of weeks of cool weather.

Funny you should mention wine or more correctly champagne. I believe that world champion brews are made from a one off process but I don't think the brewers are accused of using mythical methods or should that be cheating.

Finally thanks for the offer of the champagne Reg, but as a commercial queen breeder who needs any spare cash for experiments of my own, economics tells me that I can buy more of

my favourite wine by using the entry money to purchase it and I still have a couple of champion queens for sale.

Congratulations on winning the competition this year. I look forward to you going all the way.

Don Gibbons

P.S. We have a letter from Canada telling us that our joint venture export queens have exceeded the state average crop for the same year by 25% so someone likes our queens. **Don G.**

Dear Sir,

Russell Berry's article "Let's Look Hard at Ourselves" made me do just that. The great leap forward of the beekeeping industry took place between 1851 and 1865 with the invention of modern hives, foundation, and the centrifugal extractor. This occurred about 100 years before similar advances were made in the dairy and poultry industry which is no reason, of course, for the beekeepers to sit back and do nothing.

What have we done since then? We have replaced the reluctant horse and cart with modern transport, we have mechanical uncapping, honey pumps, bee blowers and now electronic control of extractors.

What would I like next? How about a better pricker for thixotropic honey, two opposing beds of needles both moving at the same time, self wiping on the return stroke? How about non sticking frames, a queen finder, a trailer with a ground level deck so that "Shortie" Nichols can load it without busting his boiler?

Then we could have almost instantaneous liquefaction of honey using capacitive heating at high radio frequencies, one plate of the capacitor could be the honey drum itself. Would micro-waves be better?

I have a project of my own of which, at the age of seventy two, I shall probably not see the result. I am tired of frames which come to pieces when I try to lift them with a hive tool, of storeys which come apart at the edges in spite of skew nailing. Last year I started assembly using epoxy resins to glue frames and storeys, no nails at all with the frames and a minimum with the storeys to hold them together while the resin polymerised.

Better queens through better breeding and nutrition complete my shopping list at the moment, right outside my range of skills so I shall have to leave this to our biologists.

My wife has just suggested a better extracting room floor to which propolis and wax will not adhere. This would save about half an hour a day in cleaning time.

George Nichols

Dear Sir,

Some of the information got transposed in my article about pesticide poisoning in the Spring issue.

The section printed last in the article, beginning "other effects" is actually a series of footnotes to table 1. The numbers 1-4 relate to the small numbers next to some words in the column headed "common trade names".

Andrew Matheson
Apicultural Consultant
Unfortunately this kind of error can happen although it should not. My apologies. Editor.

Dear Sir,

I feel that I should write about Russell Berry's comment in the last issue of the New Zealand Beekeeper. There are some points that he has obliviously overlooked and is giving a point of view that doesn't say enough. So let's look even harder at ourselves and the beekeeping industry.

As I see it the problem is Marketing — mainly the lack of it. For the second time in the last three years, we have had a large proportion of our honey crop unsold. As honey is our only source of income, this creates a problem. Some beekeepers get additional income from pollination; but if they were to lose this income and what honey they produced couldn't sell, how would they be able to continue keeping bees?

I think some beekeepers have an "I'm alright Jack" attitude and don't give a single thought to the industry as a whole. We also have a situation this year, where some smaller beekeepers with no market for bulk honey or because they are offered a low price have, in order to make ends meet, decided to pack and market their own honey. The obvious result of this is more sellers on a shrinking home market with price undercutting common practice. This situation spirals to increasing costs for lower returns and causes lower sales for the larger packer who then finds he doesn't need to buy in honey. This starts the cycle over again.

The NBA Executive has a Better Beekeeping Better Marketing concept but has not done enough to promote better marketing and I suggest it has only given marketing lip service because it's too difficult.

I feel that the beekeeping industry, like many producer industries, is at crisis point and until we can lift surplus honey from the home market and extort, this situation can only get worse.

Russell Berry has only stated his problem from a large outfit's point of view, where cost of labour and running of trucks, etc., is high. What he is trying to say is the cost of producing honey has eroded any profit because of lower returns. This is not only a New Zealand problem but is happening all over the world.

So let's look hard at ourselves and think what better marketing would do to beekeeping in New Zealand.

Alister Lee

NEW ENGINE GOES WITH A SWING

A radical new approach to the design of the internal combustion engine can reduce power unit size to less than one eighth compared to conventional piston engines of the same cubic capacity and power, and cut manufacturing costs by 80 per cent, while halving fuel consumption, says its British inventor. It will also provide a power to weight ratio about 10 times higher than that of a normal multi-cylinder four-stroke petrol engine.

The source of the benefits claimed for the Quadratic Engine is the use of wedge-shaped pistons in an oscillating disc-style block, in a two-stroke system that has only three moving parts, drastically lowering friction.

The design was inspired by the beam and crank mechanism of steam engines developed over 200 years ago. In this case, however, the beam is replaced by the oscillating disc which carries two square-faced arc-shaped pistons that rock like a see-saw, smoothly and in perfect balance at all speeds, avoiding vibration.

The oscillating pistons are fixed to a flange that is linked to a revolving crankshaft by a connecting rod. The pistons are housed within an annular combustion chamber featuring inlet, transfer and exhaust ports that allow the uni-directional gas flow.

As in a conventional engine, the pistons are moved by spark ignition of a fuel/air mixture within the combustion chamber. They are swung by alternating explosions to and fro between fixed wedges that enclose the four combustion chambers of each module.

Owing to the small number of moving parts, friction losses are said to be only a fraction of those in a comparable engine of traditional design, and the engine will never need an oil change as the crankcase or quadratic mechanism is isolated in a sealed bath of lubricant.

Engine simplicity includes the absence of complex valve gear and by using the oscillating action to circulate coolant and lubricant, the cost and weight of separate pumps is avoided.

A two-litre quadratic power module weighs only 20kg, it is claimed. it can be changed single-handed, without the need for a hoist, in less than 20 minutes. By using multiple modules of varying sizes, power requirements of up to around 30,000 kW for ships and power stations could be met, although the engine is aimed mainly at the car, boat, hovercraft and aircraft markets.

Don Gibbons adds his thoughts to those of Russell Berry

I am sure there are people more qualified to comment on the cost of producing a tonne of honey but perhaps I can start the ball rolling. Russell Berry's 'Let's Look Hard at Ourselves' is interesting. Interesting, because it compares us with other industries. I think that Russell is perhaps a little hard on our own industry, but possibly that is the only way to make us think. So let's do what Russell suggests and ask ourselves:

(1) Have we speeded up the hive-equipment manufacturing process? I think so. We have modern machinery for the manufacture of woodware. Probably the more progressive have pneumatic jigs and staple guns to assemble that woodware.

(2) Has transport improved? Again the anser is 'yes'. Our vehicle now travel (legally) twice as fast, have greater power and efficiency, and some have hive lifting gear and four wheel drives. This **should** give us more time with our bees, but instead we use it to farther. Unfortunately this negates our 'yes' answer because we have become trapped by the 'greener fields' syndrome.

(3) Has hive management improved? This is doubtful and is worth an article on its own. To cut it short here, some have adopted two-queen hives, usually by spring splitting. Done by an experienced beekeeper this is, in the long run, the most labour-saving approach we have. It almost completely eliminates further swarm control, reduces the number of visits to the hive, and ensures a higher popularion for the flow. Some are perhaps using the methods of fifty years ago, albeit with minor changes, but the best of these methods were pretty good for ensuring a crop of honey, always assuming one was available. I believe that some of our forefathers were damn good beekeepers.

When I first worked for a commercial beekeeper I would open a hive, look at and admire every frame. One day my boss asked: "What are you looking at?" He then explained that as commercial beekeepers we needed to be able to assess a hive's progress by looking at as few frames as possible but as thaoroughly as possible. That way we could still spend time with the needy but manage three or four times as many hives a day. That was more than 35 years ago, but I still ask myself that question: 'What are you looking at?'

Requeening by most beekeepers is still a long way short of ideal. Many waste a deal of time and feed on a hive that does not produce a cash crop. More attention to requeening may not improve the best hives but it will surely eliminate the worst and thus increase the average production, whatever system is used.

(4) Crop removal? A definite 'yes'. With the methods we have today one man should be able to remove three or four times the amount of honey a day as he could fifty years ago.

(5) Extraction? Yes. Automatic uncappers, electronically-controlled extractors, and cappings separators have all considerably increased the quantity of honey that can be extracted per day.

(6) Processing and packaging? Yes, great improvements. More honey can now be packed in an hour than could once be packed in a day.

(7) Disease control? No! We are still using the methods of 35 years ago and still burning 2-3% of our hives and crop each year. We need much more research here. Many man hours are wasted on disease control. Disease resistance is a recessive factor so is unlikely to be solved by breeding. Genetic engineering, perhaps?

(8) Finance for the change to modern technology? Loan money is probably no easier than it was 50 years ago and is a hell of a lot more expensive now and market returns per tonne would show a reduction, comparatively speaking.

To summarise. Some areas of honey production have gone along with modern technology but others, mainly hive management and perhaps marketing methods world-wide need overhauling.

Perhaps I should also mention pasture improvement, the use of fertiliser, the effects of weed control, because all these have an effect on the cost of producing a tonne of honey. Someone might care to take each section in turn and explain how progress has been made or how it can be made. let's keep the moss off Russell's rolling ball. Where might it lead us?

LIBRARY NOTES

We have received the latest brochure with information and availability of training opportunities (including beekeeping) from TELFORD RURAL POLYTECHNIC. Both the one-year "in residence" course leading up to the Certificate in Apiculture and the Certificate in Apiculture Correspondence Course are now administered by Telford.

Library Project 1990. The purchase of the book BEES AND BEEKEEPING, science, practice and world resources, by Dr Eva Crane, met with great response at our Rarotonga Conference. It will be a memento to that unforgettable occasion.

A total of $361.45 has been subscribed, more than the amount required.

We acknowledge the generosity of the following contributors:

F.& M.A. Lindsay, Johnsonville, W'ton; M., P. & D. Milne, Blenheim; F. Trewby, Nelson; J. & M. Lory, Windsor; R. Baker, Rotorua; G. McKenzie, "Telford", Balclutha.

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The above names will be attached to the book when it arrives. it has been ordered from IBRA.

QUEEN MATING COLONIES

From Reg. Clarke

Queen producers use many different types of mating colony or nucleus to suit their individual needs. At one extreme is the "mininuc", favoured in Europe for its economy with bees, and the ease with which it can be transported to isolated mating areas. This unit contains only a single small frame and about 1,500 bees. It is probably the smallest possible unit, as some 300 nurse bees are required to nurture a virgin queen into laying condition.

In New Zealand larger units are most common, though there are also those who favour the polystyrene units and other variants of the mini-frame type. The larger units consist of three to five standard langstroth frames, housed either in a nucleus box or in a standard brood box sub-divided by partitions into two or three colonies. The stronger units are better able to forage for themselves, and to care for the developing queen, and the use of standard equipment allows greater flexibility of use.

My own preference is for a 3/4 depth langstroth box divided into three compartments of three frames each. That in itself will be of no great concern to anyone; but there is an unusual twist to it that may be of wider interest. This enables the unit to better serve my needs, though it appears to contradict the rule that decrees that there can be only one queen per colony. The three compartments have individual top covers each with a 20 to 30 mm hole. A flat metal queen excluder prevents the queens gaining access to the other units, but worker bees pass through to a second storey containing eight frames and a division board feeder in the centre position. As this upper box is common territory, the workers in effect form a single colony, and combine to support the three queens below. The unit should be stocked with enough bees to cover the nine brood frames plus two to four frames in the second box. As they will usually be stronger than this on commencing operations in Spring, and also later during the build-up period, there is the opportunity to make increase if needed. The unit will be strong enough to gather all or most of its winter store needs in an average season. I feed about one litre of syrup with added minerals when each queen cell is put out — less if there is a good flow. So at most there is a sugar consumption of 150 gms per queen.

It might be thought that with this arrangement, the presence of a queen in any one unit would inhibit acceptance of other cells or queens. But it seems not. For convenience the three units are normally kept in step, but it is possible to leave one laying queen, and introduce cells to the other two units, or even to introduce three caged queens at the same time without abnormal losses.

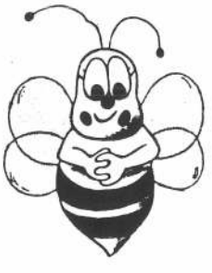
Two major problems, which are not easy to deal with in isolated nucleus units, can now be overcome. In a honey flow surplus honey fills the brood combs, and in a dearth situation each individual unit needs a separate feeder. The two-storey arrangement allows surplus honey to be stored out of the way in the second box and, when feeding is necessary, three units share a single feeder. The second problem is that for commercial reasons it is necessary to sell queens after only a few days laying. In practice this means about 16 days from introducing a ripe cell to removing the queen after she has laid in most of the available cells. The problem arises with the second and subsequent queens, which are ready to lay about 12 to 14 days after the previous queen was removed. However, the brood combs are full of capped brood which will not emerge for another seven days, so the new queen can lay only a small amount of scattered brood. This is overcome by cycling frames full of brood or honey through the second box, and placing one empty frame in each brood nest when putting in the second cell. The new queen comes into lay with space available, while workers attend the surplus brood in the second box. One 3/4 frame contains some 5,000 cells, of which perhaps two to three may be available for the queen to lay in, plus what space may be free in the other combs. With 3,000 to 4,000 cells available a good queen will attain a daily rate of about 1,000 eggs a day by the third or fourth day. At that rate her weight will be within 15 to 20% of the maximum she will attain in a full colony, and an inferior queen incapable of a high laying rate will show this by her low weight and relatively small size.

There are other advantages, too. When a unit fails to produce a queen the bees will drift to the other units. The weak, failed unit can normally be stocked from within the resources of the triple unit without recourse to a support colony. Also, if the level of nutrition is good, and some drone cells are present, a small amount of drone brood will be produced. When a large number of mating units are in use, this will add significantly to the pool of drones available, and improve the chances of a full mating.

At the end of the Spring season two options are available. Either pull out the dividers and allow a single queen to continue. Or leave the unit intact with three queens, until Autumn queen rearing begins. Based on rather limited experience so far, I believe it is possible to overwinter the unit with three queens. Success probably requires the two boxes to be well filled with bees, and it helps if there is pollen and nectar available to keep the queens laying slowly. As the total amount of brood produced by three queens is greater than that of a single queen during winter, the three queen unit is stronger in Spring. These queens are removed as the first cells go in, and are a valuable source of early queens two weeks ahead of the new seasons crop.

Over the Spring and Autumn seasons, each triple unit can produce 12 to 15 queens. More would be possible if there were a demand for queens during the summer months.

This system is working well for me, producing queens of even quality and high weight. And it helps in identifying poor specimens for culling. But it is not my invention, so I acknowledge with gratitude the good advice received from Gary Jefferies on which it is based.



IMPORTANT

Folks, please remember that fax and 'phone numbers are frequently changing so when yours does please let the NBA and, where appropriate, the Editor of the NZBK know.

Many thanks.

Cost benefit analysis of using fumagillin to treat nosema

Mark Goodman; Anton ten Houten; Joanne Perry; Ross Blackmann

INTRODUCTION

The protozoan parasite of honey bees *Nosema apis* affects honey bee colonies in a number of ways. It shortens the life span of the queen and workers, reduces brood production and development, causes the winter loss of colonies, and ultimately reduces honey production. Nosema is transmitted primarily by comb which has been soiled by excreta during the winter (Bailey 1953). The bees ingest the spores off the contaminated comb and pass them on to other bees. Frequent manipulation of colonies has also been suggested to increase nosema levels.

Two methods of treating Nosema are available in New Zealand. The simplest and possibly the most effective is to feed colonies the antibiotic fumagillin. The antibiotic is administered with sugar syrup or with dry sugar. The recommended dose for treating colonies is 100 mg of fumagillin per treatment in 4.5 L of sugar syrup (2 parts sugar, 1 part water) (Moeller 1978). The colonies are usually treated in the autumn and spring. The other control method available is heat sterilization of combs, hive parts and other equipment. Keeping the equipment at 49°C for 24 h has been found to effectively inactivate the spores (Cantwell and Lehnert 1968). While some fumagillin is fed in New Zealand the heat treatment of hive parts is seldom, if ever, carried out. This is mainly due to the difficulty in heating stacks of combs to this level without them sagging in hot spots.

Overseas, Nosema has been reported to cost beekeepers more money than all other honey bee diseases (Furgala and Mussen 1978). However, Palmer-Jones (1964, 1967, 1970) recommended that fumagillin should not be routinely fed to honey bee colonies in New Zealand because it is not cost effective as the parasite rarely builds up to dangerous levels. He also suggested that the economic loss to the beekeeping industry as a whole is probably small (Palmer-Jones 1947). This is, however, contrary to the findings of a recent New Zealand survey in which 20% of the colonies had very high infection rates (Anderson 1988) and to overseas findings of lost production from such colonies.

In New Zealand, many beekeepers consider the cost of fumagillin to be uneconomical (approx. $14.52 per g or $2.90 per colony per year). Another reason for the disease receiving little attention is that infected colonies show few characteristic symptoms other than that severely infected colonies become weak or have their rate of growth reduced. These symptoms are often attributed to other causes so the actual cost of Nosema on lost production is not usually recognised.

The purpose of this investigation was to establish the cost-benefit relationship of feeding fumagillin without first testing colonies for the presence of Nosema. The cost of microscopic diagnosis of Nosema is considerably more than the cost of treating the disease (MAF Quality Management, Lynfield $15.00 per colony 1990).

METHODS AND RESULTS

Trials were conducted during three seasons 1987-1990 in the Turangi area. The first season's trial was to determine the effect of a single spring feed of fumagillin on the levels of Nosema and on honey production. Six apiaries each containing 20 colonies were used. Ten of the colonies at each site were fed fumagillin (100 mg of fumagillin in 4.5 L of sugar syrup) in the spring (17/8/87) while the other ten colonies were fed 4.5 L of sugar syrup without fumagillin.

These trials showed that fumagillin treatment reduced both the incidence of Nosema and the levels of infection within the treated colonies. The bees in the treated colonies had an average of 620,000 spores one month after being treated while those in the untreated colonies had 3.5X more (2,220,000 spores/bee). Only the colonies at one apiary site showed a significant increase in honey production following treatment. The overall difference in honey production between the treated and control colonies was not significant. The treated colonies produced an average of 6.6 kg (13.9%) more honey per hive than the control colonies.

A further trial was conducted during the 1988-1989 season to investigate the effect of feeding fumagillin in both the autumn and spring. The two treatments were administered on 26/4/88 and 13/9/88. The treated colonies collected an average of 4.4 kg (23.2%) more honey per colony than the control colonies over all sites. This difference was not significant due to the large variance in honey production between the colonies. However, the analysis of combined results from both years suggested that the observed difference in the amount of honey collected by the control and treated colonies was a real difference.

The aim of the study in 1989-90 was to repeat the autumn and spring treatments for a second season. The number of colonies was increased from 160 to 200 with ten treated and ten control colonies at each of ten sites. The two treatments were administered on 18/4/89 and 18/9/89. The fumagillin fed colonies had significantly lower Nosema infections one month after the spring fumagillin treatment. The treated colonies had an average of

1,830,000 spores per bee and the control colonies 4,010,000 spores per bee.

The brood chambers of the fumagillin fed colonies were on average 3.2 kg heavier than the brood chambers of the non fumagillin fed colonies. The treated colonies also collected an average 7.5 kg (28.6%) more surplus honey than the control colonies.

DISCUSSION

Between 70% and 98% of the colonies tested positive for Nosema on at least one of the sampling dates. Such infection levels suggest that Nosema is probably present in all colonies in New Zealand. The highest recorded infection level was 35 million spores/bee. These figures are similar to those found in a nation wide survey (Walton and Reid unpublished) which suggests that the results of these trials are probably applicable to most areas of New Zealand.

The results of feeding fumagillin to treat Nosema are significant especially when considering all three seasons. A single treatment in 1987 produced a 13.9% increase in honey yield, two treatments in 1988 a 23.2% increase and two treatments in 1989 a 28.6% increase. As different colonies were used for the 1989-1990 study the results are independent of the previous two years trials.

The approximate 25% increase in honey yield achieved by reducing the October Nosema levels by 55% suggests that Nosema costs the New Zealand Beekeeping industry in excess of 25% of its national honey crop or more than $3,000,000 annually. The actual losses may be even higher than this as Nosema was not eliminated in the trials. Nosema therefore costs more than all other predators, parasites and disease of honey bees in New Zealand, as has been reported in other countries (Furgala and Mussen 1978).

The only reason its significance is not generally recognised by the New Zealand beekeeping industry is that it exhibits no obvious visual symptoms. If it killed 25% of larvae in all hives resulting in greater than 25% crop loss then a large number of beekeepers would be treating the disease.

Disregarding the increased weight of the brood chambers the treated colonies collected 7.5 kg more honey than the control colonies. At $1.80 kg for bulk honey this is a return of $13.50/hive. The fumagillin cost was $2.90 per colony (for two treatments). The labour costs of feeding the syrup and the cost of the syrup will need to be added to this if syrup is not normally fed.

The major drawbacks with feeding antibiotics are the possibility of resistance and residues. Resistance is not believed to be a large problem at the moment. Even if Nosema became resistant to fumagillin in 20 years, the choice now would be no control or control for 20 years and then no control. A new control method may of course have been developed by this time. Feeding only those colonies that have been tested and shown to have high Nosema levels may extend the effective life of fumagillin by slowing down the development of resistance, however the costs of getting the test done must be added into the equation. An alternative is for beekeepers to do their own tests. The procedures for analysing samples are quite simple.

In conclusion, Nosema costs the New Zealand beekeeping industry more than all other honey bee diseases. Controlling Nosema with the antibiotic fumagillin can result in significant increases in honey production. However the question of whether the potential residue problems outweigh the financial benefits of treating Nosema needs to be decided by the industry as a whole.

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A LETTER OF THANKS

GOVERNMENT OF THE COOK ISLANDS
PO Box 96, Rarotonga, COOK ISLANDS
Telephone: (682) 28-711. Fax: (682) 21-881

OFFICE OF THE

ASSOCIATE MINISTER OF:
PLANNING & ECONOMIC DEVELOPMENT

MINISTER OF:
AGRICULTURE
TRADE, LABOUR & TRANSPORT
MARINE RESOURCES

29 August 1990

Ms Mary Ann Lindsay
26 Cunliffe St
Johnsonville
Wellington
NEW ZEALAND

Dear Ms Lindsay

Thank you for your letter of the 26th instant and for the photos included for my records.

It was an honour for me to give your Association a short address at your Conference's opening function and an honour also for our country to be chosen as the venue for your first conference outside of New Zealand.

I hope that your conference has been as valuable for the New Zealand industry as it has been for the Beekeepers of Rarotonga.

Thank you again for your note and photos. At the moment, I can look out of my window and note that the coconut tree, planted to mark your conference, is growing well.

Kia Orana e Kia Manuia.

Yours sincerely

Vaine Tairea
MINISTER

How Division of Labour is controlled in honey bee colonies

From Andrew Matheson, Apicultural Consultant, MAF, Tauranga

One of the most fascinating things about honey bee colonies is the way different groups of bees perform different tasks.

This is called "division of labour", and it conjures up a picture of bees in trade unions, with demarkation disputes over any bee that dares to do another's job.

Most of us also know that the division of labour is age-related: bees start with cell cleaning, go on to brood and queen care, then to food storage and other nest-caring roles, and finally when the bee is old enough it leaves the hive to forage. These groups of bees — of similar ages doing the same jobs — are called age castes.

We also know that there are no morphological (visible) differences between bees doing different jobs, unlike some species of ants where nest guards have highly modified mouthparts to use as weapons.

But is division of labour really like trade unions? Do bees proceed through a regulated sequence of jobs during their lives — and how would all this be controlled anyway?

Some of the answers come from research carried out by Dr Gene Robinson of the University of Illinois. While in London on holiday earlier in the year I attended a two-day symposium on bee behaviour and physiology, organised by the International Bee Research Association and the Royal Entomological Society. Some of the big names in the field were there, and I was privileged to hear Dr Robinson's engrossing and informative talk.

Robinson says that honey bee division of labour is both highly structured and highly variable. If that sounds like a typical scientist's comment, then read on to see what he means.

How might division of labour be regulated? After all, individual worker bees don't "know" what's going on in the rest of the hive. Workers can't race around the hive to see how much brood needs feeding, before "deciding" to crank out the royal jelly.

One thing that varies with a worker bee's age is the level of juvenile hormone (or JH) in its body — it increases as the worker gets older. The JH level actually operates at the level of the central nervous system and alters the way bees respond to stimuli. For instance, as they get older (and the JH level increases), bees react more to alarm pheromone. They don't "smell" it any better, they just react more to it.

Experiments can be done with artificial JH, to alter bees' behaviour. Increasing the level of JH makes bees start foraging earlier — but unfortunately they don't forage for longer, rather they just die earlier (though there are conflicting data on this point).

Doing experiments like that is fine, but JH levels don't change suddenly in nature — or do they? A colony made of one-day-old bees develops division of labour within a week. If you test the JH level of the workers then you'll find that, sure enough, nurse bees have a low JH level and foragers a high one — even though they're all the same age.

The nearest thing to this in nature is a swarm, which is composed mainly of older bees. Some foragers revert to being nurse bees. They have a low JH level, even though they're older on average than nurse bees in a colony that hasn't swarmed. What's happening here is that environmental conditions are influencing the JH level in workers, and this altered JH level in turn determines the bees' behaviour.

There's another link in the chain too. Different bees respond to changing conditions in different ways. Why do some bees become precocious foragers and others not? We don't know the whole answer to this, but one obvious thing is that honey bee colonies are made up of different subfamilies.

Queens mate with a number of drones, so their colonies comprise subfamilies of workers which are full sisters (have the same mother and father). Workers in one subfamily are half-sisters to workers in another subfamily (the same mother but different fathers).

sisters, it's to be expected that they will behave differently in the same circumstances. Robinson carried out experiments with three subfamilies — each group progressed differently through the age castes.

There's a complication, of course. Sperm held by a queen is not fully homogenised, but remains somewhat clumped. This causes the colony to change character over a period of weeks or months as different subfamilies wax and wane in abundance. And not only do bees from distinct subfamilies behave differently, they also interact with their sisters and half-sisters in new ways; setting up new dynamics in the colony.

So combination after combination of simple behaviour patterns are overlaid on each other to make a complicated mosaic of behaviours, leaving us to marvel at the honey bee colony's complexity.

This was dubbed by one person at the symposium "the stupid bee hypothesis". Colony-level behaviour can be explained by bees having simple behavioural rules, which combine to make a positive feedback self-organising system.

So division of labour in honey bees is "firm but flexible" — a sequence of age-related tasks that worker bees progress through, but which is flexible enough to respond to environmental challenges.

Reference: Robinson, G.E. 1990. Hormonal and genetic control of division of labour in the honey bee colony. *Proceedings of the joint colloquium on the behaviour and physiology of bees, London, 11-12 July 1990* (in press).

POLLEN SUPPLEMENT RESEARCH

From Stephen Ogden and Phillip Jones

1. Pollen Supplement Research (Stephen Ogden, Phillip Jones)

Background

(i) Pollen contains protein, vitamins, minerals, fats and sterols (hormone precursors).

(ii) Effects of pollen deficiency: reduced brood rearing, reduced protein content of workers, reduced longevity. This results in colonies that are less effective honey gathering units = reduced income.

(iii) Pollen substitutes are generally patties of a protein concentrate mixed with sugar. These can include Lactalbumin, soy flour, or products as diverse as dog food. Often yeast is added to these diets for its protein content and high vitamin content.

(iv) Pollen supplements include pollen either as a major constituent or in small quantities as a feeding attractant.

(v) Pollen substitutes/supplements are fed directly on the top bars of the hive in times of protein shortage, or when early spring build up is required.

(vi) The production benefits of using these products have been demonstrated overseas, but not previously in the New Zealand situation.

1988-89 Programme

A pilot study was initiated using 28 hives near Hindon, Otago to determine whether pollen supplements were likely to improve honey yields in this environment. Honey production and colony weight gain were monitored, and samples were taken for body protein content and hypopharyngeal gland size[1]. Two treatments were contrasted, FED = three fortnightly 500g feeds, UNFED = no supplementary feeding. Samples were taken at the start of the experiment and at three weekly intervals thereafter.

Supplement Recipe	1988/89
Lactalbumin	11.2%
Sugar Syrup (1:1)	58.4%
Water (to dissolve pollen)	9%
Pollen	20%

The results of this experiment were very encouraging.

(a) Both bodily protein content (expressed as % nitrogen) and hypopharyngeal gland size were significantly ($P \leq 0.05$) higher earlier in the season in the FED treatment than in the unfed treatment.

(b) Hive weight gains during honey flow and at the end of season were significantly higher in FED treatments than in the UNFED hives.

(c) Honey yields were 53.5 kg in FED and 44.1 kg in UNFEED. These yields were not significantly different.

Taking all of these factors into account the likely benefits of feeding supplements indicated that a larger scale trial was warranted.

1989-90 Programme

Ninety six hives located in six sites (Hindon, Lammermoor Range, Maniototo) were used. Four treatments were involved:

(1) Beltsville Pollen Substitute Lactalbumin 11.5% (of dry weight), Brewers Yeast 23.5%, Sugar 65% and Water to mix.

(ii) Beltsville Pollen Substitute with 20% pollen
Lactalbumin 9%, Brewers yeast 19%, Sugar 52%, Pollen 20% and Water to mix.

(iii) Hives shifted from pollen rich areas to summer sites at the start of the honeyflow

(iv) Control

It was intended to test Protivy 50, however dock strikes delayed shipments and diet (i) was used instead.

Three 500g patties were given to the first two treatments at fortnightly intervals. Measurements taken included bodily protein, dry weight of pre-emergent bees, hypopharyngeal gland weights, nosema infections, brood area, colony weight gain, honey yield.

These data are yet to be analysed in detail, but preliminary analyses indicate no significant difference between treatments in honey yield or colony weight gain. This result was not unexpected, as this was a poor honey producing year — the honey flow was expected early in December but drought conditions delayed the event by about 6 weeks until late January. Conditions of colonies is likely therefore to have equalised over this period.

The other nutritional indicators monitored show that supplements may have had some effect on colonies during the spring build up e.g.

(i) Gland size in control groups was lower than in all other groups

(ii) Brood areas lower in control hives than other groups

(iii) Body protein in shifted hives higher than in other groups

One interesting observation is that the lowest nosema levels were found in hives located in pollen rich areas and shifted to summer sites at the start of the honey flow. I emphasise that these are preliminary results, and the data are not yet fully analysed. Important interactions yet to be examined include the effect of nosema on honey yields and glandular development, and the overall interactions between protein levels, brood areas, bee weight, glandular development, and honey yields.

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Two soluble protein sources Alacen and Alanate (Alaco Ingredients) were tested for suitability for incorporation with sugar syrup feeding. As approximately 60-70% of commercial beekeepers feed sugar syrup, this could be an extremely convenient method of getting protein into the hive. Tests using nucleus colonies suggested that the lactose content of these products is not of concern given suitable dilution. Field tests with one of these products showing particular promise are required to ensure that lactose toxicity does not occur in situations where storage and ripening of syrup may increase lactose concentrations, and to determine whether their use can increase honey yields.

Three Otago University post graduate students have been working on apicultural projects co-supervised by Dr Alison Mercer and myself. Sarah Day completed her BSc Honours dissertation on the nutritional composition of a number of pollen species at the end of last year. Tim Giles is completing his studies of nutritional effects on the hypopharyngeal gland for his MSc working very closely with my own field trials to provide additional data. Leeann Fenton is about halfway through her MSc project looking at population dynamics of *Mellitiphis alvearius*.

1990-91 Programme

(i) Repeat 1989-90 pollen supplement experiment measuring colony weight gain and honey yield only.

(ii) Comparison of Autumn v.s. Spring feeding and number of feeds. Approximately 400 hives are involved in a major trial with one supplement type (Lactalbumin 11%, Brewers Yeast 22%, Sugar 62%, Pollen 5%, water to mix) and nine treatments in a factorial design. This will contrast most combinations of 0,1,2,3,4 feeds in autumn 1990 and/or spring 1990. Aim is to determine when and how often to feed over a range of environments.

(iii) Liquid feeds. Field testing of soluble proteins for use in combination with sugar syrup feeding.

(iv) Test effectiveness of patty diets incorporating Fumagillin.

PRICES FOR POLLEN SUBSTITUTE INGREDIENTS:

LACTALBUMIN (Alatal 560) — $9.09/kg + GST (Discount over 200 kg)

BREWERS YEAST (Inactive, unsalted, roller dried) $5.30/kg, over 50kg $5.06/kg.

2. The effect of supplementary feeding regime on royal jelly production was evaluated at Manurewa, Omarama and Mosgiel. (Ron van Toor)

Summary

Pollen supplement patties increased yields by 57% over spring and summer at Mosgiel only, but with no effect on colour or the main chemical components of royal jelly. No surplus honey could be expected.

Management techniques were developed whereby 8g/hive per harvest of royal jelly could be produced over spring and summer. Using 30 strong hives, 2.1 kg could be produced in one month by one operator without supplementary feeding.

Mr Ben Rawnsley is developing a market whereby he can sell fresh royal jelly at $4000 per kg, making production worthwhile for a small number of beekeepers.

The work will be published in apicultural journals. A consultancy package on production of royal jelly is available by September from MAF Technology Invermay for $500.

3. Role of reseeding in legume based hill country and dryland pastures (Stephen Ogden, Phillip Jones)

Apiculture related agronomy

In white clover and other pasture legumes, seed pollinated by honey bees falls to the ground where it may become incorporated into the soil seed bank. This seed bank is a reserve to protect the pasture against loss of parent plant density. Research has shown that reseeding of white clover in North Island hill country is of little importance compared to begetative spread, due to the high seedling vigour of annual legumes and grasses. The research programme focuses on the population dynamics of white clover pastures to determine, in the hill country and dryland zones of the South Island (where competition from other seedlings is likely to be lower, but with greater opportunity for plant density loss) whether regeneration from seed is of greater importance. One of the new dryland pasture legumes (*Lotus corniculatus* or Birdsfoot trefoil) is under intensive study — it does not spread vegetatively so can only spread or repopulate by reseeding.

Intensive study of the population dynamics of these species will lead to better management of legume pastures, and will identify the real value of apiculture to pastoral agriculture.

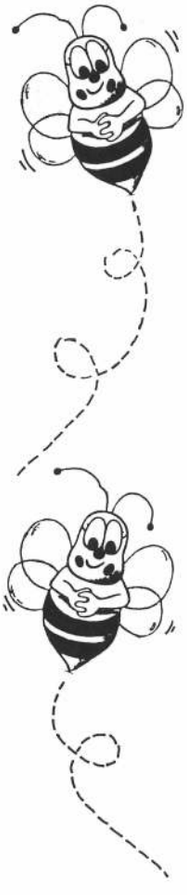
Future of MAF South Island Apicultural Research

Due to budgetary constraints and rationalisation of MAF Technology's research programmes, no new Government funded apicultural research will be initiated at Invermay. As of July 1 1990 the only apicultural research in the South Region will be the pollen supplement programme (legume reseeding research is not part of the apiculture programme and will continue). As of July 1 1991 all apicultural research in the South region will cease.

[1] Mr Tim Giles, MSc student, Otago University has been studying hypopharyngeal gland development for his Thesis.

NOTE

The closing date
for Trust applications are now
February 28 and August 31.



FROM THE COLONIES

Northland

"October fill dyke" as they say in England and here we are rushing round trying to do spring inspection and raise the annual crop of new queens while the rain drifts down. I was sad to hear that White Line queens have now faded out, so many of the old names have gone from New Zealand industry.

George Nichols

Poverty Bay

On October 6 our branch, in conjunction with MAF, held the first ever diseasathon in the Bay. Of the 368 hives looked at by the eight teams, 40 were affected or 11% of the total. Certain areas and apiaries were targeted lifting the figure artificially in some respects but overall what emerged was a serious problem of neglect and mismanagement. It was encouraging to see a good turnout of people with some new faces among them. Those new to beekeeping learnt a lot and the branch should have an increase in its membership. Further diseasathons are certain.

On the following weekend the branch participated at the A & P Show with a stand at the District Council's environmental tent with emphasis on the beneficial effects of honey bees in the environment, honey for health, trees for bees, and the latest from DSIR on wasp parasites. This, together with videos from the NBA library, drew much interest.

Kiwifruit pollination is just around the corner so every one is pretty busy just now.

Barry Foster

Otago

That beautiful green on the willow again and catkins galore on this first day of daylight saving, October 7. But we woke up to a world covered with a good coating of snow. Late in the piece it may be, but we can very well do with the moisture. Springtime has been pleasant in the eastern part of our province but with a lot of cloudy and windy days further inland.

A post-conference branch meeting was held in August. Those who attended the conference reported on proceedings and the very pleasant Rarotonga experience.

Our spring field day took place yesterday. The venue was Waimarama Apiaries at Tarras, Central Otago. Heavy rain all day, really most welcome. Hive demos outside were just out of the question, but with all the space available within the buildings, the excellent programme did not suffer.

After a few short addresses on industry matters every one attended a number of workshops which ran continuously and repeatedly so that all had the opportunity to take in four. Topics: hive manipulation, bee nutrition, queen handling, hive location and responsibilities as a beekeeper, diseases and pests (compulsory) and hive equipment construction. In addition some beekeeping videos could be watched.

Attendance was pretty good with a pleasing mixture of hobbyists, commercial men, beginners, and old timers.

Our compliments to the organisers and many thanks to our hosts, Claire and Ross MacKay, for their great hospitality.

The branch is planning a diseasathon for early November.

John Heineman

Southland

Southland had a very dry, frosty winter giving fears that the drought was to continue. However the weather changed and as I write we have had three inches of overnight snow presenting a picture-card white-Christmas look to the landscape. We have had more spring snow this year than during the winter.

The hives have opened up in good condition with reasonable reserves of feed and good pollen stores. Unfortunately until things dry out hive management will be complicated by the wet land and extreme care will be needed if the bee truck is to remain unstuck while visiting apiary sites. We are looking forward to a more favourable season that lasts, and for an increasing demand for honey.

Alister Lee

Spring is much later this year but it has been kind with a good willow flow as so far very little Northwest wind. Reports of good queen mating, and little sign of swarming. The barberry is about to flower!

For the first time in ages the cherry pollination hives are coming out heavier than they went in. The cherry blossom is only about halfway through its flowering.

The disease inspection day went off without too much of a hitch. Some 1.6% of the hives inspected were diseased. MAF apiary inspectors continuing the auditing, have found more disease.

Saint Bartholomew's Day was celebrated by us locals on August 25 with an evening get together.

A fieldday covering spring management was well attended. Several aspiring beekeepers attended. It was good to instill into them in the importance of good hive management and disease control.

Rain is needed because there is no reserve of soil moisture left. Dry weather is great for working bees but lousy for crop prospects.

James Jenkins

Hawkes Bay

By the time this is published our stall at the Agricultural and Pastoral Society's annual show and our fifth annual hive inspection day will both be history. However after all the planning and preparation put into both projects, particularly the show stall, they must be successful.

Show stall business has been the main topic for the last three branch meetings and our thanks must go to Bob and his band of helpers for their efforts in building up the display stands and equipment.

We were thrilled to have Ted Roberts with us for our October branch meeting and wasn't he hard to recognise, looking so much younger! He outlined the plans and preparations for our inspection day on November 3 and as there are a few problem areas all we need is fine weather to make the day a success.

Congratulations to long-standing member Mr Walter Watts. Three wins in branch raffles in succession must be one for our records. Obviously he learnt something in Rarotonga.

Our Autumn Field Day is scheduled for Saturday February 16. Full information will be in the "Buzz Sheet," but book the date.

Gordon Sutton

Canterbury

"Canterbury Field Day postponed because of rain. Disappointing, but also great news. This rain has come at a crucial time for clover production and because the plains have not had any major nor'west winds to dry them out, the scene looks set for the big one. Hope springs eternal in the beekeepers breast!

Hive strength generally is very good. And some worthwhile flows have already come on honey dew sites. The willow was excellent in most areas, but this has caused swarming problems for some.

Spring disease checks have so far shown that the large flare up of AFB in the autumn seems to have been con-

trolled and the sources of infection dealt with. Dr Stephen Ogdan, currently at Invermay, has been appointed A.A.O. South Island, and moves to Lincoln DSIR in June 1991. Meanwhile he is completing research work at Invermay, and is also very busy travelling to meet beekeepers at field days and meetings. We welcome his appointment and guarantee him our help and support in his new position.

David Penrose

Bay of Plenty

Well it's that time of the year again, where most beekeepers are frantically trying to finish preparing hives for kiwifruit pollination. Those who have hives earmarked for honey production doing likewise for the honey flow.

So far the spring weather has been very good with moderately warm fine days. Most hives in the Bay area seem to be doing quite nicely. With a shortage of queens this year many beekeepers have had to put their hand to some queen rearing of their own.

The Bay branch ran its annual diseaseathon in September. Again it turned into a real success with several problem BC areas being cleaned up. The price of honey, $2 per kg for bulk supplies has been very good and hopefully this will carry on or possibly improve for the coming season.

Many orchards around the Bay have been pulling out kiwifruit vines lately. A very sad trend but one would suppose inevitable considering the state of the industry.

All the best for the coming season.

Karl Christophersen

Southern North Island

It's official — I mean our name change. It far better describes our geographic location. We are a large district stretching from New Plymouth to Wellington and which includes the Wairarapa. Any NBA meeting or field day means a lot of travel.

The most newsworthy happening this spring has been our Wanganui field day held at Levin and Margorie Hibby's Honey House. Attendance 70 people. The programme included discussion and demonstration on syrup feeding, pollen collection and splitting hives for increase. We divided into buzz groups to talk about ways and means of reducing one of our biggest costs: transport. This made us think carefully about our apiary visits through the year and our work routines at the hives.

Some of our commercial beekeepers began rearing our own queens because of last minute supply problems. This has not been an easy task but it does have its own satisfaction when the new queens start laying.

Focus for many of us will be getting hives ready for kiwifruit pollination; then it's the honey crop. The seasons follow in quick succession. There's no time to feel gloomy — there's too much to do, and everything to hope for.

John Brandon

Nelson

With winter gone and spring wearing thin, the willow flow is on the way out but the barberry hedges are now offering nectar to the bees.

Our branch has not had a get-together since the dinner in the middle of July. Consequently we have heard little of the general mortality caused by the hard winter. Motueka and the nearby valleys experienced serious flooding. Some apiarists lost a large number of hives.

Although many winters and springs are similar there is always a difference when the bees start swarming. I got a call to one on September 16 but have heard of one other only up to now (October 7).

Hives are now moving to the pip fruit orchards. Plum and other stone fruits have been blooming for some time and many will now be forming fruit.

Disease never seems to have a bad winter and is, unfortunately, alive and well. The MAF has gone home and left many beekeepers with little knowledge of how to control disease.

Our annual inspection day is due very soon. It will be the third year we have had one, thanks to Dave Grouber of Blenheim. These days have been a very worthwhile effort from those who lend a hand. I have not heard whether or not we can expect a drought, but there seems to be plenty of water around: in fact, a storm is forecast for tonight. So if you don't hear from me by Christmas you can believe the worst.

Ron Stratford

Waikato

August came and went the wettest in history. The result being all that magnificent five finger nectar and pollen was washed away. The grape vine tells me that the mud which resulted from the bad weather brought about a rash of purchasing 4x4 vehicles.

Kiwifruit pollination is now only weeks away and fortunately for beekeepers in the Waikato September has been a glorious month with marvelous flows from the willow thus gaining much of what was lost in August.

The branch has held its diseaseathon and the response from branch members was first class with the attendance such that 30 teams were able to be put into the field. These teams in the time available inspected some 1,600 colonies and found 30 cases of A.F.B. What is quite disturbing is that the majority of these cases of A.F.B. were found in commercial or semi-commercial operations where the colonies had rarely, if ever, been looked at. The number of derelict hives found by the teams was disappointing.

Brian Clements, one of our more progressive beekeepers, has shown another burst of initiative by manufacturing a pollen supplement. This is based on the "Beltsville Diet" being a mixture of lactalbium, air dried yeast, sugar with water to mix. Brian supplies it in parts with the mixture about the consistency of a firm dough. All that is required to feed a hive is to take a handful from the pail and place it on the top board. The bees devour it with gusto.

Last Saturday the branch held its annual dinner, which was well attended. The feature of the evening was a video of the "goings on" at Raratonga. Most pleasant to relieve Raratonga and share these memories with others.

Ross Blackman

EUROPE 1992 — THE FACTS ON THE SINGLE MARKET

The Commercial Section of the British High Commission has available a booklet backgrounding the facts on the European Single Market due to be in place by the end of 1992.

As Prime Minister Margaret Thatcher says in the introduction, "All of the 12 Member States of the European Community are firmly committed to creating a genuine single market for goods and services.

"By sweeping away the remaining barriers we will create a single market of more than 320 millions — very nearly as many as the United States and Japan combined." Naturally this has major implications, not to say opportunities, for New Zealand businesses looking to expand their interests in Europe.

The booklet, entitled "Europe 1992: The Facts", has 68 pages crammed full of information not just on trade relations and EC trade policies but on a wide variety of specialist areas such as financial services, telecommunications, pharmaceuticals, food law, transport and using Britain as your base.

Copies are going fast but some are still available free by phoning or faxing the Commercial Department of the High Commission on phone (04) 726-049; Fax (04) 711-974. They will be despatched on a first come, first served basis.

The trials and tribulations of a wasp catcher extraordinary

By Ham Maxwell

A funny thing happened today: not that my life is a riot of laughter, but when I took the phone call I sensed that something different was about to happen. Just a standard bee call it seemed at first. Bees at the side of the house. Come and remove them, please. None of the usual urgency, like: 'someone is allergic to bees or bee stings', 'there are small children in the house too afraid to go outside', or 'Thank goodness I've found someone who can take them away.'

The household, as usual, had a dog. 'Don't worry about her, she makes a lot of noise, but won't bite.' Well, bite or not, if the dog is not tied up, don't expect me to come in and look after your bees lady!

There were bees, bumble bees, great hairy monsters they were, and judging by the traffic through the hole in the wall, a well-established nest. That was the situation uncovered after having to remove the foliage blocking the way. I'm sure that having all the exess foliage removed from the garden is a standard part and parcel of bee jobs in the area in which I live. In the middle of this lot dwelt a cactus, broad leaved, and down each side of those broad leaves were the sharpest thorns I've ever encountered. My thickest bee gloves were no match for them. A few well directed blows with a slasher put paid to that monster and revealed the bees entry point.

My entry into the house was at a different point. As usual, the 'manhole' was at the other end of the building. Now I don't know how many buildings you have been under, over or through, but this was the Lulu of them all. The lady of the house was gracious enough to remark that the plumber had seen fit to send the apprentice under 'there' when they were having alterations done recently. 'There' consisted of one board width in entry size, hinged at one end. Opening 'there' uncovered a motley collection of boards, planks, palings and sticks of timber, all of which had to be removed, one by one. Great stuff, just what I needed, exercise.

Putting aside the concern expressed as to whether I would be able to fit through the opening, down I went, flat on my face, literally. It was that, or give up trying to get under the house. For some reason the ground inside the entry point was concreted, and I am now sure that someone with evil intent had decided to lull all future entrants into a false sense of well being. That concrete lasted for all of a metre, then it was right turn, through the hole on the original foundations, proceed with caution over all the broken roofing tiles until the slope in the ground meant left turn to have enough crawl space. Proceed with caution over the plastic pipes running every which way, until you come to another section of the foundations. By the way, don't lift your head up, you will hit the floor joists if you do. Now right turn and proceed until you are able to see light entering the venting grille on your left. Remove more broken tiles and proceed left toward the light, until a loud buzzing sound tells you that journey's end has been reached.

There they are, crawling everywhere. Now, where is the nest? Odd, but there is no sign of the nest, you know, that thing that looks like a Taranaki cow pat with lots of bumps in the middle. Watch, wait, observe. Be patient. It has cost you a lot of effort to get this far. Think nice thoughts, like what would happen if whilst you are under here, there was an earthquake. Would you be squashed flat or merely pinned neatly between a floor joist and terra firma? But back to the bees. That floor joist to your left is the main highway from the hole in the wall to the middle of the house. From there proceed with caution up over the wire anchoring the joist and disappear through the gap beyond. This is stalemate, that gap is over some rather new looking concrete.

End of the road. Place liberal quantities of powder on the main highway, puff some up into the chasm past the wire, and get out of there before the powder has time to find its way into your lungs. Repeat the dry land swimming lesson in reverse to get back to the entry point and its all over but the shouting.

Now back to the other side of the house to check on the entry point used by the bees. Not much slowing down of traffic as yet. Wait. Time will tell. Pack up the gear after giving the entrance hole another burst of powder. Leave the manhole entrance as is, tell the lady of the house not to tidy away the palings and all, another visit will be necessary to check on progress.

Next day sees the bee traffic lessened considerably, and all one way, inward. Stand by the exit hole and knock off the bees as they try to get back into the house. When saturated, the bumble bee is too heavy to fly and becomes an easy target for individual disposal. Return to the manhole entrance. Good, the entryway is still clear. This time remember to not breathe inward as your head goes into the opening, the dust off the concrete pad is soft and flies everywhere with every movement. Fast track to the nest location is made easier this time, you had the foresight to bring a torch. No movement is seen along the floor joist highway, and a few dead bees are seen at the rear of the foundation section. Looks as if the powder has done its work. Leave a bit more with a few puffs around the joint in the floor joist and depart. This time you do bump your skull on the floor joist. Crawling on the stomach whilst wearing a veil means lifting the head from time to time to determine which path to follow.

Why the veil? Have you seen the spiders webs under houses? No? Come with me sometime, let me introduce you to another world. Apart from that the veil is handy to have on if the bees get a mite "tichy".

A final heave sees you clear the entrance, this time for good. Now return all those palings and scraps of timber under the house, close the door, trip lightly around to the entranceway used by the bees. Not so many now, traffic is still one way, inwards, so wait idly near the hole in the wall and knock off a few more bees. Next report to the lady of the house. Comment such as 'big nest of bees', 'difficult to get at', 'they will all be wiped out in a day's time', go a long way to reassure her of the competence of your work and the writing of a cheque. A brief mention that you guarantee the job helps dry the ink on the cheque as well. Strip off the portable sauna suit, dust yourelf down and pack away the gear in the van. Head home for that welcome cuppa, then it's on to the next job.

A decent interval of a couple of days before 'phoning to advise you will be round on the next visit to the area gives the householder a chance to get in first, should you have failed to eradicate all

the bees. Since no call was received, your follow up is regarded highly, no, they have not seen any bees since the last visit, and yes, they will be home this afternoon.

Calling around about mid-afternoon fails to find any more bees coming or going, advise the householder to stop up the entrance hole in a few days time, also to wash down the wall to get rid of any residual powder. They will pass your name on to their friends they say, free publicity is always welcome.

So there it is, another job, another dollar, another experience. Reflection will bring back the easy ones, where it was almost a shame to take the money, like the time you removed a wasp nest from the shed wall, simply by sliding a brown paper bag over the nest, giving a slight sideways twist to dislodge the nest from the wall, then winding the neck of the bag shut. No suiting up, no powder, no spray, no fuss and money in the bank to show for it. The nest was only the size of an orange if you were wondering about my bravery.

Conversely, spending two hours digging around the roots of a Toi Toi bush, filling up two sugar sacks with brood comb as you demolished another wasp nest, and for the same money, saw you suited up to the hilt, spray and powder flying in all directions. That lot were intent on defending their nest, to the last sister.

Scrambling up into the ceiling vault of a house to find a nest over a metre in height can lead to a sinking feeling. Spray today, then beat a hasty retreat. Returning the next day when activity around the nest has diminished remarkably, restores the spirit, yet demolition uncovers some of the little beasties alive and lurking deep down in the base of the nest. Alive, but not totally as active as they had been the day before. Demolition is certainly easier than would have been possible the previous day. The added cost of the second visit is justified when safety, your safety, is taken into account. None of us likes being stung by wasps, so even up the odds with that second visit where the nest is a large one.

Tread carefully around people's gardens, patios, roof cavities and when crawling under their floors. Crunching a favoured plant underfoot diminishes your popularity rating, a foot through a ceiling panel rapidly sees that job lose money, and getting stuck under someone's floorboards may well be a highly undesirable experience. Weigh up the risks involved, insure yourself to the limit before setting forth as a knight in white armour (that is your nice new, white beesuit), be on the lookout for disaster and remember, you are not getting any younger.

Fashionable makeup produced humanely

A range of cosmetics and suntan preparations has been produced in Britain without testing any of it on animals.

The Dimples Movie Star range is a comprehensive selection of makeup for eyes, cheeks, lips and nails. It has been produced without cruelty to animals but has been microbiologically tested for allergenic reactions. The eyeshadows and mascaras are unperfumed and will not irritate the eyes.

High-quality creams and powders are used in the production of the cosmetics which are available in a wide range of popular and fashionable co-ordinating and complementary colours.

The Calypso range of suntan preparations is produced similarly and tested without cruelty to animals. Sun oil and five sun milks are made to an advanced water-resistant formula containing both UVA and UVB sun filters. The milks give a choice of protection for different skin types. Factor 15, for example, is formulated for maximum protection and is recommended for use by children.

The range includes a rich oil for a deep long-lasting tan with a low protection factor for those who already have some tan or who tan easily.

photo 1.
Love your honey mead. Brian Smith sizing up some on his honey mead at the Gisborne A & P Show.

photo 2.
Interesting beehives at Zakopane, Poland, taken by Reg. Clarke's son earlier this year. Note that each is different. Zakopane, set amidst superb scenery in the heart of the Tatra Mountains, is in the province of Cracow.

WISH TO RAISE YOUR OWN QUEENS?

Part II by John Heineman

In the previous issue we discussed the most elementary way of raising a few queens.

The following method is somewhat more involved but still very simple and not complicated at all. If done correctly it will pay dividends and give satisfaction.

Needed are two colonies: the breeder to furnish the grubs and the cell-raiser to turn those grubs into first-class queen cells. Both hives should be thoroughly prepared. Genetic background is of course coming from the breeder but if you have read Reg Clarke's articles in previous Beekeepers you will understand that there is a lot more to producing good quality queen bees than genetics. Apart from all the extras, conditions must be created for the bees to be able to furnish those precious grubs earmarked to become queens with the very best, which is a copious supply of royal jelly. Your cell raiser should be a strong two-storied colony, preferably of a reasonable gentle nature as you will have to work with it more often than usual during the coming weeks. If very strong and showing the first signs of the swarming urge, so much the better, because that urge can be made good use of. Ideal would be if at this time a nice steady flow is on the way and quantities of nectar and fresh pollen are coming in. If that is not so you will have to help them along with feeding a light syrup and combs of pollen, saved up or borrowed from a next colony. Pollen supplement is a help but few small-time beekeepers will have a supply of that.

It will be an advantage if you can have a crown board on both the breeder and the cell raiser with a hole cut in it so that a coffee jar with perforated lid can be placed on it. Then no disturbance occurs when feeding. Have four jars, simply exchange full ones for empties. An empty super on top of the crown-board is all that is needed to house the jars. Now start feeding both colonies for the next 10 to 14 days, if possible every night. At the end of that period remove a comb, not brood, from the breeder and make an empty place in the centre of the brood nest. Insert a good brood comb, not too dark, into the gap and close up the hive. Keep up with the syrup feeding.

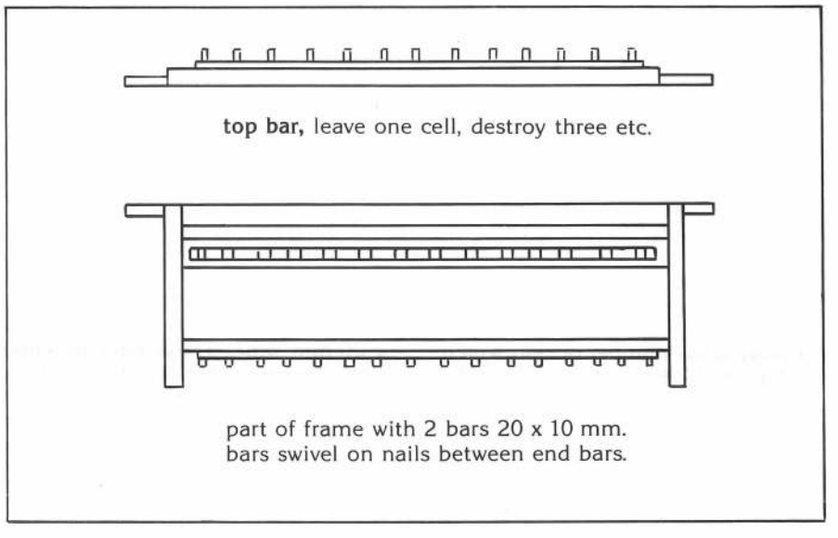
At the same time the cell raiser has to made queen less. Make a super or nuc box ready to house the lady for a while. Find the comb in the cell raiser she is on and place it into the super or nuc box. Shake in a few extra bees. Make sure there is enough feed with it to see it right and place her somewhere away from the cell raiser. Block up the entrance with some green grass to keep too many bees from returning to their original place of residence. If your cell raiser had nine combs in the top super it will now have eight. Just squeeze the combs together and don't worry about a comb short. Again keep up feeding for the next five or six days. Now, for the next step.

First back to your cell raiser. As it has been queen-less it will have put on a number of queen cells. These have to be removed, every one of them. If you do overlook one the whole operation will come to nothing. Having done that re-arrange the top super which is short of a comb so that a gap is left in the centre of the brood nest. Close up in the meantime.

Spread a newspaper on your table or bench to catch any drips of honey. Have a top bar laid on it and melt a little bees wax in a tin. Also put out a sharp knife and a kettle with hot water. Go to the breeder hive and fetch the comb you placed in the centre of its brood nest five or six days ago. Place the comb on the newspaper on the table. Study it and find the rows of cells holding the smallest larvae. That means the very young ones recently hatched from the eggs. They will show up glistening in the cells. Don't go for the bigger ones, they are older. Take the knife, dip it in the warm water and run it along both sides of the row of cells you have selected, following the centre of the adjoining rows. You probably will not get a continuous length of row to correspond with the length of the top bar, just cut shorter pieces. They can be joined.

As a comb has two sides so will the strip you have cut show cells on both sides of the midrib. Trim one side (not the one with the selected grubs) somewhat down and place the strips on the top bar. Glue them to the wood by carefully running a little of the molten wax (not hot) along each side of the strip or bits of strip. You don't need to fill the bar right up to its ends as the bees are often not very interested in doing the job too close to the sides of the hive. After having secured the strips to the bar destroy three cells and the grubs in them but leave the fourth etc, etc. In this way enough space (16 mm.) is created so that when the bees build those nice big queen cells these will not touch and become joined together like Siamese twins. Now take the bar with the strip to your cell raiser and place it in the gap left in the centre of the brood nest. Close up the hive and continue feeding syrup.

You are left with a damaged comb. Take it back to the breeder and place it on the outside of the broodnest. It still contains brood which might as well de-



top bar, leave one cell, destroy three etc.

part of frame with 2 bars 20 x 10 mm.
bars swivel on nails between end bars.

velop into bees. Later on you can move this comb up into the extracting box and cull it after extracting. A sheet of foundation will fix it again. Worried about the loss of a nice brood comb? Pretty cheap if you were to gain half a dozen queens.

The cell-raising colony has now commenced on the most important part of the operation. A large force of young nursing bees is available to attend to those cells and provide them with all they need for the transformation into queen bees. As the hive has been queenless for a number of days there will be little, if any unsealed brood left so all efforts will be directed towards the few cells on the bar.

Taking it that you have left really very young grubs, less than a day old, that is since hatching from the egg, it will need another 11 to 12 days before the virgin queens emerge. In the meantime don't forget that curiosity kills the cat, best is not to disturb the colony for the next five or six days but for routine feeding which should not be upsetting using jars on a crown board. Then the moment has arrived to have a careful look at the results. Quietly lift out the bar, don't bump it. Bees will hang on to it but you will be able to count the good looking, well developed cells. Forget any miserable runty looking things, they are not worth bothering with. Replace the bar with cells, they need a few more days in the cell raiser, now acting as cell finisher.

Knowing the number of cells which will have to be housed you can make up your mind what to do with them. Use them for re-queening, put them in nucs, or if there are more than you need ring your neighbouring beekeeper and see if he/she is interested in a couple. You now have a few days up your sleeve to make preparations. For re-queening it will be the best to either split the hive to be re-queened and put the cell into the q.l. half or make the nuc on top in a third box. The other option is to make up the required number of small nucs, give the cells to them, wait till the virgin queens have mated and are performing well and then use them for re-queening, increase or re-placement. With a variation on the saying involving chickens: "don't count your queen bees before they are mated".

Then if you are all set take out the bar with cells on the ninth or 10th day. Gently brush off the hangers-on and remove the cells from the bar with a knife by cutting along the wood, leaving as much of the wax base as possible. Deposit the cells in a small box, laying them on a soft surface. Close up the cell raiser: attend to that later. The cells then go to their destination. You can gently press them into a comb, the pressure on the hard wax base and with the true cell part pointing downward. The best place is on the borderline between stored honey and brood. A little honey dripping down along the queen cell does not hurt.

People sometimes use some form of cell protector fashioned from wire, a piece of plastic garden hose, making tape, etc. However I doubt if that is of great help. Once the cells are out all you can do is sit back and wait till nature runs its course and hope you will finish up with some good mated queens.

You will still have to deal with your q.l. cell raiser. All you have to do is reunite the nuc holding the queen you took out. Use a double sheet of newspaper. Or you could have left it with one of the cells or even have split it up into say three or four nucs and given a cell to each of them. All kind of possibilities.

How many queens will you gain with this method? It is really anyone's guess. The bar will have held from 12 to 16 cells. Probably about 80% O.K. as a maximum. That leaves no more than 12 to 13. If 75% of these turn into properly mated queens you can call yourself lucky. Result perhaps nine queens.

A good cell raising colony can cope with a greater number of cells no doubt. Instead of using one top bar make up, using a frame with the bottom bar removed, holding two bars 10 mm thick x 20 mm wide. These bars fastened with a frame nail between the end bars so that they can swivel. The frame can be put flat on the table, the bars given a quarter turn so that the wide surface faces upwards. This facilitates putting on the strips. Turn the bars that quarter turn again and hang the frame in the cell raiser. You may not need that greater number of cells but small-time beekeepers can very well band together as members of a branch or beekeepers club in this kind of project.

Raising queen bees in this manner is known as the Alley method.

Another way of raising queen cells without grafting is the Miller method. Again you need a breeder colony and a cell raising colony. The preparation of both hives are exactly the same as described for the Alley method. Again give the breeder a good light-coloured brood comb but first cut it in a zig-zag pattern at about the half way mark. You will have to cut and pull the wire out first. The bottom half of the comb has to be disregarded of course. The breeder queen will deposit eggs into this comb. After removing it from the breeder you have to cut the comb back again more or less following the zig-zag line to where very young grubs will be near the edge. Then hang it in the cell raiser. Cells will be built along the cut edge. These can be cut off when ready. I have found one draw back with this method namely the risk of getting more queen cells joined together than when using strips where only every fourth cell is saved, leaving sufficient space in between.

Then there is the Hopkins method which has always intrigued me. All preliminaries are the same again. A good brood comb is given to the breeder. When ready to go to the cell raiser it is first put flat on the table. With a sharp knife, first dipped in warm water cut along a row of cells containing very young grubs or even eggs but only as deep as the midrib (foundation). Same on the other side of the cell row. Then skip two rows of cells and perform the same cutting operation again. Depending on how well laid in the comb is you can repeat this four to six times. The next step is to scoop out the three rows of cells left between the cuts along the single row of cells you are going to use. This can be done very well with a chisel of the correct width (three cells), only as deep as the midrib. Then you are left with a number of single rows of cells far enough apart one way. Do the same to the cells in the row as what you did to strip destroy three cells and their contents and leave every fourth. Now it is ready to go to the cell raiser. The comb is not placed in the brood nest but immediately above it.

First place an empty super on top of the second brood chamber. Half depth is perfect. Place an empty frame flat on top of the brood nest frames. The prepared comb is put on this empty frame with the cut side facing downward. Cover up with some piece of light material. Cells will be raised hanging down in the space created by the empty frame. By this method you may raise a greater number of cells than by either the Alley or Miller method. So it would be better to use it as a group project.

SUMMARY

1. Select breeder and cell raiser. Assure plenty pollen, commence feeding syrup, continue for next 10 to 14 days.
2. Insert empty brood comb into brood nest of breeder. Make cell raiser queen-less. Queen into nuc. Continue feeding.
3. Four to six days after inserting comb into breeder lift out and prepare. Check cell raiser for self-raised cells, remove same. Give strip or prepared comb to cell raiser. Syrup.
4. On fifth or sixth day after insert-

(conc: page 31)

To Market, to market to sell a fat pig, oops, pollinating hive

From Bruce Stanley

The Bay of Plenty Kiwifruit Pollination Association demands high and uniform standards from its members. MAF inspectors ensure beforehand that members are able to reach the required standard. The fact that membership has recently been reduced from 60 to 37 indicates just how high these standards are.

Members must ensure that every pollination hive is particularly maintained and developed irrespective of weather so it reached the required optimum, and so that only strong, healthy beehives are used for pollination.

All members hives are further subjected to random MAF inspection once in the orchards.

If a sub-standard hive is discovered — a rare event — the beekeeper concerned is required to rectify the matter immediately. A post-season disputes' committee will hear complaints and may reduce the status or even dismiss a member.

The Association also accepts the orchardist's right to call for an independent MAF inspection of any hive or hives. This is at the orchardist's own expense, but the beekeeper concerned has the right of reasonable notice of such an inspection so he may be present if he wishes.

The Association continually educates its members and is constantly revising and improving its standards. For example, the KPA recently changed its Expressed Beehive Standard to ensure an optimum rather than a minimum standard.

Orchardists may compare quality-assured hives from KPA members with non-regulated or fly-by-night beekeepers. This is not to say all non-regulated hives are inferior, but obviously they cannot carry the guarantee that goes with KPA members.

The Kiwifruit Pollination Association has accepted the challenge of the Kiwifruit Orcharding Industry to provide a quality service. The list of KPA members is available from the Fruitgrowers' Federation or the Kiwifruit Journal.

BEEHIVE POLLINATION STANDARDS FOR THE KIWIFRUIT POLLINATION ASSOCIATION, BAY OF PLENTY, OCTOBER 1990.

1. OPTIMUM STANDARD:
(a) Seven full-depth frames of brood at 60% coverage
(b) Twelve full-depth frames covered with bees
(c) A young queen
(d) Adequate field bees.

2. ACCEPTABLE STANDARD:
(a) Five to six full-depth frames of brood at 60% coverage
(b) Ten to 11 full-depth frames covered with bees
(c) A young queen
(d) Adequate field bees.

3. OPERATING STANDARD:
Should be 95% of the optimum standard and 5% of acceptable standard.

DO YOU WANT A PROFESSIONAL QUALITY ASSURED BEEHIVE POLLINATION SERVICE?

Contact any one of the following members of the KIWIFRUIT POLLINATION ASSOCIATION.
ONLY THESE BEEKEEPERS ARE PROVIDING THE FOLLOWING SERVICE:-

1. Beekeeper Systems Audit (as K.M.B. Packhouse Systems Audit) checked for approval by independent Agriculture and Fisheries.
2. Optimum Beehive Standards (kiwifruit pollination) targeting requirement of every Beehive.
3. Automatic 'In Orchard' Beehive spot monitoring to Agriculture and Fisheries specifications to confirm Beekeepers compliance with standards.
4. 'Back Up' emergency liaison or disputes contact and faults correction procedure. Membership education, accountability and disciplinary procedures.

KIWIFRUIT POLLINATION ASSOCIATION MEMBERS 1990

Name	Phone No.	Supply Area	K.P.A. Contact Person for
Bassett J.			
(Waitomo Honey Ltd)	081 387193	TP, TA, KW	
Berry R.	073 461 111	OP, WH, TP, TA,	
(Arataki Honey Ltd)	073 461 115	KW	
Brown J.			Katikati
(Katikati Honey Centre)	075 490810	TP, TA, KW	Waihi
Bryant T.*	076 736885		
(Alpha Bees)	076 736160	WH, TP, TA, KW	
Clements B.	078 714709		
(Waikato H. Products Ltd)	078 713812	TP, TA, KW, W.	Waikato
Davies & Watkins	078 638801	TP, KW	
(Gold Coast Apiaries)			

Deans N.			
(Deans Apiaries Ltd)	075 442226	TA	
Debreceny D.			
(Harlesden Apiaries)	075 62536	TA	
Edwards Z.			
(Mountainview Apiaries)	075 410726	TA	
Eggleton C.	076 57639	OP	
Enright D.			
(Bay Apiaries)	075 481130	TP, TA, KW	
Fear J.			
(Fear & Pelosi Apiaries)	075 737877	TP	
Gifford D.			
(Comvita Apiaries)	075 31167	TP	
Giles A.	075 410974	TP, TA, KW	
Gordon J.			
(Jacobs Well Honey)	084 363852	TP, KW, CO	Coromandel
Hansen G.			
(Bee Management Services)	075 24998	TP, TA, KW	
Harrison G.	084 386959	KW, CO	
Howarth D.			
(Whenuakite Vly Apiaries)	084 363506	CO	
Hyde R.			
(Richmond Apiaries Ltd)	076 22110	OP, WH, TP	
Klausen, D.			
(Lakeview Honey)	074 60111	WH, TP, TA	
Lorimer T.			
(Hillcrest Apiaries)	071 69625	W	
Moodie K.			
(Highland Apiaries)	075 411292	TP, TA, KW	
Murray A.*			
(Murray Apiaries)	076 57650	OP	Opotiki
Nicholson M.			
(Te Kowhai Farms)	075 480029	TA	
Reynolds I.	075 757274	TP	
Richardson M.			
(Richardson Apiaries)	075 31451	TP	
Schoneveld D.	076 54640	OP	
Silson M.			
(Kiwi Coast Apiaries)	075 491532	TA, KW	
Stanley B.			
(Golden Grove Apiaries)	076 29028	OP, WH, TP	Whakatane
Steens P.			
(Coastal Apiaries Ltd)	075 420798	TP, TA, KW	
Sutherland D.			
(Motu-moana Honey)	084 356850	TP	
Townsend P.			
(Kernow Apiaries)	075 33658	TP	Te Puke
R. Turker	074 48108	TA	
Walker R.			
(Crystal Apiaries)	081 222744	TP	
Warr D.			
(Bee Ranch Apiaries)	075 66641	TA, KW	
Weenink S.	075 410984	TA	Tauranga
West D.			
(Bees Inn Apiaries)	071 296071	W	

SYMBOLS: * Candidate (new) Member:
OP - Opotiki. WH - Whakatane. TP - TePuke. TA - Tauranga KW - Katikati-Waihi. CO - Coromandel. W - Waikato

Impressions of the Japanese Honey Market

By Harry R. Rodenberg, Chairman, National Honey Board
Courtesy American Bee Journal

Bruce Beekman, executive committee, National Honey Board; Dan Hall, executive director, National Honey Board; Tom Payne, president, Thomas J. Payne Market Development; and I recently traveled to Japan to explore its honey industry.

As of 1988 in Japan, there were 8,769 beekeepers operating 269,292 colonies and producing 10,714,759 pounds of honey. The average beekeeper has 150 colonies producing 39.75 pounds per colony. Many of these beekeepers offer pollination services.

The Japanese beekeeping industry, although not large in numbers or production, is influential politically. They strongly support the 30 percent duty on imported honey.

Japanese Products

We found honey and honey products in several locations in the large department stores, and the variety of containers is extremely attractive. Honey is expensive by our standard, but this is true of many food items in Japan. Royal jelly appears to have wide acceptance, and many products, particularly cosmetics, contain royal jelly.

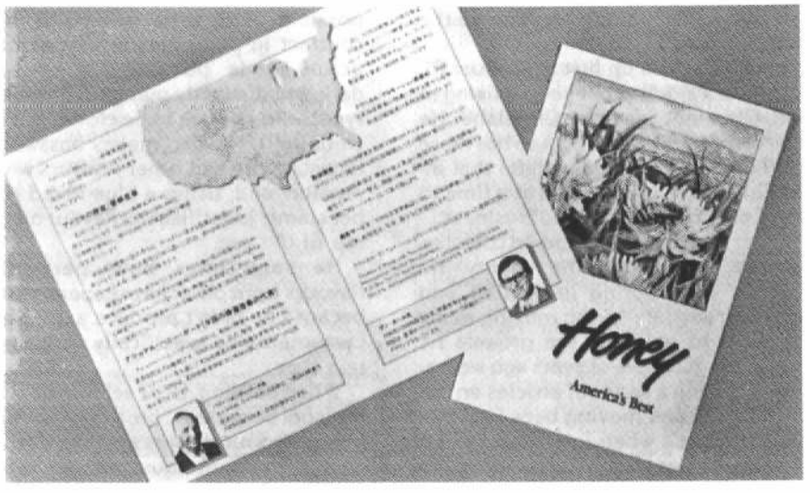
The fastest growth in the use of honey is in beverages such as soft drinks, which are mainly fruit drinks. Coin-operated soft drink dispensers are seen everywhere.

Honey sticks, which hold more honey than the ones made in the United States, are packed in round plastic vials. Children take these to school with their lunches.

The Japanese Perception of Honey

Honey is considered to be a natural health food, and a bee symbol is affixed to the packaging to assist people in locating products that contain honey. Honey adds value, and the Japanese consumer is willing to pay additional money when honey is used as the sweetener.

Since the end of World War II, the diet of the Japanese people has become much more Westernized, and as a result, the consumption of honey as a sweetener has increased considerably, but not to the extent of some of the traditional honey using countries such as Germany. The per capita consumption of hone in Japan is ⅔ pound.



The American honey industry was introduced to Japan in the National Honey Board's brochure titled, "Honey America's Best."

Nearly every conversation that we had concerning the perception of honey in Japan stressed the preference for mild flavoured, light colored honeys. Even so, it is not uncommon to find citrus honey, New Zealand Christmas berry and safflower honey.

Japanese Honey Packaging Plants

We visited two packers in Japan, Kato Brothers Co., Ltd., and Nisshin Honey Co., Ltd. Kato Brothers Co. was enthusiastic about the ultra membrane filtration method that is being used to supply consistent, quality honey to the beverage industry. The finished product is clear and water white. Much of the honey aroma is removed as well as pollen and protein.

Kato Brothers Co., Ltd., is the largest honey packer in Japan, marketing the vast majority of the honey sold in Japan. Of the total consumption, 58 percent is table honey and 42 percent is industrial. Of the 27,260 metric tons that are sold for table use, 50 percent is sold through superstores and retail stores; 20 percent by beekeepers, 15 percent by unions, 10 percent by department stores, and 5 percent by mail order businesses and pharmacies.

Both Kato Brothers and Nisshin Honey pack a crimped-seamed rectangular can, which is sold to beverage companies. It is similar to the U.S. 5-gallon can, but slightly smaller.

Reception of U.S. Honey

When we encouraged the use of U.S. honey, several questions were raised:

- Where can we obtain plain color with mild taste?
- Where can we obtain a consistent supply?
- Why do we see so much variety of color and taste in U.S. honey?
- Why is U.S. honey of a certain type not available every year?
- We like orange honey, but the quality is not consistent from year to year.
- Is U.S. honey free of pesticides and contaminants?
- How can we establish long-term commitments with your people?

Japanese traders will have to be convinced that U.S. beekeepers/packers can serve their needs at a reasonable price.

There is potential for U.S. honey in Japan. Some U.S. honey is already on the shelves. The next step is to increase the volume while maintaining a high quality product.

The National Honey Board stands ready to serve the U.S. honey industry in developing recognition of U.S. honey in the Japanese market. The Honey Board is committed to expanding the U.S. export market from 6 percent of U.S. production to 15 percent within the next three years.

A sales run with Buzz Riopelle

By Kim Flottum
Courtesy Gleanings in Bee Culture

I've recently had a chance to ride with Buzz Riopelle on one of his honey sales runs. It was a Saturday, which is why I was able to go, and, according to Buzz, a pretty typical day. I'll let you be the judge.

But let's back up just a bit. Buzz Riopelle is a sideline beekeeper living in NE Ohio, not far from Cleveland. He works for a fire department so has those odd on-again, off-again shifts that allow him three or four days at a time to take care of his bees and business.

Buzz runs a couple hundred colonies, spread out around the county. He spends early spring inspecting and dividing and late spring moving many of them to pollinate the growers he works for. A couple of years ago we featured Buzz in a series of articles on doing divides and moving bees for pollination. That's when I decided to find out why he was successful at selling the honey he makes.

He occasionally has a helper when moving colonies but does almost all the work himself. He'll spend a day gathering supers, brings them home and stacks them in his honey house. Then, it's a day or two or three extracting. He uses a Maxant chain uncapper and radial extractor and is pleased with both. Working by himself most of the time precludes the efficiency of the uncapper, but it's easy to use and goes fast, he says.

Once extracted, the honey is stored in 60's or barrels until needed or until he has time to bottle up.

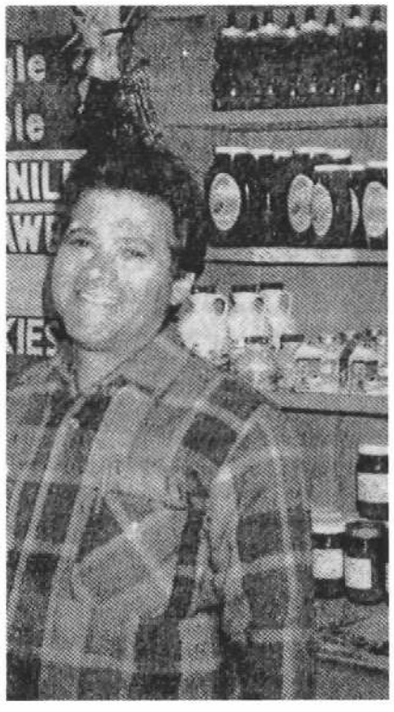
Honey types are segregated when possible (this year he had a pollination contract in pumpkins and in a short period made 'pumpkin' honey — a dark, but distinctly pumpkin flavoured type, mild enough to be clover, but far smoother). He also makes basswood, locust, apple and other flavours when possible and, using a blue-inked rubber stamp, identifies the flavour on the top of the cap.

He sometimes buys particular flavours from other beekeepers, either because he didn't produce any or has customers who specifically want a certain type.

When bottling, Buzz seldom applies his label because it "breaks my stride", he says. So, most cases sit in the storage area of his honey house without labels until needed.

It was shortly after Buzz finished extracting that I went along for the ride. Fall is the ideal time to sell honey, says Buzz, for a lot of reasons.

In the six or eight weeks before Halloween, literally hundreds of farm markets open up in the area to take advantage of the 'Harvest Season'. These are mostly small places that feature garden crops, apples, or a mix of natures best at this time of the year. Also, the weather's a little cooler so people aren't going to the beach, the kids are in school, vacations are over, and, on a bright sunny weekend day, thousands of city folks are out looking at fall colors and for some of the 'home grown' produce they think they can only find at a local farm market — out in the country.

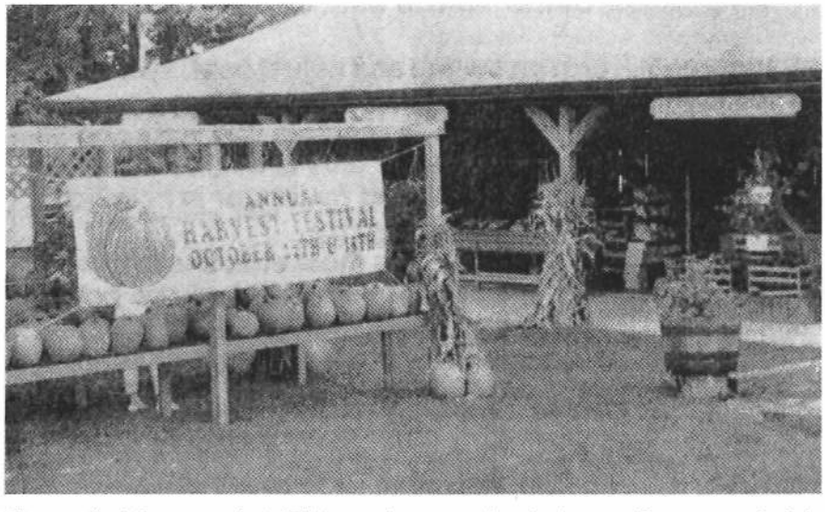


"And," Buzz asks as we leave my house at 7:30 in the morning, "What farm market worth the name, wouldn't carry honey?"

Because he has several outlets, Buzz has set up distinct delivery routes. These usually start close to home, swing out to distant stores, and work their way back. During winter and spring, there are generally fewer stops and on a good day you might make two routes instead of one. But today, it's just one, long route.

The first stop was at an egg farm. Though they make eggs by the millions, most go to a distant wholesaler but local people sometimes stop and the owners took advantage of this by selling a few extra items. "They only handle one or two cases a year, but they're happy, and I go by every week so it's no problem to stop," said Buzz.

The next stop was at one of the



The typical farm market. This one is open about six months a year, but is busiest during harvest season. It's the PERFECT place to sell 'local' honey.

seasonal farm markets that had just opened and was still stocking shelves. They had called the night before saying it was that time again, and could he stop out the next day? Buzz, with a very full trunk, had to move several cases to get at the half gallon jars on the bottom.

"They like my label," he said, as he put one on each jar. "But I usually carry jars without labels because some of these small markets put on their own label, or just leave it blank with a sign on the shelf that says 'Local Honey'. It's easier to apply a label in a store, or even out in the car than to make two trips because I didn't have what they wanted."

Next stop was an apple orchard market, open only two or three months a year. They sell two or three cases of one lb. jars a season, with the label. They made their initial contact by chance at a public meeting.

"One of the problems with these markets," says Buzz, "is that most are small, unheated buildings. The cooler weather (it was 48°F the day we were out) tends to speed crystallization, and I have to replace about 10 cases every fall from these outlets.

"I take these home and liquify them, but I try to save my label, if there is one, because of the cost," says Buzz.

Next stop is at a large, year round farm market. He sells 1 lb., 2 lb., bears and comb honey. They take all their containers without labels and apply their own.

Fall is their busiest time because they also run a huge apple orchard (which Buzzs' bees pollinated this spring) and sales are strong. They also sell hundreds of Christmas gift boxes which they put honey in (both liquid and comb) and they start putting them together before Thanksgiving.

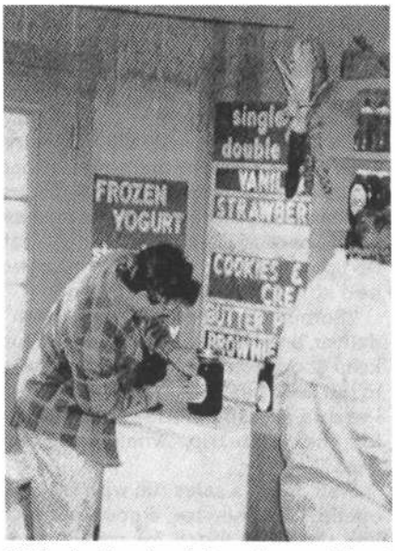
Buzz checks with the store supervisor on how much they need, goes to the car and fills the order. While doing that, I chatted with Sue, the store's supervisor.

"We like Buzz's honey because the quality is always consistent, which is the most important aspect we look for in a supplier," she said. "But there's more than that.

"He gives good service. I mean he's here before we run out, replaces all the candided stuff, and isn't high pressure about what we should carry.

"We pay top dollar (over $2.00/lb. wholesale) and expect top service. We get it. So we keep buying from him," she added.

The final planned stop for the day was at a grocery store, one of three in a chain, but the only one Buzz served. He had stopped in a couple of days earlier and checked his stock, noting



"It's better to bring jars without labels, even if you have to put them on when you get there. Some farm markets don't want a label, but would rather sell 'Local Honey'. That's fine with me!"

he was low on several sizes, but particularly five lb. jars. He uses his label here because of the competition. Also on the shelf were a national co-op brand, a large regional brand, and a generic label. There were, in total, 16 fronts of honey — a lot for a medium sized store.

"I got this account because the previous supplier didn't give good service," says Buzz. "Stocky jars, crystallized honey — it was most always a mess.

"I approached the owner, and got the account," said Buzz. "It's mostly bears here," he said, "—but maybe it'll pick up when they see how good mine is!"

After the grocery store we started home. It was past lunch and after going through all those stores I was hungry.

But Buzz had a different idea.

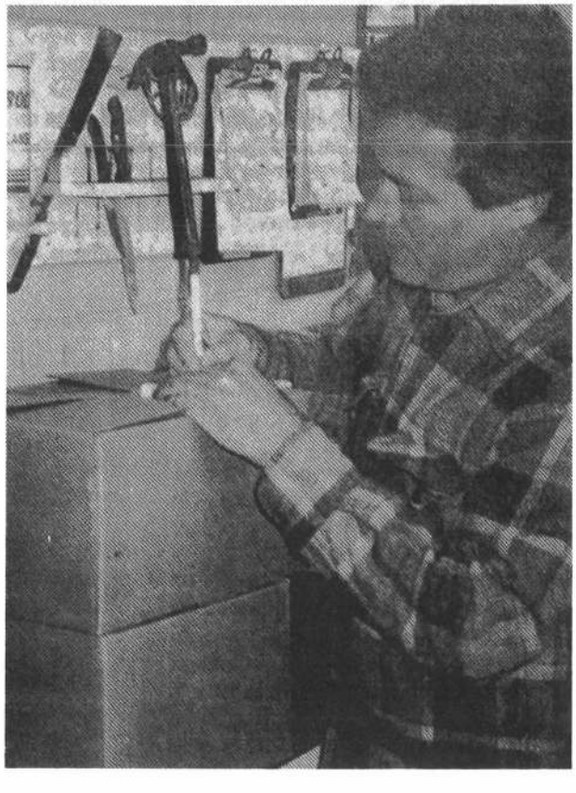
"You know," he said, "I was past here a few days ago," pointing to a small strip mall coming up on the left," and I noticed this new little store. I thought I'd give it a try.

"It's called 'A Taste of Ohio' and only carries food and food stuff made in Ohio. My honey's a natural here," said Buzz.

We pulled into the parking lot. Buzz checked the mirror and his shoes and hopped out of the car.

"Let's check the place out," he said, and we cruised in, as nonchalant as could be. Candies, jams, jellies, dried fruit . . . all sorts of food stuff and all grown in Ohio. And books about food grown in Ohio and . . . well, you get the idea. And honey, but not much, and not very well tended. One jar stuck to the shelf when I picked it up.

"Back to the car," said Buzz. Into the trunk and out comes two jars. A label



"I've got to keep good records, because some accounts pay up front, and some I have to bill later. I NEVER leave a store without leaving a receipt, though, even if they don't pay. That way, we both have a record."

goes on one, the other blank. He checked the mirror again, brushed off his pants and put on a different, well-pressed jacket.

"A professional image is one of the strongest sales tools you've got," said Buzz. But you don't want to be too fancy. Clean, well-groomed, clean-shaven and the like makes an immediate image. Most people tend to think your product is as good as how both you and it looks.

"I always bring in my business card, a price sheet and two jars of honey — one with my label on it so they see how it looks, and one without, which I send home with them.

"That way they see me, my product, my prices and get to test it — all at the same time. I try to make the decision as easy as possible, but I never, never pressure a sale. My honey sells itself, it doesn't need any help. The rest — good appearance, good label and service, and follow-up are benefits to the buyer."

The store's owner liked what she saw, and tasted, liked the price and the service, and bought two cases for this store, and two cases for another store she had in Cleveland, which was really a bonus.

That was it. The day was over (at least for me because Buzz went home to bottle up enough to replace the 18 cases he'd sold that day).

"Some of my accounts pay when I deliver, and I must bill others. I have to keep good records so I don't forget who to bill, who has paid, how much honey I've sold, how much I need to get ready for the next trip, when to check bees . . . "

Well, that's a sales run with Buzz Riopelle. Good service, a good product, and the right touch for making new sales keeps this sideliner in business.

There are 16 fronts of honey here. More than in most grocery stores. Buzz has five of them. Two 2#, two 1# and bears.

AIDA — BASIC SELLING TECHNIQUE

By Richard Thomas Edwards
Courtesy Gleanings in Bee Culture

There are few people who know how to sell and the simple truth is, there is only one way to sell your honey and that's by using a simple formula. It is called AIDA.

If you want to sell a house, a car, or almost anything else for that matter, you will use this. You want to capture the attention of the customer, you want to generate interest concerning the merchandise you intend to sell, and you hope all of this will cause the customer to develop a desire sufficient enough to take action and make that purchase.

Notice that you go through the same steps before making a purchase. Your attention may have been captured by an ad, your interest was developed by the sales person and you then justified your willingness to take action which was fired up by your desire to take action and make the purchase.

Notice, that it is your attention and interest in the product which must be fired up before your customer desires to take action. Therefore, you have two fore a customer is ready to take action and make a purchase.

Sounds simple, doesn't it? Well, it is. The problems begin when you assume your customers are already fired up to make a decision and take action by making a purchase.

Just because customers come to you does not mean they are interested in making a purchase. It is your job to create the attention and the interest in your customers to the point where they desire to take action and make a purchase.

Have you ever observed a customer in a store walk up to a salesperson, express interest in a particular product, walk over to that product and then walk away without making a purchase? Where was the salesperson?

Clearly, the product had gained the attention of the customer, but it did not, and could not, fully "sell" the customer. That was the job of the salesperson. And that's where the line of steps necessary to fully "close the sale" was disrupted.

There could have been outside forces which hampered the selling environment. The customer may not have liked the color, doubted the quality, or have found a better buy somewhere else and wanted to check or do some comparison shopping before making a decision.

But all of these could have been "argued" by the salesperson. Argued in the sense that the product that got the customer's attention should be highlighted so that the product's value became higher, increasing interest, and the customer will then decide upon taking action.

Use AIDA as a way to develop your own "arguments" or selling points — features, benefits and examples of use. You will be better armed to instill attention and interest in your customers. And it is only through attention that you can communicate interest to and in your potential customers.

ORANGE FILLING

2 tablespoons sugar
2 tablespoons flour
½ tablespoon lemon juice
½ cup orange juice
¼ cup honey
grated rind of 1 orange
1 egg, slightly beaten
1 tablespoon butter

• Mix ingredients in top of double boiler and cook until thickened. Cool and spread between cake layers.

SELLING HINTS

By Pat Radlof
Courtesy Gleanings in Bee Culture

The challenges of marketing a product are varied and honey is no exception. Hobbyist and commercial beekeepers each have a set of problems specific to their operations. Let's look at the hobbyist first.

PROBLEM 1 — Supply

Most beekeeping starts as a pleasant curiosity, grows into a deep interest, develops into an irresistible pull, and then blossoms into a full-blown fever.

Although there are women and student beekseepers, the majority of hobbyists are middle-aged men. They are outdoor people who enjoy woodworking and gardening. Bees fit into the grand scheme of things. Bees pollinate and produce a wonderful product — honey. So, "Why not have a hive or two?" It's so much fun to put the equipment together (maybe even make some in the workshop) that soon the bee yard expands into a half-dozen colonies.

Even though the family's quota for honey has been satisfied, those 6-plus colonies keep cranking it out. What once was a trickle is now a river of gold. Friends and relatives are gifted, the demands of neighbors and co-workers are met. Still the fever burns. Honey income is spent on more woodenware, a bigger settling tank, and a motorized extractor.

PROBLEM 2 — Demand

I remember the prophetic words of my beekeeping friend, Clayton Knepley: "There's a lot of money in beekeeping — my money!"

So, to market the surplus, our beekeeper sets up a table in the front yard, hangs out a sign, and displays honey in a collection of jars from instant coffee, peanut butter, and Gator-Ade. Parts of the original labels are still attached. Business is slow.

PROBLEM 3 — Packaging

Let's examine that further. Honey, and for that matter all honey products, should be packed in sparkling clean and clear jars or bottles. A full display table draws customers so those containers should be of uniform shape and the label should be eye-catching. This is not the time for an elaborately detailed bee illustration, which is a turn-off for most customers. Bugs — yuck! A sketch of the primary floral source is much more appealing.

PROBLEM 4 — Pricing

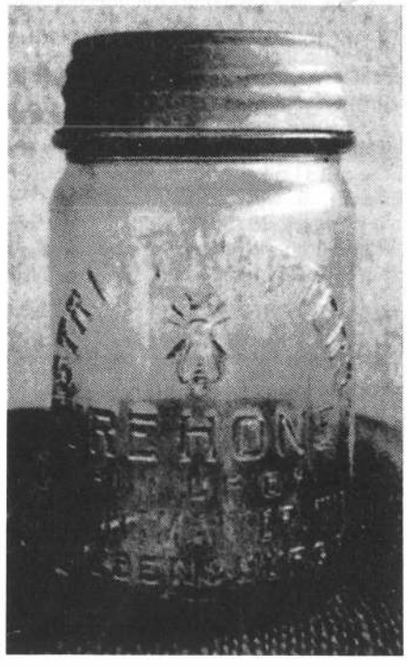
Beginners run down to the local supermarket, check the going rate for the generic honey and decide to give their product the same price, in order to be competitive. Nonsense!

PROBLEM 5 — Specializing

Why emphasize the similarity to a product already on the grocer's shelf, that is, honey processed by the ton for a mass market. The local beekeeper must focus on the unique advantages of his product — honey made from local flowers, honey produced with very little processing. Think of the appeal to travelers who want to buy something they can't get anywhere else, to health-conscious consumers who are looking for natural foods, to mead-makers who appreciate and demand the local stuff. In other words, if you've got it, flaunt it! Advertise and promote it with pride. It's a gourmet food.

Commercial beekeepers have their own special headaches.

Did you know that the average American consumes yearly 100 pounds of sugar to one pound of honey. Terrible ratio. Sadly, a lot of that honey is not produced in the United States.



'Uniqueness' is a goal of some beekeepers, and a 'unique' jar will help.

PROBLEM 6 — Imports

It's hard to compete with low foreign labour costs and a one-cent tariff. Each year commercial packers buy honey from Argentina, Canada, China, Mexico, and other countries. What about the fact that no foreign honey bee has ever pollinated the 19 billion dollars worth of U.S. food produced yearly that is dependent on insect pollination? Frankly, my dear, no one gives a damn. So much for loyalty. It will require some innovative thinking to cut labor, equipment, and packaging costs but I'll bank on American ingenuity.

PROBLEM 7 — The Honey Price Support Program

It was created after World War II to help the beekeepers who complied with the war effort and expanded when sugar rationing went into effect. For awhile, domestic honey was consigned to this program and not redeemed since the going price per pound was higher than in the market place. The government has little alternative but to give it away in food-to-the-poor and school lunch programs. Some of the honey was poor quality and hurt the demand for more. Fortunately, this situation is changing because of a shortage in recent years. In fact, there have been predictions there will be NO honey left by November of this year.

There's also the National Honey Board. One of its features is a consumer education program and, if successful, could create enough demand for honey in its various forms to not only wipe out the domestic surplus but absorb the foreign imports, too.

We haven't begun to promote the many ways to use honey. When's the last time you stirred some honey in your coffee, poured a dollop on a dish of ice cream or enjoyed a brilliant glass of mead?

The problems of marketing can be seen as a headache to be endured, or challenge to be overcome. It depends a lot on attitude. Personally, I love a challenge.

Have you had your honey today?

Pat Radloff is a beekeeper and honey seller living near Columbus, OH. She is a member of the nominating committee for the National Honey Board and was publisher of the newsletter Better Beekeeping. *This article originally appeared in the American Mead Society Newsletter.*

CONSUMER HONEY-USE SURVEY

Courtesy Bee Culture

Welcome to *Bee Culture's* first unofficial, unscientific, barely-funded, but nevertheless fascinating Consumer Honey Use Survey.

We thought National Honey Month would be the ideal time to send out our roving reporter and check out a hundred or so folks in the northeast Ohio area to see what they know about honey, how they use it, and a little bit about bees and beekeeping.

Since our sample is relatively small (about nine dozen people), and our time limited, we can say that the results are valid for only the northeast part of Ohio, but we feel the trends shown are far more universal.

Even so, we did get a good mix of people — urban (Cleveland and Akron), suburban &suburbs of both), small town (Medina and others) and rural. As it turned out, we managed to catch more males (55) than females (47) but our arbitrary age spread came out pretty well — 17 (17%) were under 20 years old; 53 (52%;) were between 20 and 50; and 32 (31%) were over 50.

Here's an interesting note — 14 (14%) of those questioned didn't really know where honey came from (we can't guarantee the accuracy of that but they seemed genuine) but of those, 11 used it regularly anyway. Maybe they haven't figured it out, but we're glad for every customer we can get, right?

Of all the people questioned, 16 didn't use honey at all (16%) which means that fully 84% (86) use it to some degree.

We took a closer look at who doesn't use honey, though, because they are the most interesting folks here. First, more males (10) said they didn't use honey than females (6). But most of the 16(12) knew where honey came from. The age spread was about the same as the larger sample.

Speaking of knowing where honey comes from, 88 (867) knew that honey came from honey bees. But 14 (12%) didn't! Interestingly, half were under 20, the other half between 20 and 50. Those over 50 all knew about bees and honey.

When we looked a little deeper at who, and how, honey was used, we found some interesting trends. As stated, 86 (84%) of our respondents routinely used honey. Forty four (51%) used honey on the table, but only 14 (16%) used it for baking. Of those, half were in the 20-50 age group, and half were over 50. And they were equally divided between male and female. Note that no respondents under 20 routinely cooked with it — nothing new here, but it confirms yet another belief held by most beekeepers.

Obviously, knowing the kinds of honey used is important, but here there were some interesting surprises. Sixty four of the respondents (74%) who use it preferred 'light' honey, while 22 (26%) preferred 'dark' honey.

But we broke it down further from that when it came to the darker color, because we've always favored the minority. Besides, knowing who buys your product is important.

Dark honey users (22 of them) were divided pretty evenly between male and female (12 and 10) but the age spread was heavily weighted in favor of the older respondents. Only two were less than 20, six were between 20 and 50, while 14 were over 50. Most, 17, bought honey at the farm, while seven got it at grocery stores.

Surprisingly, dark honey was used evenly between table use and cooking, and the purchasing habits were similar in that about half purchased less than three pounds per year, while half bought more than 3 pounds per year.

We also wanted to find out where these folks got their honey. (Remember, 86 used it in the first place.) Surprisingly, at least to us, 69 (82%) of these honey buyers made purchases at the grocery store. I guess our preconceived notion that beekeepers tend to sell mostly from their back porch and farm markets will finally have to be put to rest. Which, by the way, strongly points the direction you should consider if selling honey is a problem.

It's obvious we should have asked if these store purchases were price driven or if there was brand loyalty involved. This is vital to producers because it sets the rules on how you approach a buyer. Next time we'll follow up on that.

However, 28 (33%) respondents said they purchase honey from 'farmers', or beekeepers in this casea. But here's the interesting part of this question. When we asked how much honey per year they purchased, the 69 folks who bought honey only in stores *averaged* 1.8 pounds of honey used per year. This is over three quarters of a pound higher than the national average. But those who bought from beekeepers, or from both, averaged a full three pounds of honey used per year! This is almost twice as much as the others, and three times as much as the respondents to the survey made by the National Honey Board. (Numbers do not always total because some respondents make more than a single choice.)

Most respondents bought their honey at grocery stores and most preferred light honey over the darker flavors.

This purchasing trend points out that at least some portion of honey sales are *probably* an impulse buy in grocery stores, though we're sure there's brand loyalty, too. However, sales to grocery stores are also based on both brand loyalty by the store owner (because of service, quality and price) and good old price alone.

This points out that if you charge more for your product than the competition, the store must sell more, and at a higher price. But we realize that breaking that price barrier with store owners is difficult. Of course, this does not consider the problem of slotting, a topic we'll be covering later this year.

Often, successful beekeepers will sell at an artificially low price to gain entrance to a store. Then, after a trial period where sales justify a price increase, will raise to an acceptable level. But only strong sales will justify this. If your product is the same quality as the next guys, you won't sell more honey.

For background, we also asked if people knew about African Honey Bees and, yes, Killer Bees.

For the African Bee it was 54 yes, 48 no, as far as knowing what it was. Killer Bees were, not surprisingly, a different story. Eighty eight knew our friend the Killer, and only 12 had not heard of it.

An even 50 respondents knew of both the African and Killer Bees, and believe it or not, 10 respondents (10%) hadn't heard of either.

Excluding med-fly in California, we doubt that any agricultural group is so well known by those who are not directly involved. This speaks well of the information producing machines in this country.

We said in the beginning, and reemphasize now, this survey is not the result of an official or scientific undertaking by our staff. But, we are confident it reflects general trends in honey purchasing habits and knowledge of the product. Use it accordingly.

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ing comb into cell raiser check number of good cells. Prepare hives or nucs for receiving cells during the next few days.

5. Take out cells on the ninth or 10th day after giving strips or comb to cell raiser. Introduce cells into prepared colonies. Restore queen to cell raiser.

Note: If cells have to be transported over some distance and involving time they can be placed on a layer of soft material with a warm, not hot, hot water bottle underneath and covered with some cloth or a newspaper.

NOW AFTER HAVING DONE THIS EXERCISE, WHICH WAS EITHER FUN OR FRUSTRATION DO YOU STILL THINK THAT OUR COMMERCIAL QUEEN BREEDERS ARE CHARGING TOO MUCH?

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