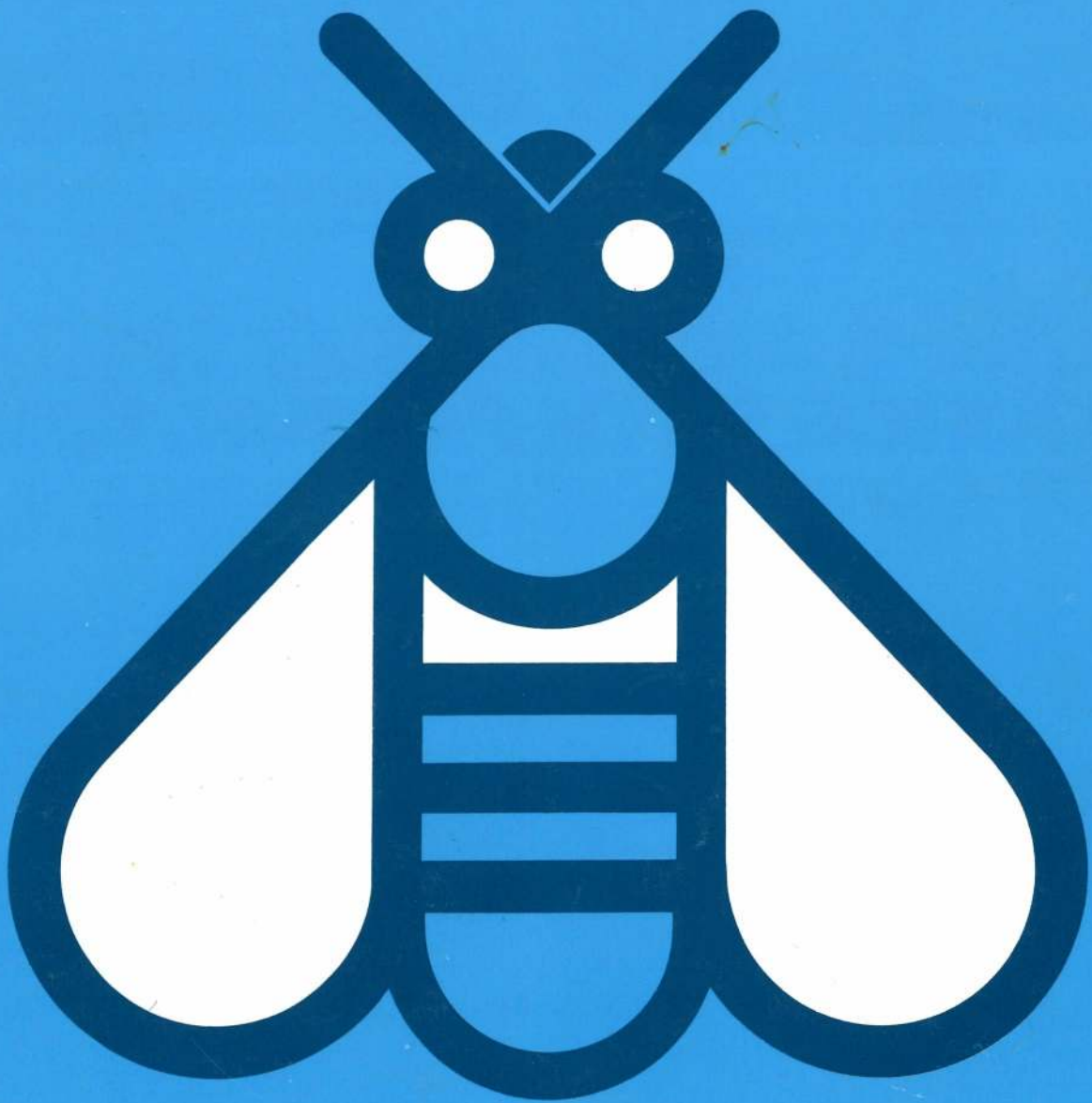
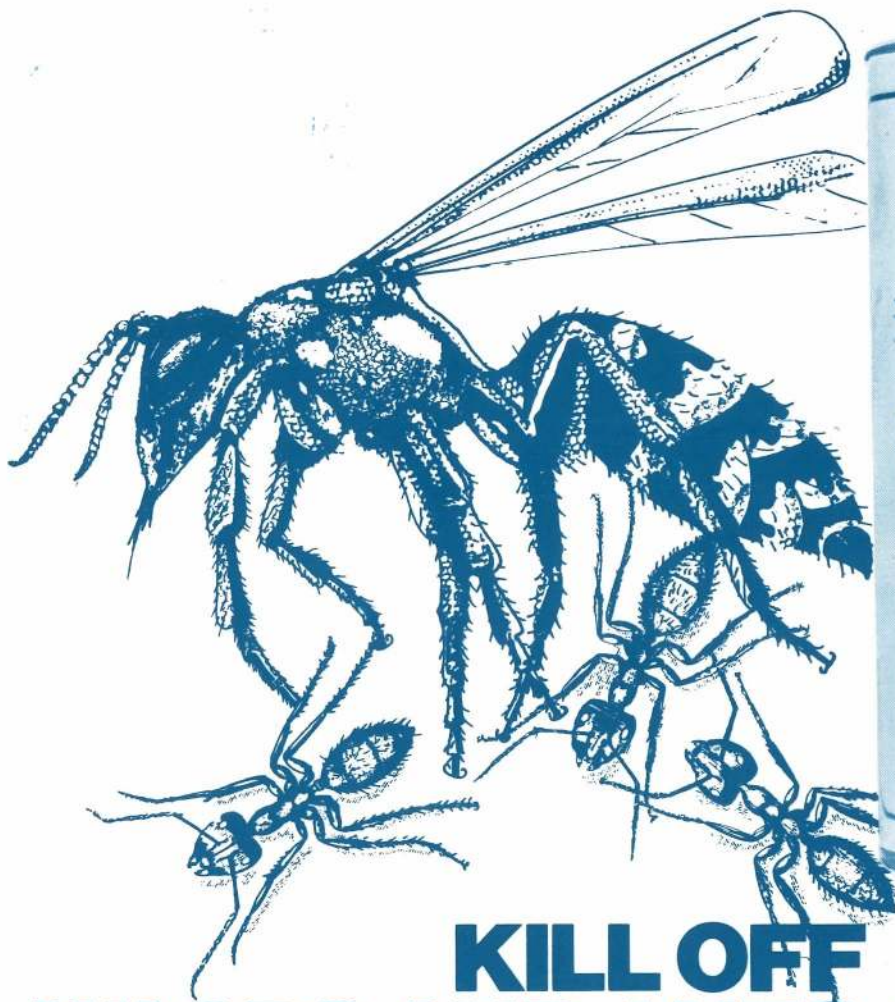


THE NEW ZEALAND
beekeeper



DECEMBER 1978



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THE NEW ZEALAND BEEKEEPER

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Index

King Bee	3
HMA deadlock broken	5
A.I. offers no miracles	5
Correspondents	5
Stings restore sight	7
Bee repellents need study	7
Opossum kill costs money	7
Honey dew study	7
Honey imports banned	7
MAF staff promotions	7
With respect	9
Boffins in gumboots	9

For hobbyists and beginners

■ Making your own extractor	10
■ Queens and colony size	13
■ Section honey for the amateur	14
■ Beginner's Massey course	23
Have extractor, will travel	16
Model beehive a beaut!	17
Honey extractor, the costs involved	18
From the colonies	21
Quality standards for NZ honey	25
HMA supply rules change	27
Queen cell raising in queenright colonies	28
Don't forget your hive levy	31

Ringling in the New Year

WITH THE exception of those beekeepers who saw their hives washed out toward the Southland coastline, most of us are looking toward a bounteous summer flow. While warm winter conditions in many districts necessitated extra feeding in the spring, most beekeepers seem to be reporting their hives to be strong and all crop indicators to be positive.

On the marketing front, matters also seem to be well under control. The authority has recently negotiated some major export sales which have vindicated its decision to hold stocks until the honey market firmed. All that remains is for the HMA to complete its somewhat delicate negotiations with the Treasury — the aim being to give the authority sufficient financial resources to be able to obtain the best returns for NZ honey for both the producer and the nation.

News on these negotiations is being kept under tight wraps and we hope to bring you some more detailed reports in our March issue.

In this issue, however, we have plenty of reading for both the amateur and the professional beekeeper. And to placate those people who feel that big type is too easy to read, we've changed our type size and style.

Those of you who have missed a formal index will have also noted that its absence has been corrected in the last two issues. It will mean no more consolidated indices, but in a quarterly magazine they may well be an unnecessary luxury.

Like all publications we are here to meet your needs. If you feel that we're missing out on something, let us know. If there's something really good about a particular issue, do the same. It gives us a better idea of what you want.

We can't guarantee you a good honey flow, but we can offer you all out there in bee-land a very happy Christmas and a profitable and fulfilling New Year.

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Advertising at these rates is available to registered
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decision will be final.

Full page \$90, Half page \$50, Quarter page \$25,
1/8 page \$15, \$2.50 a col./cm. Production charges
will be made for single insertions of a minimum of
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The NZ Beekeeper is distributed free to all bee-
keepers owning more than 49 hives who, after paying
their compulsory hive levy, automatically become
members of the National Beekeepers' Association of
New Zealand (Inc).

Beekeepers owning less than 50 hives, will pay an
annual subscription of \$9.00 which includes the cost
of a subscription of the NZ Beekeeper.



**KING
BEE**

(WHERE THE NBA HAS ITS STING)

Strings to vote retention

Beekeepers wishing to retain their voting rights until conference will in future have to attend the branch remit meeting at which conference remits are discussed. This is the intention of a planned rule alteration currently being prepared by the NBA's solicitors.

The rule alteration is the result of some confusion at the 1978 annual conference as to the rights of members to defer their vote to the conference.

For the change to take effect, it will have to be approved at the 1979 annual meeting of the association.

Hawkes Bay financial

Association vice-president Paul Marshall reported to the September meeting of the NBA executive that the 1978 NBA conference had been a financial success and that the organising branch – Hawkes Bay – would probably be able to refund the \$100 advance made to them.

Paul Marshall on committee

Paul Marshall has been appointed by the minister of agriculture to the Apiaries Advisory Committee. The committee advises the minister of the operation of the restricted honey dew area in the Coromandel-Bay of Plenty areas. The previous NBA representative was Ray Robinson, a Waikato beekeeper who did not stand for re-election to the association executive this year. Mr Robinson remains as deputy.

According to MAF chief advisory officer (beekeeping) Grahame Walton, the hive removal date for the area has been deferred from mid December to the end of the month. A control group of 200 hives will be kept in the area.

Incentives for queen bees

The NBA executive is preparing a case for the inclusion of queen bees in the export incentive scheme. The scheme already includes pollen, propolis and packed honey.

Trees for bees

Following a talk with Grahame Walton, the NBA executive decided to approach the Nurserymen's Association requesting their co-operation in encouraging nurserymen to stock trees which are attractive to bees.

Agpress still edits

The NBA executive has renewed its publishing contract with the Agricultural Press Company for the publication of "NZ Beekeeper". The new publication year starts in March 1979. The executive has also accepted increased production charges for the 1979 year.

In an endeavour to recoup these charges, the subscription for the NZ Beekeeper has been increased to \$9 a year.

Health regs studied

Queries about the manner in which certain provisions of the Food and Hygiene Regulations will apply to beekeepers will be discussed by the NBA executive at its December meeting. An officer of the Department of Health, which administers the regulations, will be invited to attend.

Seminar plans underway

The Oamaru branch of the NBA has already started plans for the organisation of a beekeeping seminar to be held in conjunction with the 1979 NBA conference in Oamaru. The Ministry of Agriculture and Fisheries has promised its co-operation in the organising of the seminar.

Wasp baits a bitter pill

MAF chief advisory officer (beekeeping) Grahame Walton, has advised the NBA executive that a note about the composition of toxic wasp baits could

be included in "Ag Link" – a MAF extension bulletin. The executive has also decided to write to agricultural chemical distributors suggesting that their wasp bait advertisements should advise users not to use honey as an attractant.

Apiaries Act to be amended

The Ministry of Agriculture is proposing that a number of changes be made in the Apiaries Act next parliamentary session. Topics ear-marked for change include the definition of honey and honeydew, pesticide restrictions, disease schedules and provisions for notices under the Act.

Honey Export Proposals

Grahame Walton has told the NBA executive that proposed new honey export regulations will be circulated around the industry in draft form so that formal amendments could be made next year. The matter is being discussed at the December meeting of the executive.

Recognising European Brood Disease

Grahame Walton has agreed to a request by NBA executive member Mervyn Cloake that an "Ag-Link" should be produced to acquaint beekeepers with the symptoms of European Brood Disease. The disease was recently diagnosed in Australia for the first time.



Former NBA president and current HMA chairman Percy Berry (right) receives an export award from Hawkes Bay M.P., J.R. Harrison at a Hawkes Bay beekeeper's field day. Mr Berry received the award for the work his company, Arataki, had done in opening and developing export markets around the world.

PROPOSED BEEKEEPING COURSES FOR 1979

The Ministry of Agriculture and Fisheries has advised that a number of short courses and meetings have been scheduled or are proposed for 1979. These include:

Workshops on: Queenbee production and artificial insemination

Theme: *The methods involved in selecting and producing quality queens using standard mating techniques and equipment; and artificial insemination.*

Where and when: MAF's Farm Training Institutes at: Flock House, Bulls (Manawatu) January 29 – February 1, 1979. Telford, Balclutha (Southland) February 12 – 15, 1979.

Course tutors: G.M. Reid, J. Smith, Dr T.S. Johansson (U.S.A.), assisted by other MAF advisers and scientists.

Registration: Numbers for this 16-participant course are almost full. For registration write to:

Flock House	Telford
Private Bag	R.D. 1
Bulls.	Balclutha.

Short courses on: Finance, management and the beekeeper

Theme: *Record keeping, bookkeeping, budget and cash flows, taxation.*

Where and when: MAF's Farm Training Institutes at Telford, Balclutha June 11 – 15, 1979. Flock House, Bulls June or July (to be finalised).

Course tutors: P.N. Baigent, T.G. Bryant, V.A. Cook and P.J. Hook.

Registration: Number limited to 16 persons; registration at the above addresses.

Beekeeping Seminar

Tentatively scheduled for July 24 at Oamaru, preceding the N.B.A. Annual Conference.

Seminar on Toxic Honeydew

Tentatively scheduled for Hamilton, August 1979.

Beginning with Bees

October (tentative) Oamaru; U.A. Cook: November 7 – 8, Telford; T.G. Bryant.

Other ministry-sponsored courses, discussion groups, field-days will be held from time to time and beekeepers are asked to contact their local apicultural adviser for details.

A number of non-ministry courses are also planned for 1979, including N.B.A. and Hobbyist Bee Club meetings and field-days, and Technical Institute beginners courses. The first of the 1979 "beginners courses" will be held at Massey University, February 7–9 and advertised elsewhere in this issue.

QUEEN BEE PRODUCTION AND ARTIFICIAL INSEMINATION WORKSHOPS: 1979

Two courses will be held on the methods involved in selecting and producing quality queens using standard mating techniques and equipment, and artificial insemination.

The venues will be the Ministry of Agriculture and Fisheries farm training institutes at

Flock House, Bulls (Manawatu) January 29 – February 1, 1979. Telford, Balclutha (Southland) February 12 – 15, 1979.

These courses will be limited to 16 participants each, and a place cannot be guaranteed for all who apply.

To apply for registration and further course particulars, write by December 31, 1978 to

Beekeeping Workshops:

Flock House	Telford
Private Bag	R.D. 1
BULLS	BALCLUTHA

354
333

The accent of these courses will be on selection and maintenance of breeding stock, on record keeping, nutrition, drone production, disease diagnosis and control, and an introduction to genetics. Course members will also be taught the technique of artificial insemination and microscope detection of nosema.

Course tutors will be MAF officers, Murray Reid, John Smith and Dr Tage Johansson from New York. Other apiary advisers and scientists will also be assisting.

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HMA deadlock broken

THE DEADLOCK on the HMA which has resulted from an even division of opinion of members on the merits of private exports, has been broken. This is the effect of the election of Mr Jasper Bray and the re-election of Mr Percy Berry to the board of the Honey Marketing Authority.

The first meeting of the new board was held in Auckland in the first week of October. At that meeting Mr Berry was elected chairman for the ensuing year and Mr Michael Stuckey, vice-chairman. Both Mr Berry and Mr Stuckey are substantial private honey exporters.

The results of the election are as follows:

P. Berry	2642 votes
J. Bray	2461 votes
A. Ecroyd	2250 votes
F. Bartrum	2002 votes

Money on the way

IF YOU haven't recently received your final HMA payment, it is probably on the way.

Yes, at press-time (about a month ago) the HMA was planning to make its final payout to honey suppliers for the 1977/78 season as soon as possible.

A.I. offers no miracles

A MAF adviser has cautioned beekeepers not to get over-enthusiastic about the potential merits of artificial insemination of queen bees.

However, as a means to increase honey production it appears to have captured the interest of many beekeepers.

Enough interest, in fact, for the last beekeepers' conference to ask for full support of the scheme by the Ministry of Agriculture and Fisheries.

Since this request Mr Grahame Walton, of the ministry's advisory services division, has given a brief outline of the policy being employed in this area, emphasising that artificial insemination is just one aspect of queen breeding.

Mr John Smith, Christchurch apiary instructor who has studied the techniques of artificial insemination over the past year, stated in a recent progress report:

"It is my feeling at this time that many beekeepers are expecting too

much from artificial insemination and I only hope I am not the person considered responsible for their misplaced enthusiasm. It certainly has not been my intention over the last year to build up artificial insemination over and above that of sensible queen breeding programmes."

Ministry officers point out that little attention has been given by beekeepers to performance recording, selection programmes and drone breeding. Preparations are already underway for another Flock House Course in 1979 on queen breeding, including artificial insemination.

"The initiative for, and the planning,

financing and operating of a queen breeding station lies with the beekeeping industry itself. The ministry would certainly provide advisory support for the establishment and running of an industry-promoted breeding project," says Mr Walton.

In original discussions and the forming of a remit at conference there was a call for government support. Mr Walton, while not being able to speak for other departments, has expressed confidence that some departments such as the Rural Banking and Finance Corporation, would seriously consider any well-planned proposal by the beekeeping industry.



CORRESPONDENTS

OTAGO/SOUTHLAND FLOODS

Dear Sir,

The disastrous 100-year flood which occurred in October has taken a high toll from the beekeeper.

Known losses are 868 colonies in Southland, South Otago with some areas still inaccessible to beekeepers. The final count is expected to be in excess of 900 colonies. Approximately 65 per cent of all equipment has been salvaged, but many combs will only be fit for rendering down as great quantities of silt in the cells make it impossible even for the most industrious of bees to clean them out.

North of the Roxburgh Hydro dam, known losses are in excess of 200 colonies, but the exact tally is unknown to the writer.

In most cases individual losses were small in comparison to total hive holdings, but several beekeepers have lost upwards of 15 per cent to 20 per cent of their hive numbers. This will have a major effect on their gross income for the coming season.

Most losses have been made up with bees and queens coming from Canterbury and Kaitaia and several local beekeepers. Queens being the biggest problem. With good management many of these nuclei should produce a crop this season.

When disasters like this occur the many offers of help, the kindness and the great community spirit shown are a feature which gladdens even the lowest of spirits. There are a great many individuals to thank on behalf

of all those who lost bees and equipment. Please accept this short paragraph as a token of our appreciation.

Yours,

T.G. Bryant
Apicultural Advisory Officer
Gore

THANKS, VOTERS

Dear Sir,

Through your columns I should like to thank those who supported me in the recent H.M.A. elections.

I would reiterate that I shall be working in what I consider to be the best interests of the whole Industry, which includes suppliers, packers, or suppliers to packers.

Yours,

J.K. Bray,
Leeston.

FOUR LETTER WORD

Dear Sir,

Your contributor who has the title of "hobbyists' adviser" needs to be made aware that there is a four-letter word that is very unpopular with discerning beekeepers. They realise that its use and association with the purest and best of foods, honey, casts a slur on the product and on the people who market it.

Whether it is connected with the American Brood Disease, or the European variety, may we request that he observe the wishes of the beekeeping fraternity and leave out the "foul" word.

Yours,

Small Beekeeper (again).

BEEKEEPERS TECHNICAL LIBRARY

P.O. Box 423, Timaru
Chris Dawson, Hon. Librarian

Mr W.J.C. Ashcroft, president of the Hawkes Bay branch has sent four books that formerly belonged to their branch library.

- "Practical Queen Rearing" by Frank Pellett
- "Australian Bee Manual", 5th edition by Isaac Hopkins.
- "ABC and XYZ" of Beekeeping" – 1947 edition, and 1913 edition.

Donated by Anonymous donor:

- "Beekeeping in New Zealand" by T.S. Winter – Bulletin 267 – 1975 edition 155 pages.

Presented by Foundation Life Members; Sydney Alan Bryant of Riversdale Southland, and Philip C. Muir of Auckland.

"Honey, a comprehensive survey" by Dr Eva Crane.

Loan fees and postages will be deducted from this \$2.00 and when you finish borrowing, any unused balance will be refunded on request. If no refund is requested, the credit will be applied to the general funds of the Library.

2. Loan fee is 20 cents for most books and five cents for each pamphlet. Where the fee is higher, this is listed with the book in the catalogue.

3. Books may be kept for one month, but renewal may be granted provided the book has not been ordered by another member and provided a further loan fee is sent with the application before loan period expires.

4. Members who do not return books within three days of due date incur an overdue fee of 10 cents per week.

5. When returning books, they are to be packed in thick packing paper.

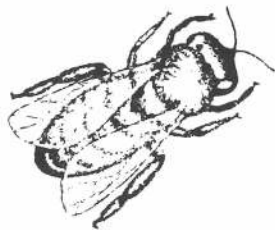
6. Books are available to members of any branch of the National Beekeepers Association of New Zealand.

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Chris Dawson,
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Stings restore sight

BLIND SIX months ago, a joyful Perth man yesterday hugged a four-year-old grand-daughter he had never been able to see before.

Little Lynda Moore was among elated relatives at Perth airport to greet 62-year-old Mr Mick Kilpatrick.

Mr Kilpatrick had returned from a six months trip to England where he underwent controversial bee sting treatment for a hereditary eye disease. He said: "Six months ago I had 1½ per cent sight. Doctors in Perth and Sydney told me I was incurable.

"But I can see again and to me that's a miracle.

"I've never seen Lynda's face until today. Before, she was a blurred shape."

Mr Kilpatrick used a white stick for seven years following the onset of retinitis pigmentosa and had to leave his credit officer's job.

He read about 71-year-old Mrs Julia Owen whose treatment with bees fed on special diets had effected apparent cures for people suffering from certain

eye diseases, asthma, arthritis, deafness and skin diseases.

Mr Kilpatrick and his wife, Marie, decided to sink their life savings into a cure-cum-holiday to seek out the London therapist.

Mr Kilpatrick said Mrs Owen at first refused to treat him because she thought she could not help.

She relented and administered daily bee stings for five months on the side and back of Mr Kilpatrick's head and on his arms.

"Now my long sight is good enough to drive a car and Mrs Owen has told me my short-sightedness should clear up within six months," he said.

"The stings hurt like any sting, and it felt strange at first," he said.

"But my sight gradually got better. I couldn't believe it.

"I know some people have called her a quack but all I can say is let them.

"She has confidence in her treatment and I am proof. I accept my sight will be perfect again."

— Timaru Herald, August 29, 1978

Bee repellents need study

BEE REPELLENTS may not be the answer to the harm done to bees by the misapplication of agricultural sprays.

Bee repellents in agricultural sprays have, to date, reduced bee mortality rather than prevented it.

To be truly effective, a repellent must repel in all weather conditions and remain active for as long as the pesticides remain toxic on the plant.

One of the major problems in introducing this sort of repellent is the

lengthy testing programme that would have to be employed to ascertain each area of effectiveness.

This is in addition to normal tests for human toxicity and residue levels.

Further, even if the use of repellents was allowed and combined pesticide/repellent formulations were available — this could be prevented by storage problems — it could be difficult to ensure that applicators always added enough of any repellent to the spray.

In the past years the Ministry of Agriculture and Fisheries has only allowed crops to be sprayed with pesticides if the application has been found to be safe to honeybees.

And for the present, the director-general of MAF, Mr M.L. Cameron, has said that he would be against any change that made greater bee mortality acceptable. This, he says, would be the case if repellents were used.

Thus, for now, the ministry does not regard repellents as providing a completely safe answer to the problems that exist in New Zealand.

However, they are prepared to consider investigating specific crop situations if the National Beekeepers Association so requests.

Kill bill sets limits

MR VENN Young, the minister for the environment, has assured NBA executive officer Graham Beard that efforts by the NZ Forest Service and Pest Destruction Boards to control opossums will continue within the bounds of finance.

Control of other animals, such as deer, will only be relative to the health of vegetation and the water and soil values at stake.

from MAF. . . .

Promotions for MAF staff

THE STATE Services Commission has recently approved the promotion of three senior members of the apiary section. Apiary instructors, D.A. Briscoe, Tauranga, and J.E. Rodie, Palmerston North, have been redesignated as apicultural advisory officers.

Mr C.G. Rope who formerly was known as a "honey grader" will in future be designated "apicultural advisory officer (quality standards)". These appointments arise from the re-grading of apiary section staff with more than 15 years service subject to the passing of an oral examination.

Honey imports banned

GREATER CONTROL can now be exercised over the import of bee products likely to present a threat to the beekeeping industry. This follows a recent amendment to the Apiaries Act 1969. The present prohibition on the import of bees and used bee appliances has been extended to include honey and other bee products.

The new amendment prohibits the import of honey without the prior written approval of the minister. Extracted honey may be approved entry if the country, state or province of production can authoritatively certify the absence of European Brood Disease.

Certain bee products may be approved entry in the form of tablets, capsules or phials, so long as they are intended solely for human consumption.

The recommendations of the National Beekeepers' Association played a significant part in the passing of this new legislation.

Honey dew study underway

THE ASSOCIATE minister of agriculture, Mr Jim Bolger, recently announced that South Island beech honeydew would be the subject of a resource assessment by the Ministry of Agriculture and Fisheries. This project follows representations by the Association of Honeydew Producers and recommendations from a honeydew seminar held in Christchurch last August.

Mr Bolger said the Ministry of Agriculture and Fisheries will estimate the size and potential of the honeydew resource and determine the factors likely to limit its production by beekeepers.

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WITH RESPECT

by Alec Hastwell, Richmond

"THE BOYS up our way all have insecticide out and their tractors ticking over, just waiting to get the first sprays on," an orchardist who's one of the beekeeping fraternity told me at the October branch meeting.

It was a few days later that I had another close look at a hive I'd marked as not doing too well. Sure enough, there was constant pushing and shoving on the flight board as bees were hassled out of the hive.

There was a thick layer of dead bees on the ground and on top were the recent outcasts, quivering and vibrating. How many more hives will be affected, and how soon? Nosema? Some virus? Toxic nectar? Pesticides? I hadn't been at this beekeeping game long enough to know. But; not to jump to conclusions!

So the department's inspector came and cogitated and took his samples. Through a slight mixup they never made it to Wallaceville for lab. tests, but within the week he mentioned that there were indications of insecticide being the problem.

Well, certainly I was having the last of my beauty sleep disturbed twice a week as one or another orchardist belted on an early morning spray, so this was one option to chase along. Tact though. . . they're neighbours!

Ring the horticulture boys and find out what the spray schedule is this week for apples and boysenberries. But you find it's not that easy. It depends on what proportion of blossom is left and that varies from locality to locality. And again, it gets down to personal estimates of phrases such as "when blossoming is substantially finished".

The department thought that meant about 5 per cent left. Not necessarily what the orchardist thinks though, because by this time the orchardist is

assessing his fruit set and thinking even about thinning to get size. From his point of view he's had a good blossom season and it's all over from the aspect of crop economics.

But a beekeeper's mind starts to roam over what might happen to bee-foraging patterns as one type of blossom declines. I poked about a bit and came across an interesting one. . . some hives that went in on an orchard boundary for the peaches and plums. Afterwards there was nothing for them but apple, breaking blossom further across the block, and perhaps some willow along the ditches.

Blossoming progressed through the various strains of apple in succession and they kept sipping its nectar, weak though it is, and binding the combs up with masses of light yellow pollen. But wait. Not 20 feet away through the fence were acres of luscious boysenberry bloom by late October. And nary a leg had on it a basket of slaty hue which would show they were working this bonanza.

All one can assume is this: They'd set up their dancing troupes for apple to the north and were not about to fly south until apple was finished. And this is the serious implication when beekeepers ponder the insecticide problem.

As an orchard passes its blossoming peak it is entirely possible that the same number of bees continue to work the diminishing resource. They may not reorient themselves until they are scrabbling over one another for the last few per cent.

So the orchardist whose opinion of when "it's all over" isn't as conservative as ours might be, can clobber a lot of flying bees with an ill-advised morning spray of insecticide.

With these ideas sorted out I decided it was time to get a little more inform-

ation . . . with tact and disarming guile, I hope.

Next door is a young man with a young orchard and, I hear, enough financial motivation to diligently seek clean export gradings. "I respect bees", he said.

Soon, I was to understand this to mean that he knew little about them, didn't want to know about more, and standing 50 feet away from hives was better than standing 20 feet away as there might be less chance of getting stung. And of course the little beggars are some use. You do need them to pollinate your crop!

Eventually, we got around to it. No, he hadn't been using insecticide as yet. Yes, he would be onto it any day. And no, he certainly wouldn't try to spray late in the day. The stuff was expensive; he wanted maximum coverage and effect; and he felt that was only possible in the calm of morning. I pleaded that there also were calms in the evening; most bees were home; the oomph would have gone from the spray by morning; and while we didn't, as beekeepers, mind some losses we didn't like wipe-outs.

Things were tense for a while. At one stage he ordered me off the place as the easiest way of removing a pesky problem. But reason prevailed and the outcome was he said that until blossoming is over, he'll ring me if he's putting on a morning insecticide, and I can mesh the entrance of my hives and keep them home for the day.

The department's view? Hardly sympathetic to beekeepers! Young fruit left wet too late in the day with spray can develop russet and be downgraded. And, (from someone who should know better), "You have to be reasonable about this. You're talking about a few pounds of honey as against an apple grower's livelihood."

Boffins in gumboots?

PRACTICAL EXPERIENCE in beekeeping is as important to the training of apiary advisers as academic qualifications. This was the contention of many delegates attending the NBA conference.

Replying to a conference remit along these lines, the director general of agriculture lays emphasis on both areas of competence.

Mr Cameron says that while he acknowledges experience is an important

consideration, he believes that a relevant and broad-based education is essential to the present and future needs of agriculture.

He also adds that units are tending to become larger, more mechanised, diversified and involving a greater capital outlay. There is a greater business-like approach to production and marketing. Beekeepers are now a much wider-travelled, better educated group.

Thus, Mr Cameron says, he feels that advisors with appropriate degree qualifications, backed by thorough on-the-job training programmes, are better

equipped to service the industry's changing needs.

Degree qualifications have the advantages of assisting advisors in analysing and objectively appraising the alternatives, in transmitting the results of research work into practical significance, and giving fundamental knowledge and skills in agriculture, biology and science.

However if, after a fair trial, the recent changes in graduate recruitment policy do not meet the association's needs, then consideration will be given to recommendations for improvement.

Making your own honey extractor

by Murray Reid, Apicultural Advisory Officer, Hamilton and Andrew Matheson, Apicultural Advisory Officer, Nelson.

HONEY IS one of the most difficult substances to remove from the honey comb, but once you have got it out it seems to take on the property of penetrating oil; it gets into every nook and cranny. Extracting honey can be a pleasant and easy task, or it can be totally frustrating and time consuming. The difference is in having the right equipment.

A mechanical extractor, preferably equipped with a motor, is the ideal. However, the ideal is usually expensive. Four Waikato beekeepers have applied their individual talents to this problem and built extractors for themselves at minimal cost. We can't give every construction detail here, but we suggest that if you require more information then contact the author or the beekeepers themselves.

Mr R.J. Galloway of Cambridge built his extractor from an old dish washer. The motor was originally fastened by a direct drive to the base of the bowl. Mr Galloway used a Trojan saw spindle and small V belt to connect the motor to the shaft. He used a 230mm pulley on the spindle and a 38mm pulley on the motor to reduce the speed to 400rpm.

The two reversible baskets were made from aluminium scrap and aluminium mesh. They were swivelled on vertical steel rods, a principle used in many commercially made tangential extractors. The frame supporting the baskets was made from 3mm aluminium. Mr

Galloway chose this material because it was cheap and easy to work. The baskets and frame are not particularly robust and wouldn't stand too much abuse. To stop the machine and reverse the baskets the motor is simply switched off. The motor tends to act as a brake.

The baskets were held down by a curved piece of mild 5mm spring steel that also supported a thrust bearing containing the top end of the vertical shaft.

The bowl was enclosed in a neat box covered by off cuts of laminex.

What did it all cost? Mr Galloway spent about \$25 on scrap aluminium, the dish washer and motor were free and he had the saw spindle. Total cost about \$30.00.

Mr R.G. Salisbury of Raglan built his 8-frame reversible extractor with a bottom drive. He used a small honey tank as the bowl. Starting at the base of the extractor Mr Salisbury obtained a flywheel off a truck and bolted that to the floor. He then welded a front stubb axle off a Chevrolet truck to this flywheel and bolted the extractor onto the brake drum using the six wheel nuts.

This heavy undercarriage attached to the floor makes a very rigid machine and no stays are needed from the lip of the extractor bowl. The motor is an old ¼ hp washing machine motor with

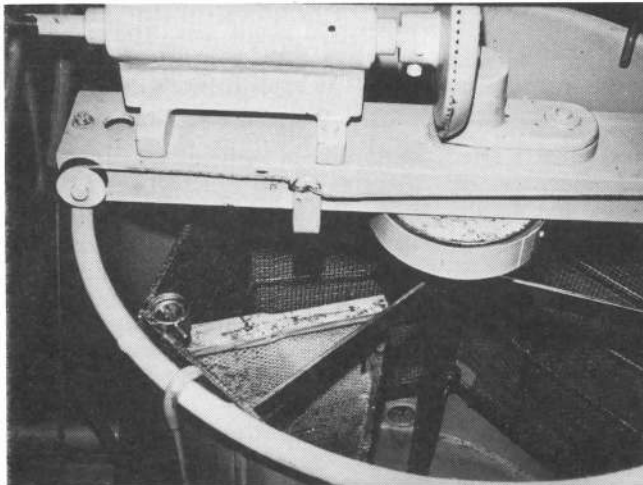
a 38mm pulley driving on to the old brake which is 305mm in diameter.

Mr Salisbury has very ingeniously converted his extractor into a variable speed machine by two switches and a heater. The first switch directs the current through a 1000 W electric single bar heater element which cuts it down to 60 volts. When the machine has gathered momentum the heater element is by-passed by the second switch and the extractor is allowed to come up to full speed.

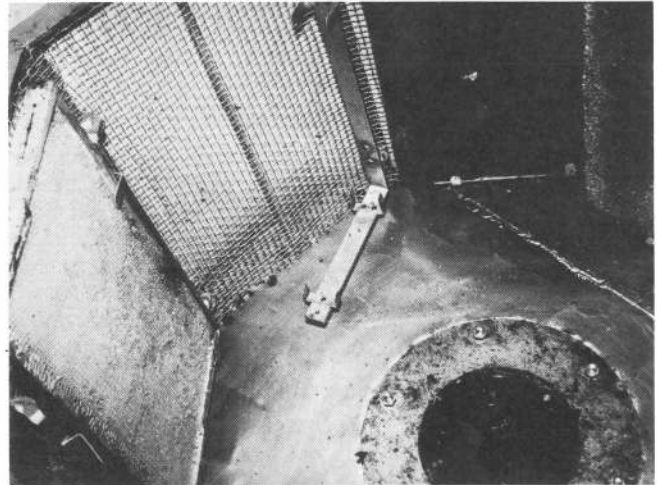
The internal frame is made from steel square tubing in the form of an octagon. The outside of this frame is covered by 9.5mm woven wire mesh which in effect forms the basket. The tubing frame is braced at the top and bottom by lengths of 12mm x 3mm flat iron around the circumference. Vertical lengths of flat iron brace the middle of the wire mesh.

The L shaped supports for the frames are attached by pins to the tubular frame so they are free to swivel. The frames are located on this support by three L shaped brackets. The wire mesh sides must be pushed inwards slightly in the centre so that they touch the surface of the combs. This prevents the middle of the combs from breaking.

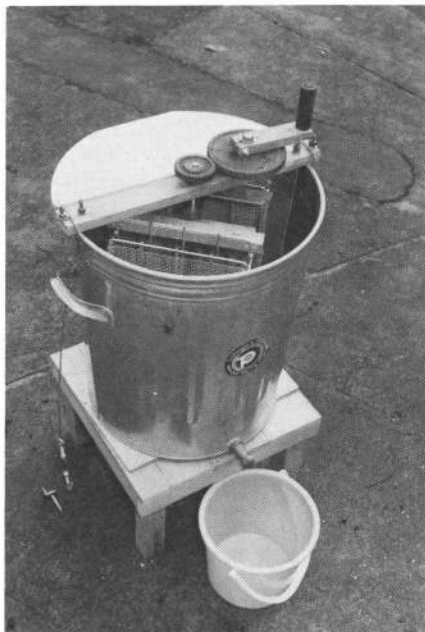
This extractor doesn't have a brake, but again the resistance of the motor when it is switched off soon stops the machine. The baskets have to be reversed more or less together because



Taylor (Morrinsville) Showing geared drive mechanism and holding brackets that support the frames by their lugs.



Salisbury (Raglan) Inside of extractor showing 6 mounting bolts of the stub axle and the holding brackets for the 8 frames.



Nathan (Te Kuiti) Two frame hand operated extractor with top geared drive and rubbish bin for the extractor bowl.

of the narrow radius of the extractor bowl.

Max Nathan, a domestic beekeeper from Te Kuiti, made himself a two frame extractor, which is shown in Fig. X. A wide variety of materials could have been used in the manufacture of the extractor, but Max used things which either he had already, or else were available at a reasonable price.

The extractor drum is an ordinary household galvanized rubbish bin. A plumbing flange attached to the bottom of it holds a brass nipple containing a single point bearing. It is on this bearing that the 13mm stainless steel shaft of the extractor rests. The stainless steel brackets which support the baskets are attached to a sleeve around the shaft, which is fastened to the shaft by a grub screw. The baskets are fixed, and have been constructed of 3mm stainless steel wire, with mesh on the outer side. This extractor has 5mm mesh, but a larger mesh would not become clogged with wax so easily. The frames must be removed from the baskets and reversed by hand.

The smaller (75mm) cog is welded to a brass collar which is attached to the top of the shaft. Both this cog and the larger (150mm) one were obtained from an old lathe. A 2:1 reduction is necessary to provide sufficient speed with a reasonable amount of effort. The wooden cross brace is attached to the bin at each end by a U-bolt, but



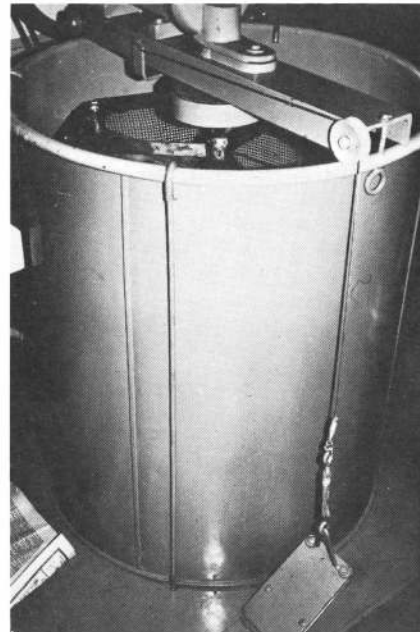
Nathan. The fixed baskets from the extractor. The combs must be lifted out and reversed by hand.

the mechanism is easily removed for cleaning. This particular extractor sits on a moulded board (for even support) on a small table 250mm high, to allow the honey to drain into a plastic bucket.

A common plumbing fitting with a threaded cap serves as a honey gate. When not in use the extractor can be stored away, but is tied down to the honey house floor when in service. Mr Nathan spent about \$50 altogether on his extractor. The main costs were the



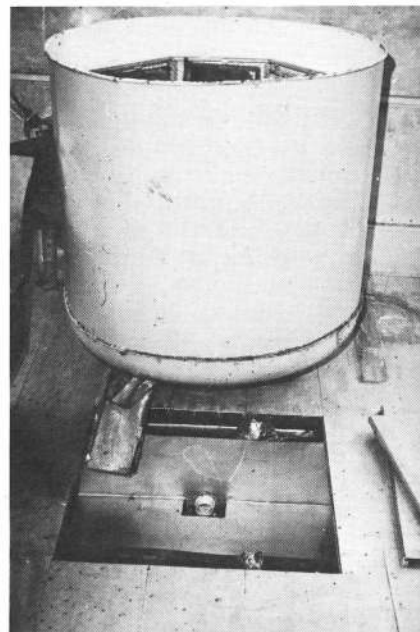
Salisbury: general view of the bottom drive extractor with the sump tank.



Taylor: an exterior view showing the pedal and pulleys that simultaneously operate the brake and disengage the motor.

rubbish bin and some stainless steel welding.

Most tangential extractors are described as having fixed or reversible baskets. An extractor which is reversible but has no baskets has been built by a sideline beekeeper in Morrinsville, Gordon Taylor. The extractor holds six frames, and an old extractor drum provides the outer shell. A central shaft supports a conventional framework of 25 x 3mm flat steel with extra supports of 3mm wire.



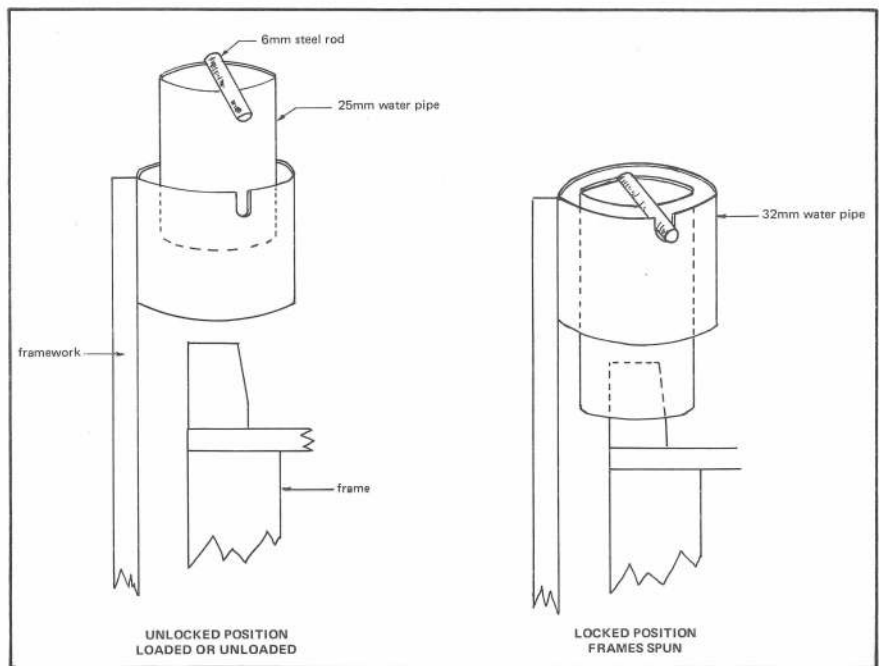
Galloway (Cambridge) showing rear view of extractor made from an old dish washer.

But the chief difference between this extractor and a conventional one is in the lack of baskets. The frames are held by brackets supporting each lug. The lower bracket is simply a short piece of 25mm water pipe welded to the framework. The top bracket must obviously be movable to allow the frame to be pushed in and out of place. A piece of 32mm water pipe is welded to the framework high enough to give sufficient clearance for the frames.

The top bracket is a length of 25mm water pipe with a piece of 6mm solid rod welded across the top. This top bracket is dropped into the piece of larger pipe welded to the framework, and projects below it and over the top of the honey frame. A small notch in the larger pipe positions it. The two bracket plugs have their inside edges bevelled to make it easier to drop the frames in.

The frames are supported by their two lugs, (which must be in good repair) and are free to swivel. They must be reversed individually, but this is still a quick operation. When the frames are removed the upper movable bracket is simply lifted a short way and turned a quarter of a turn.

The piece of solid rod welded across the top of the smaller pipe then rests on the top of the piece of large pipe instead of in the notch, raising the top bracket enough to allow the frame to be removed.



Pipe brackets to hold frames in Gordon Taylor's home-made extractor.

When the extractor is spinning, the honey frames are pushed against the 6mm wiregauze which is found all around the framework. This wire mesh must be bowed inwards at the middle so it rests against the face of the combs. This prevents comb breakage.

Gordon has motorized his extractor, using a two-stage belt drive system to obtain the correct speed. The actual cog drive mechanism on the extractor is from an old four-frame Root extractor. The brake is operated by a

foot pedal attached to the brake handle by 2.5mm wire. This pedal, with a single action, applies the brake and lifts the motor to declutch it. The motor is attached to a hinged board. When the board and motor are lifted by the action of the foot pedal the pulley simply slips on the V belt. The foot pedal must be kept depressed while lifting out empty combs and refilling the extractor, but this is not difficult with everything close at hand.



WORLD MARKET REPORT

Compiled by the editor from overseas and local sources.

Record crop but prices firm

ALTHOUGH THE US Department of Agriculture has calculated that world honey production during 1978 reached an all-time record of 683 000 tonnes (an increase of 5.5 per cent on 1977) the world market for extracted honeys continues to firm.

Thanks to growing affluence in Middle East and Far Eastern economies and a growing trend in Western countries toward health foods, the honey market appears to be growing as fast as beekeepers can expand their output.

After a long period during the middle of this year when the market was uncertain and many exporting countries including New Zealand and the Argentine were holding onto quite large stocks of honey, the market has once again begun to move in tune with prices which are more favourable than at this time in 1977.

Even in the six months ending July this year, prices for honey imported into Britain were on average up 10 per cent on the same period in 1977. However, in keeping with what was then a docile market, the volume of sales was down.

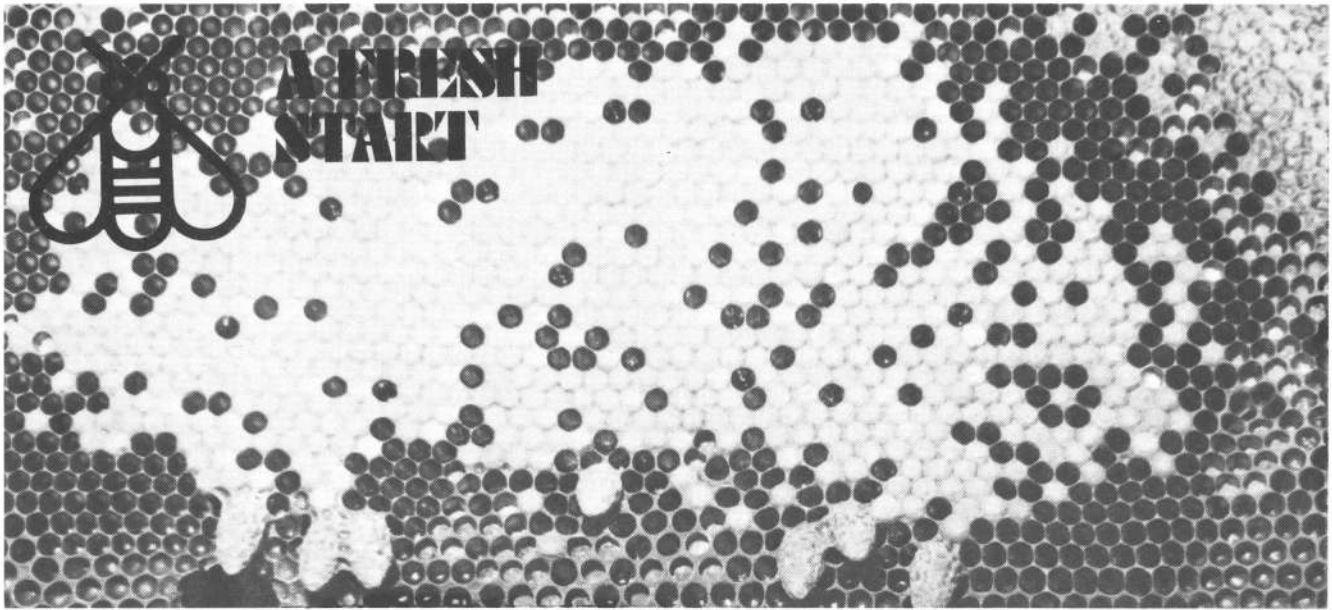
Domestic production in most European countries was poor during the recent northern summer and if this results in increased demand for New Zealand honeys it will be particularly advantageous. Most European currencies have firmed steadily against the New Zealand dollar in the last year making sales to Western Europe more profitable than otherwise would have been the case.

From the United States comes the news that honey production from apiaries with 300 or more colonies in 20 selected honey producing states is expected to total 149 million

pounds in 1978, about 44 per cent above last year and 28 per cent more than in 1976.

The estimated 2 million colonies of bees held by the apiaries in 1978 are 1 per cent above a year ago. Yield per colony is expected to average 74.6 pounds compared with 52.4 pounds last year and 60.3 pounds in 1976.

Better yields per colony were experienced this year in most of the major producing states. Honey producers in California reported a good to average year and were able to take honey from the "NUKS." In Florida, the orange blossom flow was very good with above average quality reported. In North Dakota, favourable weather and increased acreage in sunflowers and alfalfa contributed to the larger yields. Adequate rainfall in South Dakota produced better than average sweet clover and alfalfa crops.



Queen cells, inevitable in any hive with a two-year old queen.

Part two in a series by our hobbyist adviser, David Williams, on queen bee rearing for the small-scale beekeeper.

QUEENS AND COLONY SIZE

NOTHING HAS as much influence on the hive in all aspects as the queen. Her quality determines the temper and gathering characteristics of the hive; the latter at least being partially determined by the queen's brood rearing characteristics. These in turn are linked to available food and to the work force, which may again go back to heredity.

There are many reasons why a colony has to be above a certain minimum size to progress satisfactorily:

- Only young bees (usually in the 12 to 18 day post-emergence bracket) produce wax, so there must be enough of them to cluster. This is one reason that nature decrees a swarm contain all age groups. Many insects produce wax, but bees have brought to a fine art its production and utilisation. They can create fragile yet strong, plastic, exactly proportioned hexagons starting with abdominal secretions and finishing with a structure exactly suited to the purposes of the hive.
- More, the cells they create are multi-purpose, being used for the raising of three types of offspring and two types of stores. Not only that, the cappings of brood cells must be porous to allow the larvae to breathe, while the stores cappings are as effective as a plastic seal.
- In a normal colony, only bees of a certain age act as foragers.

- Climate control in the hive needs an exponential increase in worker numbers for a simple increase in brood area.

In other words, a small colony can only build up very slowly and this build-up is determined by population numbers, which in turn increase slowly. Expansion in a large colony is determined by food supply and space available and hence is under natural regulation.

- It then follows that the level of brood rearing in a small colony may not even represent a replacement level for the natural loss of older bees.
- There can be little protection from predators in a small colony, nor can it protect combs from moth attack.
- It is likely that under conditions of food supply in a small colony there is some molecular breakdown in queen substance resulting in loss of direction and morale in the colony. It has been shown that more bees are likely to drift from a small colony to a large colony than vice versa.

In practical terms there are a number of rules to follow:

Never keep a very small colony. Always combine it with another. A small colony is only a viable proposition in spring when, by restricting the entrance, providing drawn comb, giving ample stores, and feeding well (and

by giving ample stores I mean a comb or two of honey, and by feeding well I mean a daily dose of sugar syrup) they may expand, but will do it much faster if given a frame of sealed brood from a stronger colony every fortnight.

And here I would probably define a very small colony as having sufficient bees to cover one brood comb adequately, a small colony as covering two. Certainly excellent colonies may result from a four frame nuc with a laying queen made in September for the December honey flow if these rules are carried out.

We hear a lot about the adaptability of bees, but how much better to cooperate with nature rather than fight her — and lose!

Now back to the queen:

I hope to deal in detail with the chemistry of her control of the hive in another article, but will touch on the subject here.

The queen is responsible for the temper and temperament of the hive and her absence is, surprisingly, noted immediately by the bees. Only recently I examined one hive and turned to the next, only to become aware within two minutes that the hive behind me was becoming increasingly distressed. Obviously the queen was missing, and a quick search in the grass soon produced her. Her re-introduction quietened them immediately.

One could go on with the tales of the queens one has known, particularly virgins, for whom the bees seem to have no affection, consideration or compassion. This is understandable. A virgin has not commenced those pheromone-producing activities which make her a vital part of the hive, so that virgins may often be seen wandering around looking lost.

I have seen virgins sitting disconsolately way away from the bulk of the bees, have seen them wandering out onto the landing board, bored, with nothing to do and nowhere to go, have seen them on trial swarms from the hive with a mere handful of attendants and the rest of the hive ignoring them, to land centimetres or metres away and no idea what to do next. Mating changes all that, as it does for humans too!

The queen controls the mood and, to a certain extent, the activity of the hive by the production of certain complex chemical substances. These substances control all facets of the hive behaviour including swarming (which is why hives swarm under a second year queen and never under a

first – the inhibitory queen substance is stronger the younger she is).

Genetically she herself is the product of her heredity and may in turn pass on to her progeny – the whole hive – various of her characteristics such as colour, length of tongue, tendency to swarm, gentleness of temper, etc.

The workers, being imperfect females arising from fertilised eggs, combine the characteristics of the queen and whatever drone mated with her on her nuptial flight.

The drones, arising parthenogenetically from unfertilised eggs, are as pure as the queen herself, their genes identical with hers (this is not the full story, but this will be dealt with when there is more space to go into the subject fully).

Thus one would imagine a strong tendency to revert to the original imported strains of pure Italian but, unfortunately this is not the case and all varying degrees of hybridism are with us and likely to remain so.

This may seem particularly surprising when we learn that the original imports of golden Italians were made as long ago as 1880 and the variety

spread through the country as their good qualities became known.

Nevertheless the German black bee is still with us in various dilutions, probably because the darker the drone the stronger the mating flight, so that they tend to reach the queen first and thus perpetuate the problem.

Obviously this is worse in some parts of the country, but the typical New Zealand bee must be regarded as a hybrid even though the characteristics of the colony are given by one queen and one drone.

It is one thing to define what characters one would like to see in your hive – gentleness, calmness in handling, good gathering ability, good wintering ability, good hive defence, good spring build-up, non-swarming, and so on – but quite another to achieve it. Generally we have to accept what might be called a good average and only take action if we get less than this.

Notice how we are approaching the subject of queen rearing slowly, but surely. This is how I hope to see you approaching queen rearing in real life. To be continued . . .

Section honey for the amateur

by David Williams, our hobbyist adviser.

THERE HAVE been many excellent articles and chapters on section honey production in various magazines and books. Few of these methods and recommendations are suitable for the absolute amateur.

I like to keep at least part of my small-scale production in sections.

They make novelty gifts for friends and neighbours, add interest to honey production and enable us to get into this season's honey as soon as the bees have capped the first ones without messing up the honey house early in the year.

More important perhaps is that well-capped and well-stored section honey

retains its liquid nature longer than extracted honey in jars. This means we have the honey as we prefer it, and with a better flavour, for longer.

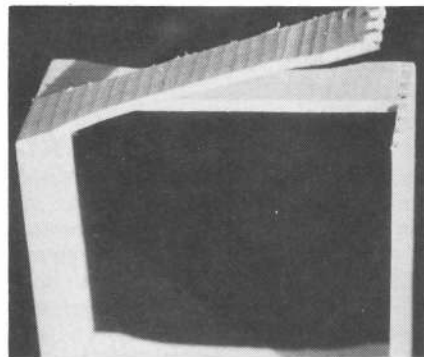
You may have the impression that sections can only be produced in hives "packed with bees". You may also believe that there is a vastly increased tendency to swarm and that bees should be crammed down to one storey, with or without the queen, with or without all brood removed or, better still, in two half-depth brood chambers.

Forget all that. None of it is wrong in any way, it just happens to be for the professional, not for us amateurs. For

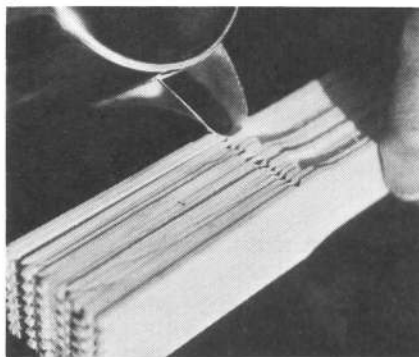
us, none of this is necessary, nor will anything too dramatic happen if you just follow the following rules:

Do's

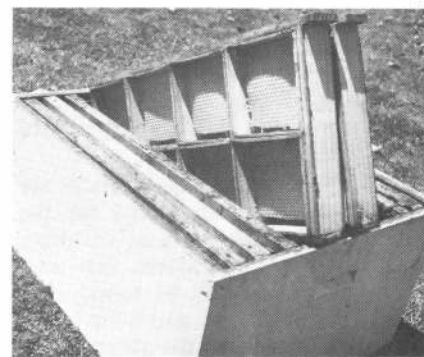
- Treat your hive just like any normal hive, requeening in autumn, doing spring queen cell checks, in two brood chambers, with usual rearrangements periodically until the honey flow starts, when you put on the queen excluder.
- Add super of sections *with one Hoffman frame at each side* or, if you don't want that many sections, put as many 8-section holders in as you wish, in the centre and fill the outsides up



Section frame ready to take thin foundation.



Wetting joints of sections for easy bending.



Two 8-frame section holders.

Raise or buy? The big question on queens

For BUY

- Trouble-free
- costs only the price of 2 to 3 kgs of honey per hive
- convenient — you keep until weather is suitable and you have time
- probably represent a good, average strain
- gives easy beekeeping if combined with good management
- removes all uncertainty — once ordered, you use.

Against

- but amateurs like the idea of queen rearing
- always a wrench to spend money even on essentials
- always the mad urge to do it NOW!
- but you may feel you have better
- can't get early enough in spring
- but has to be ordered well in advance

with frames, keeping section holders tight in the centre and any gap against outside wall.

- Don't be in too much of a hurry to remove sections — if you have enough honey on hand to carry you through, wait until the centre two or three racks are full and sealed, take these out, move the now partially drawn out outer ones in, and replace with fresh.
- Repeat this procedure as long as the flow continues, or until you have as many sections as you wish, and gradually remove all sections as they fill and replace them with normal frames.
- Carry on supering in the normal way thereafter.

Don'ts

- Don't ever let your section super get crammed with honey. Always make sure the bees have plenty of space to store and ripen the nectar they are bringing in and don't ever use only a shallow super for your sections. Finally.
- Don't carry on too long — gather sections only during the full flow.

I have seen all sorts of peculiar suggestions on how to produce section honey — the weirdest was probably one character who suggests working until the end of the season using normal frames, extracting, and then feeding it back to the bees for them to put into sections.

For RAISE

- you raise when convenient
- including early spring thus solving swarming
- you get your queens from own stock
- and save a little money
- interesting techniques
- can observe from egg to queen
- but not if handled correctly.

Against

- but the weather always turns

nasty just when the cells are due for distribution

- but autumn requeen plus good management takes care of this
 - which may not be very good
 - but money isn't everything
 - but involves extra trouble and sometimes equipment
 - but disturbs hives, sometimes severely
 - but remember queen-rearing cycle takes six weeks from larvae to laying.

You can add your pros and cons as you wish. This is merely a basic argument at this point in time off the top of my head as I sit at my typewriter and no doubt I have missed out all the really important points.

Nobody should try to raise queens in their first two years of beekeeping. A certain basic understanding of bees and how they behave is necessary and it takes at least two years experience to acquire it. The evils of queen-rearing failure when the amateur is counting on them are so great and lead to so many other problems in that year that it just shouldn't be tried until the operator is at ease and confident with his bees.

Using the system given above you will get plenty of sections for your purposes and without any more fuss and bother than you would using frames.

Certainly you need a good hive population to fill sections rapidly and cleanly — but if you've looked after your hives as you should you've got that.

Certainly if you crowd the bees down into one brood chamber they will swarm madly, but you aren't going to do that — keep them in two right through and it won't happen.

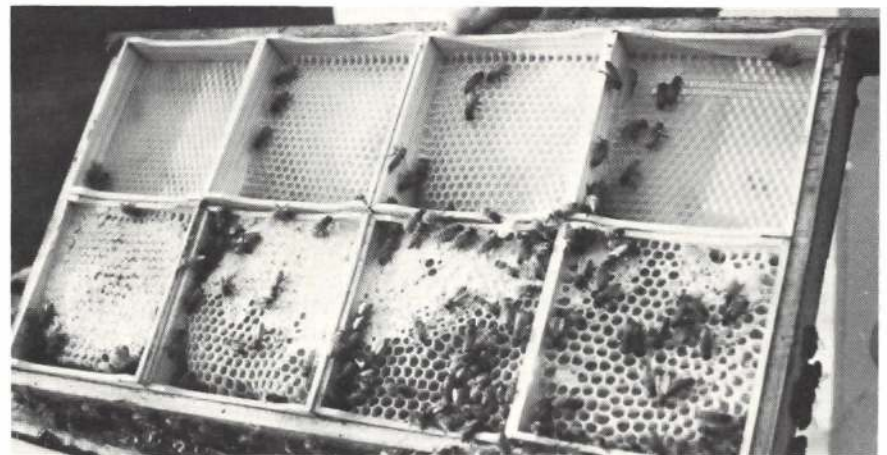
Certainly count on a reduction in total production — all the books say so, so it must be true, but I doubt if you'll notice any dramatic fall-off in total crop — I never have overall and

I've had hives giving me sections through December and January right alongside frame hives.

Certainly you need nectar coming in thick and fast — but that's what the honey flow is all about anyway.

And as for storing your sections, this is the easiest thing in the world. Just leave them in their section holders in the supers, well covered as all your other frames are (but without any anti-moth chemicals, naturally) and just lever out as needed. What could be simpler?

Well, there it all is. Try it and see. Let me know your results, and you won't need good luck — with this advice you make your own luck, while the bees make the sections.



Well on the way.



Ron Salisbury, Raglan, and Andrew Matheson, (Apicultural Advisory Officer, Nelson) standing beside Ron's mobile honey house, made from a refrigerated van.

Have extractor will travel

by Murray Reid, Apicultural Advisory Officer, Hamilton.

MOBILE EXTRACTORS are quite common in Australia but are a rare breed in New Zealand. I remember seeing one in the Manawatu eight years ago. It was in moth balls then and probably still is. However, the model owned and built by Mr Ron Salisbury of Raglan is very much alive.

Ron is a part-time carpenter, part-time beekeeper who wants to devote all his time to beekeeping. However, Ron is no spring chicken and doesn't want to encumber himself at this stage in his life with large mortgages to buy a piece of rural land and erect a honey house. He feels his money is better spent leasing a piece of land and putting up a removeable and resaleable building to use as a packing and storage shed.

The mobile honey house concept has two other great advantages, especially for beekeepers who live in the city.

Bees always hang around sheds where honey is being extracted, but this doesn't matter so much out in the country.

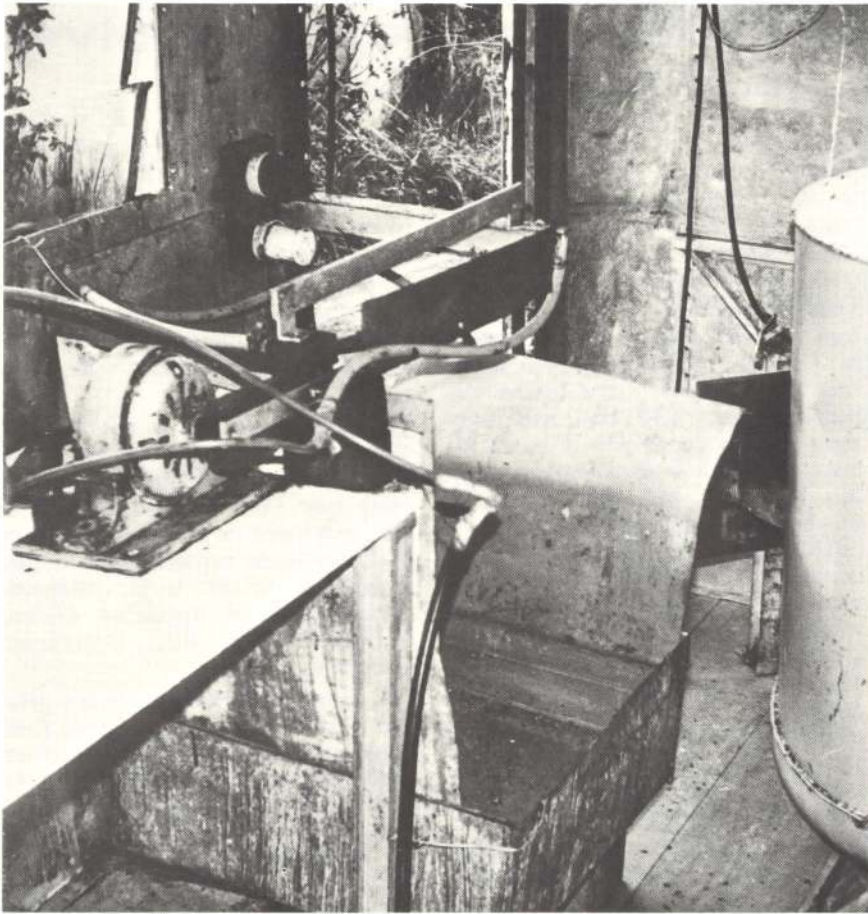
The other advantage is only now becoming apparent with health inspectors checking up on honey houses. Many part-time beekeepers will be forced into expensive alterations to bring their garages or sheds up to standard. Alterations which may be undesirable from other points of view. Extracting equipment is bulky, but hidden away in a caravan it is easily removed out of the way when not in use.

Ron built his mobile extractor from a refrigerated truck body. He dropped the floor inside to give himself plenty of head room. It also gave him room for a 140 litre honey tank. The extractor drains directly into this tank which is normally covered when the extractor is being operated.

There were three doors and Ron built in four louvre windows to increase the ventilation and light, and allow the bees to escape. All the windows and doors have screens with bee exits in them.

The interior is light and cool. The metal lining and heavy insulating see to that. It is also surprisingly roomy. Ron's extractor features in another article on different types of home-made extractors. Any extractor would do though, provided it had a variable speed motor. A 230 volt generator is also required. Ron has his generator on a long extension lead so he can hear the hum of the bees, not the noisy motor.

In the field the mobile extractor is backed into trenches so the honey boxes don't have to be lifted too high to get them inside. Chocks are placed under the back to stop the unit sinking too far into the ground.



Inside the mobile extracting van. The fixed knife used to cut the wax cappings off the honey comb is on the left. Honey from the eight frame extractor drains into a tank under the floor of the van.

Ron finds the mobile extractor ideal for doing a round of extracting before Christmas. The empty supers go straight back on to the hives. Ron has four sites at present suitable for extracting in, but he can bring full

supers to the extractor from other nearby sites.

Back in the van, Ron uncaps the combs using a steam-heated fixed knife. The cappings drop into a strainer and the honey drains into

the sump tank under the floor. Honey from the extractor also drains into this tank.

From here Ron pumps the honey through another strainer into 200-litre drums in a covered cab on the back of his 3 tonne Bedford truck. Extracting straight off the hives the honey doesn't need to be heated in a hot room.

When he has a full load or has done enough for the day Ron heads off back to Raglan. Here he pumps the honey from the drums through another strainer into a header tank in his packing room. This packing room was part of his workshop until he partitioned it off and lined it. From the header tank the honey can be run into a bulk tank for further clarifying, or drumming off, or to a packing tank.

Ron is very happy with his creation. It has worked well for him for several seasons now. It has saved him the expense of building a new extracting room to accommodate his hive expansion plans and satisfy the health inspectors. It has proved useful for his type of beekeeping country.

Out "west" it is difficult to get apiaries on a circuit. Normally Ron has to go out and back on the same road, and these roads would do rally drivers proud. They're mostly unsealed, narrow, bumpy and very torturous.

And perhaps most important of all, Ron can operate fairly large apiaries if he chooses and collect different honey types that need to be kept separate. The bees also enjoy a fairly long honey season. Under these conditions, it is more profitable to do a "little extracting, but often".



Junior beekeepers, miniature hive — all that's needed are miniature bees!

Model beehive a beaut!

WHAT ARE the "works" of a beehive like? These can be seen in this perfect model beehive.

It consists of one brood super complete with ten Hoffman frames and a honey super similarly outfitted. The migratory floor-board and lid are the same in miniature, as those used by many beekeepers throughout New Zealand.

As a means of showing the "works" of a beehive, it is excellent. It has sat on my desk for only two weeks and in that time nearly everybody has commented on this perfect model. It has answered many questions. Beekeepers want to buy it, but mine is not for sale.

Were it not that I know my visitors are honest blokes, I would be afraid of it disappearing into somebody's pocket because it is only five inches (125 mm) high.

Now that you are interested in owning one, write to Donald W. Hall at the HEL-LE-BEE FARM, P.O. Box 95, Hampton, Florida, 32044, USA and when you receive yours, you will be as proud of it as I am of mine.

Donald deserves to be commended for making available this beautiful and useful miniature.

Contributed by Chris Dawson

HONEY EXTRACTION - the costs involved

by Trevor G. Bryant, Apicultural Advisory Officer, Gore

THE ACTUAL cost of producing honey has proved elusive for many beekeepers. Ivan Dickinson, of Milton, in a determined attempt to find out, has taken into account the dollars and cents, the efficiency of his plant, a labour evaluation, and the number of hours entailed in the processing.

The exercise proved rather more difficult than Ivan had at first expected. It involved, not only the beekeeper and his hired labour, but also the co-operation of certain local authorities — in particular, of the Otago Electricity Power Supply.

The isolation of the warming room was accomplished, as this was considered to be the greatest consumer of electricity. To isolate the other items of plant would have required numerous visits to relocate meters on the various circuits. Each visit had a price tag and therefore other power usage is estimated from the total power consumption.

Ivan's plant consists of a Penrose uncapping machine and cappings melter, two eight-frame honey extractors, a heated baffle tank, two honey pumps, and a 3-tonne settling tank. The warming room has a heated concrete floor, with an air-circulating fan and a humidifier. There is also a small hot-water cylinder and an electrically operated creaming stirrer.

These items all use electricity, but do not comprise a complete inventory of the plant. Steam from an oil-fired drip feed boiler is used to heat uncapping knives and other items of plant and also supply 'dry' steam which is injected into the extractors. The boiler heats from cold to steam in half an hour and from warm to steam in 20 minutes.

The exercise began half way through the 1975/1976 extracting season. The cost of bringing the honey in, of loading the warming room, and of stacking the 'wets' away in the adjoining shed are not taken into account.

Table I compares the running costs for a one-man unit with those for a two-man unit. The cost of the labour was assessed at \$5 an hour for the owner and \$2.50 for hired labour. The Table is concerned with operating costs only.

Such items as depreciation or interest on the capital invested are not included. Both of them must vary from beekeeper to beekeeper, and your own particular costs should be included if you are seeking a detailed analysis of your own set-up. (Use Table II as a

guide). Again, if you are contemplating building a new honey house to the Health Department's present standards, the figures should be included in your comparison with the costs of extraction by contract (see Tables II and III).

Ivan's honey yield per super, shown in Table I, of 15.85kg/super seems very low. However, the season was below average, and Ivan uses only three-quarter depth supers in all his hives. In 1977 an above-average crop was harvested, and the number of supers per tonne was averaged 48 (20.83 kg/super). This 25 per cent increase in the output would mean a significant decrease in costs.

Honey in Southland/Otago region has a relatively low moisture content. This has a marked effect on the plant's output. The average moisture content of the Southland/Otago honey crop is 16 per cent with individual lines as low as 11 per cent. To produce honey free of all extraneous matter, Ivan has installed a humidifier in the warming room to add a measured amount of steam to either raise the relative humidity (RH) within the warming room or to maintain the RH.

By raising the RH above 58 per cent (honey of 17 per cent moisture is in equilibrium at this level) the moisture content of the honey can be increased. Maintaining it at 58 per cent prevents further drying of the honey. During extracting 60 per cent of Ivan's crop would be treated in this way.

Steam is also injected into the honey extractors to raise the RH. The action of extractors not only cools honey, but can also dry it further, whereas steam will reverse this situation with the added benefit of improving the efficiency of the extractors. Honey is removed from the comb faster and the extracted combs are less sticky to handle.

A word of caution, when using humidified air to improve the extracting plant's efficiency and the clarification of honey be sure you have a reliable means of testing the moisture content. This must be done regularly to ensure moisture levels do not become excessive (above 17.6 per cent) which could make the honey prone to fermentation and unsaleable. A pocket honey refractometer is recommended.

Utilising the known hygroscopic properties of honey to increase its moisture content has resulted in higher grading points for increased payment

by the H.M.A. The higher gradings are directly related to the improved clarification (condition) of the honey by eliminating specks.

Output has also increased with corresponding reductions in the amount of heat applied to the honey formerly used when attempting to eliminate specks suspended within the very viscous product.

The gross margin (See Tables II and III) makes extracting by contract look very attractive. While the honey house's value (see Table II) may seem to be low, it is based on the assumption that every beekeeper requires some storage space. The \$9 000 is the estimated average cost of upgrading existing facilities to Health Department standards.

For many beekeepers, there is a great deal of satisfaction to be gained from extracting their honey crop and from processing and marketing it. An assessment of super/combs is also possible during this period and boxes for repair and combs to cull can be put aside for repairing or rendering in the winter. But for the beekeeper who wishes to rid himself of the 'drudgery' of extracting in order to spend more time with his bees, enjoy more leisure time, and make a greater profit, the choice is obvious (see Table III).

Why is it then that extracting by contract has never really got off the ground? Primarily, it is because of the expense of building a plant big enough to extract large quantities of honey.

Co-operatives are one of the available avenues — but beekeepers are traditionally individualists, and the co-operative concept is itself a major stumbling block. However, owing to the changing economics, some beekeepers are already being forced to work in together, and their attitude may change.

When several keepers are using the one plant, each has an instinctive fear of a *Bacillus larvae* contamination. Both overseas and in New Zealand, the experience of those who do have their honey extracted on contract has proved the contamination fear to be unjustified.

Ivan does not wish to have his honey extracted on a contract basis — nor does he himself wish to extract too much honey that belongs to other beekeepers. The costing exercise he has carried out has enabled him to analyse critically his extracting methods and has led to the decision

that unskilled labour could be used to do this work for him.

Some minor alterations have been planned to further increase the plant's output, with no detrimental effects on plant efficiency or on honey quality.

A word of caution arises from Ivan's experiences over the last four years

in working his plant and carrying out several major (often radical) changes. A single change in one item of basic equipment, designed to increase the honey output, was often found to lead to many more changes, which could be very expensive. For example, a new uncapping machine meant finding

better methods of reducing the cappings and of straining and settling the honey, and so the chain reaction continued.

If you intend to make any changes, be sure to look at the whole of your present plant and to plan the entire operation 'from go to whoa'.

TABLES

TABLE 1

CASH COSTS OF EXTRACTING HONEY

(a) One-man unit

*(882 supers yielding 13 977 kg)
(15.85 kg/super)
Average output – 59 supers/7-hour day*

	\$
Man hours (102.5 at \$5/hour)	512.50
Hot room (60 days at \$1.11/24-hours)	66.67
Boiler (154 hours at 57c/hour)	88.17
	<hr/>
	667.34
Power (estimated @ 0.78c/kg)	109.99
	<hr/>
	\$777.33

Extraction costs = 88.13c/super
Cost/kilogram = 5.56c

(b) Two-man Unit

*(807 supers yielded 11 977 kg)
(14.84 kg/super)
Average output – 62 supers/5.8 – hour day*

	\$
Man hours (76.25 at \$5/hour)	381.25
(76.25 at \$2.50/hour)	190.63
Hot room (53 days at \$1.11/24 hours)	58.40
Boiler (105.75 hours at 57c/hour)	60.55
	<hr/>
	690.83
Power (estimated 0.78c/kg)	94.25
	<hr/>
	\$785.08

Extraction costs = 97.28c/super
Cost/kilogram = 6.55c

TABLE II

FIXED CHARGES

I. Annual costs of buildings (valuation, \$9 000) –	\$
Depreciation	225
Interest	900
Repairs and maintenance	450
	<hr/>
	\$1 575

II. Annual costs of plant (valuation, \$5 000) –

Depreciation	800
Interest	500
Repairs and maintenance	250
	<hr/>
	\$1 250

III. Extraction costs –

(35-tonne crop at 6.55c/kg)
(see Table I (b))

Total Extracting Costs

	\$
	2 292.50
	<hr/>
	1 575.00
	1 250.00
	<hr/>
	2 292.50
	<hr/>
	\$5 117.50

Total cost/kilogram = \$14.62c

Total cost per *super at 60 supers/tonne = \$ 2.43
*¾ depth

TABLE III

COMPARISON WITH CONTRACT EXTRACTING

I. Contract extracting charges

(85c per ¾ depth super, at 60 supers per tonne) for a 35-t crop –	\$ 1 785
Freight to and from central plant –	800
	<hr/>
	\$2 585

Cost per kilogram = 7.39c

II. By investing \$14 000 in producing units (Hives) at \$55 each, an additional 256 colonies are operated –

Extra production (41 kg per hive) = 10 496 kg	\$
Extra income (81c/kg) –	8 502
Less *operating costs (\$23 per hive) –	5 888
	<hr/>
	\$2 614

*Operating costs cover all cash expenses, including taxation. They do not cover depreciation. The figure of \$23 per hive is based on preliminary figures from the financial exercise undertaken for the 1976/77 financial year. It can be compared with the figures published in the June 1977 issue of the *New Zealand Beekeeper*.

It is worth noting that beekeepers in Southland have not only been able to hold costs – they have actually reduced them.

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FROM THE COLONIES

HAWKES BAY

THE DISTRICT has experienced one of those springs that beekeepers dream about: Perfect weather, and a good willow flow. Since then cold winds have reduced the nectar flow, forcing beekeepers to feed their bees to keep up hive strength.

This spring has also brought a strong demand for hives on hire for orchard pollination. Although a ready source of income for the few who undertake to supply, it was somewhat reduced with the spray damage that occurred during the last of the blossom.

Another cause for concern is the late start by the staff of the Ministry of Agriculture and Fisheries with the districts' apiary inspection. Training of horticulture inspectors to do this work is underway with the help of a commercial beekeeper.

However, the season is now well underway, and nothing has been done to inspect those hives owned by hobbyists in, and around, Hastings and Napier.

Apart from these problems indications for a honey crop are OK, but so far no one is making any predictions just yet.

Paul Marshall
Napier

WAIKATO

WAIKATO HAS experienced one of the driest years on record and when one thinks back to the past few seasons with their foul spring weather, one almost forgets what it is like to get wet through day after day.

Feed-wise it has been very good with a good willow flow, and now a good barbery flow even in areas where there is very little barbery, and clover showing up for the bees to go onto very early. The big worry is that we will get an early drought, or when it starts to rain it won't stop.

There is quite a deal of interest in HMA matters at present, and many opinions as to whether the payout should have been held. If prices come right overseas the HMA could show a big profit on stocks, which won't be paid to the producers.

Bush sources seem to be going to have an average flowering but that will depend on the weather.

We are sad to report the tragic death of Mr Alan Hansen from Oriri, who a few years ago was one of the big producers in the Waikato. At seminars and meetings he was always prepared to show his methods, and tell what he had learned through his long association with beekeeping.

C. Bird
Matamata

NORTHLAND

THE WINTER in Northland has been rather wetter than average but the spring has turned out to be dry and cool with pasture growth appreciably affected. These conditions have produced a major problem of Karaka poisoning among hives gathering nectar and pollen from this source. Strong hives have been decimated as a result. Many local beekeepers are experiencing this problem for the first time, such is its intensity.

Consumption of winter stores by our hives has been a little heavier than usual, but the manuka is now flowering very heavily and conditions look promising for a good honey flow from our pasture sources.

Queen breeders have had some difficulty with queen mating as a result of the cooler temperatures, but swarming has not been a major problem to date this season. We are generally shaping up quite well and are hoping for a successful season.

G.C. Richards
Whangarei

WEST COAST SOUTH ISLAND

LIKE BEEKEEPERS everywhere, the West Coasters are looking forward to a good season. Indications are that it might be a good average one providing the weather treats us with some respect at the right times.

I live in an association that is narrow and 300 miles long, and seldom hear news from the extreme ends, so I comment mainly on central prospects. There appears to have been no food shortages of any consequence as yet, and there shouldn't be now, as several of the bush flowers are showing up. There was a spell of cold westerly winds and rain that caused some concern food-wise but enough fine weather came along to soothe the anxiety.

Keath Detlapp of Ross has been busy rearing queens to revitalise his own hives and those of his brother Basil and Bill Handiside, who have taken over Waitane Apiaries of Harihari.

We all wish them the best of success in their new venture and hope they are fortunate enough to start off with a good season as to do so gives great encouragement to beginners.

Queen cells have been accepted by a big percentage of hives in some apiaries whereas in others the percentage of takes has been poor. Possibly the type of weather at the time of introduction might be the cause.

The first swarm of the season turned up at the local Motel Proprietor's Office looking for accommodation. Fortunately, or unfortunately, depending on who was looking at the situation, the proprietor wasn't in, but the prospective tenants weren't to be denied so they settled in an unused chimney and left many of their scouts to explore the office and lounge and leave their cards in many places.

Peter Lucas
Harihari

NORTH OTAGO

THE SEASON started with wind destroying the willow flow after only a couple of days although I hear the flow was better on the coast. Feeding was fairly extensive. This was a very unpleasant task due to the muddy conditions after a very wet winter. Nothing is more frustrating than getting the truck stuck every day or so, especially when you find hives flooded out — not nearly as bad as the terrible time the Southlanders have had of course.

However, the weather is now settled, drying the ground out and letting the clover show itself.

At the moment, there is so much clover that we hope the sheep can't cope with it all. Prospects look very good at this stage, all we have to do is keep those wretched nor-westerners away and pray for some summer rain. Something that North Otago isn't famous for.

R.J. Irving
Oamaru

BEEKEEPING STATISTICS AS AT MAY 31 1978

	1-5 Hives			6-50 Hives			51-250 Hives		
	Beekeepers	Apiaries	Hives	Beekeepers	Apiaries	Hives	Beekeepers	Apiaries	Hives
North Auckland	454	486	957	119	221	1613	18	202	2210
Auckland	577	641	1214	130	293	1716	18	144	1922
Hamilton	276	384	970	105	195	1557	16	214	2123
Tauranga	198	215	450	75	143	1210	15	161	2385
Hastings	120	135	283	56	139	1052	6	45	561
Hawera	135	150	298	63	133	1025	12	95	1277
Palmerston North	332	378	721	142	298	1779	16	123	1793
Nelson	221	233	532	87	237	1371	11	90	1046
Christchurch	225	245	428	88	285	1496	22	234	2500
Oamaru	114	122	237	43	108	868	21	254	3098
Gore	119	136	261	58	175	1098	20	225	2620
New Zealand	2771	3125	6351	966	2227	14785	175	1787	21535

	251-500 Hives			501-1000 Hives			More than 1000 Hives		
	Beekeepers	Apiaries	Hives	Beekeepers	Apiaries	Hives	Beekeepers	Apiaries	Hives
North Auckland	3	94	1451	5	188	2428	4	344	6480
Auckland	1	18	457	0	36	785	1	0	0
Hamilton	6	228	4762	14	483	11456	10	645	12909
Tauranga	4	197	3412	4	256	5060	2	535	9647
Hastings	0	0	0	4	196	3654	4	477	9790
Hawera	1	26	466	2	98	1880	3	175	3629
Palmerston North	3	115	1108	3	164	2426	4	345	5678
Nelson	5	163	2417	4	147	2720	3	187	4129
Christchurch	15	452	5901	9	541	7254	6	729	10048
Oamaru	10	348	4680	10	557	7547	8	927	14387
Gore	9	354	4545	15	418	7285	8	691	12616
New Zealand	57	1995	29199	70	3084	52495	53	5055	86613

	1-50 Hives			More than 50 Hives			All Beekeepers		
	Beekeepers	Apiaries	Hives	Beekeepers	Apiaries	Hives	Beekeepers	Apiaries	Hives
North Auckland	573	707	2570	30	828	12569	603	1535	15139
Auckland	707	934	2930	20	198	3164	727	1132	6094
Hamilton	381	579	2527	46	1570	31250	427	2149	33777
Tauranga	273	358	1660	25	1149	17804	298	1507	19464
Hastings	176	274	1335	14	718	14005	190	992	15340
Hawera	198	283	1323	18	394	7252	216	677	8575
Palmerston North	474	676	2500	26	747	11005	500	1423	13505
Nelson	308	470	1903	23	587	10312	331	1057	12215
Christchurch	313	530	1924	52	1956	25703	369	2486	27627
Oamaru	157	230	1105	49	2086	29712	206	2316	30817
Gore	177	311	1359	52	1688	27066	229	1999	28425
New Zealand	3737	5352	21136	355	11921	189842	4092	17273	210978

NELSON

BEEKEEPING IN Nelson province is a-humming even though we haven't featured in these columns for some time. There's a meeting each month at Richmond, a few miles out from the city, with usually a couple of dozen or so present.

For October, David Perrott told us all about wasps. He was with DSIR's entomology division here, before they shifted to Auckland, but wasn't about to leave a place like Nelson. One of his last projects with them was studying wasp populations and their control. David is a relaxed and interesting

speaker and gave us a wealth of interesting facts. The one that sticks in my mind is that a queen who really gets herself established can in one season build a colony capable of producing 12 000 other queens. So thank goodness the winter gets most of 'em.

All this spring the Nelson countryside has had little sousing of rain and I hope this portends a good honey season. Pastures are hock-high so it should take rather longer for stock to chew down the herbage and many nectar sources with it. Except in the hinterland we don't have a long honey flow and some years it can be all over, come Christmas.

To finish October we had a Saturday lunchtime meet near Kohatu and looked at some of the hundreds of hives Philip Cropp of Motupiko has strewn about the province. Ron Stratford of Brightwater brought along a modified knapsack power sprayer to show what bee blowing is all about, plus a portable tank for dispensing syrup quickly into feeders.

One new face was there from Murchison way and Gavin White's helper stopped by on his way back to Takaka. Now that was something for the timid beginner to see. He toddled up in just shorts and a bright orange singlet and soon had lids off and frames whizzing about. And those bees hadn't been sugared up for our visit. Soon as I find out his incantation I'm going to whisper it to my bees, instead of imprecations. They can sometimes be tetchy and like most of you I'm stuck with donning my space suit.

**Alec Hastwell
Nelson**

BAY OF PLENTY

THE BAY of Plenty branch has been encouraging the formation of domestic beekeeping groups in the Bay of Plenty area, under the auspices of the branch's vice-president, Jim Courtney, aided by the Ministry of Agriculture apiary instructor, Doug Briscoe. During the course of winter three meetings were held to establish what the domestic beekeepers required. The general consensus of opinion turned out to be a requirement for practical field days including lifting lids and looking at bees.

We have now held three field days during the course of spring which were well-attended and appeared to be enjoyed by all. Two to three more field days are planned culminating in an open day at Bruce Stanley's queen rearing apiary at Taneatua in February.

We have two area secretaries for the domestic beekeepers, Roy Hyde for the Whakatane and Eastern Bay Area (Tel: Whakatane 5568) and Mrs Sutcliffe for the Tauranga and Western Bay Area (Tel: Tauranga 66-874);

**R. Hale,
Tauranga**

SOUTH WESTERN

WITH THREE provinces coming under the South Western Branch it is difficult to know just how the spring has treated most beekeepers to date. But going by our own hives the prospects of strong colonies being ready for an early flow are pretty favourable.

The coastal regions may need rain soon and here in the high country the November thunder storms are always welcome.

The bush should flower well this year after the poor showing of last season, and with the unusual warm conditions at present the clover is coming away well.

Large sleek queen wasps are making their appearance and are a reminder of the mayhem and misery we can all look forward to next autumn. Ted Roberts says that if the "back room boys" don't come up with an effective wasp bait he will wire his hives down as the wasps might decide to cart them off as well.

Welcome to Stan Plunket who begins his first year as a commercial beekeeper, we hope you will get a bumper crop. Stan and his parents, who are orchardists, hail from Southland.

Having been unable to be present at Masterton to attend a field day and a discussion on honey house safety by the Labour and Health departments, it was also a disappointment not to be able to join in the fellowship at the meeting and to enjoy the hospitality provided by the Elliot family.

Hope to see you up this way in late February with a special welcome to all hobbyists.

**Stuart Tweeddale
Taihape**

SOUTHLAND

SOUTHLAND'S WINTER was comparatively mild and except for some extremes of frost in June and floods in May, the winter has passed generally milder than usual. This has resulted in hives getting away to an early start with brood raising giving some strong hives opening up in the spring. This will have a detrimental effect on stores and will give some feeding problems later in the season despite the heavy super of stores left on in the autumn. If weather conditions continue to be favourable, swarming could be a factor around Christmas.

During the quiet time of the season, local beekeepers attended a seminar on income tax and bookkeeping with regard to provisional tax problems. Later in August we had a seminar on honey processing, packing and selling with beekeepers taking part from Otago and Southland.

On September 4, Glass Brothers had a disastrous fire which destroyed the main honey house and packing shed together with all spare supers, feed honey and honey stocks.

Southland and Otago floods lost approximately 800 hives, though some equipment will be saved. Inaccessible areas still have to be checked.

Our ever-popular field day will be held on February 10 at the premises of Russel Cloake, Mossburn and a very interesting programme is organised for the day.

**Alister Lee
Balfour**

CANTERBURY

AFTER A mild but wet winter on the plains hives came into the spring quite strong, and coupled with an excellent willow flow in some areas, there are some very strong hives around.

The prospects are for an abundance of clover this year, with plenty of moisture in the ground and much spring feed which is presently ahead of grazing stock.

Providing farmers are allowed to get their lambs to the works in time, and sunshine is abundant, hives should do well on the clover flow.

Honeydew areas have reported winter losses due to brood nests being honeyed out in the Autumn, coupled with a pollen shortage at higher altitudes during early spring.

Hives in bush areas located at lower levels have emerged much stronger as a result of early August heather and September gorse and wattle.

The beech is flowering this year in bush areas and generally hives are strong and collecting honeydew steadily.

Queen rearing and mating have got off to an early start because of our warm September and October which is unusual for Canterbury.

The branch in conjunction with MAF held a successful honeydew seminar in July, thanks to John Smith's organisation. We are hoping for a summer like last year, but not as dry.

**Tony Scott
Christchurch**



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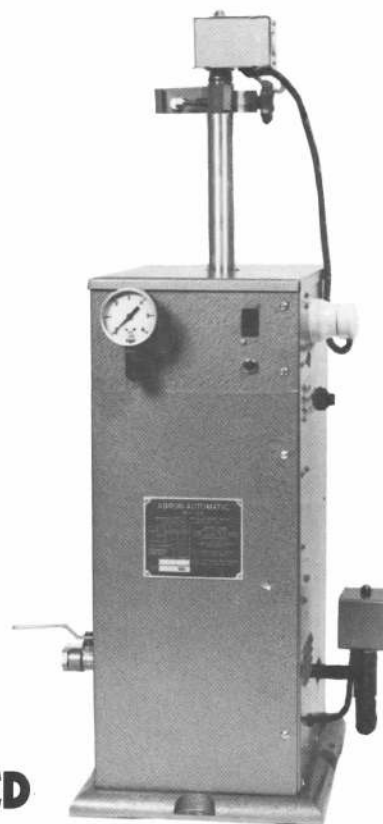
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on honey

Black combs

DARKEN HONEY

New Zealand honey

QUALITY STANDARDS

by Colin G. Rope, Honey Grader, Auckland

Colour

If a grocer puts a bowl of brown eggs and a bowl of white eggs on a shop counter all the eggs will soon be sold, but the brown eggs will be purchased first. Everybody knows that from a nutritional point of view white eggs are just as good as brown eggs. But from a sales point of view brown eggs are easier to sell.

Colour is an important quality factor in all foods. Why do we embellish our dishes with sprigs of green parsley, thin slices of red tomato, garnishes of purple beetroot, a yellow, white and green vegetable with our meats, whipped cream on fruit salad? Because colour stimulates a desire for the food. Why do restaurants install soft, red lighting and soothing music in their dining rooms? Because atmosphere and colour add interest and pleasure to our meals.

If we ask any group of people which colour of honey they like best, some will say white, some will say amber, and others may respond with good old-fashioned "bush-honey". Is white honey better than dark honey nutritionally? Not one iota!

Then why do white honeys always command higher prices almost anywhere in the world? Because perhaps three or four consumers in every five prefer white honey (provided it tastes okay) and what's more they are prepared to pay for that preference. That is the evidence provided in sales statistics.

It is clear that colour is a significant quality factor in honey and honey packers are well advised to offer their customers a range of colours, in the ratio of about four of lighter coloured honeys to every one of dark, in order to satisfy the overall demand!

Flavour

My little boy eats a lot of honey. Is it because he thinks it is "good" for him? Not at all. He likes the taste of honey! He doesn't know the difference between a vitamin and a doughnut! But he eats doughnuts too — because he likes the taste of them as well!

Sales figures prove there is a consumer

preference for milder flavoured honeys in comparison with stronger flavoured honeys, and the more delicate the flavour is, the more cash they will pay for it. There is a minority of consumers whose sense of taste is extremely dull and they prefer rich flavoured food.

Why do people in hot climates choose "tasty" foods, like currys and peppers? Because the human palate loses its sensitivity as temperatures rise above 20 deg C. Our traditional markets tend to have temperate climates.

Floral source

Besides the fact that honey can have a mild or strong flavour, it can also have a distinctive taste derived from the flower or plant which produced the nectar gathered by the bees.

Although a particular honey may taste unique, that doesn't mean everybody will like it. Some people may, and some may not.

Once again it is a matter of consumer preference.

It is interesting that the demand is fairly even for most floral sources packed true to label — with the exception of two varieties which several buyers specifically exclude from their orders!

If I named these honeys I would be labelled instantly as being prejudiced, so in order to save likely complainants from any future embarrassment, I shall leave my readers to decide what they are.

Suffice to say, because "Floral Source Packs" occupy more store shelf space than conventional packs, the more honey is sold.

The snag is, some naughty packers have not been packing honeys true to label. That practice will phase itself out, especially overseas, because new food laws are in force within the largest honey consuming nations which forbid the use of a floral source label unless at least 50 per cent of the pollen remaining in the honey has been derived from the flower specified on the label. Pollen counts are a straightforward microscopic operation.

DON'T MIX

**buttercup
with white honeys**

Pesticides

The consuming public is mindful of being fed daily doses of toxic substances, however minute these may be, and some of the countries which buy New Zealand honey are asking for assurances our honey is free from them. I am glad to say analytic reports I have seen show no trace of them in our honey to date.

Food value

There is a change confronting New Zealand beekeepers right now. People everywhere are becoming more food conscious. Many processed foods have lost something of original value, and populations in some countries are suffering through nutritional deficiencies.

As a remit the United Nations World Food Health Organisation is bringing down standards for many foods and is recommending all governments consider adopting them.

The honey standards recommended for European Countries come into being as of January 14, 1979. The New Zealand Health Department also wants those standards adopted here.

The arguments in favour of adoption include the point that unless it can be specified that natural honey is different from artificial honey or indeed from common sugar nutritionally, then there is no justification for legislative distinction nor for price differences among the three products mentioned.

Good honeys then, need to be fresh. As honeys age, they change chemically. Some of these changes can be accurately measured in a laboratory. An acid called H.M.F. increases as honey ages. Desirable enzymes derived

**Avoid
foreign tastes
or
odours**

Don't mix

● **SWEET** clover

with

● **WHITE** clover

**Air bubbles accelerate
fermentation**



Don't **TAIN**T

honey with

smoke

or

repellents

Don't mix

STRONG

flavours with

DELICATE

flavours

Don't use

WET

combs

Don't extract
UNCAPPED *
combs of Tawari

Honey is a natural product

KEEP IT THAT WAY

from the flowers and from the honey bee's digestive juices, diminish as the honey ages. The speed of this aging process can be accelerated, markedly, by heat.

Honey can be made to "grow old" before its time through careless treatment by beekeepers, packers and exporters. Heat damage is accumulative; today's damage adds on to yesterday's damage and onto all the damage done before.

Once honey falls below the quality standards set by importing governments, it can be offered for sale in those countries only as "industrial honey". You can imagine the prices. Fermenting honeys must be regarded as industrial quality too.

Cleanliness

Food hygiene standards reflect public demand that the food we eat shall be wholesome and free from extraneous

matter, such as bee's wings, dark specks of hive debris, wax moths, ants and unacceptable substances such as lubricating oils, fly sprays and chemical bee repellants.

New Zealand quality standards in these regards are set extremely high, obviously. What recommendations have I to give to beekeepers and export packers? The most significant points are covered by the attached illustrations.

HMA supply rules change

ALL HMA suppliers will have now received their 1978/79 conditions of supply and supply contracts from the authority.

The conditions of supply differ in two areas from those applying in previous years.

In response to the NBA conference request, special purchase provisions for dark honey have been introduced. This will enable suppliers of dark honeys such as Rewarewa to be eligible for special payments if their honey is selected for selected source packs or other uses where a premium price is obtainable.

The other major changes relate to the ownership of containers and represent a major tightening up of rules prevailing in previous years. For the record, the authority retains ownership of all containers carrying its identification mark and has the right to make rental or other charges for their use or misuse.

You will only be supplied with HMA containers if you have agreed to the conditions of supply and have re-

turned the memorandum of agreement, (contract) to the authority's office. At the end of the season, the ordered containers need not be returned to the HMA, so long as you notify the authority in writing that you intend to renew your supply agreement the following season.

Freight on outgoing drums is paid by the HMA to the nearest railhead, whereas suppliers are liable for all freight charges when sending honey in to the authority.

When receiving drums from the HMA, you must ensure that any damage is noted on the green copy of the Railways consignment note before uplifting them. This copy must then be sent to the HMA office so that a claim can proceed. You must also ensure that all the drums carry an HMA brand and that they are all accounted for.

If you uplift drums from a railways depot without amending the consignment note for damage or missing drums you will be liable for the full consignment.

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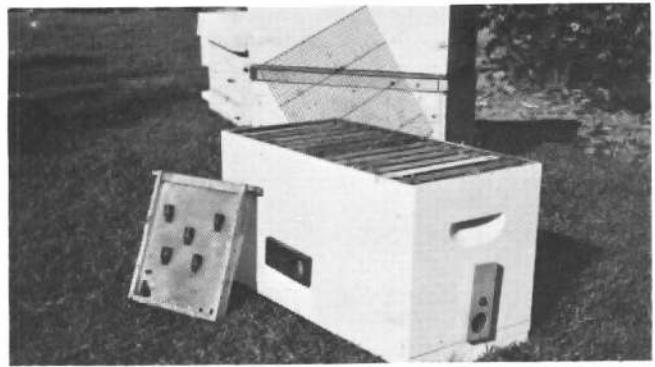
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Friday 19 January 1979).



When starting queen cells in a queenright colony, partly cover the queen excluder with plastic sheet before sliding into position. Anne Urquhart is learning fast.



"A nucleus colony will raise up to ten cells." The simplest way of raising small lots is to press grafted cells into the face of a comb.

Queen cell raising in queenright colonies under supersedure impulse

by Chris Dawson, Timaru

IN WILD and natural conditions, the honeybee colony maintains its permanent existence by the replacement of the queen. Worker bees live from six weeks to six months depending on the time of the year and the amount of work they do, but queen bees live for several years – as long as they remain effective as head of the colony.

Because the worker bees strive to maintain a high state of efficiency in their hive, when the effective leadership of the queen begins to decrease, they take over the situation and create another queen.

This creation is effected under the drive of one of three natural impulses – swarming, emergency, supersedure. These natural impulses are created artificially by queen breeders to raise replacement queens.

By placing grafted queen cells in a compartment that is crowded with bees but partly isolated from the compartment where the queen is located, the colony will accept the queen cells and give them the feeding, nursing and incubation necessary for the production of high performance queens.

To secure the replacement of a decreasingly effective honeybee queen with the minimum disturbance to the honey harvest is one of the big aims of the successful beekeeper.

In the natural colony, when the *swarming* impulse is used, a large number of worker bees leave the hive with the old queen in a swarm to help to build a new colony. This causes a short break in the rearing of young bees, but the greatest setback is in the severe loss of worker bees who should be gathering the honey crop for the parent colony.

When the queen is accidentally killed, the *emergency* impulse is triggered. There is a break in brood rearing which in turn causes a substantial loss in the work strength which could be at a vital time in the working life of the hive.

When a queen shows signs of not being able to maintain her colony at as high a strength as the colony considers it should be maintained, the colony takes over the management of a replacement by *supersedure*. A few queen cells are created around eggs laid in worker cells by the failing queen and these cells are given very special treatment so that they become top quality cells from which emerge queens of good strength and excellent vitality. When the queen reared under the supersedure impulse takes over, the old queen is killed and there is no break in brood rearing.

Queen breeders know that the use of the supersedure impulse is the best method of breeding high quality queens. They are always searching for better methods of artificially creating this natural impulse, and new techniques developed recently make it easier to use this impulse.

The method here described uses the supersedure impulse and can be adapted to use on any size of colony – the only difference in management being that the number of cells given to the queen-rearing colony to be raised must be closely related to the number of nurse bees available to build and feed the queen cells. Each colony must be given no more cells than it can cope with with ease. A small nucleus colony will raise up to 10 cells. A single storey full-depth colony will raise up to 40 cells and a two-storey hive will raise up to 60 cells at each grafting.

The most efficient hive is that which raises the greatest number of cells in proportion to the number of bees involved. This is a two-storey, full-depth nucleus that takes half-width full-depth frames in each storey. These smaller size frames give the working bees easier access to both sides of all the frames, and the bees like them. Such a colony, crowded with bees, will raise 30 to 40 high-quality cells with ease. This colony, also, when managed efficiently will raise 30 to 40 cells in each two-weekly period.

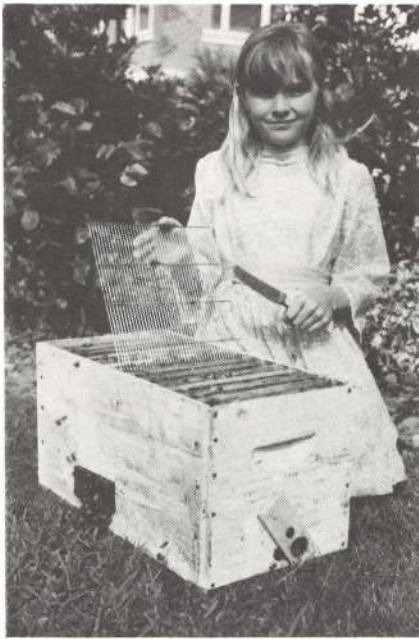
If an incubator or incubator colony is used to hold sealed cells, fresh cells can be grafted to the queen cell-raising colony each week approximately. These colonies are self-replenishing in bees – they raise their own – but they must be lavishly fed. Feed syrup and pollen must be available at all times before and during the building of cells.

Even during the nectar flow, it pays to keep up the artificial feeding in case there is a sudden dearth or deterioration in the weather.

The success of this method of queen rearing rests on the fact that the supersedure impulse is created artificially, the colony is encouraged to raise queen cells artificially, and everything about a thriving natural colony is built into this cell raising colony.

Provided nectar or feed syrup and pollen are maintained in plentiful supply and outside air temperatures are not too cold, the supersedure impulse can be created by restricting the laying area available to the queen.

If the area in which a queen is able to lay eggs is insufficient for her to maintain an expanding brood nest, supersedure will follow.



A queen excluder slides into position at the middle and divides the colony to allow the queen to work in one compartment while cells are raised at the other end.



"Feed syrup and pollen must be available at all times during the building of queen cells."



"If good acceptance, lift the second storey slightly with a hive tool and gently withdraw the sheet of plastic."

Supersedure can be encouraged in any colony by inserting in the brood nest a division that partially isolates the queen from ready access to all of the bees. The bees in the compartment where the queen is working will have enough access to the queen to maintain good morale in that compartment and the bees can obtain enough queen odour to keep them contented.

But the bees that are partly isolated from the queen in the other compartment become aware of the lower supply of queen odour which they obtain by licking and grooming the queen. Because this queen odour is not readily available, they will set about raising a supersedure queen.

Before describing the procedure for building the supersedure queen raising colony, one further point needs to be understood.

It is known how many eggs a queen can lay each day. When she is in full lay, it would be difficult for her to lay sufficient eggs to maintain ten full-depth full-width frames of comb. It is important that the queen is maintaining a hive that is crowded with bees.

It is important, therefore, that the brood nest is as *large* as is necessary to keep a full supply of bees and brood developing, and *small* enough to keep the colony in a state where supersedure is encouraged.

A single-storey 10-frame full-depth full-width super is too big for a queen to maintain a continuous supply of nurse bees. But a ten-frame full-depth *half*-width super the size of a five-frame nucleus is highly successful. A two-storey crowded colony of 10 half-width full-depth size frames will raise queen cells continuously for a full season and maintain itself in bees.

How to proceed

To build a two-storey supersedure, queen rearing colony, proceed as follows:

The entrance at one end needs to give ample ventilation while giving limited admittance to flying bees. If a gap ¼ inch deep and up to three inches wide is cut in a piece of

gauze that is stretched across the entrance, ventilation is very little reduced, but the entrance is not too large for guard bees to defend. When colonies are being artificially fed, the width of the entrance is important — there must be no robbing.

With all frames crowded with bees, build the bottom storey as follows: Reading from the entrance end —

Frame No. 1 — Pollen, 2 — Brood, 3 — Brood, 4 part unsealed brood, 5 — empty comb, 6 — unsealed brood and queen, 7 — empty comb, 8 — brood, 9 — brood, 10 — brood, 11 — brood, 12 — brood and pollen. (Note that the queen is in this storey).

Over the bottom storey place a queen excluder and on top of this place a piece of plastic sheet that covers all the excluder except a one-inch border around three sides. The end of the plastic at the opposite end to the entrance protrudes an inch or more to allow this end to be grasped to draw it out slowly after raising the second super slightly one or two days after the cell building has started.

Over the sheet of plastic place the second storey which would be built as follows: Reading from entrance end —

First a space equal to one frame for crowding place for bees. No. 1 — empty comb, 2 — honey and pollen, 3 — stores, 4 — unsealed stores, 5 partly unsealed brood (taken from position 4 of bottom storey) 6 — frame of bars of queen cells, 7 — partly unsealed brood, 8 — unsealed honey and pollen, 9 — stores, 10 — empty comb — then leave one space equal to one frame.

On top of the second storey place a supply of sifted pollen (pollen that has been sifted through wire gauze) in a shallow lid or on a piece of card. Over the second storey place a hardboard top with a hole for a feeder jar or tin near the end furthest from the entrance. Feed with 2 water — 1 sugar syrup. Over this place a bee-tight empty storey and a bee-tight hive lid.

Management of the Q.R. colony

Monday — build cell raising colony and feed syrup and pollen.

Tuesday – graft cells.

Wednesday – check if good acceptance of cells. If so, quietly lift the second storey slightly and gently withdraw the sheet of plastic. If this is done properly no bees will be killed.

Nine days later, the cells will be ripe and ready to be introduced to queenless nuclei colonies and queen should emerge within about three days.

If there was not a good acceptance of cells, do not withdraw the plastic sheet, but graft all the cells again, using their own royal jelly. Withdraw the plastic sheet one or two days later.

If the colony continues to have a poor acceptance, take a look at everything done and see if instructions have all been followed. Also look through the combs for a rogue virgin. The usual acceptance for these graftings in my apiary is 28 or more of each 30 cells.

Continuous timetable of operation:

Day 1 – Monday – build queen cell raising colony and feed syrup and pollen. Day 2 – Tuesday – graft cells. Day 3 – Wednesday – check acceptance and remove plastic sheet. Day 4 to 10 leave undisturbed. Day 11 – Thursday – remove cells and introduce to nuclei. Day 12 to 14 leave undisturbed. Day 13 – Monday – rebuild colony and start cycle again (see later note).

Timetable using incubator hive

Cells can be moved to an incubator or an incubator hive if the following timetable is used:

Day 1 to 7 same as above. Day 8, move to incubator and start cycle again as at Day 13.

Restarting a cycle

In rebuilding the colony on Day 13 it should be noted that the two frames of now sealed brood on each side of the queen cells in the second storey should be moved to the bottom storey and two fresh frames of unsealed brood moved up from the bottom storey.

Check every frame in the colony for rogue queen cells and if you find an empty queen cell, the virgin queen *must* be found and destroyed.

The two frames of unsealed brood placed on each side of the queen cell frame have sufficient unsealed brood if there is a patch as large as a tennis ball. Some who use this method (Harry Cloake is one) declare that it is not necessary to use these frames of unsealed brood, but I obtain better results by using them.

Essentials for efficiency in queen rearing

- 1. Population**
Supers must be crowded, with bees boiling over tops of frames.
- 2. Food**
Sugar (1) and water (2) syrup and sifted pollen must be readily available as long as cells are unsealed. (Queen cells are made of honey and pollen).
- 3. Temper**
The colony must be contented. Ample food, some brood, sufficient ventilation.
- 4. Secure**
The colony needs to be secure, safe from robbing, noises, wind, holes, and the entrance suitably sized.
- 5. Ventilation**
Cool outer skin, all around cluster. If the cluster is scattered, the bees are too warm.



Thirty cells grafted, 27 accepted. Rachel Kempf likes working with bees. "These frames and bars are built of the lightest possible material."

- 6. Weather**
Provision needs to be made for variations in weather temperatures.
- 7. Smoke**
Work without smoke if possible. No smoke when grafting.
- 8. Colony odour**
All equipment introduced, including cell frame, bars and cells, must have time to take on colony odour before being used. Hands while grafting need to be free of odours objectionable to bees.
- 9. Speed and timing**
Each operation needs to be completed at the correct time and as quickly as possible. Cells removed for grafting should be out of the colony no more than a few minutes.
- 10. Robbing must be eliminated**
No holes in supers where robber bees can get in: No spilt feed syrup: Nothing lowers colony morale more quickly than robbing.

Building cell bar frame

The removal and replacement of the cell bars and frame during grafting can be disturbing to the colony. If these are built of the lightest possible pieces of wood, this disturbance is kept to a minimum. My cell bars are made from strips 1/8 inch thick by 5/8 inch wide. The frame is made of 1/2 inch by 3/4 inch strips for sides and 3/8 inch by 3/4 inch top and bottom bars. When used for the first time, they are left in the colony a week before use to allow them to take on colony odour and be varnished up by the bees. In the small queen rearing house where my grafting is done, windows can be closed and the temperature made higher than outside. The smoker is not brought inside if possible and there is a mat on the floor so that it is possible to move around quietly.

DON'T FORGET!

THE APIARIES Act requires every beekeeper owning 50 or more hives to pay an annual levy to the National Beekeepers' Association. The rate of the levy is set each year by the minister of agriculture after consulting with the NBA and the Honey Marketing Authority.

The rate this year — changed from last — is 17.5c a hive, payable to the NBA on or before February 20, 1979.

The number of hives on which the levy is paid is determined by the number owned on January 1.

- The NBA has the power to defer payment. If you can't afford to make your levy payment by the due date, write and ask for a deferment of your obligations. If your reasons are good enough, the association will probably agree.

- The NBA has the power to impose a penalty if payment is not made by March 31.

- Payment has to be made on a form provided by the NBA. The association gets your name from the MAF list of registered beekeepers. If you haven't received your form by the end of January, you'd better start checking. You may not be a registered beekeeper, and that's illegal.

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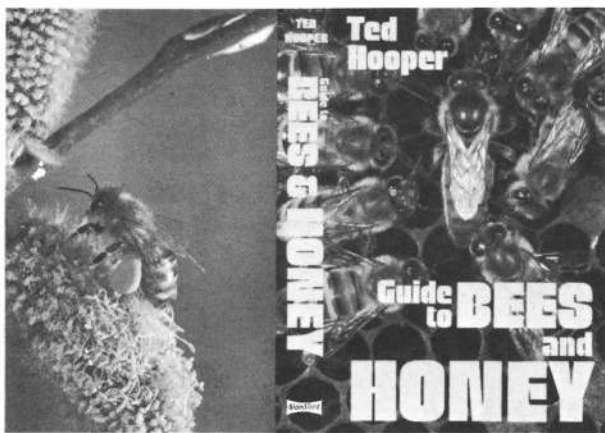
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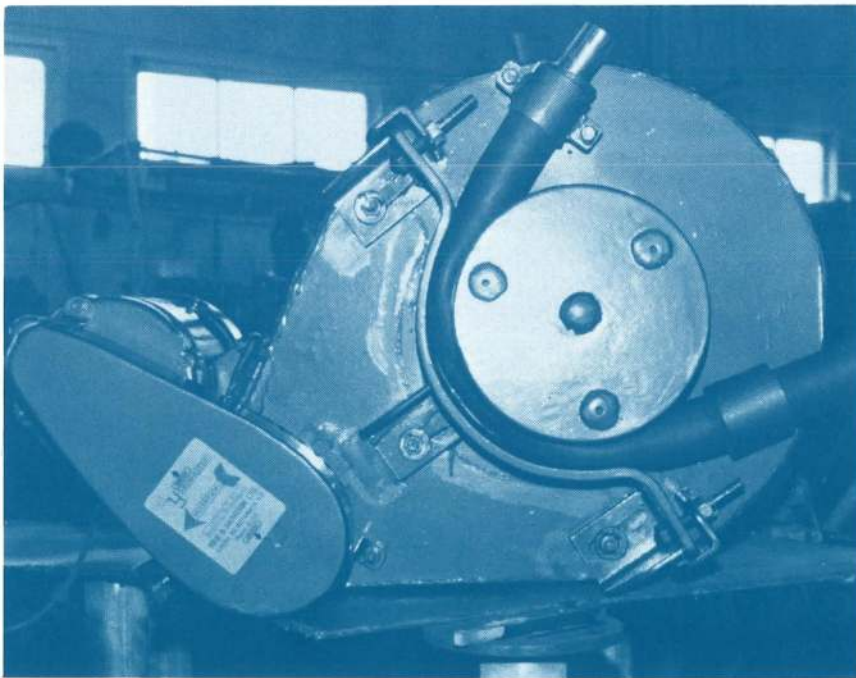
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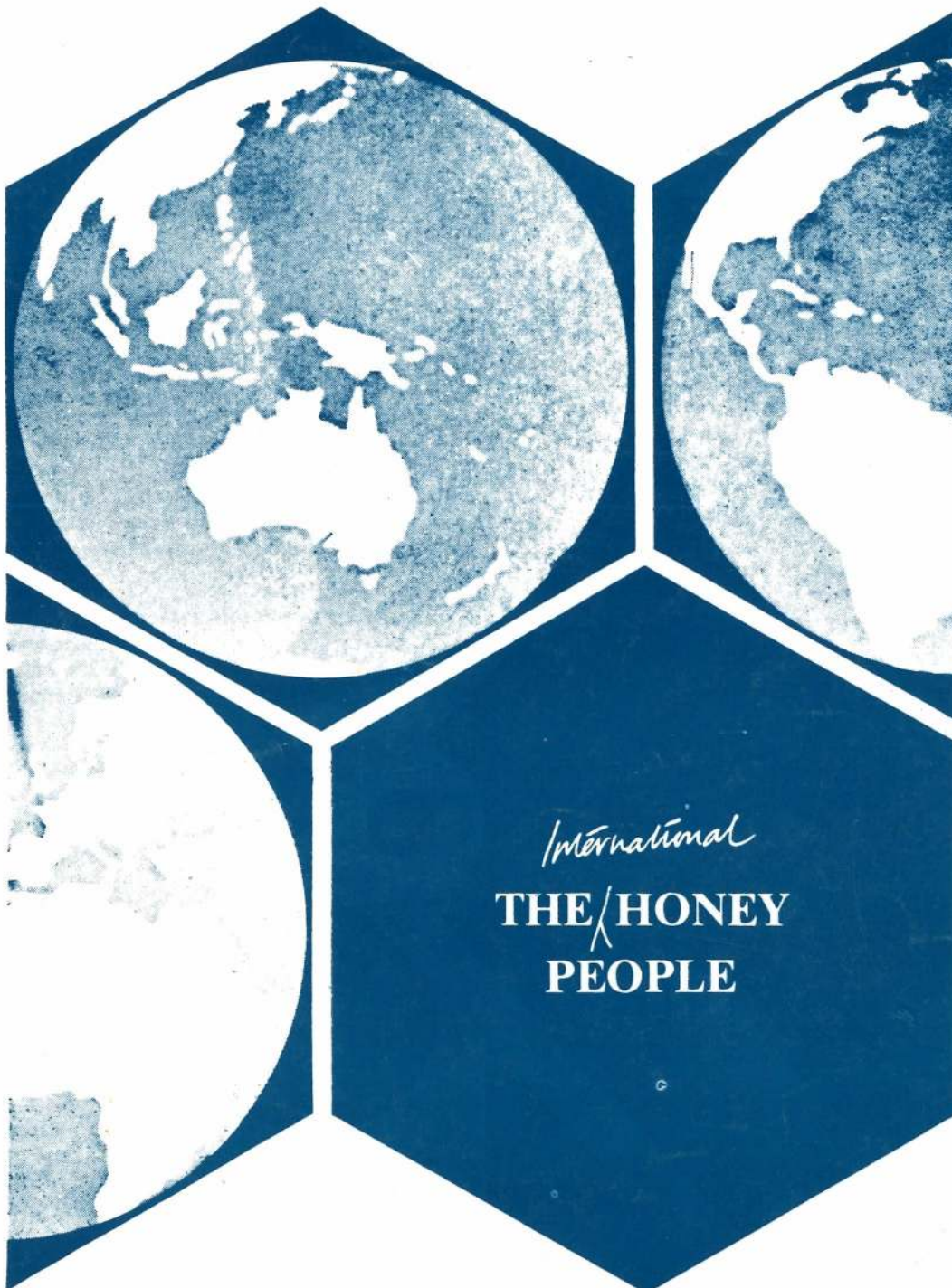
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