THE NEW ZEALAND beekeeper

JUNE, 1976

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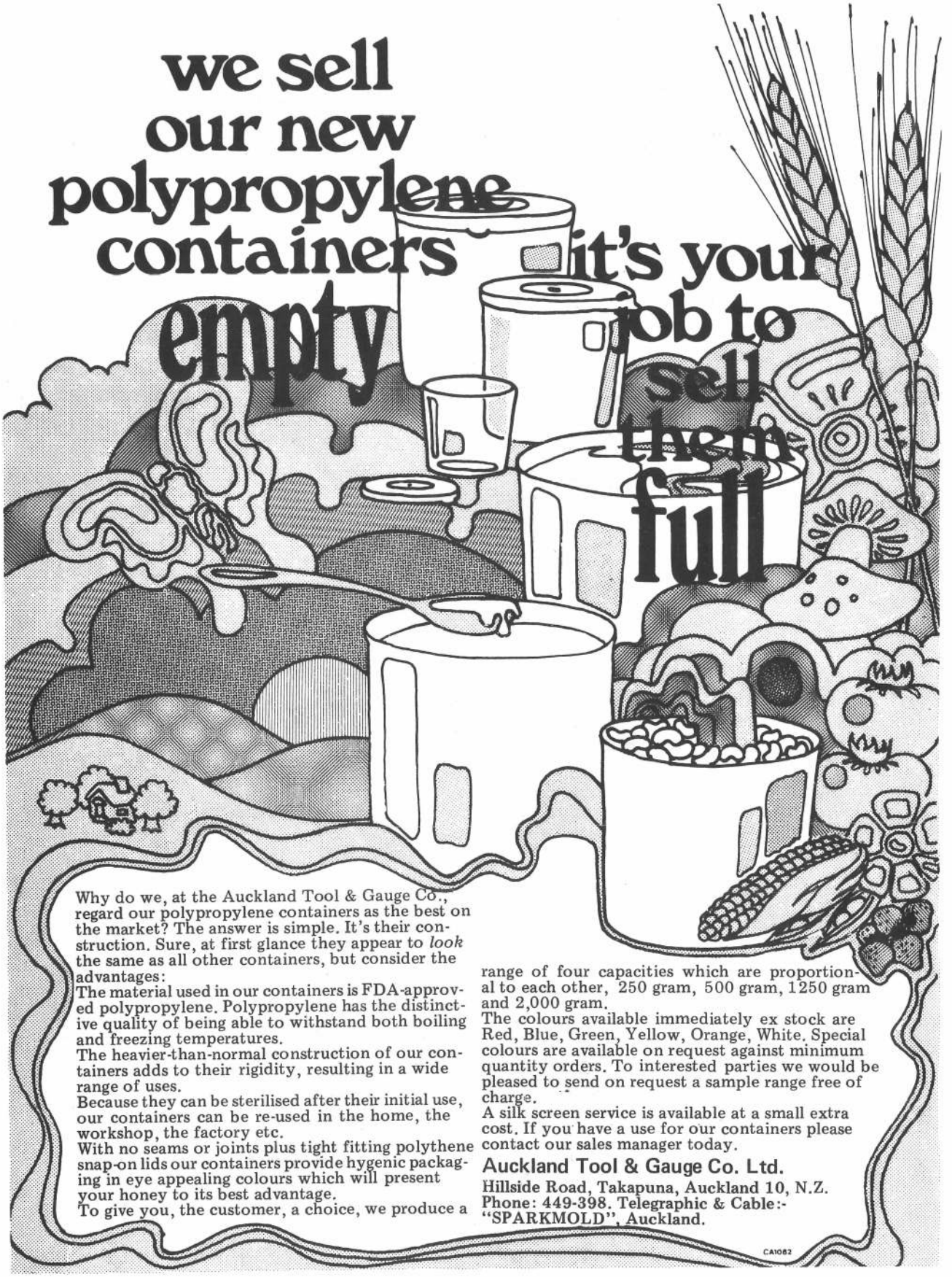

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THE NEW ZEALAND BEEKEEPER

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In this issue. . . .

Editorial

Businesslike beekeeping

YOU MAY NOT be a businessman by choice but, if you are involved with bees on more than a hobby level, normal business methods are essential if you are to be adequately rewarded for your efforts and investment.

It doesn't matter to what extent your beekeeping enterprise is a labour of love, there is little point in spending time and money which is wasted. Without adequate production and financial records any attempt at greater efficiency must only be a hit-or-miss affair.

In this issue we publish a feature on the activities of the Rural Banking and Finance Corporation, whose officers have recently become heavily involved with Central North Island beekeepers who have had disastrous honey crops.

To their surprise, the RBFC officers have been greeted by some full-time commercial beekeepers who have no production or financial records other than the near worthless accounts prepared each year for the benefit (or bewilderment) of the Inland Revenue Department.

Like all commercial lending agencies, the RBFC is impressed by a businesslike approach from borrowers. Adequate records and budgetary information are a sure sign of a beekeeper who knows something of where he is going and a lot of where he has been and why.

On an industry level, a businesslike approach is also appropriate.

It has been observed from both outside and inside the industry that New Zealand beekeepers are among the most over-administered and represented groups in the country. The presence of a political body — the National Beekeepers' Association — a marketing body — the HMA — and two independent special interest groups never ceases to amaze.

Politicians, including at least one influential member of the present Cabinet, have been prompted to make comments about the undoubted duplication of executive services, facilities and servicing costs which undoubtedly result from such a plethora of organisations.

From a political effectiveness point of view, the 'many voices are better than one' argument doesn't hold water. It is more likely to result in misdirected efforts and a dilution of the persuasive effect a united industry might have when defending its interests.

The establishment of the annual conference of the NBA as the electoral committee of the HMA, or for the producer representatives on the HMA to be NBA nominees, would be prudent alternative courses of action.

It would probably require the establishment of the association as a statutory body, but it would also force the marketing and the political arms of the industry to co-operate more effectively than they do today. With the packers' and comb honey associations acting as sections of the NBA — a structure which would be reflected at branch level — the industry would be able to sort out its internal conflicts of interest before entering the public arena.

In a period of high inflation and rapidly changing technology and political structures, a reappraisal of business and industry performance is important.

Good records and accounting procedures should be regularly used by beekeepers to measure their performance in production, processing and marketing in the same way that, on an industry level, the Honey Marketing Authority needs to regularly re-examine alternative marketing, packaging and transport systems.

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N.Z. BEEKEEPER ADVERTISING RATES

Beekeeper Rates
Advertising at these rates is available to bona-fide beekeepers advertising products or services relating to their beekeeping enterprise only. In cases where the appropriate rate is questioned, the decision of the editor will be final.

Rates: Full-page, $50; Half-page, $30; Quarter-page, $15; $1 a column cm. No deductions for contracts will apply.

Commercial Rates
Full-page, $80; Half-page, $50; Quarter-page, $25; $2 a column cm. $20 per page loading for inside cover, outside back over and spot colour. Concessions available for contracts.

SUBSCRIPTIONS
The NZ Beekeeper is distributed free to all beekeepers 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 and others who may wish or may not wish to join the association, will pay an annual subscription of $7.50 which includes the cost of a subscription to the NZ Beekeeper.

KING BEE

Wasp bugs elusive
Investigations by the HMA to determine whether wasps carry diseases harmful to honey bees have so far drawn a blank. Apparently there has been little research conducted on this matter, though that information which is available indicates that wasps are not a factor in the spread of diseases harmful to bees.

Honey regulations progressing
Work is progressing on the updating of the Honey Export Regulations which are ill-suited to the role they now have to play. According to Mr Eric Smaellie, the MAF beekeeping superintendent, one of the problems involved in drafting the new regulations was in finding a satisfactory definition for honey.

Sour sugar
Although the NBA executive has received no reply from the minister of agriculture regarding its request for a subsidy on sugar used to feed hives, a favourable response is not expected to eventuate.

Saving Vipers
The Counties Association has informed the NBA that amending legislation will be introduced to parliament this year which will, in effect, remove Vipers bugloss from the noxious weeds schedule.

Strategic support
NBA branches are being canvassed by the executive for their ideas regarding areas where the industry requires government support for its development.

Thanks, Rural Bank
The under-secretary for agriculture, Mr Jim Bolger, has been thanked by the HMA executive for the assistance given the industry by the government as a result of the disastrous honey season in the northern North Island.

Budget advisory service?
Increased travel, administration and other costs have put the future of the apiary advisory service in some doubt. While there is no chance that it will be eliminated, it is probable that its services will be curtailed sometime in the future, according to Mr Ian Forbes.

There is a possibility that part-time advisers may replace retiring full-time ministry staffers, though this possibility has yet to be discussed by ministry officials.

Seminar shuffle
There has been a mixed reaction from NBA executive members to proposals from ministry of agriculture officials to hold the 1977 beekeeping seminar in the weeks just before or just after the Apimonda conference so as to benefit from the visits of overseas beekeeping experts travelling either to or from Australia. There was a feeling that the commitment could be too great for many beekeepers entering their busy season and that a better time for the seminar would be in conference week.

The executive has agreed to study further the possibility of a National Honey Week being started in 1977.

Another S.G.M.
After receiving advice from the association solicitor, it was decided that the Special General Meeting of the National Beekeepers' Association was unable to pass a resolution adopting the new association rules on March 24. The technical point raised was such as to defer the decision making meeting to May 14, 1976.

Restricted zone rows
The implementation of the Coromandel restricted zone regulations are currently subject to litigation by concerned apiarists. In Wellington, there also have been angry words about the failure of MAF officials to gazette the appointment of NBA representative, G.R. Robinson, on the Apiaries Advisory Committee, the committee charged with implementing the restricted zone regulations. This matter now appears to have been settled.

Propolus incentives pursued
The Ministry of Trade and Industry has so far failed to respond to correspondence from NBA general secretary, Graham Beard, regarding the eligibility of propolus for export incentive grants.

MAF merry-go-round
Mr J.H. Watt, former MAF horticultural chief, has retired. His deputy, Ian Forbes, has been promoted and is now the senior MAF official concerned with honey affairs. The NBA executive wished Mr Watt a happy retirement at their March meeting.

Strawberries sprayed
The Ministry of Agriculture and Fisheries is currently investigating the use of less toxic sprays for the culture of strawberries. Strawberries are sprayed more frequently during their growing season with toxic sprays than most other horticultural crops. These sprays are dangerous to the bees needed to pollinate the fruit.

Tours from overseas
Following the upsets which resulted when a recent tour party of North American beekeepers suddenly changed their tour plans, the NBA executive asks that association branches involved in the organisation of itineraries for overseas beekeepers should channel these through head office or, at the very least, keep the general secretary informed of arrangements.

ANNUAL REPORT AND ACCOUNTS

Copies of the annual report and accounts of the National Beekeepers' Association of New Zealand (Inc) are now available free of charge to all association members. Just write to:

General Secretary
NBA
Box 4048
WELLINGTON

Federation levy

The president of the NBA, Ivan Dickinson, attended the February meeting of the dominion council of Federated Farmers. In reporting back to the association executive he said that attendance at such meetings provided a worthwhile liaison with two branches of the farming industry. However, he expressed strong reservations about a federation proposal to levy all farm produce to help fund the federation's activities.

Smaellie retiring

The NBA executive has opened a presentation fund to mark the retirement of the MAF beekeeping superintendent, Eric Smaellie. Branches and individuals are invited to contribute.

APIARY DOOR PRICES UP

According to a short survey of apiary door honey prices conducted by the editor, beekeepers have reacted swiftly to the new wholesale prices announced by the Honey Marketing Authority.

The average apiary door price for honey in customers' containers seems to stand at 50c a pound, with some prices well above the average in some districts.

Whither costs

The NBA executive has approached the Honey Marketing Authority for a breakdown of last year's processing and packing costs as these applied to both the local and export markets.

No gas tax cut

The ministers of agriculture and fisheries, and transport, have informed the NBA that higher petrol tax rebates are not going to be given to beekeepers or other farmers in the meantime. The ministers say that no decision will be made on the matter until an overall appraisal of the farming sector has been completed.

Agriculture minister, Duncan MacIntyre, also pointed out:

"I appreciate the point made by the association concerning the beekeepers particular dependence on owner-operated transport, and the limited quantity of fuel that qualifies for a petrol rebate. The beekeeping industry, however, has an advantage in that it is not so dependant as many other primary industries on increased export realisations to meet its increased operating costs. As the greater proportion of honey produced is sold on the local market increased prices could well be sought to cover increases in petrol and other costs."

Tutin resolutions

The NBA executive has made the following resolutions to guide the association's representative on the Apiaries Advisory Committee:

- **"That it be recorded that it be executive committee policy that any restrictions imposed be reasonable and consistent with the protection of public health."**
- **"That the executive committee does not support the production of comb honey in restricted zones during the risk periods.**
- **"That it is not satisfied at present that the inclusion of extracted honey in the restriction is justified or necessary."**
- **"That areas included in restricted zones for beekeeping should be more precisely defined."**

HONEYBEE MANAGEMENT COURSE

TELFORD FARM TRAINING INSTITUTE,
BALCLUTHA, SOUTH OTAGO

TO BE HELD ON THE 19th, 20th and 21st August.

This course is orientated mainly at New Zealand commercial beekeepers and potential beekeepers. Subjects will include honey bee development, behaviour and communication, economics, management, diseases and honey quality.

The course will be restricted to 20 persons and a place cannot be guaranteed to those who apply.

The probable cost will be approximately $35.00. This includes accommodation, meals, etc., for the three days.

Apply in writing to:

Telford Course for Beekeepers
Ministry of Agriculture & Fisheries
P.O. Box 20
Gore

by July 16, 1976.

New rules adopted

NEW RULES for the National Beekeepers' Association of New Zealand (Inc.) were adopted at a Special General Meeting held in Wellington on Friday May 14, 1976.

The rules had been considered and amended at branch level before being submitted to the special meeting and for that reason there were only two amendments made to the final draft at the meeting.

The purpose of the rule changes was to bring the association's constitution more in line with those of similar organisations, to allow for the election of officers by postal ballot and to allow two-year executive terms.

Under the rules now adopted — though subjected to scrutiny and possible amendment by the annual conference — three executive members are elected by association members in each island to provide a six member executive. Members retire in rotation with three being re-elected each year.

The role of non-voting conference participants was discussed and it was decided that this could be spelled out in the constitution. Similarly it was decided to spell out where responsibility for election administration should lie.

These two explanatory adjustments were the only changes made to the final draft of association rules.

Conference, full ahead!

PLANS FOR THE 1976 National Beekeepers' Association conference are now finalised.

Delegates and association members are requested to make their bookings and travel arrangements promptly and to return their registration forms by the stated deadline.

The conference itself will be held in the new Senior Citizens Hall in Storey Place, Taupo. This hall is situated at the end of the road to the right of the Taupo Post Office.

Accommodation has been arranged at the Lake View Motel. There is no obligation for those attending to stay at this motel, though those who wish to should notify the motel of their requirements well in advance.

This motel is also the venue for a pre-conference social get-together on Tuesday evening. This will commence at 8pm.

Conference registration will commence at 9am on Wednesday July 28 and the working sessions will continue through to midday on Friday July 30.

In a break with traditional practice, the conference will not be opened by the minister of agriculture but, in order to fit in with tight ministerial schedules, the minister or his under-secretary will address the conference at a time which is convenient to both the conference and the minister.

A dinner and social evening will be held on the night of Thursday July 29, commencing at 7pm. Wine and grape juice will be on the tables at dinner, though guests will be expected to pay for their own drinks at the social to follow. A band will be in attendance.

Come to the conference and enjoy the hospitality of the organisers, the Waikato beekeepers.

NATIONAL BEEKEEPERS ASSOCIATION

1976 Conference Taupo, July 28, 29 and 30, 1976

Registration Form

Name ..... Branch .....

Address .....

Registration fee	$5.00	No. Persons .....
Lunch each day	$2.00	.....
Wednesday	$2.00	.....
Thursday	$2.00	.....
Friday	$2.00	.....
Dinner and Social	$7.50	.....
Total	$18.50	

Cheque enclosed for .....

A receipt will be sent as soon as payment is received. All enquiries & registration to:-

Mr J. Welton
R.D. 1
Maroa
Taupo
phone 1905.U

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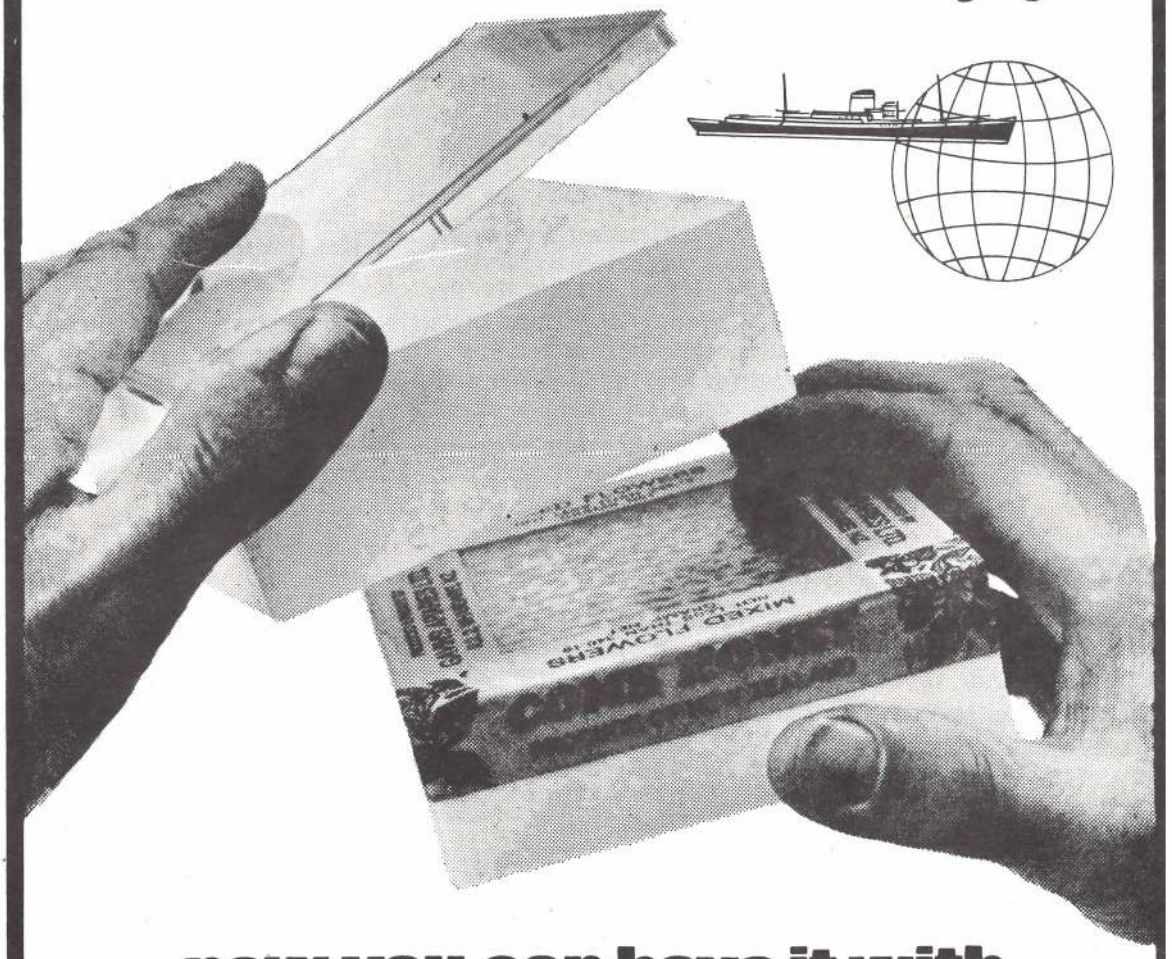

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Price up, but formula unchanged

THE GOVERNMENT supports the retention of the present honey price stabilisation scheme with a guaranteed base price which may be increased, if justified by realisations, in accordance with a formula allowing for some of the additional realisations to be put to reserves. This is the view of the minister of agriculture, Duncan MacIntyre, in a letter outlining this season's honey pricing formula addressed to Mr R.F. Poole, chairman of the N.Z. Honey Marketing Authority.

"There may be room for some variation to the formula which was established by my predecessor, but it appears to have worked satisfactorily over the last two years, and I am of the view that the existing scheme should carry on at this stage," said Mr MacIntyre.

"Although you have asked that the base price be set at the same level as last year, I am conscious of the increased costs faced by beekeepers and the likely reduced crop, and I accordingly consider that the guaranteed base price should be raised by 3c to 57 cents per kg.

"I assume that because of the reduced crop, the authority will need to supply a larger proportion of its intake towards meeting local market requirements. It would of course be competent for the authority to seek an appropriate increase in its local selling prices. There should also be a reduced surplus available for export, with the result that even if overseas prices do not improve, there should be a much smaller call on the authority's reserves.

"By adopting the formula established by my predecessor, the payout for 1975-76 will be as follows:-

"1. If realisations average 57c per kg or less, the payout will be 57c with any shortfall being drawn from the Authority's reserves.

"2. If realisations exceed 57c the payout will be increased as follows:

- Where realisations are between 57c and 59c, by 75 per cent of the amount by which the realisations exceed 57c;
- Where realisations are between 59c and 61c, by 1.5c plus 50 per cent of the amount by which the realisations exceed 59c;
- Where realisations are between 61c and 63c, by 2.5c plus 25 per cent of the amount by which the realisations exceed 61c.

"3. If realisations average 63c or more, the payout will be 60c per kg, the maximum payout possible, with all remaining realisations being put to reserves.

"Your proposal for setting a base price of 54c per kg with provision for the authority to pay such higher amount as it considers advisable, is not acceptable. The situation of beekeepers affected by a very poor crop is best assisted by way of loans from the Rural Banking and Finance Corporation, as no amount of payout will assist those beekeepers who have had a crop failure.

"I have noted your request for an increase in the authority's Reserve Bank overdraft limit and have referred it to my colleague, the minister of finance, with a request for favourable consideration."

Rural Bank comes to aid of apiarists

Mr Jim Bolger, under-secretary to the minister of agriculture.

BEEKEEPERS WHO have suffered severe losses this season because of lower than usual honey production will have access to special financial assistance from the Rural Banking and Finance Corporation.

Announcing this on March 15, the parliamentary under-secretary to the minister in charge of the bank, Mr Bolger, said the bank would sympathetically consider loans to competent and creditworthy apiarists suffering hardship.

The loans would carry interest at the rate of seven and one half per cent, but this would be rebated to five and one half per cent for the first three years. Repayment terms would be related to the borrower's circumstances.

"In some parts of New Zealand beekeepers have been severely hit on two counts by a wet cold summer — they have lost honey production and subsequent income, and their bees have gathered insufficient honey to feed themselves over the winter.

Just part of the work of an apiary instructor

by J. Smith,
Apiary Instructor,
Christchurch

THERE IS A group of people, that as an apiary instructor I am always grateful for.

These are the band of beekeepers who will turn out to collect those swarms which always seem to hang from the most unlikely places just as I sit down to my Sunday dinner. Without these helpers I know my job in Christchurch would become one of no roast beef and Yorkshire pud.

However, this season there was one swarm I felt needed the expert attention of the Ministry of Agriculture and Fisheries, and even though my van with all my beekeeping equipment, was locked away for the weekend, being serviced, I took off without veil or smoker to render assistance to a very concerned group of people.

As the photo shows, it was an easy swarm to box, even in front of a crowd of about 150 sun lovers from the local sun club on whose grounds the swarm had decided to settle. Mind you, most of the crowd had by the time I arrived become a normal clothed group, whether the result of the change in the weather, the presence of the swarm of bees, or my visit, I don't know.

While as I said it was an easy swarm to collect, it did cause more than a few problems, some being keeping its presence a secret from my band of swarm collectors, paying the five speeding tickets I collected on the way to the sun club (swarms have been known to take off before ones arrival), and most of all trying to convince Russell Poole who normally collects swarms in that area that he just hasn't the experience to handle certain swarms in certain places.

RBFC loan story - continued from page 7.

"Hives in these cases face starvation over the winter so the apiarists concerned will have to buy supplies of sugar to feed them," Mr Bolger said. "As a result the government has acted to maintain the productive capacity of the hives and assist the apiarists."

He said there would be room for flexibility in cases of financial hardship. This could take the form of the borrower being charged interest only for a period of deferring charges until production recovered to the stage where repayment terms could be fixed.

"No upper limit has been set on the loans as the individuals needs will vary. Security normally required for such loans would be a mortgage of land and buildings."

The financial assistance would primarily be aimed at the commercial beekeeper who was fully dependent on honey production for his livelihood. But applicants from other producers would be considered if necessary.

He said the problem had not affected the whole country. The districts most badly hit were the Waikato, Taupo, Taranaki, Manawatu, West Coast and parts of Otago.

"It is not possible to precisely determine the full extent of the problem, but it is not expected that more than 100 apiarists will require financial assistance."

Australia to host world congress

AUSTRALIA WILL BE a new host nation for the Apimondia biennial world congress of apiarists and agricultural scientists, in October 1977. Venue will be the recently completed Festival Centre in Adelaide, capital of South Australia.

The Federal Council of Australian Apiarists' Associations will cater for upwards of 1500 delegates representing 50 to 60 producing countries from all parts of the world.

Australia's invitation and accompanying submission was accepted unanimously by delegates to last year's 25th congress held in Grenoble, France.

The submission stressed that Australia was in a unique position to assist in the development and improvement of beekeeping, particularly in the developing countries of Asia and Africa. But more importantly, it offered scientists from all parts of the world the opportunity of studying what is believed to be the last remaining pure strains of bees.

There are three main races of honeybees used in the beekeeping industry — the Yellow Italian, Black Caucasian and Black Carniolan. Because of the impossibility of controlling mating, these three geographical races are now thoroughly mixed in most parts of the world.

Scientists interested in the genetics of bees are becoming concerned to locate pure strains of bees. They would be used to produce acceptable and more productive hybrids and for the development of pure strains with specific useful characteristics.

Because of its vast distances between population centres, Australia is probably the only major country in which isolated populations of pure strains of bees still exist.

Australia has four identifiable isolated populations of honeybees, believed to be all pure strains. Overseas authorities are currently co-operating in biometric studies to clarify this point.

These populations are:

- The Kangaroo Island (South Australia) population of Ligurian (Italian) bees is the only completely documented case of an isolated population. The bees were introduced to the island a hundred years ago, and Kangaroo Island has been a sanctuary for these bees ever since. Surveys of the island in 1957 by Prof. J. Exkert of the University of California, and a study by Prof. J. Woyke of the University of Warsaw have established the purity of this population.

  (Delegates will be given the opportunity to visit Kangaroo Island and study this population in the field.)

- Tasmania — an isolated population in north-east Tasmania is believed to be one of the few pure remnants of the British Black bee left in the world. It is believed to have been established for more than 100 years, and a sanctuary for the bees is to be declared shortly.

- Queensland — a pure remnant of either the British Black or European Black bee is thought to occur near Cooktown. This population would also be over 100 years old.

- Western Australia — a population of Carniolan bees was established on Rottnest Island some 30 years ago. No other bees have been introduced to the island.

Inquiries overseas have shown considerable interest in these populations of bees, and they are expected to be a major feature of the Congress. Demonstration hives of all four populations will be available at the Congress.

Australia is in a unique situation to play a major role in development programmes. Its isolation provides yet another important facet in that its bee populations are virtually free of all the more serious diseases.

Further, its bees are among the most productive in the world — on an average commercial beekeepers harvest between 100 and 200kg of honey per hive a year.

This and other factors covering climate and flora has led to Australian beekeepers developing a distinctive style of beekeeping based on relatively small numbers of hives — there are few who keep more than 1000 hives. This contrasts with the large scale, highly mechanised operations of North American beekeepers, many of whom operate several thousand hives.

It also explains why Australia, though well down on the list of world honey producers, rates fourth or fifth on the list of honey exporters.

The Apimondia congress itself consists of the presentation of scientific papers, the exchange of research results and discussion of up-to-date developments in international beekeeping.

It is anticipated that Mr Doull will be the 1977 Congress President, and that Congress will make various awards for newly developed equipment and beekeeping technology. Apimondia 1977 will also have an associated exhibition of beekeeping equipment, production and packaging equipment, honey in its many forms, beeswax and beeswax products.

One of the items on view at the exhibition "One Hundred Years of Beekeeping" at Bristol, England, in June 1976 — an old beekeeping society's president's badge. Sterling silver on a heavy chain.

One hundred years beekeeping in Bristol

BEEKEEPERS IN BRISTOL, England, will this year be celebrating the foundation of their Bristol Beekeepers Association which was established in June 1876. The society has passed through many difficulties and triumphs and has assumed a variety of different names — most of them to cover changes in local government boundaries. Essentially this has been a keen society of amateurs with a sprinkle of commercial beekeepers and dealers covering an area of about 25 miles around Bristol in England's beautiful West Country, keeping their hives on city roofs, in lovely country house gardens, on farms and orchards and in apiaries on the Mendips and the Cotswold Hills — with excursions to Exmoor — now a National Forest Park — for the heather.

After foundation in 1876, the Bristol Beekeepers Association became in 1889 the "Bristol, Somersetshire and Gloucestershire Beekeepers' Association" covering an area roughly that of the new British county of Avon and with "Experts" established in the nearby towns of Bath, Weston-Super-Mare, Yate, Keynsham and Kingswood.

This was the heyday of the good honey cropping years in Britain and the prosperous society had a large marquee and a screen demonstration cage which visited all the big agricultural shows in the district. The association had meetings in Short's Coffee Tavern, High Street, Bristol and dinners at the George and Railway Hotel, Victoria Street, Bristol. And their field demonstrations and honey shows were often preceded by a concert from the Bristol Rifle Volunteers Military Band and ended with a cricket match.

Beekeeping in Bristol did not, of course, start just 100 years ago. In 1373 — date of a charter that made Bristol a shire with a sheriff and county jurisdiction — it was reported that the City was ringed around with religious houses: St Augustine's Abbey, the Carmelite Friars, the Benedictine Priory of St. James, the Hospital of St. Lawrence for Lepers at Lawford's Gate, the Black Friars, a Franciscan Convent at Lewin's Mead, a Collegiate Church at Westbury and an Abbey at Keynsham — all keeping bees in straw skeps.

Wax was in enormous demand for wax candles — one Bristol church used 60 large candles every saint's day and another consumed 35,000lb of wax a year. Some of these religious houses had over 300 beehives and most cottagers and farmers had a good row of skeps. Feudal dues could be demanded and tithes paid in Wax, Honey or Mead.

The Bristol Beekeepers, now a division of the Avon County Beekeepers' Association, which is affiliated to the British Beekeepers Association, will be celebrating their centenary at Honeycombe Farm, the apiary of their chairman and president, Frank Buckley, a barrister-at-law who is a B.B.K.A. lecturer and a show judge for honey and mead.

The celebrations to be held in June 1976 will include an exhibition "One Hundred Years of Beekeeping", demonstrations of last century beekeeping methods, a barbecue and a tasting of vintage meads.

The society would be grateful to receive material for this exhibition and would like to receive greetings from beekeepers and societies all over the world, which would be displayed in the exhibition marquee.

Old photographs or magazines articles or books of about 1876 would also be gratefully received. Any greetings or material should be sent to:

Frank Buckley
President
Avon County Beekeepers Association
620 Filton Avenue
Filton
Bristol BS 12 7LD
England

Bees - vital link in New Zealand's energy pattern

by Murray Reid, Apiary Advisory Officer, Christchurch

"NEW ZEALAND'S trade symbol should not be a wingless bird that sleeps all day and lays only one egg a year, but a clover plant rampant, preferably a white clover plant in full bloom."

This was part of the message delivered by Professor T.W. Walker, of Lincoln College, to a recent symposium on "The N.Z. Fertilizer Industry in a changing World". Professor Walker went on to say that if New Zealand had one lesson to teach the world it is the significance of legumes in agriculture. A satisfactory goal for us to aim at would be to produce a kg of meat, or equivalent milk product from our grasslands at the same energy costs as Europeans and North Americans need to produce 1 kg of grain.

As it needs about 10 kg of grain to produce 1 kg of meat we could not then be blamed for using diminishing sources of fossil fuel to grow luxury foods.

However, it is one thing to use nitrogen fixing legumes (which require bees for pollination), but it is another to actually use these crops to produce fuel. But this very question is vexing many scientific minds right now especially with the huge increases in oil costs and oil based products, e.g. nitrogen fertilizers.

Solar energy can be used very effectively to produce hot water and even electricity but so far we can't convert the sun's energy into fuels and chemicals. However, nature herself has devised an effective, if rather inefficient, means of both capturing and storing some of the sun's energy — through the growth of plants. All our fossil fuels are, of course, derived from this natural process.

We can't wait several million years for today's plants to be converted into coal or oil, but we do have the technology to convert them now into fuels such as alcohol. At the present cost of fuel, planting farmland in so-called "energy" plantations would be competitive with conventional farming.

There appears to be two basic avenues of approach to energy farming. One is using fermentation to produce alcohol, the other is using pyrolosis (heating without oxygen) to produce synthetic gas.

Crops such as grain, sugar beet, potatoes and lucerne can be fermented, as can wood once it has been subjected to acid hydrolysis to break it down to a substance suitable for fermentation. A considerable amount of money is currently being spent on investigating the feasibility of using natural fermentation methods to produce ethanol from farm crops.

The attractiveness of ethanol is that it can be added to petrol up to 10 per cent of the total volume with little or no modification required for the standard car engine.

Using figures for the second half of 1974 Dr Stewart of Invermay Research Station has calculated that $166 million or 22 per cent of our export earnings were used to purchase the 23 million barrels of oil we imported. Those export earnings were generated on just 2 million hectares of land. If that same area of land was planted in trees for fuel it could produce twice as much oil equivalent at less cost.

Although trees grow well in New Zealand they're relatively inefficient energy converters and it's not easy to extract fuel such as alcohol from them. Sugar cane is the most efficient crop in the world, but it doesn't grow here; so we must look around for a crop which will grow well in New Zealand and has an efficiency close to that of sugar cane.

Other scientists have estimated that land suitable for energy farming in terms of soil types can be broken down to:-

Trees:	8.5	million	ha,	with slight limitations
	6.5	"	"	moderate limitations
Sugar Beet:	2.5	"	"	
Maize	2	"	"	
Lucerne:	8	"	"	

Unfortunately, the 30 per cent of New Zealand which offers the best opportunity for energy farming is improved grassland, and would therefore compete directly with food production.

Soils which have high actual value for food production total 1.47 million hectares and soils with high potential value for food production total 1.12 million hectares, altogether about 10 per cent of the total land area.

Of the plants listed as suitable for energy farming, only lucerne relies on bees for pollination. However, if we consider both sides of the "energy coin" i.e. energy farming for fuel as well as the savings made by using clover plants instead of nitrogen fertilizers, then the value of bees to the overall New Zealand agriculture scene takes on a new proportion. I suppose we could also make alcohol for fuel out of honey; albeit expensive alcohol.

I know I don't have to convince beekeepers of the value of bees to agriculture and horticulture. It seems now we can't calculate the value of bees solely in terms of honey and beeswax, or even in terms of the value of crops they pollinate. We need to go one step further and estimate the increased costs if nitrogen fertilizers have to be used instead of clovers or if less efficient fuel producing crops have to be grown that don't require pollinating.

OBITUARIES

Norman Tuck

IT IS WITH REGRET I write in tribute to another companion, this time Norman Tuck, a man in his middle age. A number of us attended his funeral at a lovely new church in Te Awamutu. We had known Norman as a beekeeper, and as a stalwart worker at branch level, and a regular attender at conferences. Except to a few it came as a surprise to see a large church packed to the doors with people, and to hear from the minister of his many interests.

For myself it had become a habit to call in passing, whether after branch meetings, or on other occasions, and it was a privilege to be welcomed to his home, and a great pleasure to see how readily his evening meal would be shared at short notice, with those of whom he approved. I knew some of his interests, but was amazed when they were listed at the funeral to find how extensive they were. He was on the Forest and Bird Society, the Rotary Club, the Returned Services Association, and a committee member of the National Party, for several years a very active Kihi-Kihi councillor, president of the Waikato Branch of the Hard of Hearing league, and he won a New Zealand award for the most accurate forecast of share price movements.

His long service as secretary of the Waikato Branch was much appreciated locally, he was not a forceful speaker, but he held firm views. One of his important attributes was his intolerance of procrastination, I would invariably find him writing up his minutes as soon as he returned to his home. His wife had a great interest in antiques, so one relaxed in his home among surroundings of great beauty.

He had friends in many countries, as he was widely travelled, and made a point of calling on commercial beekeepers. He told me how once while on active service in Italy he had seen an old man in a lovely apiary about to be destroyed by the German army, following its policy of scorched earth destruction, how the Royal Air Force had arrived just in time, and of the old man's great enthusiasm for the British forces because of this.

We have just attended a field day which was very will attended, and Norman's presence and personality and work were surely missed, even to his cruising among us all holding out his hat for donations to cover the costs. He is, and will be, very greatly missed. Our sincere sympathy goes out to his wife, Dorothy, and to his two sons, Henry and Stephen, together with very best wishes that Stephen will succeed in carrying on the Kihi-Kihi apiary business.

J.R. Barber
Piopio

Bruce Forsyth

A WELL-KNOWN Waikato Beekeeper, Mr Bruce Forsyth, of Ohaupo, died recently.

His lifetime interest in beekeeping began when he was a child. Later, after he returned from active service with the RNZAF in the Pacific, he acquired his father's business which he managed until his death.

Mr Forsyth was a former president of the National Beekeepers Association, and of the Waikato branch of the association. He was a producer-representative on the Honey Marketing Authority for several years and served as vice-president.

He was also a member of the Apiary Advisory Board attached to the Ministry of Agriculture and Fisheries.

Mr Forsyth was born in Ohaupo and educated at Ohaupo Primary School and Hamilton Technical College. In 1963, he was awarded a National Diploma in Agriculture.

Local body work was another lifetime interest. Mr Forsyth was chairman of Ohaupo Town Council for nine years and Town Clerk for 12 years. He was a member of the Ohaupo Memorial Park Committee for about 30 years, and was an active member of the National Party.

For 10 years he was a member of the Justice of the Peace Association and served as secretary of the Ohaupo RSA.

He served on the Board of Managers of the Ohaupo Presbyterian Church and was for many years secretary-treasurer of the parish. For 10 years he was Braille organiser for Ohaupo district.

Mr Forsyth had a keen interest in sport and led an active life until just before his death. He is survived by his wife, four daughters and two sons.

CORRESPONDENTS

LANGSTROTH SURVIVES

Messrs G.M. Reid and J. Smith of the Ministry of Agriculture & Fisheries, Christchurch, recently wrote to Miami University expressing their concern about reports that the home of the father of modern beekeeping was about to be destroyed by the university. The following is the reply they received.

Dear Messrs. Reid and Smith:

I appreciate your writing me concerning the question of the possible demolition of the Langstroth house. While such had not been seriously considered, it is true that for a number of months serious consideration had been given to its removal to a new location to permit construction of a new academic building on its original site.

You will be pleased to know that the Miami University Board of Trustees, at its meeting on December 6, determined to construct the academic building immediately north of the Langstroth house, thus enabling the continued preservation of the house on its original site.

Yours,

Phillip R. Shriver
President
Miami University

CHOKING SMOKERS

Dear Sir,

Would you please enquire through the NZ Beekeeper if there are any types of mild fuel to use in smokers that do not irritate the nose and throat.

This is a serious problem and within a radius of 20 miles from here I know of three young beekeepers, one with 1600 hives, two father and son businesses, one with 1300 hives, and the other over 2,000 hives, who get very bad hay fever with running eyes and noses and have to stop work until they are over the attacks.

During the busy season when they are using the smokers a lot they have this problem to a certain degree all the time.

There must be a number of beekeepers affected this way and many will and must have been lost to the industry because of this.

Perhaps the Department of Agriculture or the DSIR should be doing research on this problem.

If any readers of the journal have answers to this we would be very pleased and grateful to hear from them,

Yours,

L. Baker
Gordonton Apiary Ltd.
R.D. 1 Hamilton.

AVERY SCALES UP

Dear Sir,

It is with regret that the Honey Marketing Authority has been advised by Avery (NZ) Ltd that as from March 8, 1976 they have been forced to increase their price of $383.00 by 5 per cent. This increase now brings the price to $402.15.

Beekeepers still wishing to purchase scales are advised to place orders early to avoid any further increases which may occur.

Yours,

Curtis Wicht
NZ Honey Marketing Authority

CHEAP CHEAP CHEAPER

Dear Sir,

I am enclosing $7.50 in New Zealand funds, please mail me your excellent magazine for the 1976 complete year. I am looking forward to receiving my back issues.

I was on a beekeepers' tour to your country in January of this year and it amazes me to see how small your colony annual yield is and the low prices your beekeepers receive from your marketing board for their honey. Last year here in Ontario it was recommended that beekeepers sell their honey at 70c a pound in customers' containers.

Yours,

A.A. Burge
RR Stratford, Ontario,
Canada

COMB HONEY DEMAND

Dear Sir,

I am sure you will be as pleased as I was to read the following paragraph which I received in a letter from Mr G.B. Hinton of Asociation de Apicultores de San Luis Potosi, Apartado Postal 1391-F, San Luis Potosi, S.L.P., Mexico:-

"Yesterday I received a parcel of magazines, bee journals, from you for which many thanks, I will peruse them myself and then turn them over to another member who reads a little English. The New Zealand Beekeeper for the month of December 1975 has a number of exceedingly good articles in it, so good in fact that I think I will subscribe to this magazine again".

So what about an article on the production of Comb Honey? I want to buy more in 340 gram Plastic Boxes — as soon as possible and have enquiries for about NZ $500,000 worth — but with our own brand.

Is that an inducement to you to back this enquiry?

Yours,

Hector Franks,
Managing Director
D.J. Scott & Co. Ltd,
London.

OBITUARY

Dick Hobbs

WITH THE RECENT tragic death of Mr Dick Hobbs, apiary instructor of Palmerston North, there ends a family connection of almost one hundred years with beekeeping in the Manawatu.

Many beekeepers of the West Coast, Southland and also his home area of Palmerston North, will remember him with affection and respect. I am sure they will join in offering sympathy to his wife and family.

Dick carried on the family business from his father and uncle, the well known Hobbs Bros., of Palmerston North, whose honey could be bought locally as far back as memory serves me.

One of their apiaries that I can remember of so many years ago, was situated on the banks of the Tiritea stream just where it disappeared into the beautiful native bush with its waterwheel and garden walks and where today Massey University stands.

It was here that as children we all learned to swim and I well remember my father battling to save the hives from a raging grass fire that threatened the native bush as well. In those times I believe the apiary was serviced by horse and cart.

It was years later, somewhere around 1933, that I first met Dick, a teenager like myself, at an apiary on a next door farm. It was a scorching hot day, and here they were, in a sheltered little clearing in native bush, extracting in the apiary itself. Dick's job was to uncap onto a corrigated cone shaped piece of equipment with a heater underneath, while his father and uncle removed the supers of honey and replaced the nests. The bees meantime working happily away.

I was to think of this little episode many times, after the end of the war, when as a rehab beekeeper I was unfortunate enough to buy in some of the most vicious little monsters that I've ever worked with and which took me years to get rid of. I am sure that if we had had wasps then, they would have been no problem.

It is interesting to note that 40 odd years ago the Manawatu plains had many sheltered areas of native bush and there would have been hundreds of herds of dairy cows. Today this shelter has mostly gone, and now in place of dairy herds, sheep graze the pastures like so many aphids.

The honey of those days was water-white in colour, and I can well remember buying Hobbs Bross brand, done up in packs about twice the size of a lb of butter. This was cut and wrapped and sold over the counter.

The price of a 5lb tin of their honey was 2/6d or 6d per lb.

I cannot remember honey being sold at different prices.

The returns to the beekeeper would have been low in any case, and I would think that the producers of those days would have had more respect for themselves and the product they worked so hard to produce than to have cut prices on each other.

The close friendship that has developed between the chief buyers and the price-cutters, is a more recent problem the industry is faced with.

When Dick gave up commercial beekeeping some twenty years ago, I was to buy some of his hives and other equipment and it is interesting to note that many of the bottom boards are made from one solid piece of kauri or totara. They are as sound today as when assembled sometime last century.

Some of the metalled covers or lids still have penciled notes written in those far off times.

Dick was a carefree young fellow in his youth and nothing he liked better, than to get out into the ranges after the deer.

We are all going to miss Dick and I am sure the department will have a time replacing a man of his undoubted ability.

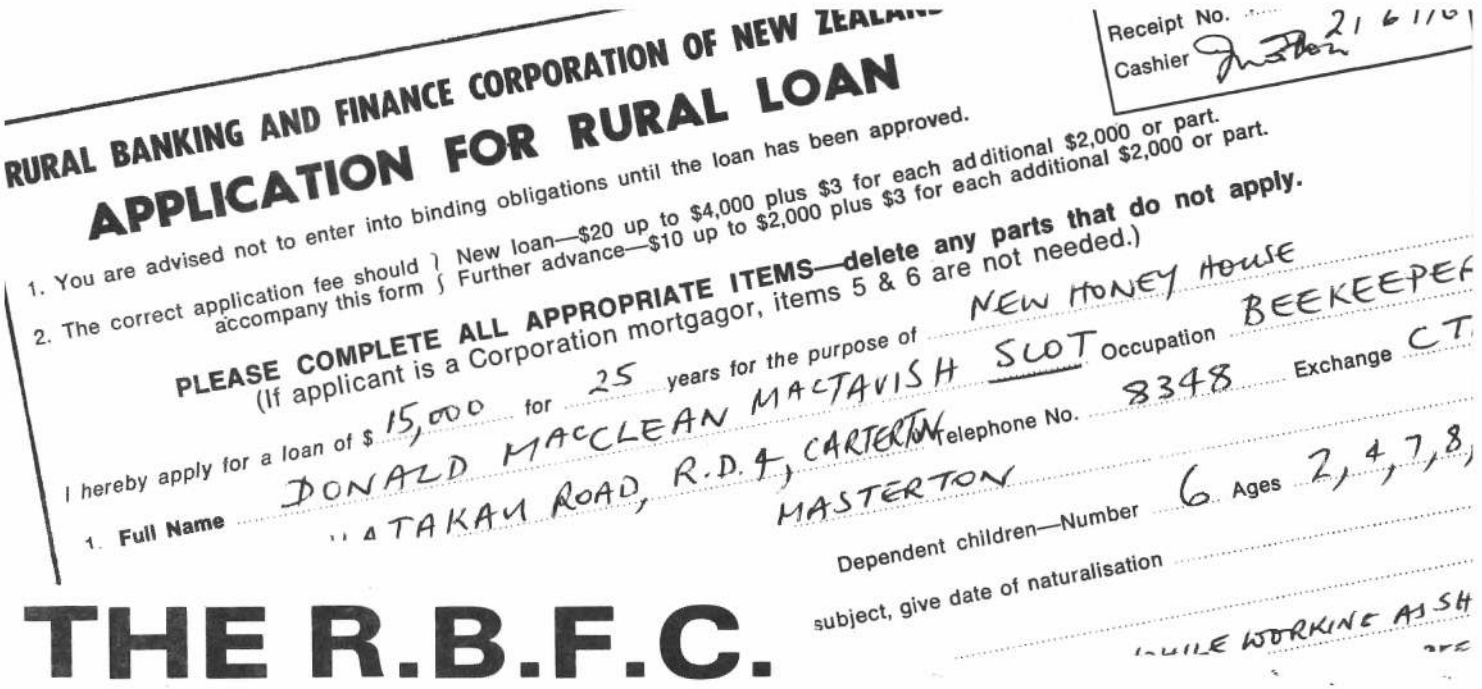
Stuart Tweeddale

NBA EXECUTIVE ELECTIONS

WITH THE EXCEPTION of the current president, Mr Ivan Dickinson, all current executive members of the National Beekeepers' Association will make themselves available for nomination for the incoming executive.

At the May executive meeting Mr Dickinson told the colleagues that, for family reasons, he was extremely doubtful whether he would consider nomination for the 1976-1977 executive.

Since the reasons for his decision are not likely to preclude further executive level involvement at a later date, Mr Dickinson said he intends to continue his involvement with the industry at a branch level during the coming year. Mr Dickinson has just been elected president of the Otago branch of the association.



RURAL BANKING AND FINANCE CORPORATION OF NEW ZEALAND

APPLICATION FOR RURAL LOAN

Receipt No. 21 6176
Cashier

1. You are advised not to enter into binding obligations until the loan has been approved.
2. The correct application fee should accompany this form { New loan—$20 up to $4,000 plus $3 for each additional $2,000 or part. Further advance—$10 up to $2,000 plus $3 for each additional $2,000 or part.

PLEASE COMPLETE ALL APPROPRIATE ITEMS—delete any parts that do not apply.
(If applicant is a Corporation mortgagor, items 5 & 6 are not needed.)

I hereby apply for a loan of $ 15,000 for 25 years for the purpose of NEW HONEY HOUSE

1. Full Name DONALD MACCLEAN MACTAVISH SLOT Occupation BEEKEEPER
TAKAM ROAD, R.D.4, CARTERTON Telephone No. 8348 Exchange CT
MASTERTON

Dependent children—Number 6 Ages 2, 4, 7, 8,

subject, give date of naturalisation

WHILE WORKING AS SH

THE R.B.F.C.

1. What the RBFC has in store for you

by Trevor Walton, Editor

"IF YOU DON'T want to do something, its very easy to find a reason for not doing it and because we can't help all the people who call upon us for finance, people don't believe that it is our objective to help young farmers and beekeepers whenever possible . . . .

"There are a lot of part-time fringe farmers in beekeeping and small livestock who have little money and expertise. These people are not good credit risks. Our refusals to them get broadcast around . . .

"In fact we have been lending to beekeepers for over 30 years. I'm not sure of the exact numbers involved, but we are currently lending to a large number of beekeepers — and with many there are large sums involved."

THE MAN QUOTED is Hec King, deputy general manager of the Rural Banking and Finance Corporation. He's not on the defensive, but he does like to put things right.

"We are lending to competent and credit-worthy young beekeepers who have demonstrated initiative and have a financial contribution to make toward their proposition. We help them to become permanent beekeepers," says Mr King.

"The most important thing is the individual expertise of the operator. If he wants to buy a beekeeping enterprise we are willing to consider loans up to $40,000. We take security over the land and buildings — up to 66 per cent of their value — though much depends on the needs of the borrower, his assets and capabilities."

In discussion Mr King keeps coming back to the individual expertise of the operator. He obviously sees this as the main security the corporation has for its loans and points out that because there are only a limited number of people at any time who are in a position to buy an established beekeeping business, the last thing his officers want is to be put in a position where they have to put a mortgagor's assets onto the market.

The other form of security is land. Money tied up in land is easily turned into cash — far more so than the tools of trade, hives and honey room equipment of a beekeeper.

"We have loaned money to itinerant beekeepers with no real property, just hives and a little plant," says Mr King. "But there are problems of security, hive identification, territorial disputes with other beekeepers and so on." He says he does his best to help these people, but there are some pretty strict limits to how far the bank can go.

"If a beekeeper has an established base from which to operate, it signifies to a lender that he has some permanence in the industry. It also indicates to fellow beekeepers that he has a definite territory in which he works," Mr King explains.

The Rural Banking and Finance Corporation was once the rural division of the State Advances Corporation. Established in 1974 under the terms of the Rural Banking and Finance Corporation Act, the bank is charged with making loans and providing other assistance for farming, other primary industries and for related service industries.

Although the bank is managed as a commercial lending organisation with responsibility for the rural sector, it is also the instrument by which the government channels much of its financial aid to the farming sector. These "aid" measures, such as the recent emergency loans for beekeepers, are administered on terms set by the government.

In contrast, the bank's "normal" lending activities are by and large the responsibility of the bank and only in areas such as government interest-rate policy does the state interfere.

The areas in which the bank puts its greatest emphasis are revealed by an examination of its most recent annual report. This shows (Table 1) that initial farm purch-

ase is the most important area of bank lending in terms of the sum involved, $34 million in 1974/75. The second most important area is the provision of development loans, $25 million in 1974/75.

It is also apparent that nearly half of all loans are for development purposes, compared with less than a sixth for initial farm purchase.

It is in these two areas that the bank makes most of its loans to beekeepers, though loans for new plant are not uncommon.

Bridging loans and mortgage refinancing is not carried out by the bank in other than exceptional circumstances.

Boiled down, all this means is that if you want to buy a second apiary when you already have a viable one, or if you want to refinance your old family mortgages which are about to fall due, the rural bank is not the place to go.

"We have to distinguish between the needy and the greedy," explains Hec King succinctly. He points out that the money available is not unlimited and while the bank will do all it can to meet any reasonable request, it has a strict list of priorities.

First on this list is the competent young beekeeper who wants to enter the industry. Second on the list is the established beekeeper who wishes to upgrade or further develop his enterprise.

The smaller part-time operator with 300 to 400 hives who is working his way up into the industry and who has demonstrated his ability and credit-worthiness is a classic example. Mr King says that if such a person has the opportunity to purchase extra hives, the bank would be willing to finance him into full-time beekeeping.

"It's a bit of a cliche," he adds, "but every case is looked at on its merits."

Like all lenders, the bank is a little cautious about lending money on the security of hives which are scattered around the district on other people's land and which are often difficult to identify. Nevertheless the bank sometimes takes security over them, usually just as collateral to the main security in land and buildings.

Also, says Mr King, if a beekeeper has (say) 1000 well-maintained and fully-paid-up hives and the bank is a little stretched for security on land and buildings, then it will take this into account when assessing the proposition.

Its lending rates have recently been well-publicised with Mr Muldoon's decision to increase all lending rates in the business sector, including those offered by the corporation to farmers. Currently, first mortgage interest rates for farm purchase are running at 7½ per cent, with a repayment term running at about 20 years, depending on the nature of the assets and the ability to repay.

Some borrowers of course don't repay. Despite the vetting of the RBFC appraisers they don't have the ability to run their businesses in a profitable manner. For these people, the bank acts like any other prudent lender and if the situation is beyond remedy, ends it as quickly and painlessly as possible. This only happens very rarely.

For the borrower who runs into difficulties beyond his control, the RBFC is far more understanding than most lenders. The function of the bank is to assist capable people to be successful farmers or apiarists, not to foreclose on them if they are beset by drought, flood or bad honeyflow.

"We are sympathetic to those who run into difficulties with their repayments providing they are willing to take preventative action," says Mr King. "If they are not willing to cut back on non-essential spending or help themselves, we are not so sympathetic."

In 1974/75, 2.5 per cent of dairy farmers, 9 per cent of sheep farmers and 9 per cent of other farm borrowers from the bank were in mortgage arrears. But it was a bad farming year and boosted sheepfarming returns in particular are expected to improve things appreciably this year.

"The Rural Bank is here to give beekeepers and farmers the opportunity, not the guarantee of success," says Hec King. "We are a business which lends money in the interests of the industry and the nation and we expect it to be repaid."

Table 1. Loan Authorisations

	1974-75 (RBFC)		1973-74 (SAC)	
	Number	Amount $(m)	Number	Amount $(m)
Farm purchase (initial ownership)	829	34.04	613	21.01
Additional land (strengthening existing farms)	201	4.79	500	11.94
Development	2 257	25.26	1 137	12.29
Refinance (including climatic relief)	996	8.45	528	7.43
Lands Department settlements	32	0.99	19	0.53
Stock and plant loans (including advances to RIC associations)	773	6.52	704	5.62
Industrial	42	11.18	3	0.58
Special industrial	27	0.64	..	..
	5 157	91.87		
Seasonal finance support	2 474	11.30	..	..
	7 631	$103.17	3 504	$59.40

2. Bringing out the best from the Rural Bank

by Trevor Walton

THE RURAL BANKING and Finance Corporation knows farmers, beekeepers and horticulturists pretty well. It has mortgages on 25,000 of their properties.

Its officers are highly-skilled in their jobs. Their pre-university practical farming experience, academic qualifications from Lincoln or Massey and their experience as appraisers make them good at judging people like you.

If you are planning the sort of venture in which they normally invest mortgage finance, their prime function is to assess whether you have the ability to carry your plans through to fulfillment.

And just in case their judgement is wrong, they take security over your land, buildings and in many cases, plant, before giving their go-ahead.

Don't be put off by this attitude. It's employed by all lenders including your bank manager and your insurance company. The only difference is that the RBFC's prime function is to financially assist farmers and other sections of primary industry. With all other lenders, provision of mortgage finance is very much a secondary activity.

Although the appraisers are well-versed in pastoral farming, many don't have much background in specialist areas such as beekeeping, pork production, horticulture and so on. This doesn't mean they can be bluffed.

The bank's officers are not afraid to ask questions from experts in each particular field of endeavour and are likely to closely question apiary instructors or advisory officers before making substantial loans to beekeepers.

This means that if your local Ministry of Agriculture adviser doesn't like your chances of success, you are going to find the bank's funds a little more difficult to tap.

Approaches are also usually made to your trading manager and stock firm to determine your credit-worthyness. Obviously a reputation for bad debts, bouncing cheques or failing to live within your means will count against your chances of success.

On the other hand, if your credit-rating is good and it appears you have the ability to carry your dream to fruition, the chances of getting a loan are good. In fact, of the 6182 loan applications made to the bank in 1974/75, 5157 were successful.

If you don't fall into the no-hoper class and you're certain that you don't have a reputation as 'leading' beekeeper, how do you — the ordinary bloke — improve your chances of getting a loan?

The most important thing is to impress the appraiser that you know what you want to do. He's not going to be impressed by the fellow who wanders in after having a wet-day beer wanting to know if he can have $10,000 for a honey house.

Even after the appropriate form has been filled in and your balance sheets for the last three years and budget for the coming year have been filed (those are required for all loans), there is a lot more that the bank appraiser will want to know.

If buildings are involved, the most important things are plans, specifications and quotes. Also required is a local body permit, or if that is not available, a legal assessment of the chances of obtaining a specified departure.

Budgets as to the likely financial outcome of your proposition are also essential. If you're not good at figures, the assistance of an apiary instructor, farm adviser or farm accountant may be called for here.

The important thing being to remember is that big money is involved. The appraiser is a professional and he will be impressed with your professionalism when you present him with a case for a loan which has no loose ends lying around.

If a land purchase is intended, all the budgets and so on will still be required, plus a copy of the title and a basic map showing the farm in relation to others in the district. A valuation of the land will help, though the appraiser will automatically conduct his own valuation before granting a loan.

Attention to detail in your planning, together with a reputation as a competent and credit-worthy operator will smooth the way for a successful loan application.

Honey bees used in warfare

reprinted from the January 1976 edition of the American Bee Journal.

OF ALL THE interesting facts accumulated on honey bees throughout history, perhaps none are more strange than those accounts of honey bees being used in warfare. Surprisingly enough, this information is not all ancient history either. As late in history as the Vietnam War, incidents were recorded on how certain ill-equipped guerilla units used hive booby traps to discourage their foes.

The whole business is said to have started in England circa 908 A.D. when an army composed of Danes and Norwegians came from Ireland and laid siege to Chester. The besiegers fixed hurdles beneath the city walls to form a protection, while they worked at undermining the fortifications. According to William Herrod-Hempsall who gave an account of the incident in his book, *Beekeeping — New and Old:*

"The defenders countered this action by hurling rocks down on the hurdling. The enemy replied by strengthening the hurdles with stout posts. The defenders retaliated by pouring down boiling mead and water, and when the besiegers frustrated this action by covering their hurdles with hides, the defenders, as a last resort, collected bee hives in the city and flung them upon the foe. This had the desired effect, the enemy being so badly stung that in despair they abandoned the siege."

The military engine pictured with this article was taken from a 1326 manuscript written by Walterus de Millemet of Christ Church, Oxford. The apparatus was designed similar to a windmill and proved quite effective in ancient warfare. The hand-operated device is being used to throw skeps at fort defenders who are retaliating with bow and arrow and hand or sling-pitched missiles.

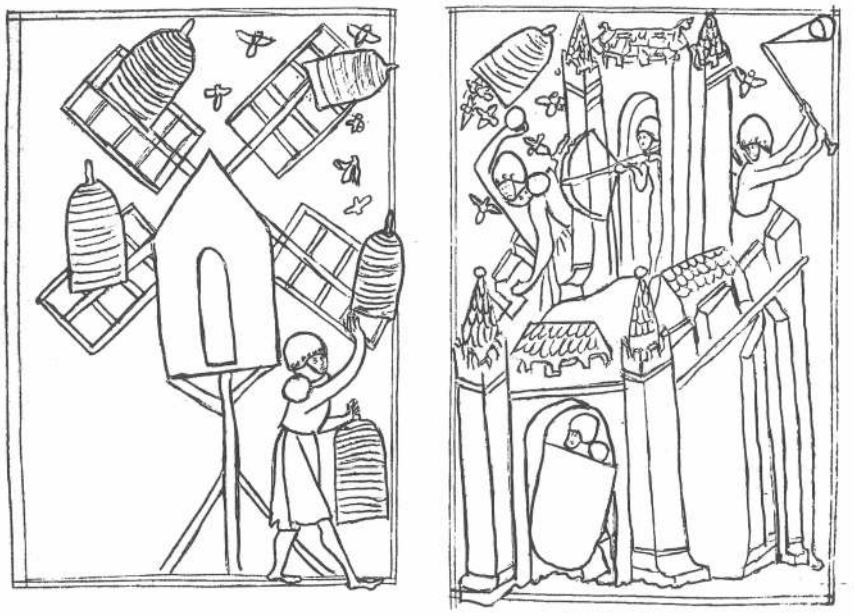
In another instance, Ghiselbert, Duke of Lorraine, revolted against Otto the Great in about 940 A.D. Otto could do nothing to stop the revolt until one of the Duke's own followers, Immo the Crafty, ". . . Collected a large number of occupied hives and flung them out against the Duke's cavalry." The Duke was forced to order a retreat when the aroused bees stung the riders' horses and made them uncontrollable.

The Bishop of Pwy (in Germany) fighting against Acre was unsuccessful until he ordered hives from Germany brought to the front lines. "All around us," urged the Bishop, "there is an abundance of beehives. Let us hurl them from our engines over the city walls. So shall we keep the Saracens off while we undermine their fortress." The Christians in this way were able to break through the walls and conquered the city of Acre.

Ancient history records the use of honey bees in warfare by Mithridates and later by Russians troops in their campaign against Shamyl in the middle 18th century. Numerous other similar incidents also have been recorded in military history. It is even said that hives were once used to win a sea battle. The out-numbered men on the besieged ship hurled hives across the water on to the attacking ship with devasting effects.

Civilians, too, have been successful in using bees for defence purposes. Herrod-Hempsall records this interesting note:

"During the confusion occasioned by a time of war in 1525, a mob of peasants, assembling in Hohn-



Ancient engine for slinging beehives in warfare. Taken from Walterus de Millemet's manuscript prepared circa 1326 A.D.

stein, in Thuringia, attempted to pillage the house of the minister of Eleude, who having in vain employed all his eloquence to dissuade them from their design, ordered his domestics to fetch his bee hives and throw them in the middle of this furious mob. The effect was what might have been expected; they were immediately put to flight, and happy to escape unstung."

Of course, outlaws also have employed honey bees at one time or another, usually to escape pursuit by authorities. The following excerpt gives one such incident:

"A band of Caucasian brigands (bandits) and cattle raiders were driven by a small force of Cossacks to take refuge upon a rock crag, where they were at once surrounded and called upon to surrender. Instead of obeying, the leader of the band flung down three bezdonka hives, which he had placed there some time before, and which were then densely peopled with wild bees. A few moments later, the Cossacks, half blinded by the bees, fled for their lives, leaving the brigands to withdraw at their leisure to their impregnable rocky fastness."

Honeybee warfare has not been limited entirely to ancient conflicts, however, as these World War I quotes will attest:

"In East Africa, during November 1914, Brigadier-General Aitken, who was in command of a force which included the 1st Loyal North Lancashires and a number of Indian units, launched an attack on Tanga. As part of their scheme of defense, the Germans hid numerous hives of bees in the dense bush which would have to be traversed by attacking troops, and attached steel wires to the covers of the hives, which would thus be pulled off directly when the wires were touched. The ruse succeeded. Fighting their way through the bush, the British troops quickly upset the hives. Swarms of infuriated bees attacked the soldiers and a great number of them were severely stung."

"A handful of Belgians who had barricaded themselves on a bee farm were attacked by a whole regiment of German infantry. The defenders allowed the Germans to approach within a few yards of the barricades and then hurled the bee hives at them. The maddened insects proved themselves valuable allies, for in less than a quarter of an hour they had driven back the Germans, who fled panic sticken."

According to Herrod-Hempsall, honey bees actually were used during the American Civil War as messengers. The North sometimes used them instead of pigeons to carry messages through the Confederate lines. The microscopic communications were written on small bits of paper and attached to the body of the messenger bee.

But, before you get any bright ideas from all of this — Remember, nowadays if a beekeeper tried hurling his hives at intruders, he might be doing them a big favour. With the high price of honey bee colonies on the open market, the would-be thieves would probably sell the hives and get rich quick anyway.

The majority of this information has been taken from William Herrod-Hempsall's mammoth work on beekeeping, entitled Beekeeping — New and Old. The two volumes contain 1,817 pages and give information on about anything a person would ever want to know concerning beekeeping and its related topics. The first volume was published in 1930 and the second in 1937. The author was born in the village of Sutton-on-Trent, in the county of Nottinghamshire, England. His brother Joseph served as editor of the British Bee Journal and The Beekeeper's Record.

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A FRESH START

This article is the first in a new series of beginners' notes prepared by Mr D.H. Williams of Rotorua.

Beginning at the beginning

THE BIG THING for the fellow with a couple of hives in the back garden (this means YOU) is that he is not a professional. Obvious, you may say? Not so. Intellectually you may be aware of it, practically you may not. Attitudes, equipment, government funds, research, advisory services, and so on are primarily geared to industry.

This is only fair. The amateur is in it for love, the professional has to live by it, but it does mean that the amateur is left in limbo in all except a few lucky areas with amateur beekeeping clubs. There are few occupations where the gap between amateur and professional is so great. Nicer people you wouldn't meet in a month of Sundays, but their ways are not our ways.

So let's lay down two basic ground rules for the amateur:-

- ☐ With bees, there are certain things that must be done at certain times. Do them.
- ☐ At other times, leave them alone.

Obvious, you may say again. If so, why is it that practically every amateur is still troubled by swarms, why is it that there are still cases of hives starving to death, why is it that amateurs are still the most turbulent, troubled, advice-seeking mob you ever came across? Because they are their own worst enemies, that's why!

Right, let's take a quick look at a few of the basic points. This article should come out in the middle of the year so we'll make out a timetable. See below.

Cut these instructions out and pin in conspicuous place.

Allowing for time lag up and down the country, if you don't adhere to this timetable, you are wrong. This timetable is average. Lop a few weeks for Far North, add a couple if Deep South.

Please note that, as an amateur, no excuses for deviation from this routine are acceptable. You have a great advantage in that the work you have to do to keep your hives happy, healthy and prosperous can be done in only a few minutes. A sunny lunchtime, a warm after-work daylight-saving hour, the Sunday half-hour between church and food, all these are perfect for your purposes, while the poor old commercial beekeeper has to be about his business at all hours and in all weathers, and suffers accordingly.

You don't have to suffer at all. Pick your time and your weather, smoke gently and handle gently, and you won't turn a single bee hostile.

BEGINNERS ACTION PACK

JUNE – JULY
do nothing

AUGUST
– a fine day towards the end of the month, have a quick look in the top. If short of stores, remove two empty frames, replace with frames of honey. Total time – 60 seconds per hive.

SEPTEMBER
– middle of month, check right through, clean or replace floorboard, remove entrance guards, put queen and brood in bottom box, any stores and empty comb in second. If short of stores, another frame of honey. Time – 10 to 20 mins.

OCTOBER – NOVEMBER
– check for swarm cells every fortnight by simply sliding top box slightly forward, tilting up, lightly smoking, and examining bottom edges of frames for cells; if found, examine all frames. Cell check time – 5 seconds. Method is almost foolproof.

DECEMBER
– last week of November or first December, rearrange bottom two boxes as for September, queen excluder on top, honey supers above that, eight frames per super.

JANUARY – FEBRUARY
Leave

MARCH
– first or second week, remove supers and extract. Check second box is full by lifting centre comb. If this is comfortably full and outside frames are full, box is good. Otherwise exchange empty for full.

Store three full frames honey per hive, extract rest. Re-queen with Autumn queens, close entrance down to 2 cm wide.

APRIL – MAY
Leave

Now let's have a little discussion on a few points in the timetable — not the timetable itself, that is fixed and unchanging as the laws of the Medes and Persians, but some expansion of detail. We started in June because that is when this may reach you, otherwise the bracket of non-activity would be mid-March to the end of August, and then only to check for food, so its mid-September before you go through top to bottom.

What happens if you find disease? Well, it doesn't show up as much at this examination as it does later but is obvious enough if its there. If you get disease at this or the November examination (or any other, of course), wait until dark, put a couple of litres of petrol in the top and a match in the bottom. Don't mess about, don't try to salvage anything, just do it.

You can stand by with a hose if its near a hedge or anything else. Bury the remains a metre deep next day. Do not dump them — there may something left to be picked up by some other hive. Messy but necessary.

Swarming

With new autumn queens, swarming will be greatly reduced. But, because under this regime you'll have large, active colonies building up steadily, not entirely eliminated, checks must necessarily be carried out every fortnight, or ideally every 10 days. Because you are separating them at these intervals, the top and bottom boxes never really get sealed together so disturbance is minimal and the observations made almost before the bees realise it.

Queen excluders

Queen excluders are not always necessary if you re-arrange at start of honey flow as instructed. Queen is then in bottom box and the bees pile honey up above and keep her down.

On the other hand, using an excluder ensures that all boxes above are brood and pollen free and can save a lot of re-sorting if the queen does wander up, as she always tries to do. Also bees preferentially store honey below excluder — of course they do — which ensures adequate winter stores.

Number of supers

Please yourself as to the number of supers you have. You can be sure the bees won't use them unless they need to, but never believe these people who say you should be satisfied with one super of honey per year.

With a young, vigorous queen, effective swarm prevention, access to early feed, adequate stores, three boxes may not be any too many. Juggle them how you like. Take full frames out if you like, take full boxes off if you like, but always keep work in front of the bees. If you only have one spare super and they fill it before Christmas, as they should, extract and replace the wet combs. The bees love them.

But if ever they run out of room, they seem to lose their enthusiasm for gathering and it takes some time before they pick up momentum again, so don't let it happen.

You can, if you like and have plenty of supers, pile three on top, take away early March, and any extra they get after that helps the winter stores. Remove excluder at the same time, of course.

Keeping full frames of honey for feed is by far the best way of maintaining morale. For one thing it means less to extract, for another it makes feeding so simple, you just take out an empty comb and pop in a full one.

As with all your operations, it is all over in seconds, the minimum time with minimum disturbance and maximum benefit. Remember that it is an investment. Anything you give to the bees you get back tenfold. Believe you me, every time you don't reserve these frames, you'll wish you had come spring.

Autumn requeening

If you could get spring queens, they'd be that much better, because Ivor Forster showed that with this year's queens you get no swarming. However, you won't be able to buy them early enough to do you any good at all, so forget about them and concentrate on March, when queens are available and advertised in this journal.

Pick a clear calm day and the job will be no trouble at all. If it isn't a clear calm day, wait until it is. The queens will be in their cages, keep them in a warm place in the house — not in full sunlight or anything like that, nor where you will be using flyspray or anything volatile, nor where the kids will get them — and they'll be perfectly happy.

Never rush anything. You quietly go through the hive, find the old queen, kill her off, leave the queen cage in her place (with the candy exposed of course) and close the whole thing down again, reducing the entrance at the same time.

One other good thing about Autumn queens is that if you get a Spring queen failure, the bees swarm, given the chance. Not so in March, they are more likely to quietly re-queen themselves without fuss.

Now, one last, very important thing. Don't ever let anyone talk you into keeping the brood chamber (i.e. the space below the excluder) down to one box. No way, friend! It may be fine for the experts but not for you. You don't believe me? Try it! You'll find you get more swarms cells and less honey than you'd believe possible.

In the normal hive the queen will have brood spread through some 14 frames in the build up period — not solid, of course, but substantial — and she doesn't like the combs nearest the wall.

Where does that leave you in one box? It leaves you with congested space and a slow build up while with the number of bees you should have, you won't get bees plus winter stores into one box anyway.

So, two boxes, a couple of rearrangements a year, and just see how the honey rolls in.

It was a case of more chiefs than indians when beekeepers tackled a wild hive in the chimney of a hall while attending the Flock House course.

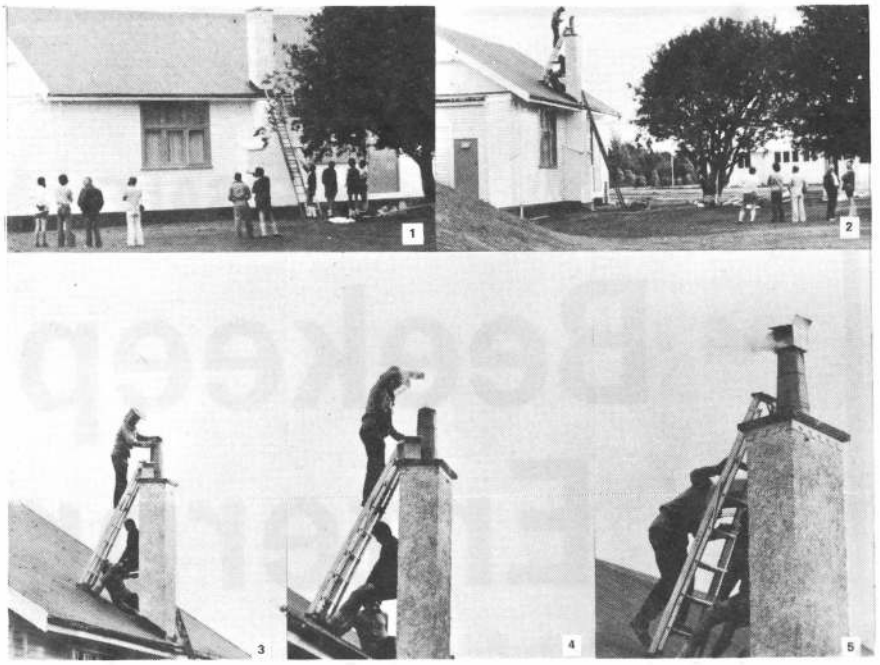
Photo 1:
Surveying the position

Photo 2:
The final ascent

Photo 3:
John Berry, assisted by Philip Cropp and Paul Ashcroft, preparing for the smoke bomb.

Photo 4:
Inserting the smoke bomb

Photo 5:
Hopefully the end of another wild hive (the chimney top was then screened over to prevent the re-entry of swarms).



Course for queen bee producers

IN JANUARY the Ministry of Agriculture and Fisheries organised a "Queen Bee Production" Course which was attended by fourteen commercial and semi-commercial beekeepers from New Zealand and one from Nuie Island. The week-long course was held at the Ministry's Flock House Farm Training Institute, near Bulls, in the Manawatu.

Flock House provides a comprehensive range of short courses for farmers, farming staff, and farm-servicing personnel, as well as year-long courses for farm cadets. Under the guiding influence of the Farm Principal, well known rugby personality John (J.J.) Stewart, excellent amenities have been provided for farming courses.

The beekeepers' course was a repeat of the successful 1975 course and was organised by Apicultural Advisory Officers Murray Reid (Christchurch) and Grahame Walton (Palmerston North), assisted by Trevor Bryant, Apiary Instructor from Gore. Course numbers were kept to less than 20 to encourage open discussion and full individual participation.

Facilities provided for the beekeepers included an apiary, a range of beekeeping equipment, microscopes, beekeeping films, and a comprehensive file of reference material. The programme covered most aspects of queen rearing, breeding and programming, and looked at the associated topics of nutrition, anatomy, behaviour, diseases, economics and marketing.

From left to right: Paul Ashcroft (Havelock North), Tony Taiaroa (Leeston), Guy Dobson (Dargaville), Stewart Booth (Drummond), Foster Ikimau (Nuie Island), Nick Wallingford (Leeston), Tony Wilton (Waihi), Peter Pegram (Frasertown), Peter Viner (Himatangi), Phillip Cropp (Motupiko), Grahame Walton (M.A.F. Palmerston North), John Berry (Havelock North), Theras Broadley (Paeroa), Charles Gauthern (Dargaville), Murray Reid (M.A.F. Christchurch), Trevor Bryant (M.A.F. Gore), Alistair Little (Kaitaia), and Peter Kemble (Fairview).

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June 25, 1976

If no firm offers have been received by this date, the property, plant and hives will be re-offered for sale, but not as a going concern.

Happymondia?

Kevin Ecroyd's observations about the organisation of the Grenoble Apimondia Congress in the December 1975 NZ Beekeeper were confirmed in great detail in the January edition of the British "Beecraft" magazine.

From this report it is apparent that bad organisation ruined many a visitor's stay at the congress.

In his report the Beecraft writer concludes,

"I do not doubt that the organisers of the social events are all good men, and well versed in their own advocations, but it is my impression that "They could not organise a bun fight in a bakery."

"I think the last words must be a comment made to me by one of the organisers who insisted on speaking to me in English, he explained that I was not in a position to criticise as I had not attended the previous Congress meetings and he told me that on this occasion "the inconveniences were better organised than ever before."

Some congress!

Bee Technology Course

The agricultural technical institute of the University of Ohio, Wooster, United States, has formulated a course in beekeeping technology which will accept its first enrolment of students later this year.

The course, says John Chalk, head of the university's department of beekeeping technology, is designed to prepare technicians who may later find employment as commercial beekeepers, apiary managers, equipment salesmen, apiary inspectors, pollinators, package bee producers and as queen bee breeders.

Private exports reviewed

THE EXECUTIVE of the National Beekeepers' Association has considered an HMA position paper regarding private honey exports and while agreeing with most points raised in the paper has suggested even more stringent conditions and safeguards of its own.

Fundamental to the private export policies of both the authority and the association is the belief that private exports must not in any way jeopardise the ability of the authority to maintain a stable domestic market and to export honey at prices and conditions which are in the best interests of the industry.

Points agreed to by both the association and the HMA were as follows:

- ☐ Shipment should only be in retail packs.
- ☐ Each consignment should be of 10 tonnes or less.
- ☐ Selling prices should be subject to HMA approval.
- ☐ Copies of bills of lading, certified invoice and export entry together with a letter certifying they are true copies of the originals should be provided to the authority.
- ☐ Exporter's bank should advise HMA of receipt of proceeds identified in such a way that they can be related to specific shipments.

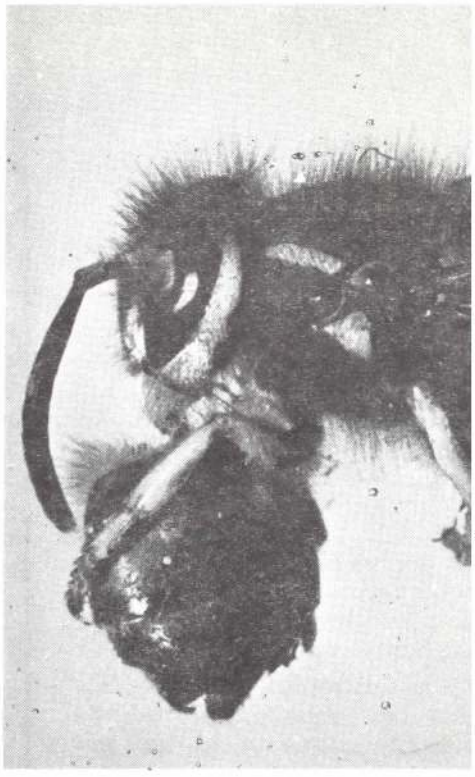
The Authority position paper also stated:-

Application to export must reach the Authority not less than 30 days prior to shipment. Application must be made on Customs Form No. 326 (obtainable from any office of H.M. Customs) in triplicate. It is important to note that the Ministry of Agriculture & Fisheries is required to give an Export Grade Certificate and no approval will be given unless this certificate approving the honey as up to export standard is sighted by the Authority. Samples for grading must reach the Honey Grader not less than 30 days prior to shipment."

While the NBA executive agreed that this 30-day approval period was normally essential, it should not be interpreted rigidly as it was probable that occasions would arise when much shorter approval periods would be necessary for commercial reasons.

The following additional points were agreed to by the executive for forwarding to the authority:-

- ☐ That each private exporter be required to establish a bond with the authority in support of compliance with the conditions laid down — a figure around $200 could be appropriate.
- ☐ That an HMA administration fee be charged for each application, to ensure that the non-exporting suppliers are not meeting costs on honey not the property of the authority.
- ☐ That consignment, date and origin codes be affixed to each honey container to ensure that it can be checked back should the need arise.
- ☐ That the packs used be subject to HMA approval so as to ensure the protection of the name of New Zealand honey in export markets.
- ☐ That an export levy on all honey exported by private packers under this general arrangement be subject to a stabilisation levy assessed on an adjustable percentage scale.
- ☐ This is considered basic to the whole proposal so long as a honey price payout ceiling applies to honey supplied to the authority. The intention is that the proceeds of the exports levy would be credited to the stabilisation fund.
- ☐ That permits to export be confined to commercial members of the association i.e. the payers of Hive Levy.
- ☐ The executive committee does not consider the licensing of private packers to be necessary — the suggested bond system should suffice.



THE 1975 NEW ZEALAND EUROPEAN WASP SURVEY

by G.M. Walton and G.M. Reid, Apicultural Advisory Officers

This Ministry of Agriculture and Fisheries survey examined the extent, effects, economic significance and control of the European wasp (Paravespula germanica) in New Zealand during the 1974/75 season. Replies were received from 125 (53.6 per cent) of the 233 commercial and semi-commercial beekeepers circulated. Most beekeepers regarded P. germanica as a nuisance (88.6 per cent) and as a cause of financial loss (73.6 per cent). Problem areas were reported in most regions, particularly during the autumn months.

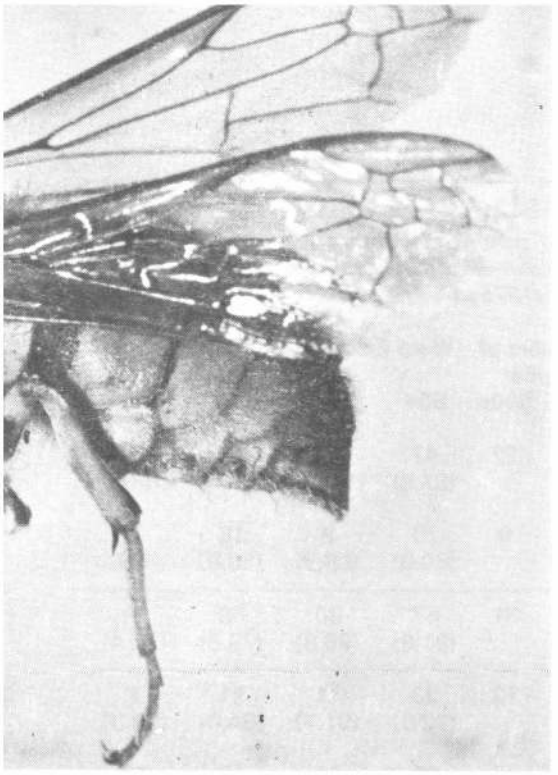
The European wasp was estimated to have totally destroyed 3900 colonies (1.9 per cent) in New Zealand valued at $71,000, and to have seriously affected 10,100 other colonies (4.9 per cent), valued at $63,000. Losses in the 1974/75 season were considered similar to that of previous years. The economic significance of this wasp, its life cycle, behaviour, control and avenues for future research are discussed.

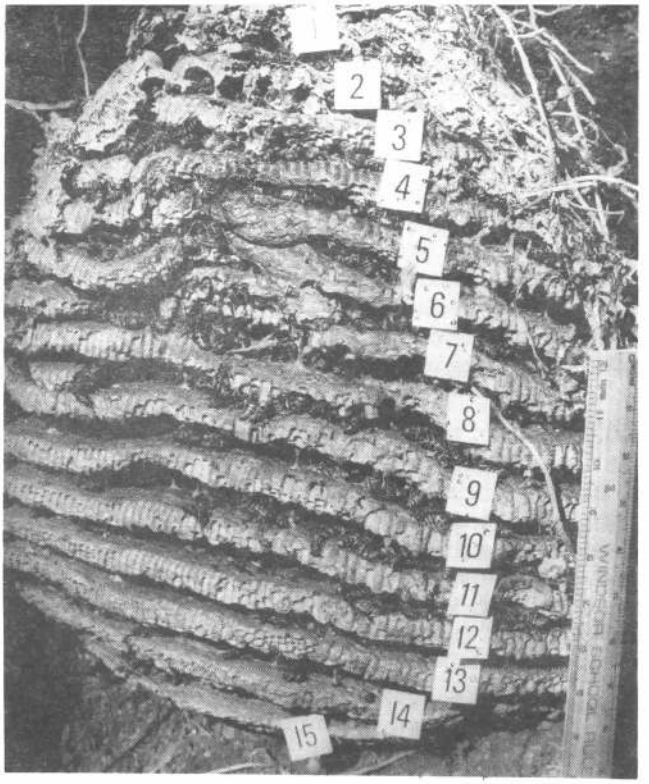
THE EUROPEAN WASP, Paravespula germanica (Fab.), formerly called Vespula germanica, was first discovered in New Zealand in April 1945 at Te Rapa, Hamilton. Since that time it has spread and stabilised throughout virtually all areas of the country.

In 1960 C.R. Thomas, of the Department of Scientific and Industrial Research published results of a comprehensive study carried out during the 1949 to 1952 period with respect to the establishment, dispersal, life history, nest size, economic significance and control of this wasp. Thomas recognised that beekeepers suffered considerable losses from wasps. He reported that in 1949 over 60 established colonies in the Waikato were lost through wasp attack. At the time of this study the European wasp had not affected beekeeping operations in the Taranaki, Manawatu or Hawkes Bay regions, and its presence had not been detected in the South Island. Hive losses have subsequently been reported in many New Zealand areas.

The Ministry of Agriculture and Fisheries and the DSIR have for many years tested various methods of wasp control (for review article see New Zealand Beekeeper November, 1971) and have issued articles on wasp nest destruction. Recently D.C.F. Perrott, formerly with the DSIR, published results of a four-year study of mirex-poisoned protein baits for the control of Paravespula germanica. A substantial reduction in wasp populations was achieved when a bait of canned fish poisoned with 0.5 per cent or 1.0 per cent mirex was used. In unpublished tests by the MAF, little or no success was achieved using similar protein-based baits.

In October and November, 1975 the MAF initiated a New Zealand wide survey designed to assess the full effects of this wasp on commercial and semi-commercial beekeeping operations. The one-page 10-part questionnaire was mailed to all beekeepers owning more than 50 hives in the North Island and in the Nelson, Marlborough and Westland districts of the South Island. Beekeepers owning more than 500 (commercial category) hives in the remaining South Island districts were also circulated. A total of 125 beekeepers (53.6 per cent) responded to the survey, including 70 beekeepers (60.9 per cent) in the commercial category. One unsigned return was excluded from the results of the survey.





From left: The entrance to a subterranean wasp nest; a worker wasp carrying the abdomen of a honey bee; an over-wintered wasp nest removed in September. It contained 7019 adult workers, 656 drones and 2475 queens of which three appeared to be in egg-laying condition.

Extent of the problem

The survey clearly established the widespread effect that Paravespula germanica has on the beekeeping industry.

Table 1 presents the degree to which beekeepers regarded this wasp as a nuisance to beekeeping operations and as a cause of financial loss. It was apparent that the most seriously affected beekeeping territories were those that embraced large tracts of scrub and bush lands. Most beekeepers in Northland, Waikato, Rotorua, King Country, Nelson, Westland and in the Canterbury honeydew area reported serious losses. To a lesser extent wasps were reported as a problem in parts of the Bay of Plenty, Hawkes Bay, Taranaki, Manawatu, Marlborough, South Canterbury and Southland districts.

Table 2 presents the period of the year that 96 beekeepers regarded this wasp as a nuisance to beekeeping operations. Wasp nuisance in the spring and summer months was more evident in the South Island than in the North Island; however autumn was clearly the major problem period in both Islands.

When asked to indicate at what stage in their operations was Paravespula germanica a nuisance most beekeepers indicated the period when hives were left for winter. Nuisance about the honey house, especially during extracting and packing, received somewhat similar mention. Other stages when wasps were regarded as a nuisance included honey removal, autumn queen rearing, autumn hive increase, bush apiary management, and spring build-up.

Beekeepers were asked to compare the effects of the 1974/75 wasp season with that of previous seasons. Of the 125 beekeepers surveyed, 58 regarded the 1974/75 season as their worst year, 52 reported greater financial losses in previous years and 15 made no comparison. Whereas the majority of North Island beekeepers reported greater losses in previous seasons (especially 1972 to 1974) the majority of South Island beekeepers regarded the latest season as their worst for hive losses.

Economic significance

Those beekeepers reporting a financial loss were asked to estimate the number of totally destroyed and seriously affected hives together with an assessment of their value. Table 3 presents a regional breakdown of these losses as reported by commercial-category beekeepers.

Of the 70 commercial beekeepers surveyed, 84.3 per cent took active steps to destroy nests in their districts. The average time spent per year in destroying nests was 4.4 days; with slightly more time (4.8 days) spent on nest destruction by South Island commercial beekeepers.

Most beekeepers were not faced with significant costs in protecting and/or relocating hives. Either the wasp problem did not exist or apiary protection methods (entrance reduction, care in the removal of honey, etc.) were carried out as a part of routine apiary management. However, some North Island beekeepers spent up to $1000 each in shifting hives from wasp-plagued areas.

A number of West Coast beekeepers were also compelled to shift their hives.

Prevention and control

Beekeepers gave a wide range of replies to the question: what methods do you use in your apiaries and honey house to reduce the effect of wasps? In order of response beekeepers found and destroyed nests, re-

duced the entrances of hives, shifted hives from danger areas, used wasp-tight equipment, provided wasp baits, kept hives strong, killed queen wasps, promptly removed the honey crop, and used wasp-resistant strains of bees.

This list probably does not reflect the true popularity of wasp control measures. For instance only four beekeepers indicated that they killed queen wasps although it is recognised that most beekeepers would attempt to kill all hibernating wasps found in hive equipment.

To control wasps in the honey house beekeepers used insecticide sprays and made the building wasp-tight. A few beekeepers used electronic insect killers and one beekeeper used trays of kerosene under windows and lights to trap flying insects.

Of the 125 surveyed beekeepers, 85.6 per cent took active steps to destroy nests, representing an average time expenditure of 3.6 days per beekeeper. Petrol, diesel oil, DDT, carbaryl and lindane were the usual methods of destroying wasp nests. One beekeeper reported using gelignite!

Only 31 beekeepers (24.8 per cent) used a wasp-baiting technique: incorporating an insecticide with a wasp attractant. Of these, few beekeepers reported any effective control of wasp populations. Up until the time of its removal from the market lead arsenate, mixed with icing, piping or cane sugars, was the most popular bait combination.

Good success was reported by some beekeepers so long as the bait was provisioned well before hive robbing commenced. The insecticides carbaryl and lindane mixed with carbohydrate attractant were also reported as successful.

Ten beekeepers used a commercial wasp bait that incorporated the insecticide mirex with freeze-dried fish. Limited or no success was indicated using this method. Other protein baits, using meat or fish mixed with DDT, were also tried unsuccessfully by a few beekeepers. One Gisborne beekeeper reported excellent results using Pest Destruction Board's phosphorus jam rabbit baits; however others have found it to be readily consumed by wasps but without much effect on their survival.

TABLE 1

The number of semi-commercial and commercial (more than 500 hives) beekeepers regarding P. germanica as a nuisance to beekeeping operations, and as a cause of financial loss during the 1974/1975 season.

	Number of replies		Wasp nuisance		Financial loss	
	50+	500+	50+	500+	50+	500+
Northland, Auckland, Waikato, Bay of Plenty	48	22	47 (97.9)	22 (100.0)	43 (89.6)	19 (86.4)
Hawkes Bay, Taranaki, Manawatu, Wellington	25	9	20 (80.0)	8 (88.9)	15 (60.0)	5 (55.6)
North Island	73	31	67 (91.8)	30 (96.8)	58 (79.5)	24 (77.4)
Nelson, Marlborough Westland, Canterbury	25	12	23 (92.0)	11 (91.7)	21 (84.0)	7 (58.3)
South Canterbury Otago, Southland	27	27	21 (77.8)	21 (77.8)	13 (48.1)	13 (48.1)
South Island	52	39	44 (84.6)	32 (82.1)	34 (65.4)	20 (51.3)
NEW ZEALAND	125	70	111 (88.8)	62 (88.6)	92 (73.6)	44 (62.9)

(Percentages in brackets)

Other comments

As a final question on the survey sheet, beekeepers were asked for their comments and suggestions with respect to wasp damage, control, seasonal build-up, yearly fluctuations and behaviour. Many beekeepers provided comprehensive replies. Some of their comments follow.

The magnitude of the wasp problem was explicitly illustrated by a number of beekeepers. Some reported losses of entire apiaries, others were forced to abandon large tracts of good beekeeping territory. Beekeeping activities in autumn, particularly queen rearing, colony division and honey removal, all increased the likelihood of wasp attacks in wasp-prone areas. One beekeeper owning 800 hives now sets aside 2 tonnes of honey for reserve winter feed whereas seven years ago, before any serious wasp build-up, no additional feeding was required.

TABLE 2

The period of the year that beekeepers regarded P. germanica as a nuisance, as a percentage of the total replies.

	North Island	South Island	New Zealand
Spring	24.6	31.4	27.1
Summer	26.2	48.6	34.4
Autumn	93.4	88.6	91.7
Winter	52.5	40.0	47.9

Wasps were reported as less of a problem during the season that followed a wet winter or spring. Rains and floods apparently reduced the number of hibernating queens and destroyed many nest sites. Larger populations of wasps seemed to follow mild winters and warm dry summers.

The wasp problem faced by beekeepers during the winter and spring periods was attributed to overwintering nests. This was observed mainly in the North Island and the northern and western parts of the South Island.

Although some localities were regarded as notorious for wasps year after year, other beekeepers noted that bad areas fluctuated within their territories. Wasps were prevalent in the volcanic pumice land areas of the North Island. This light, friable soil could be removed readily during nest excavation.

One beekeeper noted that geothermal areas were popular nesting sites, perhaps because of the warmth maintained in the ground. The honeydew-producing beech forest region of the South Island, with its natural food supply, was another wasp-prone area.

The weakest hives within the apiary were the most susceptible to wasp attacks. Even so, some beekeepers reported that strong hives were occasionally attacked first. Scavenging wasps were adept at avoiding guard bees and gained admission to the hive through the main entrance, or through gaps in poorly constructed positioned hive equipment.

The European wasp, with its comparatively longer daily foraging patterns could "steal" exposed and undefended honey while honeybees were still confined to their early morning cluster. Colonies would become so weakened and demoralised by these attacks that death would progressively follow throughout the apiary unless the beekeeper intervened. Apiaries under attack were difficult to manage, and foraging performance was affected.

A number of beekeepers have noted that some strains of bees were more resistant to wasp attacks than others. In general the darker-coloured bush strains of honeybee defended themselves better than the so-called domestic yellow bee.

Most beekeepers searched for and destroyed wasp nests that were creating problems. A number of beekeepers noted that the destruction of just one or two medium to large nests near an apiary significantly reduced a wasp menace. Two beekeepers offered a bounty system by paying 50 cents to schoolboys for every nest destroyed. Other beekeepers encouraged farmers to report nest locations on their land.

In tracking wasp nests, a number of beekeepers reported success by following the return of a wasp from a sugar syrup or honey feeding station. Wasps apparently flew straight back to their nest after imbibing this fluid. Tracking wasps against a setting sun or early on misty mornings, when the sun's rays reflected from the flying wasp, was successful. Tracking was also aided by the dusting of foraging wasps with flour or icing sugar.

In the wasp-prone Waikato areas, commercial beekeepers were faced with the inconvenience of shifting apiaries out once hive robbing started. In these areas wasp baits were satisfactory only if they were placed early in the season, for once wasps took command of a hive it was usually too late to train them onto a bait source.

Two semi-commercial beekeepers indicated the benefits of Paravespula germanica. One beekeeper mentioned that blowfly numbers have been reduced significantly since the introduction of the wasp. Another beekeeper commented that the European wasp has destroyed many wild hives about the country, probably reducing the number of diseased hives at the same time.

Discussion

Survey replies were received from 60.9 per cent of New Zealand's commercial beekeepers (owning more than 500 hives) and 26.3 per cent of the semi-commercial beekeepers (50 to 500 hives). This combined group would own an estimated 96,000 hives, or 46.9 per cent of the country's total hive holding.

Based on the survey returns from these beekeepers the European wasp is estimated to have totally destroyed 3900 New Zealand hives, valued at $71,000, and to have seriously affected 10,100 other hives, valued at $63,000 during the 1974/75 season.

It was apparent from beekeepers returns that the losses in 1974/75 season were no more severe nationally than those occurring on other years.

That one predatory insect can destroy 1.9 per cent of New Zealand's hives and affect 4.9 per cent of others indicates a significant and serious loss factor to the beekeeping industry. This hive loss is somewhat greater than the 0.4 per cent level recorded for American Foul Brood Disease (Bacillus larvae) during the same period. However losses attributed to wasp damage would probably be outweighed by losses incurred through starvation, queenlessness, wind and stock damage.

The average value of $18.28 per hive as assessed by beekeepers for totally destroyed colonies appears to be a realistic assessment. This would include the loss of the queen and worker population, together with that of the autumn and winter food supply. In contrast to American Foul Brood disease the hive equipment would be re-usable.

The estimated annual loss of $134,000 does not include the cost of searching for and destroying nests, nor the preventative techniques employed in the apiaries and honey houses.

Most New Zealand wasp colonies follow the typical vespid pattern: solitary winter hibernation of the queen, production of workers during the summer and early autumn, production of queen and drone reproductives in autumn, followed by the collapse and demise of the colony as winter approaches.

Occasionally there is a depature from this pattern when the founding queen, joined by younger laying queens, continues the brood rearing phase through the winter. This can lend to massive overwintered nests in the following season.

This feature is more common in those areas providing a reliable year-round food supply. Overwintered nests can cause serious harassment to honeybee colonies during the autumn to spring months.

Fluctuations in wasp levels from year to year do not appear to follow any cyclic pattern. Some regions appear to maintain high wasp levels whereas in others the wasp problem is only spasmodic. Forest and scrub lands, gullies and river banks harbour good nesting sites. Light, granular, and well-drained soils, such as pumice and river siltloams, are favoured by wasps.

Beekeepers have noted that cold, wet winters and springs usually result in lower wasp numbers the following autumn. The raising of the water table may limit the number of nesting sites. The premature activation of hibernating queen wasps leading to nest building during periods of warm spring weather may be detrimental if followed by severe frosts.

Attempts to eradicate Paravespula germanica from New Zealand have proved futile. A bounty system on hibernating queens over a three month period in 1948, just four years after its accidental introduction, resulted in the collection of 118,000 queens without apparent effect on the establishment of wasp nests in that year.

Once a wasp colony becomes established and supported by its own foraging and defending worker force its survival is virtually guaranteed. Only severe environmental factors such as floods, earthquakes and fires or man-made disturbances are likely to destroy a mature nest.

The destruction of all wasp nests in the vicinity of an apiary is the only reliable method of controlling honey-predating wasps. For nest destruction the petrol or kerosene method is, in our view, the easiest, safest and most effective way to eliminate subterranean nests located away from buildings.

The fumes from two to four litres of petrol or kerosene poured down the entrance, at dusk, is usually sufficient to kill all but the largest of overwintered nests. Smoke-generating insecticide bombs or insecticide powders such as carbaryl, DDT and lindane are recommended for aerial nests and nests located adjacent to buildings.

A number of sound methods to track down wasp nests, and to reduce the effects of wasps in apiaries and honey houses have been mentioned by beekeepers and are listed in this report.

In recent years the apiary section of the Ministry of Agriculture and Fisheries has conducted wasp bait trials. This testing programme is continuing. It is apparent that protein baits are ineffective in the apiary context. Honeybees tend to be attracted to carbohydrate baits under some conditions, but show less preference for the granular and candied baits.

The ministry requires a bait that will be specific for Paravespula germanica; it must be safe to handle; it must be attractive enough to compete successfully with naturally occurring food sources — for instance, honey. No wasp bait so far tested meets these conditions and therefore a public recommendation cannot be given at this stage.

The European wasp presents considerable opportunities for pure and applied research. Such avenues as population regulation, feeding behaviour and preferences, genetic variability, beneficial and predatory effects, biological and pesticide control, are all open to in-depth investigation. The results of this survey have established the magnitude of the wasp problem as it affects the beekeeping industry, and that for this group alone further investigative research is desirable.

TABLE 3

Hive loss during the 1974/1975 season for commercial category beekeepers (more than 500 hives).

	Totally destroyed hives		Seriously affected hives	
	Number	Cost $	Number	Cost $
Northland, Auckland Waikato, Bay of Plenty	788	14,590	1251	9560
Hawkes Bay, Taranaki Manawatu, Wellington	245	3,100	125	1250
North Island	1033	17,690	1376	10810
Nelson, Marlborough Westland, Canterbury	54	1,700	681	5200
South Canterbury Otago, Southland	262	5,275	971	2900
South Island	316	6,975	1652	8100
NEW ZEALAND	1349	24,665	3028	18910
Average/beekeeper	36.5	$666.60	94.6	$590.90

ACKNOWLEDGEMENT

The authors wish to thank all beekeepers who have participated in this survey.

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MARKETING NOTES

(from the Honey Marketing Authority)

INTERNATIONAL

World honey stocks held by honey packing and honey buying companies have decreased, and the market is settling back to a normal situation. It is considered highly unlikely that any overseas company will return to the speculative importing of 1972-73 in view of their experience in selling excess stock built up through over-importing at that time.

Enquiries received suggest that there is real interest for NZ honey which is highly regarded, and that demand has been increased by NZ entry into newer markets particularly Canada, U.S.A., and the United Arab Republic and the renewed interest from Japan for bulk honey.

Although quality is essential and price is the deciding factor, New Zealand honey is commanding top prices and has been successfully trading on a competitive international market with returns which should prove most satisfactory to NZ beekeeper suppliers.

World honey consumption probably slightly exceeded production during 1973-74. Figures for 1974/75 are not yet available.

NZ packed honey is being marketed overseas in an orderly and vigorous manner and is exported to the five major continents i.e.) North America, Asia, Europe, Africa and Australia, in addition to the Middle East and Pacific Island areas.

DOMESTIC

Many beekeepers took advantage of the arrangements made by the H.M.A. in purchasing scales and the majority are supplying to a standardised nett 305 kg weight.

The Overseas Gift Parcel Scheme was successful. However, increased domestic and external freight and postage rates no longer make this a viable proposition at present prices. The authority is discontinuing the scheme at least until inflationary aspects of the economy have settled down.

The domestic honey price was increased by the authority on April 5, 1976. The complete wholesale price list is published on this page.

The price change was made after careful consideration and to recover many of the increased costs incurred in packaging, freight and in-line services over recent months.

WHOLESALE PRICE LIST EFFECTIVE APRIL 5, 1976

Calculated in accordance with the Stabilisation of Prices Regulations 1974

Please Note: Two Weight sizes, Imperial and Metric, are listed for your convenience.

	SIZE	DOZEN PER CARTON	WHOLESALE PRICE PER DOZEN $
HOLLAND & SWEET MEADOW CLOVER			
Imperial Weight	½ lb. pot	4	3.12
	1 lb. pot	4	5.88
	2 lb. pot	2	11.64
Metric Weight	250 gramme pot	4	3.29
	500 gramme pot	3	6.21
	900 gramme pot	2	11.64
	400 gramme glass (liquid)	2	6.13
	2 kg. tin	1	27.17
SWEETMEADOW LIGHT & RICH AMBER			
Imperial Weight	½ lb. pot	4	3.04
	1 lb. pot	4	5.80
	2 lb. pot	2	11.44
Metric Weight	250 gramme pot	4	3.20
	500 gramme pot	3	6.13
	900 gramme pot	2	11.44
SELECTED SOURCES			
Imperial Weight	½ lb. plastic pots	2	3.54
	3 x ½ lb. gift pack	1	12.13
Metric Weight	250 gramme plastic pot	2	3.70
	3 x 250 gramme gift pack	1	12.72
	400 gramme glass jar (cream)	1	5.96
	2 kg. tin	1	27.17
	15 kg. tin		15.55
	30 kg. tin		29.94

PRICE INCLUDES:

1. Freight into store for orders of thirty (30) cartons and over.
2. Freight to nearest railhead for orders of ten (10) cartons and over. Freight to clients' account for orders under ten (10) cartons.

FROM THE COLONIES

CANTERBURY

The Annual Field day was held at David Penrose's honey house near Leeston on March 13. After a summer of dull changeable weather the district experienced a hot dry autumn, ideal for the outdoor demonstrations and discussions enjoyed by a large number of beekeepers who attended from many parts of the South Island.

Gavin McKenzie gave a report on N.B.A. Executive matters, and Russell Poole covered H.M.A. affairs.

After lunch, the honey extracting plant was set in motion and the operation was explained with special reference to the very efficient cappings melting equipment developed by Mr Penrose. Filling, weighing, handling and moving of 44 gallon drums was also demonstrated. John Syme produced a very simple but ingenious trolley for moving 44 gallon drums. Earlier John had demonstrated the loader on his truck which has proved very successful. David Penrose also demonstrated a new type of boom loader which he had completed building only a few days earlier and many beekeepers tried their hand at operating it.

A panel consisting of Harry Cloake, Jasper Bray and John Syme gave their methods of preparing hives for the winter and each demonstrated his own type of bottom board and explained its particular advantages both to the operator and the bees.

Thanks are due to David for the use of his property, and to his wife Moira who, with the help of some friends provided morning and afternoon tea and lunch.

A number of visitors accepted David and Moira's invitation to join them in a barbeque tea which proved to be a pleasant ending to a successful field day.

R. Poole
Christchurch

WAIKATO

This past season will go down as the worst that the Waikato — Rotorua — Taupo beekeepers have ever experienced. Production is from ½ to 1 tonne per 100 hives, and in many cases large numbers of hives gathered as good as nothing, and have to be fed with honey from other areas or with sugar.

Rural Bank finance has been made available, and is the "in" thing. Just how much is going to be spent to salvage outfits is being estimated by all, and sums of $20,000 to $40,000 just to keep the bees alive makes one wonder how many seasons it will be until we can finance our businesses again.

Closing down hives has been quite a job as most hives have empty brood boxes, and a lot of work is involved in putting honey down. There will be no excuse for not being able to have a big boil up of old brood combs this winter.

Very little queen rearing seems to have been done this autumn, and some who did, sent their queens to Canada.

Waikato Branch was saddened by the deaths of Bruce Forsyth, past NBA president, and member of the HMA, and Norman Tuck, branch secretary for many years.

We are poorer for their passing, but richer for having known and worked with them.

C. Bird

OTAGO

The majority of hives in our part of the country have not produced the crops of honey during the past season one would care to write home about. There are some lucky apiarists of course who have done better through being in a more favourable situation this year.

The annual field day was a very successful affair indeed. The day, in March was a lucky dip. Calm and

FROM THE COLONIES

sunny. The attendance large, the programme tops. The scene at Sawyers Bay, next door to Port Chalmers, could not be bettered. The view across Otago Harbour is like a picture post card.

Next to the hall where the field day was held we had the new honey house of John Dale and John Tardett. Really up to date and showing us what a honey house should be like for the number of colonies they operate at present.

We must tell you about the nice little nugget recovered by one of our members, Chas. Foote. Charlie, besides bees, keeps quite a few hens. One day he decided it was time to do some slaughtering and out of a dead hens gizzard comes this nugget. The jeweller says it is pure gold and worth about 20 bucks. Sorry to say the other victims did not produce any windfalls. Just goes to show that not only beekeeping can be a gold mine (has it ever been?).

And now the next thing is to get our stand for the winter show in Dunedin under way. Queens Birthday week end is the Otago winter show time. On the Tuesday after we will have the annual Otago and Southland Beekeepers' Convention which has now been going for many years. Those interested, don't forget the date: June 8, at the Pioneer Womens Building, Morray Place, Dunedin, 2 p.m. (commercial) and 8 p.m. anybody.

John Heineman
Milton

HAWKES BAY

The news of the death of our apiary instructor, Mr Dick Hobbs, came as a great shock to Hawkes Bay beekeepers. Dick had many friends in Hawkes Bay and he will be missed at our meetings and field days where he was always willing to help out with his cheerful discussions on beekeepers' problems. The branch extends its sympathy to Mrs Hobbs and family.

Our new apiary instructor, Mr Bill Rodie, attended our field day held at Paul Ashcroft's honey house on March 27, 1976. As the field day was well-attended it was a good opportunity for beekeepers to meet Bill and wish him well for the future in what appears to be a formidable task, covering an area which was formerly covered by three instructors.

Bill figures he can cope and we assure him that Hawkes Bay beekeepers will do their share to assist him in keeping the incidence of disease in this area down to the present low level.

During our field day a talk was given on two queen hives and a demonstration on the removal of honey from the hives. This was followed by an extracting demonstration by the Ashcrofts, showing their new uncapping machine. The first in the Napier Hastings area.

Everyone was impressed with the neat, tidy and efficient set up to enable one person to extract the crop. The wide range of quality packs on display drew many favourable comments. The field day was rounded off with a delightful afternoon tea turned on by the ladies.

Most Hawkes Bay beekeepers have now completed extracting this season's crop and while the excessive rain during the summer spoiled what could have been a very good season, we have not had the disastrous season some other areas have experienced. The extraction would vary from about half to two supers per hive, with an average of about one super. Not what we would call a good crop, but as we have only had one really good season in the past eight we are learning to make a living from other than good crops and who knows, the next season may be the one for which we have been waiting.

Ian Berry

SOUTHLAND

As in many other parts of the country, Southlands' honey crop was a fraction of the normal and the chore of many weeks extracting honey was not experienced by many.

Apiaries which were well-sheltered from the south, put on better crops, as did those further inland, but "exposed positions" yielded little surplus.

However, someone, having worked out a graph on past seasons' crops, has intimated that next season will be a big one, so fortunately most of us will have no problems regarding empty drums for at least the first round!

Mild weather over the past few weeks has prolonged brood-rearing and colonies will have consumed a few pounds extra of winter stores — not so good.

On the other hand, the fact that considerable fresh pollen has been stored, would more than compensate and will certainly help towards prevention of losses in the spring from Nosema.

Allan Ward

NORTHLAND

After a bad spring, Northland's season appeared to be settling in to be a very good one. Up until a few days before Christmas hives were producing very well indeed, the flowers were looking good everywhere things looked great.

However it was not to be. At Christmas it started to rain and didn't stop until the end of January.

We all thought the season had had its chips, but all was not lost. at the beginning of February the sun started to shine again, the bees started flying again and the honey started to come in again. In some areas the bees made up for lost time and gathered as much honey as the year before. The bush areas produced particularly well and extended into March.

Some beekeepers were less fortunate than others and still had a poor season however. A reasonable average of four tonnes of honey per 100 hives was achieved in some areas.

P.G. Smith
Whangarei

WEST COAST

The season just past must surely be one of the most topsy turvy ever, with weather as cold as winter and as wet as spring in the middle of summer and as warm and pleasant as summer should have been during autumn.

Kamahi flowered prolifically before Christmas in unsuitable weather and now it is flowering again and might boost stores a bit. Some other trees including fruit-trees are following suit and some gardeners have collected two crops of pumpkins off the same vines.

The rata vines failed to flower to any extent so we finished up with a crop not much better than half of average. The flavour of honey produced here in the south is proving very popular being well laced with lotus major and blackberry nectar.

A very enjoyable and instructive evening was held at Rod Buchanan's honey house, when about 40 beekeepers and friends turned up to inspect his equipment and processing plant at Paroa near Greymouth.

Our very popular apiary instructor, Jack Varley, was in attendance.

After the shed inspection a very informal meeting was held outside, the latter part of which was watched over by many stars and a friendly moon.

Once again the Forestry came in for some criticism for appearing to remove, or allow to be removed far more rata from the forest than seems necessary and bitterest fill of all, just when a cut over forest had rejuvenated to 12 ft ratas promising a nearby apiarist some good future crops, a dozer was put in, and the lot flattened.

It transpired later that since some Federated Farmers considered the area wasteland it may have had some influence on the clearing.

Weather has been well near perfect for many weeks and still is in May with clear skies, no wind and mild.

Peter Lucas
Harihari
Westland

BEEKEEPERS TECHNICAL LIBRARY

Library of The National Beekeepers' Association of New Zealand Incorporated.

Honorary Librarian: Chris Dawson, P.O. Box 423, Timaru.

Books and magazines are available to members for a loan fee of up to 20 cents per book. Catalogue and copy of rules will be sent on receipt of stamped addressed envelope.

The library wishes to express its thanks to the committee that arranged the "1976 Queen Bee Production Course" at Flock House in January 1976, for a copy of lectures and study material used at this course. It is a useful addition to the library.

WITHDRAWAL – The book, "Bees are my Business" by Harry Whitcome has been withdrawn from the catalogue. Our copy was kindly lent for seven years by Mr J.R. Simpson of Gore. – Thank you Mr Simpson! This is a popular book and if any beekeeper has a copy that he would lend, it would be greatly appreciated.

Chris Dawson
Librarian

NEW FRONTIERS

Three New Zealand bee lines evaluated

MOST RACES OF honey bees suitable for commercial beekeeping have been introduced into New Zealand. Italian strains now predominate. Because of the regular interchange of queen bees among beekeepers, and the promiscuous mating habits of the honey bee, New Zealand stock has become fairly homogenous.

Many beekeepers consider the darker strains to be better honey producers and hence the tendency has been to breed such strains, a practice often resulting in progeny of rather uneven performance.

As the importation of honey bees into New Zealand is undesirable, any improvements in performance will depend on the selection of desirable characteristics in local stock.

Because of the complexity of the method, selective breeding has had little practical application to beekeeping. Although artificial insemination has been applied, it is not yet feasible commercially.

The aim of a recent study by Mr I.W. Forster was to test the validity of opinions held by beekeepers on breeding and to discover how advantageous selections could be made on the basis of characteristics shown by three selected lines.

This study indicated that honey production varied little between lines of honey bees, though sacbrood was significantly lower in one line in one season. There was a marked line difference in the propensity to sting, and a significant association between colour and tendency to swarm.

In selecting breeding stock it appears that beekeepers should choose queens whose progeny are evenly marked and light coloured. This should favour a reduction in both swarming and propensity to sting

From N.Z. Journal of Experimental Agriculture Volume 3, 1975.

Bees essential for kiwifruit

THE APICULTURE SECTION of the Wallaceville Animal Research Centre has recently released the results of its investigation into the role played by honey bees and other insects in kiwifruit pollination.

To determine the degree of pollination obtained in the absence of honey bees, sleeves of nylon net were used to enclose branches of vines before flowering commenced. The mesh offered very little resistance to wind, and pollen could enter the sleeves, as could small insects such as thrips. However, honey bees, bumble bees, and the larger insects were excluded. The sleeves were removed when flowering had finished.

The results of three experiments — one in 1973 and two in 1974 — showed that an average of only 20 per cent of fruit from sleeved flowers was over 60g compared with 98 per cent in the controls. This indicated that satisfactory fruit size depends almost entirely upon visitation by larger insects.

Honey bees, bumble bees, native bees, thrips, and hover flies were the only insects observed visiting flowers in the daytime. No nocturnal insects were seen on the flowers.

Of these insects, only honey bees were present in numbers capable of obtaining the level of pollination required to produce fruit of satisfactory weight.

Honey bees gathered pollen, with some difficulty, from both male and female flowers. The pollen appeared to be more attractive to bees in the mornings, probably because they could gather it more easily when it was still damp with dew.

Because the kiwifruit flower produces no nectar, and a dry pollen, honey bees prefer to visit flowers of citrus and white clover, which produce both nectar and pollen. Both these plants were flowering within bee range of all the orchards studied.

It is therefore necessary to saturate these sources to ensure that honey bees will visit the kiwifruit.

A tentative recommendation of eight hives per hectare of producing vines was made. This proved satisfactory in 1973, but to check whether a higher density would increase the size of fruit in 1974 an experiment was carried out using cages.

This experiment showed no advantage in favour of higher honey bee densities and thus the original recommendation still stands.

From a paper by T. Palmer-Jones and P.G. Clinch, scientists, Wallaceville Animal Research Centre, Private Bag, Upper Hutt.

FOR SALE

Approx. 800 hives situated in good central Waikato area.

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BEE CRAFT - The official (monthly) magazine of the British Beekeepers' Association, contains interesting articles. Annual subscriptions: £2 (Post paid).

Write: The Secretary, 21 West Way, Copthorne Bank, Sussex, England.

EMPLOYMENT

KEEN MAN

with some experience requires one season's work with progressive beekeeper, preferably in North Island, starting about October.

Derek Bettesworth
27c Lorna St.,
New Plymouth
phone 75017

INTERNATIONAL BEE RESEARCH ASSOCIATION regularly publishes new information on bees, beekeeping and hive products, for beekeepers and scientists all over the world. IBRA Representative for New Zealand: G.M. Walton, Advisory Services Division, MAF, Private Bag, Palmerston North. Catalogues of publications and details of journals and membership $0.55; specimen copy of journals: **Bee World** $1.10, **Journal of Apicultural Research** $1.10, **Apicultural Abstracts** $1.55. INTERNATIONAL BEE RESEARCH ASSOCIATION, Hill House, Gerrards Cross, Bucks. SL9 ONR, England.

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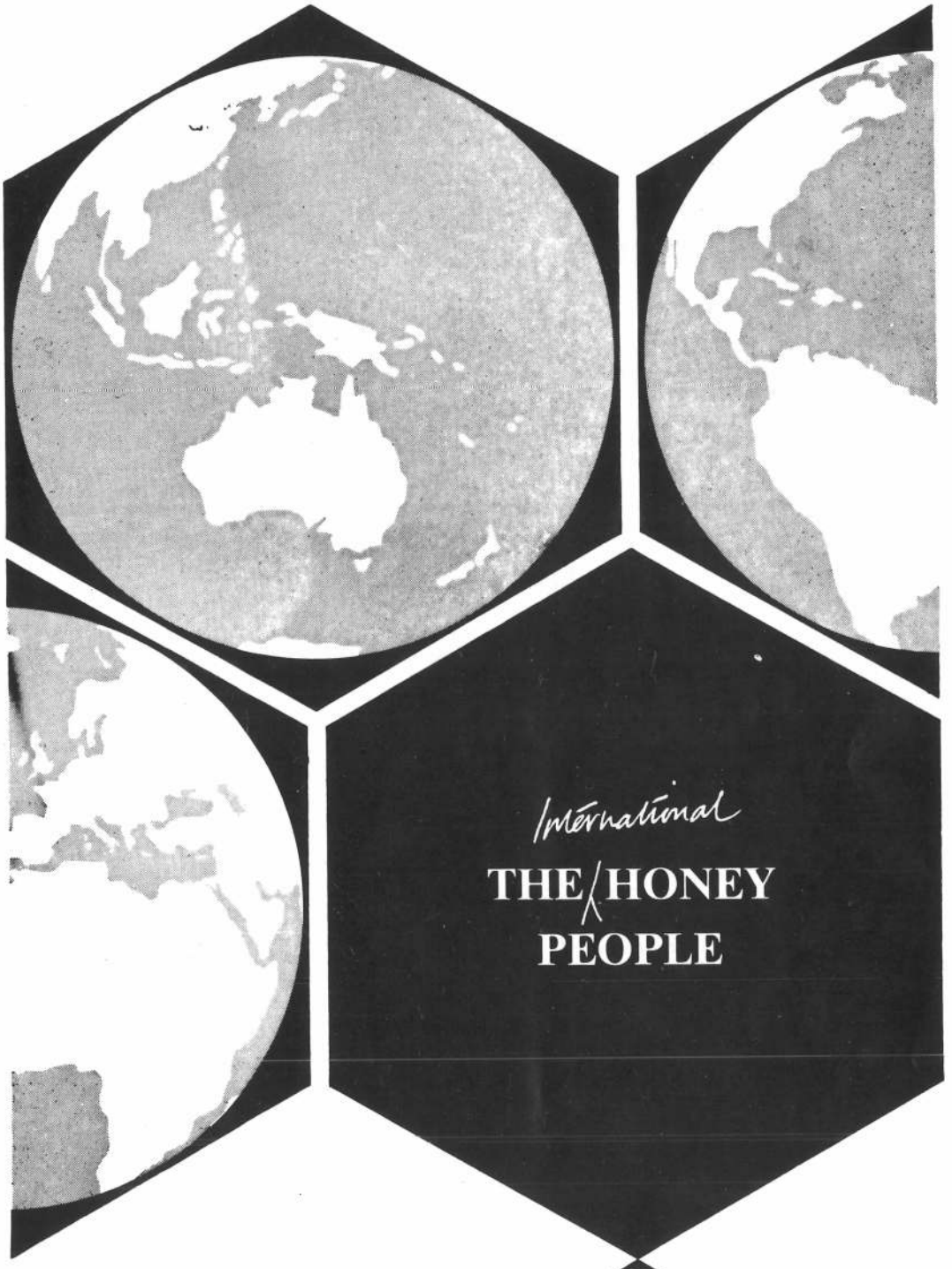

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