The New Zealand BeeKeeper

Autumn 1984

The New Zealand BeeKeeper

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

CIRCULATION 1,400
To Members of The National Beekeepers' Association of NZ Inc who own more than 50 hives each and so are legally subject to the annual hive levy. THESE HIVE LEVY PAYERS OWN APPROXIMATELY 87% OF ALL BEEHIVES IN NEW ZEALAND.
To Beekeepers with less than 50 hives who subscribe to the journal at $12.50 a year which also includes membership of the National Beekeepers' Association of NZ Inc.

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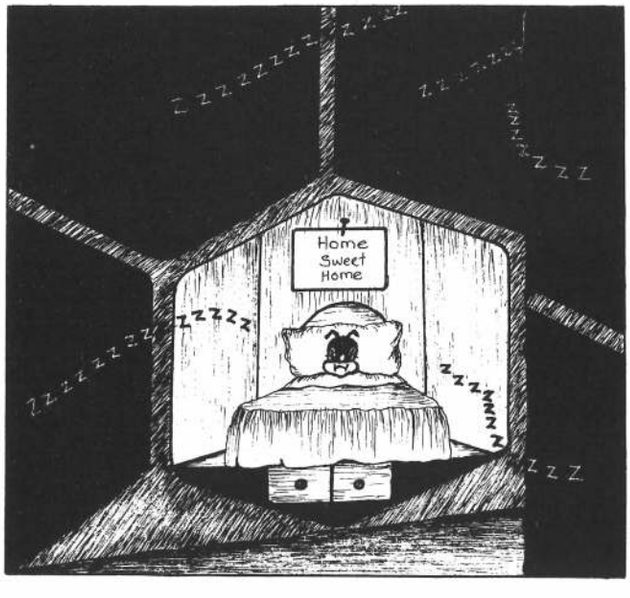

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Time to haul up the socks

New Zealand has some 6,500 beekeepers. Less than 20 percent subscribe to The N.Z. Beekeeper. That is ominous.

Is it presentation? Is it content? Is it that the magazine does not involve the majority of beekeepers?

Traditionally there has been an attitude that trade journals must be dull. To be "worthy" they must be ponderous. The duller and more ponderous the worthier.

That is not to suggest that The N.Z. Beekeeper has of necessity been dull; nor is it a reflection on the competence of previous editors. Like this one they could work only with the material available.

During WWII both British and Americans made training films. The British films were competent, technically prefect, contained the required information in the correct sequence, but were unutterably dull and guaranteed to send even the keenest recruit to sleep.

The Americans, however, brought in Walt Disney. The same degree of competence, the same perfection of presentation, the same information, but encapsuled in entertaining cartoons. Recruits enjoyed these cartoons and the degree of retention of the message was high.

I do not suggest that The N.Z. Beekeeper should be turned into a comic book. Far from it. But there is room for an enlivened presentation. That is now happening.

But there is a limit to what can be done with present resources and finances available. To provide a first-class journal we need more money and that money must come from advertising revenue.

We now have a strong advertising campaign under way. The 125 advertising agencies in New Zealand have already been approached and, as time goes on, more and more overseas advertisers will be contacted.

However, as yet our case is not strong. The advertising dollar is tough to trap, and we have two strikes against us from the start: no full colour and a small, very small, circulation.

Here we have the chicken and the egg situation. To catch the elusive advertising dollar we need at least some full colour and a much larger circulation.

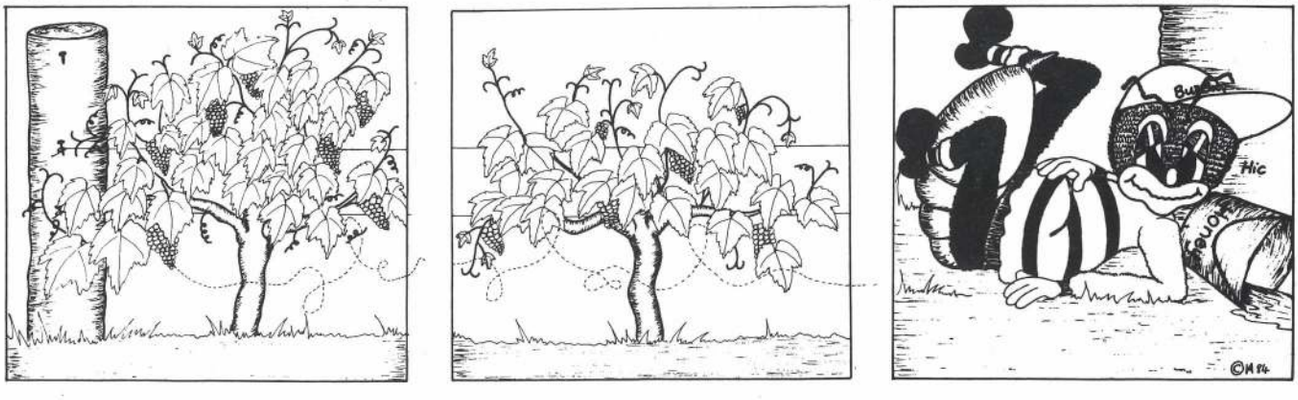
Your executive will do its best. Our team here will do its best. But we need your help. Every subscription you bring in will be another rung upwards on the ladder. Every letter, view, article, photo you send in will help strengthen the editorial content. Let us all pull together.

Remember, this is your magazine, for you: The New Zealand Beekeeper.

Michael Burgess,
Editor.

BUZZ BEE

1984—Bound to "Bee" a vintage year



To the Editor

Dear Sir,

Could I please mention Chalkbrood from one queen breeder's viewpoint.

The MAF flying survey, done inside a week, is now a scare of the past and no doubt we shall see the results of this survey in good time.

I cannot help but feel that it was an exercise to see how quickly the MAF could get into gear in the event of a major exotic disease outbreak. If this is a fact, congratulations MAF. You got into gear fast but you scared us out of ours in the process. Thank goodness none of the queen breeders have it as yet in their queen breeding outfits, so that does give us a small breathing space. But what of this disease which the media has branded a killer disease?

After reading all the headlines I felt I should extend my limited knowledge on chalkbrood which I have hitherto thought not an important disease.

Well I know that gorse and one or two other exotics went berserk on arrival in New Zealand. But I have yet to read of any country in the world (and it appears to be in all but Australia) that considers this disease to be of major importance. I have learned that like sac brood we can breed resistance to chalkbrood, and by keeping our hives on a sunny site, well ventilated and higher off the ground than we normally do, we can minimise its effects.

While we could have done without chalkbrood, I believe it could be of beneficial effect in the future by making us that much more aware of the constant vigil required to keep us free of other exotic diseases.

Don Gibbons,
Crown Queens Ltd,
Waipu.

Dear Sir,

Some would believe that the industry has a good future with the extra demand for hives for pollination, But I wonder if you would get the same reponse from commercial beekeepers who have had their hives stolen?

After getting the hives through a difficult spring to find that someone has taken your effort and property is soul destroying.

Maybe the industry should close its ranks so that the efforts of these devils by night will not be rewarded.

A. Ellis,
Mt Wellington.

(The NBA recommends hive branding as a way of making theft more difficult.—Editor.)

Dear Sir,

In Europe recently, my wife and I, mostly accompanied by our daughter Amanda, visited research stations and universities to discuss various treecrops but in particular the sweet chestnut.

Where possible we took the opportunity to discuss apiculture as it applied to pollination, management methods, and crop, partly because of our own interest as beekeepers, and also to make contacts for our daughter Dianna who is a beekeeper intending to be in North America and Europe in 1984/85.

One of the things we discovered was the beautiful sweet chestnut honey from the forests of Italy and Switzerland. After our first jar we ate no other during the three months we were away. The honey has a beautiful texture (liquid) and the nearest I can describe it would be as the caramel filling in chocolate: it is quite delicious.

We have colour slides of beehives in Italy and also of a very interesting Swiss trailer set up for six hives used partly for pollination and partly for gathering nectar. In due course we will arrange for prints to be sent to you for possible publication in The New Zealand Beekeeper.

Ernest New,
Invercargill.

(It will be most interesting to see these photos. I have written to Mr New asking him if he would be prepared to write an article on beekeeping in Europe as he saw it—Editor.)

* * * *

BEES RETURN TO CHATHAMS

Bees have staged a comeback in the Chatham Islands thanks to the efforts of the Ministry of Agriculture and Lands and Survey.

Twenty years ago the Islands had no bees, says livestock officer Ross Bambry.

Until recently bees did not survive in the Islands. Introduced in the last century they were extinct by 1980. Several subsequent attempts were made to re-establish them but to no avail.

That was until the late 1950s, when the Department of Agriculture, Federated Farmers, and various residents got their heads together.

Investigations showed that isolation and inbreeding had devastated the hives. To counter that hives were established with quality queens from the mainland.

Some of these queens did not survive the winters. But last year brood nests were protected with plastic sheets.

Since 1978 hive numbers have risen from 18 to 130: a dramatic increase but still far short of the 400 hives Mr Bambry considers the Islands could carry.

Now two apiarists visit regularly from Canterbury to advise embryo apiarists and to encourage farmers to keep bees.

A spin-off for farmers could be the improved pollination of clover, better feed for lambs than ryegrass which can cause staggers.

There is also the matter of export earnings. Last year 150 kg of honey were exported. The first ever shipment.

* * * *

PESTICIDES

NBA President Ian Berry has received the following letter from Kathy Polhl, Secretary of The MAF Pesticides Board.

"As you will know the Publicity Committee decided at its November meeting to investigate the possibility of producing a poster concerning the problems of pesticides toxic to bees.

Your Association has agreed to provide financial support towards production costs, and I discussed the matter with Mr Watts and he agreed the Board could also contribute its share of the costs.

I have contacted Murray Reid (Apicultural Advisory Officer, Hamilton) concerning the wording and layout of the poster and also for a clear idea of the 'target audience'—horticulturists (Kiwifuit, berryfruit, orchardists etc).

Once a draft of the poster is available Graham Walton (Chief Advisory Officer Extension) will investigate production and the Ministry's contribution to costs. It is possible we will reach the draft stage in time for the Board's Publicity Committee meeting in March. If so, I will contact you and you may like to attend that meeting."

* * * *

APOLOGY

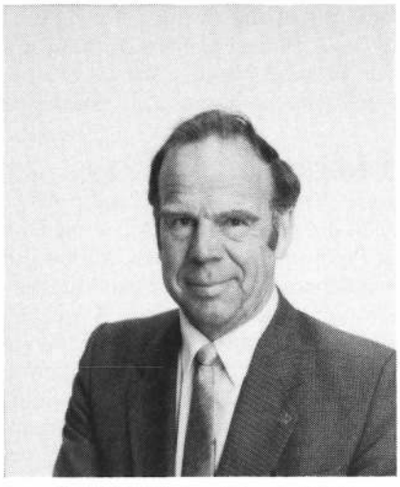
A most serious mistake was made in the December 1983 issue of the New Zealand Beekeeper.

In the WHITELINE QUEENS advertisement on page four old prices were listed instead of those current. This caused considerable inconvenience and embarrassment not only to the firm WHITELINE QUEENS but to their many customers.

This mistake should never have happened. Nothing can excuse it. The New Zealand Beekeeper apologises most profoundly to WHITELINE QUEENS and to their managing director, Mr Terry Gavin.

We sincerely hope that the Company will accept this apology and that this regrettable incident will not mar our future business relationship.

The President's Report



President Ian Berry NBA

THE HONEY CROP: Reports from around the country at the time of writing seem to indicate a well below average honey crop so far this season. There are still good prospects for a late flow in some areas if the weather improves, but the chance seems to have gone of a really good crop this year to help compensate for last year's light or non-existent crops. After heavy sugar feeding to keep the bees alive during the difficult spring, some beekeepers will be facing severe financial problems if the hoped-for late flow doesn't eventuate.

Those beekeepers who have been worried about possible marketing problems if New Zealand should have had a bumper crop this season should have less worries than they expected, what with the anticipated light crop and the fact that the stocks of honey in the country at 1 January 1984 must have been at the lowest level for many years. Perhaps it will also bring home to some that marketing honey is not just a matter of spending money on advertising and promotion. Maintaining a continuous supply of honey to your customers is also important and can prove difficult during a run of poor production years.

CHALKBROOD: The confirmation of chalkbrood in Northland made the news media in a big way. Apparently it had not been the Ministry of Agriculture and Fisheries' intention to create such a sensation, but the gathering of so many advisory officers at the meeting in Auckland on 20 January 1984, followed by their visit en masse to Northland, was closely watched by the media. At the time there were foot and mouth threats in Australia and it was considered prudent to forestall any false impressions that might have arisen.

I attended a meeting of the Northland Branch of the NBA in Whangarei on January 23, 1984 to discuss the chalkbrood problem. Northland President Malcolm Haines chaired the meeting which was well attended by beekeepers, the MAF, and the news media. Auckland Apiary Advisory Officer Brian Milnes outlined the developments to date and useful discussions were held, with several of the beekeepers present giving their experiences with the problem.

Next day I travelled with Terry and Pat Gavin and some of their family to Kerikeri to get a first-hand look at chalkbrood. We were taken by a local beekeeper to an apiary of 62 hives in which five hives had shown signs of chalkbrood. Looking through one of the infected hives, it was obvious that the hive was throwing off the effects as we were unable to find any sign of the disease in its early stages. There was still about 5 percent of the brood dead in the cells, mainly on the outer edges of the brood nest, and perhaps 50 mummified larvae lying on the floorboard. The Kerikeri beekeeper is farming about 800 hives and is building up his hive numbers rapidly to meet the needs of the kiwifruit growers in his district. Apparently in no case had he had a high percentage of hives affected in any apiary and the greatest amount of diseased brood found in any one hive was not more than one-third of the total.

While in Kerikeri we also called at the headquarters of the MAF survey team which had already checked a number of apiaries. They had had many telephone calls from hive-owners in the area and were finding local beekeepers very co-operative. There had also been a good response from owners of unregistered hives.

While at the time of writing the results of the survey have not been evaluated and Dr Shimanuki has only just arrived, I think it is still possible to draw some conclusions from discussions in Northland and also with people from all over New Zealand who have had experience overseas with chalkbrood. Subject to change as more information comes to hand, I would suggest the following:

1. Chalkbrood has probably been in the area for several years.

2. The number of hives infected and the area they are spread over means it would be pointless to attempt an eradication programme.

3. It seems likely that it will be discovered in other parts of New Zealand when people know what to look for and start checking their hives.

4. Most overseas countries already have chalkbrood and its economic effects are fairly minimal: about on par with the effects of sac-brood in New Zealand.

5. Its most serious economic effect on beekeeping in New Zealand could easily prove to be the loss to the industry of several Northland queen breeding businesses. Poor honey crops and rising costs without a compensating increase in the price of queens have meant times haven't been easy and, if the discovery of chalkbrood results in reduced or cancelled orders for queens, they will find it difficult to carry on.

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EXECUTIVE MEETING: We had a full attendance of our executive at the meeting held in Wellington on 23-24 November 1983. Also in attendance was the Executive Secretary, Mr S. C. Goodman. Other people attending at times were Mr M. Reid, MAF; Mr M. Burgess, Burgess Media Services Ltd, and Messrs E. Hall, M. Kennedy, I. Young and R. Riddell from the Agriculture Training Council. Once again we found we had a very full agenda and many decisions to make. Among the more important were the following:—

NEW EDITOR FOR "THE NEW ZEALAND BEEKEEPER" After much discussion and evaluation of the four firm applications received, it was unanimously decided to appoint Mr Michael Burgess of Burgess Media Services Ltd. It was also decided that the same firm would handle the advertising. The main factors which prompted us to arrive at this decision were the price quoted, the convenience of having our editor based in Wellington, and the favourable impression made by Mr Burgess when he attended our meeting. I am sure all members will join with me in wishing Michael and his team a long and happy association with the beekeeping industry.

INDUSTRY PLANNING: Since our meeting it has been confirmed that our next executive meeting will be held in Wellington on Tuesday, May 1, 1984, and we will then move to Flock House where we will commence a planning meeting after lunch on Wednesday, 2 May. This meeting will conclude on the Friday morning. Besides the executive, it is hoped to have Murray Reid, Andrew Matheson, Cliff Van Eaton, and Michelle Forsythe from MAF, Nick Wallingford and Paul Marshall from the beekeeping education field, and Russell Berry and Ivan Dickinson, the two beekeeping trustees of our trust funds, there. During the meeting we will be doing a "SWOT" analysis; i.e. identifying our industry's Strengths, Weaknesses, Opportunities, and Threats. We will also be setting out what we feel should be the main aims of the NBA and preparing a plan for the future. I anticipate that once we have done the spadework at the May meeting, industry planning will become a regular part of the NBA work at both branch and national levels and that all beekeepers who wish to do so will be given an opportunity to make their contribution.

BEEKEEPING EDUCATION: Tony Lorimer and I represented the executive at a meeting at the Bay of Plenty Community College on October 28, 1983. Also in attendance were Kevin Hearle, Barry Mead, and Nick Wallingford from the College, Murray Reid and Trevor Bryant from the MAF, and Russell Berry and David Warr, local beekeepers. Tony and I were able to report to the executive that a lot of progress had already been made. Nick has settled in well and has already conducted a number of beekeeping courses. The proposed two-year, 12-module National Certificate Course in beekeeping is well advanced and should be ready to commence by early 1985. Resource material for use in beekeeping education throughout New Zealand is already building up for use in beekeeping education at the college. New buildings for demonstrating extracting, etc., have been erected and the fact that the sum of about $100,000 has been spent on beekeeping education during the past year at the college gives some idea of the rapid progress made. The certificate level course in beekeeping as proposed by the Bay of Plenty Community College was considered and accepted in principle by the executive. Useful discussions were held with the four members of the Agriculture Training Council who have offered to help us bring together the various resources available to assist us in our efforts to provide the industry with the best possible education programme.

1984 CONFERENCE: This will be held on Wednesday and Thursday, 25-26 July, with a seminar on Tuesday, 24 July. The venue will be the Devon Motor Lodge, New Plymouth. Full details will be published in the June Beekeeper, but in the meantime the executive has the following timetable in mind. A 'get-together' on Monday evening. Tuesday evening to remain free for the meetings of the various specialty groups, and the dinner and dance to be on Wednesday evening at the Racecourse Complex. The South Western Districts Branch of the NBA, hosting the 1984 Conference is already working with enthusiasm to ensure the conference will be both successful from a business point of view as well as enjoyable and interesting. For my part I will endeavour to see time is available for everybody who so wishes to put forward his ideas on industry planning, probably using 'buzz groups' such as we had at the Waitangi conference.

In spite of the fact that we had a two-day meeting instead of our normal one-day November meeting, we ran out of time before we were able to study the subject of industry promotion. Hopefully this will be covered at our meetings in May.

BRANCH MEETINGS: Besides the meeting in Whangarei, I have recently received, and have been pleased to accept, two other invitations to branch meetings. One was Wanganui where I was able to bring the branch up-to-date on what we were doing at national level, and also learn some of the problems and developments of the area. The 1984 Conference was also discussed. A visit to Nelson to their Christmas dinner meeting enabled me to examine some of the problems they were having with spray damage to hives pollinating kiwifruit. Among other useful suggestions made during the evening were a couple of good ideas for improving the content of the Beekeeper. My thanks to both these branches for their invitations and their hospitality. May I conclude this report by reminding branches that members of your National Executive consider it part of their duties to make themselves available to branch meetings where branches feel such visits would serve a useful purpose.

Ian Berry

30 January 1984

Scientist Discovers Boon for Beekeepers

A chemistry professor at Humboldt State University has discovered an inexpensive way to subdue aggressive bees while harvesting their honey.

Dr William F. Wood found that smoke from burning hair or chicken feathers produces anaesthesia in the so-called "African killer bee." This could be a boon to beekeepers in Africa and America who harvest honey from the bee.

Beekeepers commonly use smoke to calm European honeybees. Smoke from burning wood, pine needles or cow dung might be used, according to Robert Hitte, beekeeper and part-time instructor at Humboldt State. The bees are tricked into thinking their hive is on fire and they gorge on honey. The stuffed bees are too fat to bend over and sting the beekeeper.

African bees are a different matter. They aren't calmed by ordinary smoke and will still sting unless they are anaesthetized.

Wood got the idea to use burning hair while he was in Kenya several years ago. Beekeepers there use smoke from a burning puffball (a mushroom-like fungus) to anaesthetize African bees.

"The puffball smelled like burning hair to me," Wood said. His experiments at Humboldt showed burning hair and chicken feathers produce a chemical, hydrogen sulphide, that "completely knocked out" a group of honeybees for up to 20 minutes. The bees recovered with no ill effects.

Since puffballs are scarce and not readily available in some parts of the world, Wood thinks his research will help commercial beekeepers in the U.S. and developing countries.

"The ferocious African bee was imported to Brazil in the late 1950s for breeding experiments to improve honey production," Wood explained. A number of the bees escaped into the wild and subsequently spread throughout much of South and Central America.

"The 'Africanized' bees are more productive than European honeybees, but they still retain the aggressive behaviour of their African ancestors," Wood said. The bees have now reached Costa Rica on their migration north from South America and are expected to enter the southern U.S. in five to seven years.

"When swarms reach the U.S. beekeepers will have to adjust to the aggressive nature of the 'African killer bee.' "

COMMENT

Michael Burgess

Bees may live in a colony but the time has long gone for New Zealanders to do so.

Since the ratification of the Statute of Westminster in 1947, we have been a sovereign nation. Yet 37 years later, despite the advent of the Common Market, and the consequential loss of virtual automatic access to the British market, we are dogged by the emotional attitude that we are too young a country, too inexperienced, too gauche to compete on world markets without government subsidies, without protection in traditional markets, in fact without the coddling offered a small child by a parent.

We are told by politicians that Britain "must" do this or that for us. Why should Britain do anything for us? She has her own problems, as many, sometimes more, than she can cope with. It may of course by argued that we were booted somewhat unceremoniously out of the nest, and perhaps we are owed something for that, but the fact remains that we are now on the ground and if we don't watch out the neighbour's cat will get us.

Part of this colonial thinking is a national inferiority complex. Instead of relying on home-grown expertise, expertise familiar with our problems, we insist on bringing in overseas "experts" to rationalise railways, airlines, whatever, at fantastic cost, while we tell ourselves that because of distance, small production runs, and umpteen other invalid reasons, we cannot compete on overseas markets.

Sure we have problems in competing. What industry, what country, does not? Sure we need experts. Every industry does. But the fact is that one of our greatest exports is expertise. You may find New Zealanders in every country, every overseas industry in the world. And this is not only because pay rates are higher. The old adage that a prophet is not without honour was never more valid than in New Zealand.

Certainly we must learn from overseas, grab all the knowledge we can. That is only business sense. But please, oh please, let us not be overawed by someone who comes from somewhere else, just because he comes from somewhere else, and who is frequently no better than and often inferior to, the native New Zealander.

We usually have a surplus of honey to export and the world market is big. The Department of Trade and Industry agrees but says "it is not as simple as that". Of course it isn't. Nothing is "as simple as that". If it were so everyone would be in on the act with the consequential result that there would be nothing in it for anyone.

There is a large potential market for honey throughout the world. ***That*** is the simple statement. Now we must cash in on this market by establishing a strong marketing thrust. The world needs to know about New Zealand honey. It must be convinced that our honey is a superior product.

That will not be easily done, but it can be done. However, we must first learn to walk before we can run. A strong, cohesive, closely-knit and forward thinking industry must be built in New Zealand first. It will need you in Invercargill developing that new kind of hive, you in Waitomo with a new idea for packaging, you in Kaitaia with a new strain of queens.

The fact that, on world standards, you may consider yourselves "backyard" may well be an advantage. More inventions and developments have come out of backyard bicycle sheds than have emerged from the laboratories of heavily-subsidised universities or the "think-tanks" of big business.

It's really over to you. *

POSTERS AND TAGS

The Association will order 10,000 "bee tags" and 500 "trees for bees" posters. Branches are being advised of this and when both tags and posters are received they will be made available to branches. Anyone interested in developing this programme should contact their local YMCA or other work skills supporting organisation.

CHALKBROOD

QUESTIONS AND ANSWERS

By: Cliff Van Eaton
Apicultural Advisory Officer
Ministry of Agriculture and Fisheries
GORE

The recent outbreak of chalkbrood in the far north and the subsequent extensive publicity surrounding a MAF disease survey there, has undoubtedly concerned many people about both chalkbrood and its possible effects on the beekeeping industry. In an attempt to clear up misunderstandings about this disease. Here are answers to some of the questions being asked by New Zealand beekeepers.

What is chalkbrood?

Ascosphaera apis, commonly known as chalkbrood, is a fungus which infects honey bee larvae. Like other fungi (including moulds and yeasts) chalkbrood has two stages. In the vegetative stage white-coloured growth fibres (called the ***mycelium***) are formed. In the reproductive stage, when the mycelium from two different strains (there are no males and females) touch each other, spores are formed within dark brown-green cysts known as "fruiting bodies".

What is the life cycle of chalkbrood in the hive and how is it identified?

Chalkbrood spores enter host larvae in brood food provided by nurse bees. Larvae are most susceptible to infection when three to four days old, and if subjected to brief chilling two days later, after their cells have been capped. The spores germinate in the larval gut and the larva dies when the mycelium breaks out of the hind end of the larvae. The mycelium continue to grow while feeding on larval nutrients and the larvae first take on a fluffy, vivid-white appearance. If removed the larvae are moist, hexagonal-shaped, and swollen to the size of the cells. In most cases the larval head appears clearly as a dark spot in these remains. Later the dead larvae gradually change into hard, chalk-like lumps (called ***mummies***) as the larvae dry out. While such mummies can appear white, if fungal fruiting bodies are formed they become dark grey or black.

Are there any other easily observed signs of chalkbrood?

In light infections adult bees generally uncap diseased cells and the larval remains can be easily observed. Bees may actually chew at the remains before they become dried out and once mummies are formed they are often removed. Discarded mummies can be found either on the hive bottom board or in the grass outside the entrance. In such cases, chalkbrood mummies are often confused with mouldy pollen. But while mouldy pollen is cylindrical in shape and easily pulverised between the fingers, mummies are much flatter and elongated and are not readily crushed. In heavy infections of the disease affected cells may remain capped. In this case cells can appear sunken and discoloured as is common with American brood disease. Combs containing capped chalkbrood mummies may rattle when shaken.

How is chalkbrood spread?

As with all fungi, spores produced in the fruiting bodies of the organism are the causative agent of chalkbrood disease. While the natural rate of spread of the disease from hive to hive and between apiaries is generally considered to be quite low, there is evidence to suggest that disease spores can be transferred by most of the methods commonly associated with our established bee diseases. These include swapping of combs and/or contaminated honey, feeding of pollen trapped from diseased hives, excessive colony drift, and the use of contaminated hive tools and gloves. As chalkbrood is a fungus, it is thought that its spores may be windborne and survive in the soil as well. It is known that chalkbrood spores are highly resistant and can remain viable for at least 15 years. However, specimens kept in laboratory containers in Canada at room temperature did not survive longer than one to two years.

When and under what conditions is chalkbrood likely to occur?

Chalkbrood, like most other diseases of fungal origin, favours damp, cool conditions for growth. As a result, most infections appear in colonies during the spring on early summer. At this time of year colonies have high ratios of brood to bees and are most susceptible to temperature changes and chilling. Consequently chalkbrood is often found on the edge of the brood nest and in drone brood where such chilling is most likely to occur. Excessive hive moisture has also been shown to be a cause and colonies confined in wet weather without adequate ventilation are most susceptible to disease. But, more importantly, shortages of honey or sugar syrup stores and pollen, plus a lack of regular requeening produce a stressful colony environment in which chalkbrood infections are far more severe.

Is chalkbrood considered serious in other countries?

Chalkbrood is found in many important beekeeping areas of the world including Great Britain, Western Europe, and the USSR. In the USA, following an initial report in 1968, the disease now appears to be widespread. And in Canada, a 1972 survey found that 32% of colonies inspected showed visual symptoms of the disease. Nevertheless, overseas chalkbrood is seldom regarded as anything more than a nuisance with little or no economic effect. Indeed, in the Canadian survey 75% of infected colonies had 10 or less cells with chalkbrood.

How can chalkbrood be treated and controlled?

No chemicals are registered for the control of chalkbrood, either in New Zealand or abroad. While some

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substances have shown a positive effect, the disease has never proved serious enough to justify the high level of research needed to find a reliable cure. Because chalkbrood mummies can easily be removed by house-cleaning bees, the disease can often disappear from a hive without assistance from the beekeeper. And, as with sacbrood, a chalkbrood infection will often vanish at the onset of the honey flow. Positive control includes provision of adequate hive ventilation, maintenance of strong, well-fed colonies headed by vigorous young queens, and the removal of heavily infected combs. As well, resistance to the disease seems to be associated with recessive genes controlling uncapping and removal behaviour.

How long has chalkbrood been in New Zealand?

In 1957 chalkbrood was discovered in Southland and verified by Trevor Palmer-Jones, then principal research officer at Wallaceville. Although there are unrecorded reports dating from the 1930s of the disease's presence in Northland and South Auckland, no further cases of chalkbrood were reported until this year. Nevertheless, it now seems clear that chalkbrood was present in one isolated Northland area for at least the last three years and probably elsewhere in Northland as well. Beekeepers should notify their nearest apicultural advisory officer if they suspect their colonies may have chalkbrood.

Why does there appear to be widespread infection now?

With a recent increase in kiwifruit pollination in the Kerikeri area, hives from many different parts of Northland and Auckland have come into contact. With hives in close proximity, chalkbrood spores were probably transferred from infected hives. When the newly-infected hives returned to their permanent sites other hives may have become infected.

When was this most recent discovery of the disease made?

Following routine inspection of kiwifruit pollination hives in Kerikeri last November, Northland Apiary Instructor Brian Milnes sent suspect samples to the Plant Diseases Division, DSIR, at Mt Albert. On December 15, Dr Garry Samuels, a mycologist at Mt Albert with experience of the disease in North America, confirmed the cultured samples as being ***Ascosphaera apis.*** Within days a preliminary survey by a MAF-appointed inspector, plus beekeeper reports, identified at least 600 hives as being infected in the Kerikeri, Peria, and Kaeo areas. The need for a more extensive survey to determine the spread of chalkbrood in Northland was apparent, and on 24 January 1984 MAF apiary staff and part-time inspectors began at Kerikeri. The results of that survey are reported elsewhere.

Is there any likelihood of containment and eradication of the disease?

Because of the large area of infection, the length of time chalkbrood has been in Northland, and the ease with which spores may spread, containment and eradication are unlikely. More will be said about this in the Director's report.

Should beekeepers be concerned about buying queens from Northland?

With at least 85% of New Zealand's queens for sale being reared in Northland there is fear that the situation could seriously affect commercial queen-rearing enterprises. The MAF cannot guarantee that queens or package bees from Northland will be free of chalkbrood. Beekeepers must assess the risks themselves.

Will the discovery of chalkbrood in New Zealand affect the industry's exports?

The presence of the disease in New Zealand is not expected to curtail export of honey as most major importing nations either have the disease themselves or import honey from countries that do. As for queen exports, the disease is not expected to affect current or developing markets in either the Mid-East, North America, or Europe. Small markets may be closed in the Pacific and the Australian market is likely to remain shut. *

* * * *

SPLASH

Auckland beekeepers had the worst spring in living memory. It rained for most of a month and from October 22 apiary management was curtailed.

The bad weather cut off accustomed spring nectar sources and in most places many bees died from starvation. The wet, humid, and cool weather increased the incidence of nosema apis and some apiaries have been reported wiped out by pesticides applied by helicopters to strawberry plantations.

Muddy paddocks made it difficult for trucks delivering food to starving colonies and beekeepers were still buying sugar in mid-November.

The bad weather also disrupted queens' mating flights and swarming has been abnormal in apiaries where enthusiasts have not grasped the rudiments of spring feeding.

All in all it can only result in poor crops this season.

Colin Rope,
Apicultural Advisory Officer,
MAF, Auckland

THE MARKET

With the extension of the price freeze there has been little or no movement of honey prices in New Zealand for some time. Consequently it seemed rather pointless to continue publishing the same price information in each issue of "The New Zealand Beekeeper". However, the end of the price freeze is in sight and it would seem appropriate to again publish the range of prices at which honey was being delivered to wholesalers' warehouses in late 1982.

The following was first published in the December 1982 issue of "The New Zealand Beekeeper". Presumably prices charged at the present time are, with few exceptions, the same.

250 g pottles $7.40 to $8.16 per dozen; 500 g $13.40 to $15.48 per dozen; 500 g glass $16.55 to $17.00 per dozen;

900 g pottles $24.00 to $26.42 per dozen; 2 kg plastic $52.00 to $58.30 per dozen; 2 kg tins $58.25 to $60.65 per dozen;

6 kg plastic pack $157.20 to $164.40 per dozen; 30 kg tins $60.00 to $68.00 each; fill own container $2.00 to $2.60 per kg.

It will be interesting to see what changes, if any, are made to the price of honey once the freeze is lifted.

THE OVERSEAS MARKET: An extract from the USDA National Honey Report dated 13 January 1984 reads as follows:

"Honey Market for the week ending January 12, 1984: Offerings of domestic, bulk honey increased slightly during the past week. Import offerings increased sharply from Mexico, Argentina, and Canada. Demand was moderate at lower prices. The market was lower. Some trade sources encountered lower Mexican and Argentinian quotations than the actual reported sales."

A further extract reads: "Prices paid to Canadian beekeepers for unprocessed, bulk honey by packers and importers in U.S. currency FOB shipping point, containers included unless otherwise stated. Duty and crossing charges are extra. Alberta—white clover; water white 46c per pound."

Another figure of interest in the report shows that the world sugar consumption has risen from 97.49 million tons three years ago to 103.51 million tons in the past year.

Ian Berry

THE MINISTRY ACTS

By: M Reid
National Apicultural Advisory Officer
Ministry of Agriculture and Fisheries
HAMILTON

Following the outbreak of chalkbrood in Kerikeri, an initial survey showed that the disease was present in many hives. Consequently MAF, Wallaceville, and DSIR personnel met in Auckland on January 21 and decided to conduct a full-scale survey of hives in the far north. The survey would chart the extent of the infection (and the likelihood of containment), train apicultural personnel throughout the country in field identification, and test the Ministry's response to outbreaks of exotic bee disease.

Twenty qualified and experienced apiary officers and MAF part-time inspectors were formed into teams, equipped with cars, maps, apiary registration lists, man-kits full of disinfectant, plastic gloves, buckets, etc, and sent to appointed areas. Other staff looked after the media, phones, and local arrangements. It was no mean feat to locate and assemble over 20 people from all over the country.

The teams concentrated on the area north of a line between Dargaville and Waipu. In three and a half days 443 apiaries of 111 beekeepers were visited and 826 hives inspected. Over 13% of the apiaries examined were infected with chalkbrood. Black bees seemed most susceptible and swarms were found to carry the disease.

Most hives were light to moderately infected (5-20% of the brood), except for around Kerikeri where many hives showed up to 50% infection. These hives usually showed evidence of old queens and spring starvation. Colonies with young queens frequently had a crop of honey and little chalkbrood.

It seemed that beekeepers were mainly responsible for spreading the disease within their own apiaries as many nearby hobbyist hives were healthy. The exception was Kerikeri. Robbing, drifting bees, or floral contamination may account for the high incidence of infection in colonies that had been in the kiwifruit and citrus orchards for pollination.

Infected colonies have been found outside Northland, namely South Auckland (the hives had been in Kerikeri for kiwifruit pollination) and in one outfit in the Queenstown area (the bees had come from Northland).

Under the Apiaries Act 1969, chalkbrood is a Schedule III disease along with nosema disease, and virus diseases such as paralysis. Chalkbrood is not regarded as a serious disease overseas and can be controlled by good colony management.

Chalkbrood is well entrenched in the far north at least. It is not possible to eradicate the disease and containment will be difficult if not impossible to enforce. Thus, beekeepers themselves must limit its spread.

As a rehearsal for a serious Schedule I disease outbreak (***Varroa*** or ***Acarine***), the survey proved most useful. The MAF can assemble, accommodate, and equip a large number of inspectors in a short time. However, early media publicity needs more co-ordination. President Ian Berry of the NBA was kept informed throughout of MAF's actions, findings, and decisions. He also visited Kerikeri to study the problem at first hand and see the survey team at work.

The most disquieting aspect was the inadequacy of MAF apiary records. The reason for this lies mainly with beekeepers. Radio appeals for beekeepers to report hives resulted in over 600 calls to the Kerikeri and Whangarei MAF offices. Many of these calls reported feral hives or registered apiaries, but many concerned unregistered hives. It was also rare to find an apiary with a registration number as required by law.

The MAF has revised Aglink FPP 124 "American Brood Disease" to include a section on sacbrood (often confused with American brood disease by beginners) and chalkbrood. The section on chalkbrood includes information on management methods and ways to select for house cleaning behaviour which will lessen the effects of this disease. *

* * * *

Big business

It's all right, you kiwifruit pollinators, what is 18 000 hives. In California they apparently use 450 000 hives of their own and truck in another 150 000 across the State line for pollination. Those figures are estimates of course—give or take the odd 20 000.

* * * *

Sugar flows by rail

A group of Waikato beekeepers have taken the first railway tanker of fine liquid sugar out of the Chelsea refinery—all 8.9 tonnes of it.

They report very thick syrup (about 65 percent solids) requiring a good pump to move it. Including $124 for freight to Te Awamutu the price worked out around $124.56 per 200 litre drum.

According to Wallaceville trials, this sugar is quite safe for bee feed and it certainly saves messy bags of sugar and the 'mixing your own' chore.

* * * *

BEES DON BUN HATS

British bees have joined the drift to the towns. Today's bees live in Chelsea rather than Chalmsley-Nether-Wallop. It's not that bee-keeping has become the latest urban fad; simply an urban hive produces two to three times the honey of its rural cousin.

Bees have been part of Britain since days of yore. The Romans christened Britannia the land of honey. But the gasoline engine changed that.

Fields once under crops for horse feed are now under grain. More and more hedgerows disappear annually to make the big fields demanded by larger and larger modern machines. Crops sprayed with herbicides, insecticides, turn birds and bees into something for the history book.

Had it not been for an increased acreage of oilseed rape the bee might have disappeared from the British countryside. In 1982, 174,500 hectares of rape were planted in Britain offering a potential honey harvest of 8,725 tonnes.

GB Rural to Urban pastures movement.

But suburban gardens abound with flowers and fruit trees and are often free from soulless and rigid commercial practices which destroy everything but the crop concerned. Coupled with that, urban temperatures tend to be warmer than rural and you have the reason why a London hive can yield at least 34 kgs of honey against 12 kgs for one in the country.

The Inner London Beekeepers' Association has 130 members but estimates the Capital's apiarists to be three times that. Bees are kept in back gardens, on garage roofs, in squares and parks, on balconies of office blocks. And, the Association claims, urban honey shows no trace of lead.

Dr Harry Riches, vice-chairman of the British Beekeepers' Association gained some 200 kgs of honey from seven hives at Rickmansworth during 1982. It was a dark, pungent honey, almost the colour of treacle. The dark colour comes from honeydew.

These urban "backyard" beekeepers are on to a good thing. Especially when they can dispose of surplus to a local healthfood shop for $2.50 a jar.

Britain was more or less sufficient in honey during the two world wars but is no longer so. During 1982 it imported over 20,000 tonnes, mainly from China, Mexico and Australia, but produced a mere 2,503 tonnes itself. Domestic production varies from year to year, depending on the vagaries of the climate, but British honey is in demand on the home market because, it is claimed, of the uniqueness and variety of British flora.

It is further claimed that imported honey has to be pasteurised to make it clean and palatable thus killing off many of the enzymes and vitamins that make honey unique as a food.

Claims that suggest British apiarists may have a nice little line of protection propaganda going. It is hardly likely that New Zealand honey would be less hygienic than British. *

From The Colonies

WESTLAND

To date the season seems almost a repeat of last summer: cool, changeable weather, limiting bee-flying so slowing the honey flow accordingly.

From reports from different areas here on the Coast it would appear to have been a season of mixed fortunes. In some places kamahi flowered heavily while in others flowering was poor. Overall the kamahi crop will be well down on average.

Perhaps the most surprising feature this season was the unexpected flowering again of the southern rata. After a good showing last year the consensus was for no rata this year. But we were wrong and though, like the kamahi, it varied from locality to locality it was very good in some places.

Flowering began three to four weeks early and, probably because of the cool weather, lasted much longer than usual. The records show that 1962 was the last time rata flowered for the second season in succession. Timely indeed, for it should lift crops to near average in most places.

Pasture is abundant, but with cool ground temperatures nectar secretion is non-existent. So perhaps we have been saved by the skin of our teeth, or rather the unpredictable rata.

Sandy Richardson,
Ahaura

NORTH OTAGO

With paddocks of clover everywhere the prospects of a better than average crop seemed assured, but we reckoned without mother nature. Broken weather from before Christmas until mid-January skimmed the cream off the crop and it also induced excessive swarming which doesn't help.

However, the weather seems to have at last settled down, and all in all we should do better than during the last few drought years. Although I doubt it will be a year to make us rush in and buy a new truck or pay off the mortgage: at least, the prudent ones who know North Otago won't.

The North Otago Board extends a warm welcome to our new editor, may he be with us for many years delving into the hidden mysteries of the hive and beekeepers, and we hope that profit and pleasure will result for us all.

S. E. Winslade,
Oamaru

HAWKES BAY

After predicting an above-average crop this year I have to eat my words. The Hawkes Bay crop is very patchy—much like last year.

We had a beautiful build-up in the spring, with great grass growth. Unfortunately it kept on growing with little or no clover coming as a result of last year's drought. One consolation is the amount of thistle flowering in some areas giving us a crop.

We have noticed that the "dry area" of Hawkes Bay has yielded as good crop. Further north the manuka yield has been non-existent.

Everyone is trying to guess how long it will be before we have chalkbrood. One wonders if the problem will remain sub-tropical. However, no comments until Murray Reid and staff come to a decision.

At present our thoughts are with the Southland beekeepers. Beekeeping is no easy occupation when the elements throw everything at us. However, we will overcome!

Next meeting: AGM, 14 March 1984, 7.30 p.m., Farming House, Market Street, Hastings.

As this is my last comment "From the Colonies" I wish everyone "Better Beekeeping".

Keith Leadley,
Hastings

NELSON

The Nelson Board combined its December meeting with an end of year dinner. We were very pleased to have with us NBA president, Ian Berry. He talked about the running of the NBA and its involvement in such things as the new beekeeping courses at the Bay of Plenty Community College and Telford. He also explained what had been organised so far with regards to the Industry Planning Forum. It was a good opportunity for us to find out how the Executive operates as well as being an enjoyable social occasion.

Pollination has come and gone with its many associated problems, and we are now planning for next season. At least the Kiwifruit growers should have been pleased with the fine weather during pollination although the beekeepers were not so keen on the month of rain that followed! In spite of that we are hoping for a better season than last year.

Following reports of the discovery of chalkbrood in Northland we are all anxiously looking up the symtoms in the textbooks and hoping that is the only place we will ever see them.

Rex Bolwell,
Riwaka

NORTHLAND

At the time of writing Northland is in a turmoil, with MAF men in every nook and cranny. Need I say more!

In some areas the honey flow appears to be finally getting under way, and with continued sunshine, an average crop is still possible. Clover has never flowered better in Northland, and bush sources are also flowering heavily. Far North areas are still disappointing.

Our Field Day will be held in Kerikeri late February early March, and we hope Doctor Shimanuki will be present.

STOP PRESS: MAF survey team has inspected and not found any chalkbrood in the three major queen-rearing areas.

Many thanks to our MAF survey team, Ian Berry, and our fellow beekeepers further south for their generous offers to assistance.

Terry Gavin,
Whangarei

BAY OF PLENTY

It's been rather a confusing spring in the Bay of Plenty. After one of the easiest early spring build-ups for several seasons, the rains hit with a vengeance in October. The very early bush flowers such as that from the five-finger yielded well, but by the time for the rewarewa there was nothing. A lot of hives being prepared for the kiwifruit pollination had to be fed more than expected. A group of beekeepers in the Tauranga area purchased and fed out two bulk wine tanker loads of fine liquid sugar from the Auckland plant. This heavy syrup was pumped at the rail station into drums and used directly, saving the mess and equipment needed to mix from dry sugar.

The pollination period started off with a rush, somewhat earlier than the last few years. Fortunately the need for bees varied enough so that they didn't all have to go in at once. Though the final figure of hives shifted in for pollination is not available it seems it may be down on the M.A.F. estimates. Stress caused by last year's drought and some bud rot in the Te Puke area contributed to a lighter flowering, and orchardists decreased their hive requirements accordingly. Bee activity in the orchards seemed very good overall; Pat Clinch has previously pointed out the apparent increase of kiwifruit pollen collection after rainfall.

The honey season prospects seem about nil as I write this in mid-January. Heavy rains in early December and prolonged cool periods have kept the ground temperature down. Clover flowering appeared to be

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quite good, but after several false starts curtailed by rain or cold it seems unlikely to happen now. Several frosts in central plateau areas wrecked chances for good flowerings there. With honey stocks as low as they are, due to the last few seasons, small crops in other areas could lead to some shortages of honey. It will cause further tightening of belts in many cases.

The confirmation of chalkbrood disease in Northland has given the industry some "publicity". Isn't it sad that an industry such as ours that contributes so much to horticulture and agriculture can only get such mention when it faces an immediate threat?

Nick Wallingford,
Tauranga

SOUTH WESTERN DISTRICTS

Another poor honey crop is feared. The second year in a row. I would much rather have to delve into the dictionary for superlatives to describe that elusive bumper crop. Words would flow just as excitedly as that dreamed of honey flow. But not this year. And I don't relish writing this report.

From New Plymouth to Wellington our coastal climate has frustrated our bees. December began too dry and the clover did not come. December finished cool and wet: good for clover, but bad for bees. The first half of January gave us the best conditions for nectar production and the beginnings of a crop. But since then the weather has not been good enough to give us an average of a box of honey per hive. Some may get half a box, others will harvest less.

We still hope for a late season flow in the first half of February. Beyond that we shall have to wait patiently for a better crop next year.

NBA President Ian Berry was with us at our November branch meeting. We discussed industry objectives and planning.

John Brandon,
Wanganui

OTAGO

I am afraid that the news from this part of the New Zealand bee world once again is not very heartening. It looks very much that the honey crop will be something along the lines of last year. At least here in South Otago we have to call it light and that is an overestimate. Further inland hives have done somewhat better. Some bush sources have produced a box or so. I believe that some hives round Dunedin filled two boxes before Xmas. It has been the weather that has let us down. Last year shows record high rainfalls, near record low temperatures, record low sunshine hours. And the first month of this year has been no different. Perhaps three or four days we could call summer. There it is and at this stage of time one cannot expect a great deal any more even if we were to get some real hot weeks as from now. However we have missed out on the floods this week. Plenty of rain but we did get off a lot lighter than our Southland brothers.

One cannot help but wonder sometimes about the viability of commercial beekeeping when we have to face such a prolonged period of bad weather. The thing to do of course is to stick to it if it is at all possible for it must come right again one of these days. Unless we are in for another ice-age.

One thing worth noting is that the rata has put on a wonderful display this year. Trees flowered in places where we have not noticed any before. Not that we have such a lot of it but a little pocket here and there and a fair bit down the Catlins coast. Just beauty. And it did yield on the better days. The right time to be thankful for little mercies.

John Heineman,
Milton

SOUTH AUCKLAND

Another kiwifruit pollination season is behind us and from what I hear the bees have done a good job. But here we are at the end of January with very little honey in the hives.

South Auckland and areas around Auckland are a sea of white clover, but with windy weather and low ground temperatures very little nectar is being collected. This season could be worse than the last, especially for those beekeepers who shifted bees in and out of kiwifruit orchards.

I hear quite a few kiwifruit growers in and around Frankton need more hives for next season, in some cases up to 50%.

I also hear that some beekeepers have had quite a few queens go missing and of other queens that have not come up to expectations. However, if this season is a dud then we can all think of that bumper season (next year?).

Dave Young,
Drury

MARLBOROUGH

Conditions in Marlborough have been similar to those experienced in the rest of the north of the South Island. Spring promised a good season with plenty of growth and flower, but it turned out cold and windy limiting the crop.

On heavier soils around Blenheim the crop has been poor while in the hill country it has been patchy.

Beekeepers on the increase have found bees very reluctant to draw out foundation. However, at the end of January the flower is still there and it would take a couple of weeks of hot windless weather only and we could still get a good crop.

Our branch's efforts to establish the pollination service on a good, sound pricing structure is working. Pip and storefruit orchardists are paying $30 to $35 per hive, and last year beekeepers received about $20 per hive for putting hives on clover and onion seed crops. That was a real breakthrough because in the past farmers and beekeepers have felt that the honey collected was sufficient payment. However, the cost of transport, the value of the beekeeper's labour, and the high cost of a hive must be considered today.

We are also concerned about the service offered by some queen breeders. As our industry is expanding many new breeders are offering queens for sale. Some of our members have had problems with some breeders. The worst example was that of a member who pre-paid for some queens two years ago and has still not received them. Surely it is in the interests of these breeders to maintain a higher standard of service.

Our joint Wellington-Marlborough field day is being held at the Wallaceville Bee Research Centre in February 1984.

Craig Deans,
Blenheim

WAIKATO

The Waikato is having a difficult and frustrating season.

In my last Waikato report I said the weather had changed from mild to cold and showery and that's the way it has stayed: days of rain, cold winds and showers, and very cold nights, frosts in the Matamata area last week. An unbelievable summer so far. It has been an extremely difficult season to get hives up to strength, even young queens were slow. Some beekeepers blamed pollen shortage and it may have contributed in some areas, but I believe cold temperatures and cold strong winds were the main cause.

The bees packed what honey they gathered tightly around the broodnest and the queens did not lay to capacity.

A big storm which broke telephone poles off at ground level and flattened several haybarns dropped 10 in. of rain along the Kaimais and wiped the Tawari out in mid flow. Tawari is a very high moisture content honey and Donald Bates told me some hives they had were pouring the honey in through the day but the nights were so cold the bees couldn't ripen it. Through the night the honey would flow off the combs and out the entrance and in the morning the bees were on the ground taking the honey back into the hive: the first time I've heard of such a thing happening.

This is a particularly frustrating season because although the clover was late coming into the pastures (between Xmas and New Year) there is at the present time clover as good as I have ever seen it in our northern end of the Waikato. Other areas are not as good I am told, including the central plateau. Again if the weather picked up, there is still the possibility of a crop of honey. The nodding thistle has not started to produce and some members are undecided whether to move hives on to thistle areas or to stay and perhaps get some clover.

There is considerable feeling about kiwifruit pollination hives being brought out of the Bay of Plenty and put in amongst established beekeepers on the northern end of Waikato, sometimes on the same farm.

There are regular reports of hive thefts ranging from two to three to whole yards of hives disappearing. These hives are no doubt hidden away for pollination and will be unregistered and not inspected for disease. They may pose a big problem in the future.

Ray Robinson,
Waihou

Maintaining Hive Numbers

In a recent discussion with a beekeeper building up his hive numbers for kiwifruit pollination, I remembered an article I had written for the N.Z. Journal of Agriculture. On re-reading this article I realised some of it could be of current interest with so many beekeepers building up to meet the expected need for pollination.

The following is an extract headed "Maintaining Hive Numbers" which appeared in the November 1979 of the above magazine.

"There is, I feel, a better alternative to either autumn or spring divisions and that is to keep on dividing some hives from September until December and then allowing the divisions to build up in strength and gather some stores for winter during January and February. These extra hives are then overwintered and used for making up the losses the following spring.

"Perhaps if I give an actual example from our records it will give the best indication of the potential of this system for making up a lot of spare hives from a comparatively small number of hives at the start of the spring.

"On August 27 we went through an apiary and marked all the strongest hives for pollination. There were 15 hives which were too weak to mark. The pollination hives were shifted out and on September 28 we divided 11 of the 15 hives and put in a total of 13 nine-day-old cells (we killed one poor queen and had one queenless hive). On October 31 we again divided the apiary, this time finishing up with 35 single storey hives and two two-storey hives.

"This time we used 16 eight-day-old cells. On November 26 we used 16 seven-day cells and finished up with 48 one-storey hives and one two-storey hive.

"On December 24 after again dividing the suitable hives we finished up with 73 × 1 hives and used 27 eight-day cells. On January 7 we shifted 40 × 1 hives with laying queens out to the hills and left 28 × 1 and 5 × 2.

"On March 25 we packed up three hives and wintered 10 × 1 and 20 × 2. Of the 40 hives shifted we wintered 38 hives making a total of 68 hives wintered from the original 15 tail-end hives we started with in the spring.

"The hives shifted were supered to two storeys, mainly with sections, and when we wintered them we left them in one box with three combs of feed and we took off 28 boxes of honey.

"The hives left on the original site, while not producing any spare honey, did have sufficient honey to leave the singles with three combs of feed and the doubles with six combs.

"The honey produced by the divided hives was probably as much as the original 15 hives would have produced if they had not been divided, and we went into the winter with 53 extra hives.

"When dividing the hives we split any hives which had four or more frames of brood, shifting the queen and most of the brood and bees to a new position in the apiary and leaving only one frame of brood with the cell.

"The reasons for this were, first, to make up the maximum number of divisions as quickly as possible and, secondly, unless the hive with the cell is not left very weak at this time of year, a lot of swarming can occur with the loss of the queens from the cells put in."

While the results in this instance may be difficult to achieve every time, the article does show it is possible to obtain a very rapid build up in hive numbers even when starting with comparatively poor hives.

Ian Berry

* * * *

Greeks concerned about imports of Chinese Honey

A clipping from a Greek newspaper, received recently by Miss Dimitria Kyriakaki, Havelock North, indicates Greek beekeepers' concern over large imports of Chinese honey and royal jelly into Greece.

President B. Georgiou, Greek Beekeepers' Association, says that although Greek honey is of better quality than Chinese, the Chinese honey is still pure and wholesome even though in granulated form rather than liquid, the usual way of selling honey in Greece.

The clipping also notes that there are about 50,000 beekeepers in Greece owning 1.2 million hives and producing annually an average of 14,000 tonnes of honey. Seventy-five percent of this honey is consumed in Greece and the remainder is exported.

In 1983, 60,000 hives of bees in the province of Argo were killed by pesticides, mostly sprayed from the air.

* * * *

FROM THE KITCHEN

Halbus sounds lovely but all we really have to know about it is that it won first prize in the honey recipe category at this year's Waikato branch field day.

So here it is, plus a selection of other delights and we can't tell you who dreamed them up as none of them was signed. No liability for food poisoning?

Halbus (Greek)

350g butter
Juice of 2 lemons
300g honey (1 cup)
3½ cups of water
1 packet ground almonds
1 large packet semolina (100g)

Put honey, lemon and water in pot. Bring to boil. In another pot melt butter, add slowly all semolina and almonds, stirring all the time. Take off stove, add water mixture. Stir well until mixture comes away from side of pot. Place in dish with hole in middle. Set for 10 min. Place dish in warm water to remove from dish.

Honey punch

3 cups water
1½ cups honey
2 cups pineapple juice
1 cup lemon juice
2 cups orange juice
3 cups freshly made tea
4 pint bottles ginger ale or equivalent in large.

Boil honey and water for three minutes. Make tea with 4 teaspoons tea. Stand for three minutes and strain. Leave these to cool. Add juices and ginger ale just before serving.

Honey roll

3 eggs (no. 7)
¾ cup self-raising flour
⅔ cup honey
1 dsp cold water
add after flour

Beat egg whites until stiff but not dry, gradually add slightly warmed honey, then broken up egg yolks; fold in well sifted flour and pour into sponge roll tin. (I always line with buttered grease proof paper.) Cook approximately 15 minutes 325-350 degrees. Turn out onto damp cloth and roll up for 3-4 minutes.

Filling: Make cornflour mixture, boil ½ cup milk and add 1½ tspns cornflour, cool. Beat together 2 tbsp butter, 1 tbsp sugar, 1 tbsp honey, add cooled cornflour mixture, cream well, flavouring to suit (caramel), spread over cooled cake and reroll.

THE ENVIRONMENT AND YOU

Trees and bees

The following article is a resume of a talk given by Piers Maclaren to a meeting of the Nelson Beekeepers' Association on May 30, 1983.

Radiata pine is unjustly slandered by many of the public. Its timber is, in fact, excellent for most uses and that is why it has come to capture the market. For beehives, its virtues include ease of machining and processing, lack of splitting when nailed close to an edge, and stability when painted. A beehive is a precision product, and a slight warp will result in entry of wasps, alternative entrances for bees, or a tendency to topple over.

One problem with radiata pine, however, is that it is not very durable unless treated. Many treatments will kill the bees, and other (such as those containing chrome) may be undesirable in a product sold as a health food. A beekeeper's hives represent a huge investment and it would be a pity if he had to replace them due to a tightening of overseas health regulations.

Nevertheless, there are harmless ways of imparting durability to radiata: You can dip the boxes in paraffin wax, paint them in Metallex (a fungicide) or Woodlife (a water-repellent), or just apply three coats of ordinary paint. All these things are expensive to do, and this money could be saved if you built your hives from a naturally durable timber.

Such timbers may not be more expensive then radiata, particularly if you calculate how many boxes you can actually make per 100 pineal metres of timber bought (remember that you are also paying for your off-cuts). In addition, some species (such as Western Red Cedar) are much lighter than radiata. You could save over a kilo in weight per box.

Here follows my list of alternatives in order of preference. Remember that only heartwood is durable, and that there is great variation within a tree species and this partly depends on where it is grown. I don't advocate milling of native species unless you can obtain some trees by way of salvage.

Native cedar: Light, durable, stable. Look at old window sashes. DON'T buy trees with spiralling bark.

Western Red Cedar: Light, durable. Look at new window sashes.

Totara: Quite light and very durable—even on the ground.

Redwood: Quite light and quite durable. Golden Downs has these for sale.

Kahikatea: Quite light. Heartwood is very hard to distinguish from the useless sap-wood.

Macrocarpa: Same weight as radiata. Could be durable if it is not lusitanica sold under another name.

European larch: Hard to paint, as are most of these.

Native silver pine: Extremely durable in ground contact.

Douglas fir: Hard to paint, heavy, perhaps not durable, can give off splinter.

Matai: Heavy but durable.

Rimu: Heavy, moderately durable. Splits when nailed close to ends.

The runners under the baseboard might as well be ground-treated radiata. The baseboard and bottom box, while not actually in contact with the ground, are subject to rain-splash and humidity from long grass. It would be best if ground-durable species were used for these. (Silver pine, totara, matai, native cedar and perhaps macrocarpa.)

Do not even consider hardwoods (that is, non-conifers). They are usually difficult to season, hard to nail and saw, split easily, very heavy, and have a tendency to warp badly while seasoning.

To summarise: Buy some radiata and treat it in your preferred way. Keep a close account of costs and calculate the cost per box. Then track down one of the species above and make some boxes from it. Compare costs.

Trees for pollen and nectar

Don't be fooled by the size and colour of flowers—tiny green or white flowers may be a better source of bee tucker than large red ones. There's no point in planting trees that flower when there is already an over-abundant honey flow—try and fill the gaps in your area. There is always a spring gap—it is vital to build bee numbers up to maximum strength for the main mid-summer flows. There is also usually an autumn gap.

For early spring plant tree lucerne (***Chamaecytisus plamensis***), ***Prunus*** species, flowering currant, some eucalypts, ***Acacia*** species, and —very importantly—willows. Chris van Kraayenoord of the National Plant Materials Centre, Aokautere Science Centre, Palmerston North, has done wonderful work on willows. He has a list of clones that can keep bees going from July right through to April! He is also developing a stock and possum-resistant willow.

There is no authentic, comprehensive list of the best trees for bees. When you think about it, how could such a list be obtained? It would be incredibly difficult to calculate hectare by hectare or tree by tree which are the consistently best species. All we have to go by is the accumulated wisdom of practising beekeepers. Dr Rod McFarlane of the DSIR, Lincoln, has written a report on what is known (or rather not known) about trees and bees.

Trees for bees—and something else

Trees are a multi-purpose invention, and there is no reason why you shouldn't try to milk them **and** shear them.

Firewood: All timber burns and the heat given off is proportional to the weight of wood, if the wood is equally dry. Wood will vary in growth rate, ease of splitting, density, time taken to dry out, ease of lighting, aroma, sparking, etc. The Acacia (esp ***mearnsii***) are generally regarded as being the best thing for firewood. Good early pollen source.

Shade: Stock don't actually need shade, but if it is there they will use it. You need a tall tree with a high canopy so that the sun moves round and dries out the ground, killing diseases and minimising loss of pasture production. Poplars and eucalypts might fit the bill.

Shelter: Shelterbelts need to be long, uniform, and unbroken or they are worse than useless. They should be 50 percent permeable, and not a solid wall. Matsudana willows are probably the best for both shelter and bees.

Timber: There is a contradiction between a good bee tree and a good timber tree. The bee tree needs to grow in the open so it will develop a broad canopy all exposed to the sun. (Only branches in full sunlight will flower.) The timber tree, on the other hand, needs to grow in a dense forest so that the main stem is tall and straight, and so that the branches are scarce and small.

There are two ways to get round this impasse: Either plant eucalypts, which are often self-pruning or partially so, or prune hell out of anything you plant. The latter action will not be as good as growing a forest tree, but it might make for something you can sell. Make sure the branches are pruned when they are small (not more than 30mm).

If you don't stick to the species listed below, then you will probably not be able to sell your product. Trees are worth only what someone is prepared to pay and most buyers are interested only in quantities of several thousand hectares of any one species.

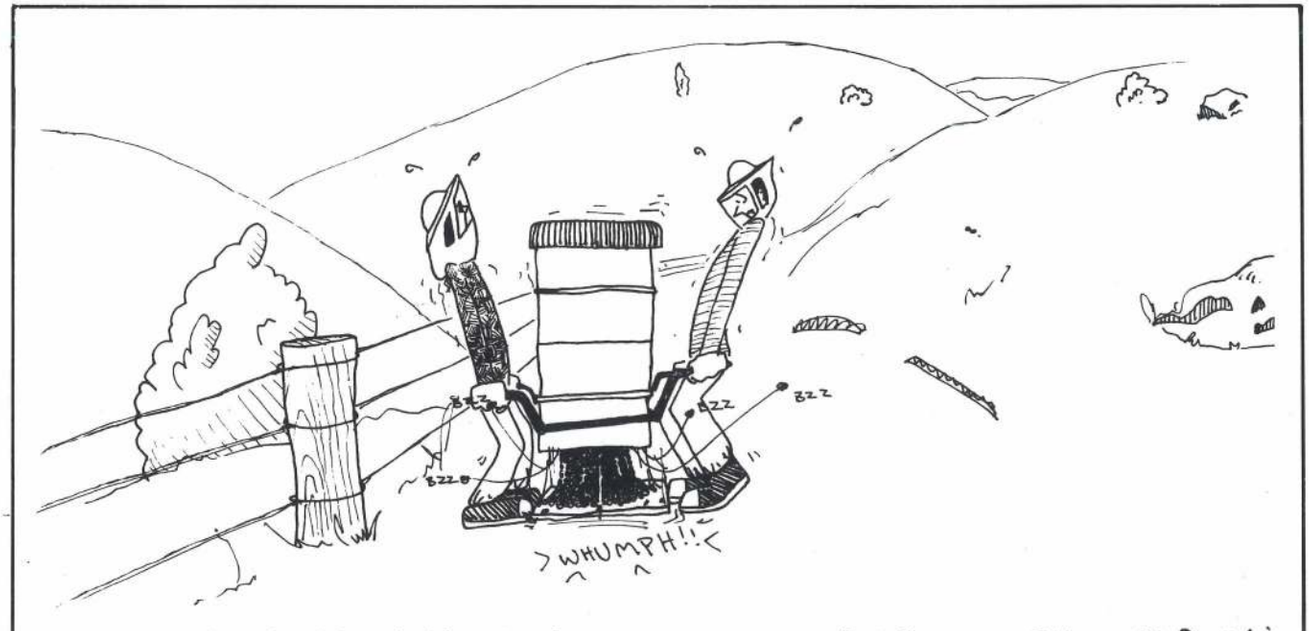
- Eucalypts delegatensis, fastigata, obliqua, regnans, saligna, and botryoides.
- ***Acacia melanoxylon*** or Australian blackwood. This is the kiwifruit of the forest industry, with timber selling internationally for prices comparable with mahogany. It grows fast, is a nitrogen fixer, has few diseases, will grow on almost any site, and is excellent for bees. But the market demand is due to the fashion for naturally-black wood—can you guarantee this will still be there in 40 years' time?

General

Honey locust (***Gleditsia tricanthos***) has created tremendous interest as a fodder tree. It drops quantities of very nutritious pods and is said to do away with the necessity of providing winter feed. You can buy honey locusts from nurseries (but does the thornless sort flower?) or grow them yourself from seed. Good for nectar and pollen in October.

Black locust (**Robinia pseudoacacia**) is a totally different plant, but with equal potential. Hungary produces three times as much honey per hectare as New Zealand, and Robinia is the reason. Unfortunately, there is great variation within this species and we have the wrong sort in this country. The Plant Materials Centre, however, is working on the problem. Robinia is extremely durable (if you can remove the sapwood somehow); Venice is built on Robinia piles. It doesn't grow very straight, but there is a variety (var rectissima) that does, and is called shipmast locust, for obvious reasons.

Australia produces some staggering honey yields off many of its species of gums, but Australia's best honey-tree is probably ***Nyssa sylvatica*** or tupelo which is imported from America. We could try this one here. *



I think I remember what I thought I forgot to do

By D. Flanagan, 8 Albany St, Dunedin

Knot tying for Beekeepers

By: Nick Wallingford
Photos by: Max Wilson

Most beekeepers use some variation of a trucker's hitch when tying hives or boxes on to a truck deck. These enable a purchase that will allow tension to be applied by the same principle used in a rope hoist. Many of these hitches, though easy to tie, can be very difficult to untie once full tension has been applied to them.

The hitch described in this article is called the Canadian hay hauler's hitch. Gavin White of Golden Bay learned it while beekeeping in the U.S. several years back. I learned it while working with Jasper Bray in Leeston. I have always been a keen student of rope and knot work, and I believe this hitch superior to all that I have seen and used. It positions itself on the rope automatically during the course of tying, no time is wasted pulling long lengths of rope through loops, and most importantly once tension has been removed the knot can always be easily taken out of the rope.

A further advantage to this version of the hitch is that it can be tied with equal ease around hooks or rails fitted to the truck deck. Some hitches require the full length of a rope be fed through between the truck and the rail before tensioning. Before unloading, the full length must again be fed through. Ideally, of course, a beekeeper has one length of rope cut to pass over each row of the load, rather than using one very long length to criss-cross over the entire load. Someday perhaps I'll meet such a beekeeper. . .

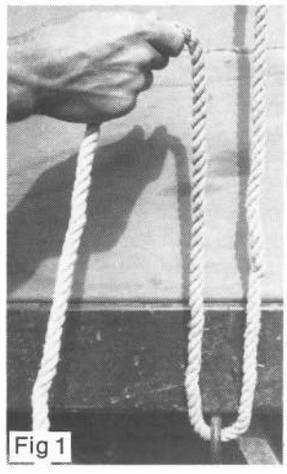


Fig 1

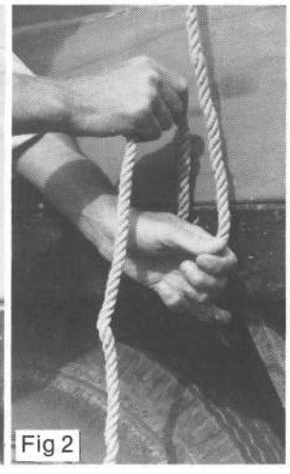


Fig 2


Fig 3

Learning to tie a hitch such as this from photos and description is not the best way to do it. Much better would be to be shown in person. But by following the directions you will see how very basic the hitch really is, and if you use it several times I think you might agree with me that it is a very valuable knot that can save you considerable time.

After securing the rope on one side of the truck and throwing the coil over the load, it is passed behind a hook (Figure 1). If your truck is fitted with rails only, you need only push a loop through from behind the rail, leaving the bulk of the rope at your feet.

With your right hand holding the "free" end of the rope, reach under your right hand with your left and grasp the "fixed" end of the rope, that part that leads back over the load (Figure 2).

While still grasping the rope with your left hand, bring this hand back to your left and then up, letting the rope slide through your right hand to give you slack (Figure 3).

This lifting of your left hand automatically determines the placement of the hitch on the line as well as forming the critical loop that will be used for the purchase, with the free end of the rope that will be pulled to tension already through it. (Figure 4).

With your right hand you now form a small loop on the fixed end of the rope near where your left hand holds the rope (Figure 5).

This loop is placed over the larger loop held in the left hand which has its closed end pointing up (Figure 6). If the free end of the rope is pulled now, the hitch will actually hold quite securely, even though it looks shaky.

As a safety measure, I prefer to tie a half-hitch around the fixed part of the rope with the loop that protrudes from the smaller loop you placed over it. (Figure 7). This acts as a stopper to keep the hitch from accidently coming apart while you are putting on the tension.

The now complete hitch is used to tighten the rope over the load by pulling down on the free end of the rope (Figure 8). Even more tension is possible by looping this free end around the hook or rail, running the rope up and through the stopper loop, and then pulling down on this double purchase. I have never found this really necessary. I do occasionally use my foot on the free

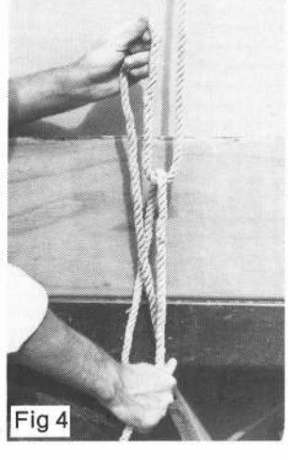


Fig 4


Fig 5


Fig 6

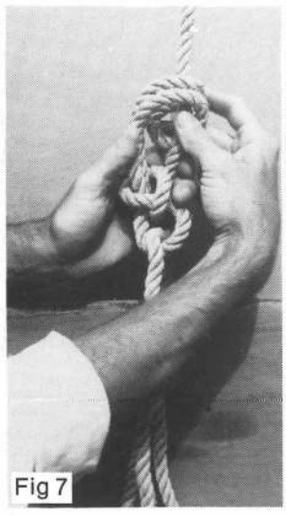


Fig 7


Fig 8

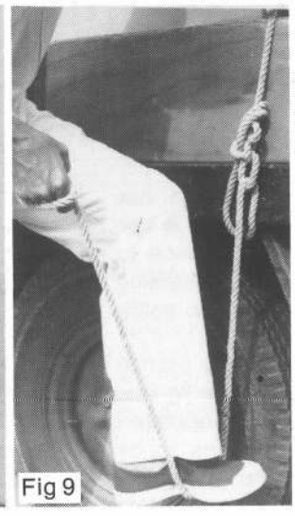


Fig 9

end of the rope to pull it tight (Figure 9) while helping to pull out slackness with my free hand.

I tie off each row of a load with two half-hitches before moving back to the next row (Figure 10) though with two people tying down, this isn't always necessary. If tension is kept on the rope after using the hay hauler's hitch, it can be passed around the next hook and thrown across the load to the helper who will tie the next hitch. If tying off to a rail, I use a clove hitch that leaves a small loop sticking out (since it is being tied without passing the full length of the rope through).

Two other knots well worth learning for use in beekeeping are the sheet bend and the bowline. The sheet bend is used for joining two lengths of rope. It is infinitely superior to the reef knot which will jam and become nearly impossible to untie. The bowline is used to make a loop at one end of a rope. Again, no matter how much tension is applied to the line, the bowline will not collapse and will always be easy to get out of the rope.

The sheet bend that I use is left with a "slip" (Figure 11). It is not difficult to learn or tie, and the knot is untied by pulling on the loose end.

The bowline is a good way to tie a free end of the rope around a rail or hook (Figure 12). If hooks are used, the loop can be left in the rope, but to pass around the rail it must be retied each time.

I hope these few knots and ideas are of use. Most beekeepers have their rope habits firmly entrenched and would not be likely to change, but the Canadian hay hauler's hitch has so many desirable features that I hope you will give it a fair go. Sometimes it seems that too much time is spent tying and untying knots and opening and shutting gates. Perhaps this article will cut some of the time for you in doing the first two.

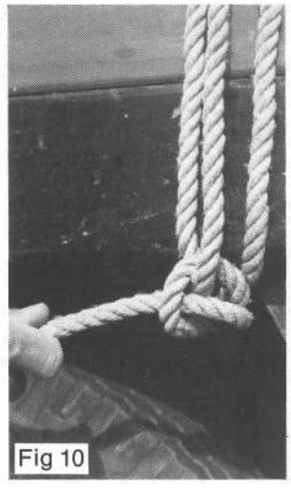


Fig 10


Fig 11

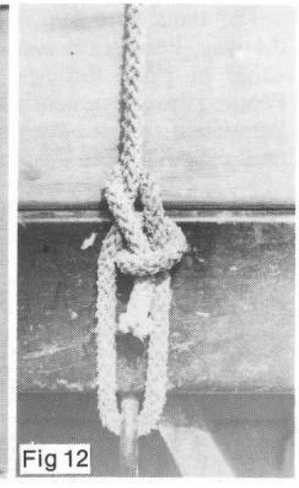


Fig 12

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Spray the bugs, save the bees

A recent IBRA report highlights a worldwide dilemma of cropping: Modern sprays can greatly increase yields but without proper care they can also decimate pollinating insects vital to crop production.

While the report targets developing countries, where unbiased information is often hard to find, it discusses a wide range of tropical and sub-tropical crops.

"The impact of pest management on bees and pollination," by Dr Eva Crane and Penelope Walker, has been placed in the NBA library, or is available from IBRA at 15 or US$27, post paid.

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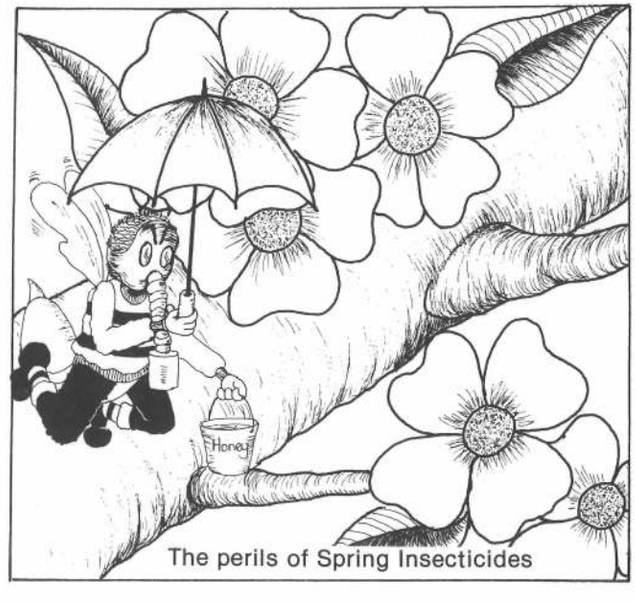


The perils of Spring Insecticides

Jig for assembling supers

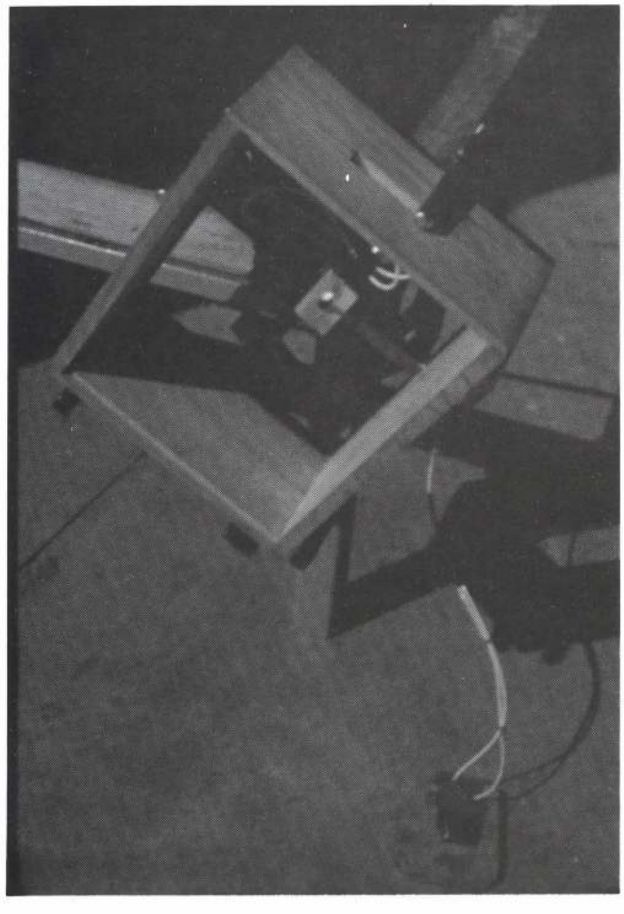
by Nick Wallingford

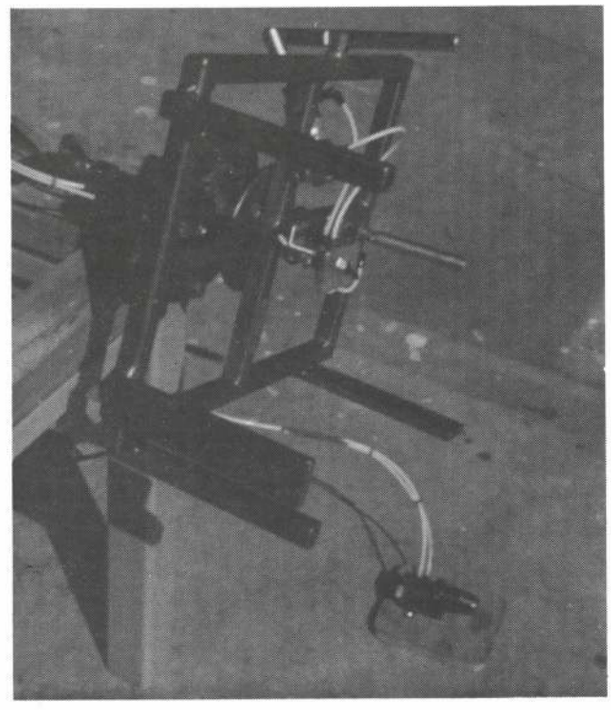
RON STEENS, a tool and diemaker from Tauranga, has built a jig for assembling supers that is both quick to use and accurate. It is no problem at all for one person to staple supers at the rate of one per minute. The working position is comfortable and the pace can be easily maintained.

Ron brought a prototype to a Bay of Plenty branch meeting several months back. At this stage, the jig was mounted on a horizontal turntable with two air-operated rams pushing directly on two sides of the box to be stapled up. After over-coming several technical problems, he modified the unit so that it can rotate through the vertical plane as shown in the photos.

The air supply to the rams enters through the centre of the back so there is no problem with tangling air hoses. Mounting vertically like this allows the staple gun to be used in a more normal and less tiring position.

The rams were re-positioned so as to fit down out of the way. Pressure is conveyed to hold the pieces of the super in place through two pivoted pieces of steel. Flipping the conveniently located switch to "on" provides immediate and positive pressure to the super, holding it firmly square while it is stapled.





The pneumatic rams operate at 550 kPa (80 psi) and have a piston diameter of 30 mm. Though the pistons move only 25 mm in their strokes, when they are in the "off" position there is plenty of room to fit the pieces of the super in the jig.

To hold the jig in place while the super is stapled, a pneumatic disc brake was fitted to the back of the unit. The foot pedal operates this brake and allows the jig to be securely held in any position while stapling.

Though the unit shown in the photos is a "right-handed" jig, Ron has made another that better suits his left-handed beekeeping brother Paul. The entire unit is quite portable and can be clamped to any convenient work-bench or table for use. It will handle either full depth or three-quarter depth supers with no changes needed.

The cost of the jig has been quite high. The total cost of $780 included about $300 of pneumatics alone. Ron realised that few beekeepers would choose to buy one at this price and so decided to rent out the jig for $40 per day. As his brother has assembled as many as 500 supers in a day with it, Ron feels that many beekeepers might find it worthwhile renting it for several days to do all their assembly work at one go.

If any beekeeper is interested in contacting Ron Steens to discuss other details of the construction or rental of the jig, he can be reached at: R.V.S. Die and Toolmakers, P.O. Box 2154, Tauranga. *

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THE PERFECT ANSWER

Trade and Industry to Queen Breeder: "Please explain why you have raised the price of your queen bees during the price freeze."

Queen Breeder: "Livestock is exempt from the price freeze."

"That is correct, livestock is exempt but really are queen bees livestock?"

"Well, you turned down our application for increased export incentives for the queen bees we exported on the grounds that they were livestock and livestock did not qualify."

LIBRARY NOTES January 1984

by John Heinman, Hon. Librarian

The catalogue is now really on the way. The General Secretary mailed a copy asking me to look through it for corrections and he wanted to know the number of copies required. So I hope that the next issue of the Beekeeper will tell you the cost of a copy. It won't be all that much.

Another job near completion is the binding of those volumes of the N.Z. Beekeeper which had not been done. 1982/83 is at the binder now. He has made a very good job indeed of the previous years. We have received the following publications:

THE IMPACT OF PEST MANAGEMENT OF BEES AND POLLINATION by Eva Crane and Penelope Walker. 1983. 129p plus Annex A 73p and Annex B 9p.

NATURAL THERAPEUTICS, by Dr Y. Donadieu, 1983. 220p, in English from the French. It consists of four booklets bound together covering Honey, Pollen, Propolis and Royal Jelly. A good addition to our Library for I was impressed by the no-nonsense discussion of the therapeutic value of these bee-products. No wild claims are made for what pollen or royal jelly will do for the human system. It seems to be all well founded on thorough research and very different from some of the stuff one gets from health food places and so. Very readable and informative.

BEEKEEPING TIPS AND TOPICS by E. R. Jaycox, 1982. 155p, USA. We have had this book on order for some time. Professor Jaycox, the well known "Bee Specialist" of the Mid West, has put together the bits and pieces and hints he gave to his students when he lectured at the University of Illinois. Some of the contents may not be applicable here but most of it is of real practical value to the average N.Z. Beekeeper, either with two or 2000 hives.

DICTIONARY OF BEEKEEPING TERMS Volume 5, English-French-German-Russian and Spanish, Apimondia edited by Dr Eva Crane. It is what the title says and could be of use to anyone who wants to have a look at beekeeping in any of those countries or who wants to participate in the next Apimondia Conference, 1977, 206p.

AGRICULTURAL LITERATURE OF CZECHOSLOVAKIA, 3-4 1982. Nine paragraphs on beekeeping show that a considerable amount of research in connection with beekeeping goes on in this country. Text in English.

EXPANDING INTO COMMERCIAL BEEKEEPING, Notes of Short Course held in September 1983 at Telford.

KIWIFRUIT SEMINARS PROCEEDINGS, Hamilton and Tauranga 1982. 82p.

KIWIFRUIT POLLINATION by J. E. T. Ivens (Development Finance Corporation) 1982. This is a report re the present situation of pollination, future requirements and much needed further research. N.B.A. Technical Library, Box 112, MILTON at your service.

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Conference in Kenya — November 1984

The Third International Conference on Apiculture in Tropical Climates will be held on 5-9 November, 1984, in the Kenyatta International Conference Centre, Nairobi, at the invitation of the Government of Kenya. Other sponsors are the Organisation of African Unity, and the International Bee Research Association which convenes this series of meetings. Conference languages will be English and French, with simultaneous translation.

The First of these Conferences was held in 1976 in London, and the Second in 1980 in New Delhi at the invitation of the Government of India.

The First Circular on the 1984 Conference is now available, from either of the addresses below. It invites communications on the following subjects in relation to the tropics or subtropics:

- Apicultural problems in African countries
- Apicultural problems in other tropical countries
- Characteristics of African and other tropical honeybees
- Bee management and hives
- Honeys and other hive products, and their quality control
- Injuries to bees by diseases, pests and pesticides
- Pollination of crops by bees
- Beekeeping training and education
- Beekeeping in integrated rural development
- Economics of beekeeping, including marketing of products.

There will be other activities also, including excursions to see beekeeping and the country around Nairobi, and post-conference tours will be available. Arrangements are being made for group travel to the Conference from London, and from other centres where there is sufficient demand.

Conference Secretariat: Ministry of Livestock Development, Beekeeping Section, P.O. Box 68228, Nairobi, Kenya (telephone 010-2542-564324, telex 22766 MIN AG).

Convener: International Bee Research Association, Hill House, Gerrards Cross, Bucks SL9 ONR, UK (telephone 44-753-885011, telex 23152 MONREF G 8390).

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Hopes for an end to jetlag

Jetlag may soon be a thing of the past. Scientists believe it may be possible to use a drug to adjust rhythmic body functions when people fly from one part of the world to another.

Hopes of eliminating jetlag centre on a neuro-hormone substance called Melatonin. It is secreted by the pineal gland into the blood stream. Its rate of synthesis is greatly stimulated by darkness. Studies have shown that it synchronises breathing cycles in sheep and that it will act as synchroniser of the rest-activity cycle in rats.

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OVERHEAD IN NORTHLAND

Beekeeper calling wife on truck RT—
"Worker One calling Queen Bee"
"Queen Bee receiving"
"We'll be home in about 15 minutes"
"Right-O. Over and out".

COPY HELD OVER

We regret that some articles, scheduled for this issue, have been held over to make space for chalkbrood information. These articles should appear in the winter edition.

Classified Advertisements

Available only to registered beekeepers selling used hives, used plant, and other apiary equipment, and those seeking work in the industry; $5.00 a column cm. No discounts apply. No production charges. Maximum size: 1/6 page.

WANTED TO BUY

Beehives wanted, up to 300, also division-board feeders and queen excluders. Contact Geoff Stone, Pirinoa 869, collect, evenings.

Beekeeping business or part of same. Consider anywhere from Marlborough to Otago. Prefer South Canterbury-North Otago.
Reply "Beekeeper, P.O. Box 843, Timaru.

One or two-frame hand honey extractor.
W. N. Dempsey, LWR, Retaruke, R.D. 2, Owhango, Taumarunui. Telephone 3851.

Up to 500 hives on site, preferably Central Otago. Consider other areas if substantiated by good crop record.
Contact: D. L. Whiteford, C/- P.O., Waihola, Otago.

FOR SALE

For removal 200 hives with pollen traps. All equipment as new.
Phone: R. Saunders, Telephone: 83-769, Ashburton or T. Saunders, Telephone: 6252, Ashburton.

Small beekeeping business comprising 55 hives, 25 nucs, 600 boxes of stored combs, baseboards, lids, pallets, blower, paraffin tank, three items woodworking plant, staple gun, compressor, box assy fixture, J5 Bedford.
For full list and prices contact: **Denis Minton, 1 Clegg Place, Warkworth. Telephone: WW7272 (bus), WW7157 (home).**

Limited quantity of bulk honey for sale at $1.70 per kilo.
Contact: G. R. Tweeddale, R.D. 2, Marybank, Wanganui.

800 beehives including 400 on pallets plus all equipment. Immediate possession. J. and C. Busby, Rotomanu, R.D. Kumara, Westland. Phone: Rotomanu 504.

Beehives, 50, three-storey, January 1984 queens, $120. 100½ depth supers with frames, never used, $8 each. 20¾ depth supers, never used, $5 each. 100 hive lids $7 each. 50 migratory bot bds $5 each. Plus numerous other misc. items-offers. Phone: Auckland 762308.

Around 40 Deevee variable Nucs plus bees. F. Galea, 263 Ranzau Road, Hope, Nelson. Phone: Richmond 7180 evenings.

OTHER PUBLICATIONS

INTERNATIONAL BEE RESEARCH ASSOCIATION

Regularly publishing new information on bees, beekeeping and hive products, for beekeepers and scientists all over the world. IBRA Representative for New Zealand: T. G. Bryant, Apicultural Advisory Officer, Ministry of Agriculture & Fisheries, Private Bag, Tauranga. 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.

WORK WANTED

Bee frames assembled and waxed 30 cents per frame. We can supply materials at competitive rates or you supply. IHC Workshop, Papakura. Phone: Auckland 2996180.

TUITION

TELFORD

Short course business management for commercial apiarists. Dates 9th-12th July 1984. Monday 1 p.m.-Thursday 12 noon. For established commercial producers. Designed to foster interest and efficiency in the financial management aspects of beekeeping. Topics include record keeping, employing labour, accounting, budgeting, taxation, marketing, sources of finance, insurances, estate planning.
For further information please contact: Registrar, Telford Farm Training Institute, Private Bag, Balclutha. **Telephone: 81-550.**

BOOKS

Bees and Honey

An excellent booklet, originally produced for schools and other educational purposes by the NZ Honey Marketing Authority.

Minimum order, 5 copies: $1. Additional copies 20c each.

Write:

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P.O. Box 4048, Wellington

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A guide to bee forage plants. An updated version of a text first prepared by R. S. Walsh in 1967.

This 1978 edition lists source plants in chapters according to the seasons in which they bear nectar or pollen. Additional chapters are also included on the flight range of bees, the function of the flower and district planting notes (originally prepared by the NBA).

$2.50 a copy, from:

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P.O. Box 4048, Wellington

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THE APIARIST

A New Zealand Beekeeping Journal. Published every two months. Contains informative and interesting articles on beekeeping in New Zealand and overseas.

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Write to: The Editor, "The Apiarist", P.O. Box 5056, Papanui, Christchurch.

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Senior Beekeeping Journal of the Southern Hemisphere. Complete coverage of all beekeeping topics in one of the world's largest beekeeping countries.

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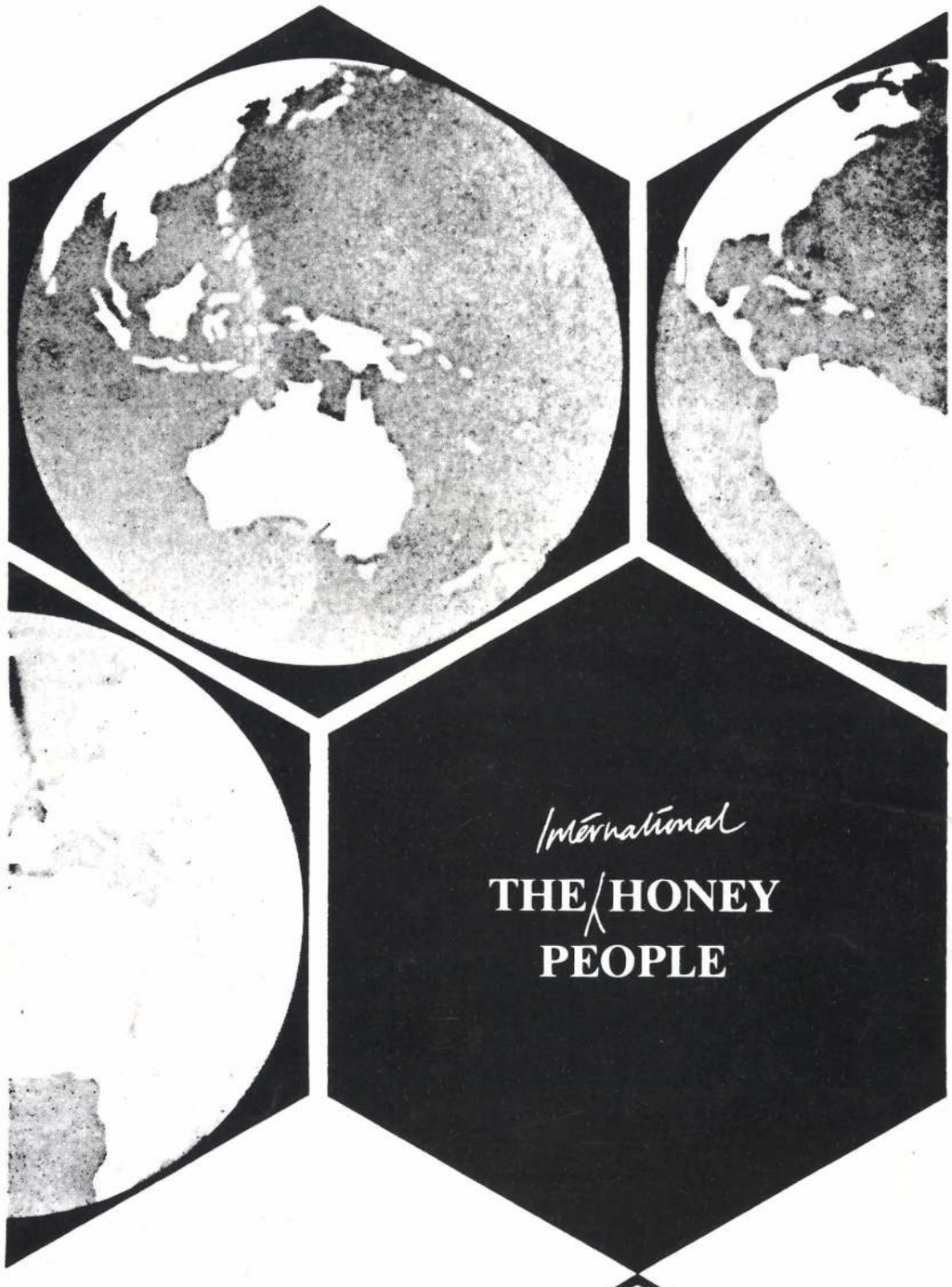

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