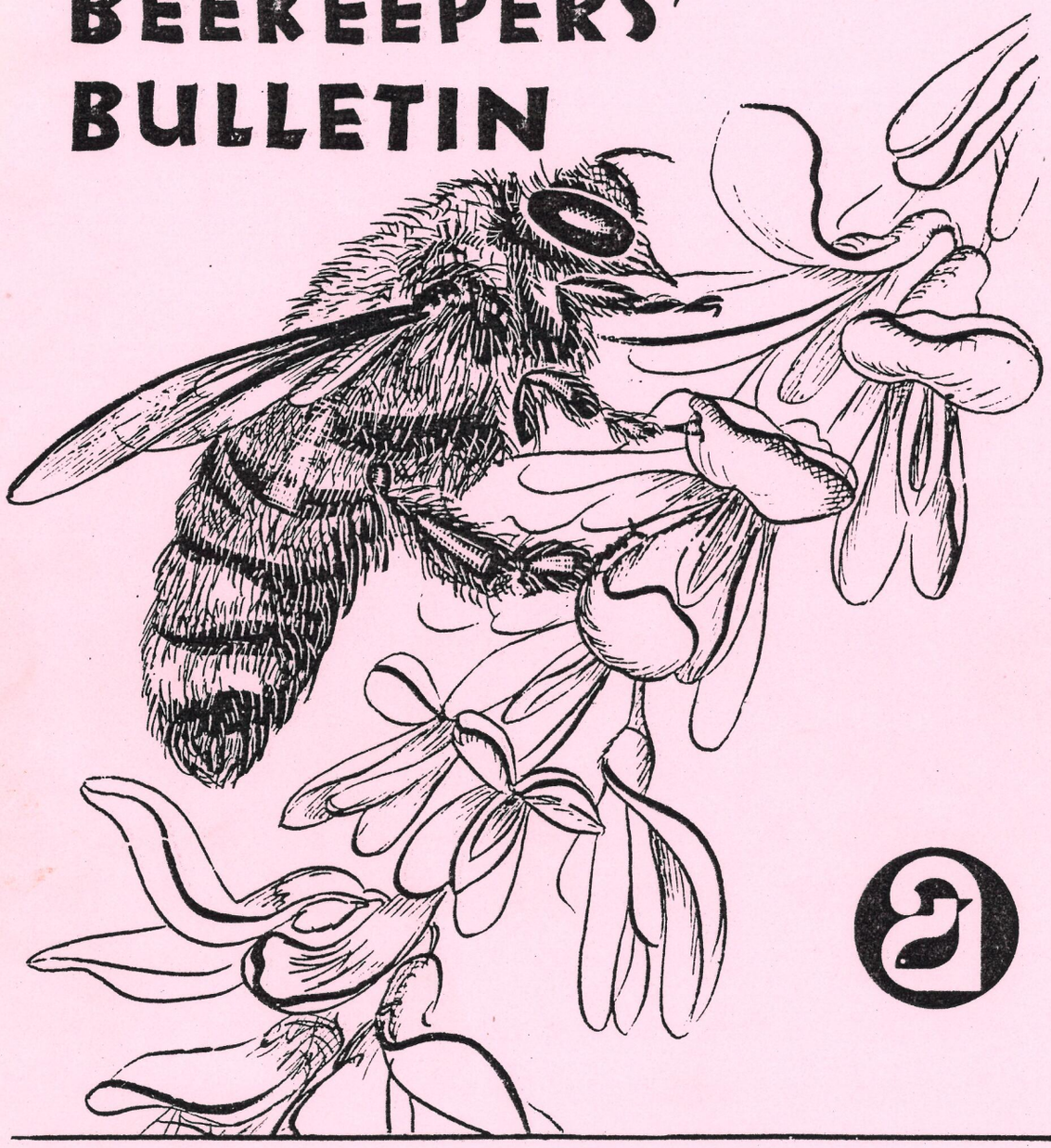
THE BEEKEEPERS' BULLETIN



A.G. Matheson
Apicultural Advisory Officer
Ministry of Agriculture and Fisheries
Private Bag
NELSON

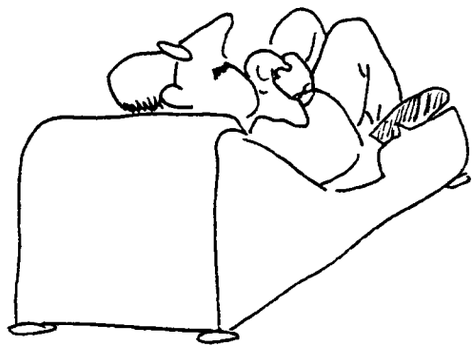
Telephone: 81 069 (Work)

Volume 5 number 3

February 1984

Once again the season has been very strange, and I despair of ever experiencing another "normal" summer. The season started with a promising early spring in some areas, with hives very strong in brood and bees earlier than usual.

Then came a very disappointing period from mid-October to mid-December. Never before has so much sugar been fed by so many beekeepers with so few results. It wasn't a question of whether to feed, it just had to be done to keep bee numbers up. Of course any hives that missed a feed or received one late ended up dead,or so weak they couldn't gather a crop.



There is tremendous clover flowering in Nelson and Marlborough, better than most people have ever seen. But do you think any nectar is coming off? Hardly a drop - there just hasn't been a period of hot weather long enough to get the ground temperatures up and nectaries working.

So the season is very late starting, but there is still a chance of getting some honey if the weather changes.

For a change, the West Coasters are much better off. After an incredible flowering last year, rata is turning it on again. This year the blossom is quite patchy, with only parts of trees flowering in most areas, and some areas much better than others. That's still enough to get a crop though, and after a respectable first round of kamahi the rata honey is beginning to come in. Prospects are for an above average crop.

BL has shown up in fairly high numbers this year. Provisional figures for the year ending 31 January 1984 show the following incidence:

	apiaries	hives
BL reported by beekeepers	65	103
BL found by MAF	22	59
Total	87	162
Last year's figures	70	106
% change	+24%	+53%

The figures show that there is a vast amount of room for improvement. The disease is very scattered, with beekeepers reporting an average of only 1.6 diseased hives per diseased apiary, and MAF finding 2.7.

To me this indicates that BL is still mostly being spread by beekeepers in their own hive equipment. Good hygiene and careful disease prevention procedures can almost abolish this kind of BL spreading, leaving only the isolated cases of diseased hives being robbed out.

How about it?

* * * * * *

- West Coast branch NBA. An extracting evening will be held at John Glasson's in February. Contact branch officials for further details.

- Beekeeping courses. This year's sole offering will be "business management for beekeepers".

  Aim: to foster interest and efficiency in the financial management aspects of beekeeping.

  Subjects: record-keeping, employing labour, accounting, budgeting, taxation, marketing, insurance, estate planning, and others.

  Participants: established commercial beekeepers and their wives or husbands.

  Tutor team: MAF apicultural and economics advisers, invited specialists.

  Place: Telford Farm Training Institute, Balclutha.

  Dates: originally scheduled for 23-26 July, but as this is conference week the dates may be changed.

  Further information: myself or The Registrar
  Telford Farm Training Institute
  Private Bag
  Balclutha.

GETTING THE BEST RESULTS FROM **SUGAR** FEEDING

Sugar feeding is part of every beekeeper's management. Even those who run colonies on "all-honey wintering" end up resorting to sugar feeding on occasions. These days it's more important than ever to get the most benefit from the dollars spent on sugar.

What do bees do with sugar?

Bees must do two things to sucrose before it can be absorbed. First the sugar must be digested (or "inverted"), and then excess water must be eliminated. The enzyme used to digest the sucrose is invertase, which is produced in workers' hypopharyngeal glands. These glands produce royal jelly in bees 5-13 days old, but during summer the glands shrink rapidly when a worker gets to 17 days old and begin to produce invertase. Enzyme production reaches a peak when the bees are about 21 days old and start foraging. In winter bees of all ages produce invertase.

Excess water is voided in the faeces, and of course bees must have fine weather to be able to fly and defaecate. In the case of dry sugar the bees add a lot of water to the crystals, and in fact make it much more dilute than honey or concentrated sugar syrup. Dry sugar is reduced to a 31% solution or 1 part sugar:2.25 parts water by weight.

Autumn sugar syrup feeding

Let's look specifically at syrup feeding in autumn. One of the best studies on this subject was done quite some years ago by C R Ribbands of Rothamsted Research Station in England. By weighing colonies fed at different times and with different concentrations of syrup, he showed quite clearly the savings that can be made with correct feeding. Remember that we are talking autumn feeding only.

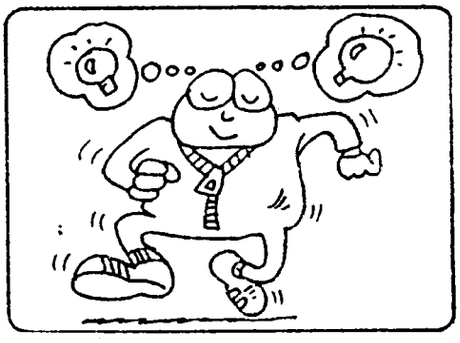
Savings with heavy syrup

Bees fed concentrated syrup (64% sugar) produced one third more stores than bees fed the same weight of sugar in dilute syrup (38% sugar). This happened because the bees fed dilute syrup must consume extra sugar just to dispose of the surplus water. It "costs" 250-300 g of sugar for every litre of water eliminated.

In practical terms this means that for every 10 litres of concentrated syrup fed, an extra 2.5-3.0 kg of sugar will be stored, compared with when the same amount of sugar is fed in dilute syrup. At 80¢/kg that can be seen as a saving of $2.00-$2.40 per 10 litre feeding per hive.

Optimum syrup concentration

There is a lot of mumbo-jumbo spoken about syrup concentration, with people rattling off 2:1 by weight or 1:1 by volume, and 1:1 by weight or 1:2 by volume. It's easiest to express concentration as a ratio by weight, or as a % solution.



The most concentrated syrup you can get at 17°C is 67% or 2:1 by weight. To work out the ratio use these formulae:

$$\text{ratio by weight} = \frac{\text{sugar}}{\text{water}}$$

20 kg of sugar and 10 kg of water (or 10 litres) = $\frac{20}{10}$ or $\frac{2}{1}$, a ratio of 2:1 by weight.

To work out the % solution use this:

$$\% \text{ solution} = \frac{\text{sugar}}{\text{sugar + water}} \times 100$$

$$= \frac{20}{20 + 10} \times 100$$

$$= \frac{20}{30} \times 100$$

$$= 67\%$$

Although all the sugar in a 67% solution is dissolved at 17°C, there is a risk of sugar granulating and sitting on the bottom of the tank if the temperature drops. To avoid this waste use a 62% solution, or 18 kg of sugar to 10 litres of water. At this concentration the temperature has to drop below 0°C before there is any risk of granulation.

When to feed

Ribbands also found that a significant saving could be made depending on the time during autumn that the colonies were fed. Ten percent more stores resulted from feeding concentrated syrup in mid-September than from the same amount fed in August. Later feeding was found to stimulate brood rearing less.

That was in the northern hemisphere of course. It's difficult to translate it directly to New Zealand conditions, but it might be around mid-March. Feed syrup too early and the colonies rear too much late brood, and the winter bees have a shorter life span because of the extra brood rearing they've had to do in autumn. Feed too late and the colony may have trouble expelling the waste water in the cold and damp conditions.

How much to feed

This can only be determined by an examination of each colony. If we assume that a colony needs 25 kg of stores for winter, following Ribbands we can expect approximately 8 kg of sugar stored for every ten litres of concentrated syrup fed. Light colonies, then, would require two feedings, while medium colonies might only need one.

Don't be caught out, however, by assuming that to feed the same equivalent weight of sugar in concentrated syrup, you only have to feed half the amount you normally feed in dilute. Because of the way sugar concentrates in water you should actually feed closer to two-thirds of your usual figure.

How to get the best results from autumn syrup feeding

1) Feed concentrated syrup rather than dilute.

2) Use the correct concentration of syrup - 18 kg sugar per 10 litres of water.

3) Don't feed before mid-March.

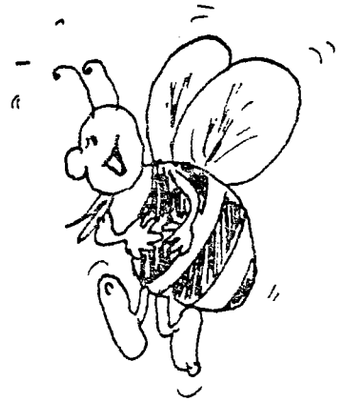
4) Feed twice to light colonies, once to heavy colonies (10 litre feeds).

5) Use two-thirds of your usual dilute feed when using concentrated syrup, to get the same amount of sugar fed.

*** *** *** *** *** *** ***

FROM THE BELIEVE-IT-OR-NOT DEPARTMENT

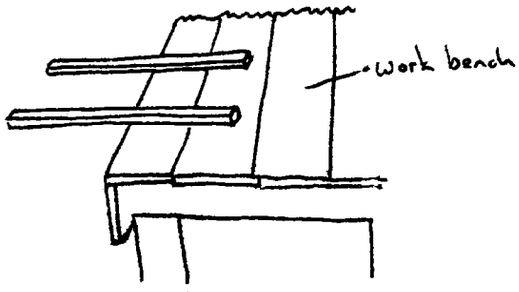
The latest Apicultural Abstracts reports the publishing of a new journal in Japan called Ho Shin, or Api-acupuncture. The magazine records the foundation of a Society for Api-acupuncture, and reports on the experience that some beekeepers have had with using stings as acupuncture needles - application in a planned way to specific sites on the body is used to treat particular conditions.



A HELPING HAND FOR PAINTING

Here's a good idea to save messy fingers when painting supers.

Fix two lengths of timber (about 50 x 25 mm) to the work bench so they stick out by about 225 mm. They should be parallel, with the outside edges about 325-350 mm apart.



The two arms make a good support for hanging a super on while it's being painted. It can hang from its end or side, or even sit on it diagonally.

That idea is just one of many practical snippets contained in a series of articles from the New Zealand Journal of Agriculture about 25 years ago. They were written by Roy Paterson (of creamer fame), and I might write about more of them in future issues.

*** *** *** *** *** *** ***

COATINGS FOR HONEY HOUSE APPLICATIONS

Another range of coatings that may be useful for honey houses come from Ceilcote. This firm pioneered glass flake linings over 20 years ago, and the products are used in many different situations in New Zealand and overseas.

Flakeline 200 series coatings and linings consist of a polyester resin that is impregnated with tiny flakes of glass, giving an almost impermeable film. This would be useful in coating floors, and it has high impact resistance and good abrasion resistance.

Contact:

Ceilcote (NZ) Ltd, P O Box 3046, New Plymouth. Phone NP 70-410.
The local agent is R Lenting, 53 Trafalgar St, Nelson.
Phone NN 89-729.

A PLEA FOR SOME INFORMATION FROM YOU

What's the best thing for writing on hive lids so that the words are legible for a reasonable length of time (say a season or two)? Felt pens seem to fade fairly quickly, and I'm always losing the caps and letting the pens go dry. Ordinary crayons and chinagraph pencils aren't too much cop. Any ideas?

*** *** *** *** *** *** ***

HONEYDEW UPDATE

Two scientists of DSIR's Ecology Division have been studying beech honeydew in the Nelson area, and have recently published their findings. The paper was mainly to do with the importance of honeydew as a food source for birds, but it does contain some information for beekeepers. Three sites were studied: Graham Bush in the Whangamoas, and Winn's Bush and Spooner's Bush, both in Golden Downs State Forest.

* Types of tree bearing honeydew

  - Mostly black beech and mountain beech, with some hard beech also.

  - Mostly younger trees - 80% of the honeydew-bearing trees had a diameter (at breast height) of less than 300 mm.

* Seasons of honeydew production

  - Main peak in spring (September, October, November), with a lesser peak in autumn (April, May, June). See figure 1.

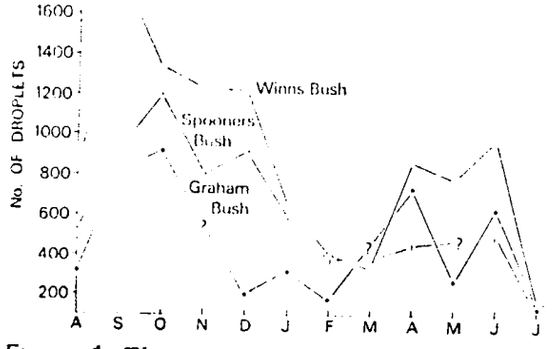


FIGURE 1. *The total number of honeydew droplets counted in two 30 cm x 20 cm quadrats on 20 beech trees in each study area each month.*

* Sugar concentration

  - The sugar concentration of honeydew varies throughout the year, being highest in winter/early spring, and lowest in November and again in March (see figure 2).

  - The sugar concentration of honeydew rises throughout the day as water evaporates from the droplet (see figure 3).

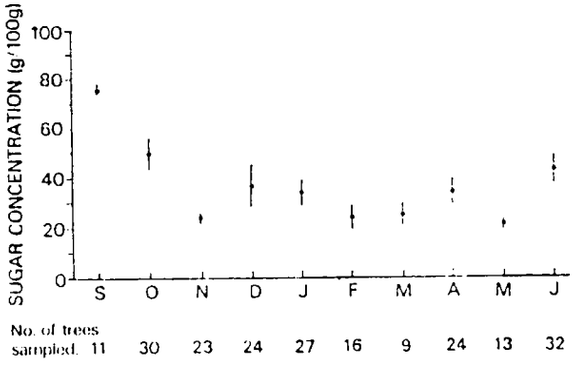


FIGURE 2. *The mean (± 95% confidence limits) monthly concentration of sugar in honeydew.*

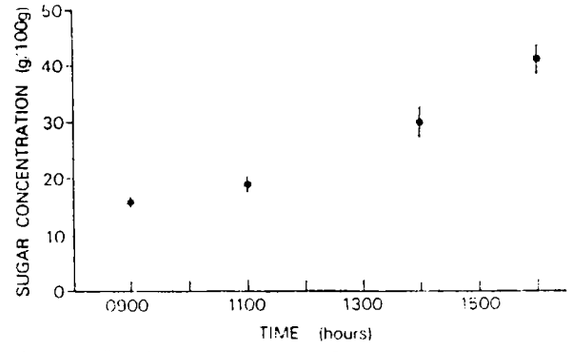


FIGURE 3. *The mean (± 95% confidence limits) concentration of honeydew collected from 10 black beech trees between 0900 hrs and 1600 hrs, 12 May 1980.*

  - Honeydew of less than 30% sugar flows freely, but gets stickier as the water evaporates. At over 70% sugar the droplets become tacky and stay on the wax tube of the insect, possibly restricting further flow. A droplet like this may hang for hours without becoming larger, but if it is removed another drop will begin to be formed.

Gaze, P.D.; Clout, M.N. 1983. Honeydew and its importance to birds in beech forests of South Island, New Zealand. New Zealand Journal of Ecology 6: 33-37.

Another honeydew seminar (Son of Honeydew? Honeydew Revisited?) will be held later this year. It is being organised by a student from Lincoln College, who is doing a thesis on use of the honeydew resource in the South Island. She has been employed by MAF over the summer vacation to collate more information on the subject and to organise the seminar.

CODE NUMBERS IN APIARIES

My part-time inspectors report that they are constantly being frustrated by the lack of code numbers in apiaries. These people are MAF staff being deployed on disease checking to help YOUR industry, and I think they deserve YOUR support.

Another good reason for having numbers on came to light last year. After both the July and the December floods I had farmers ring me up and say that they'd had hives brought down the river and left on their property. Because the hives had numbers on I could contact the owners and they at least retrieved the gear.

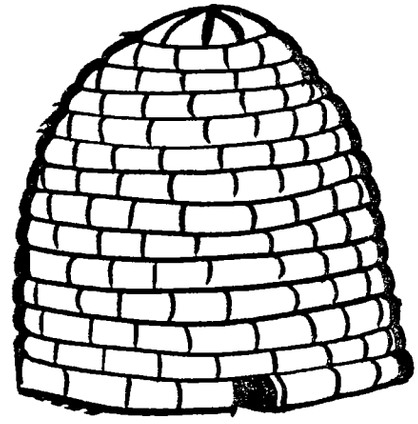
*** *** *** *** *** *** ***

PLASTIC BEEHIVES

From time to time various moves are made into plastic hive components, and a recent development in Israel looks promising. Rotoplas Ltd of Jerusalem are making a Langstroth hive of crosslinked polyethylene (polythene). Each piece of the hive has an inner core of foamed polyethylene reinforced with glass fibres, while the exterior is a denser layer of crosslinked polyethylene.

Claimed advantages include:

- 35% lighter than wood
- stronger than wood
- maintenance free
- not affected by mould, wax moth, or boring insects
- easily cleaned or fumigated.



The problems with most experiments on plastic hives are the cost, and the fact that plastic breaks down in sunlight. This particular hive, "Bee Plus", is ultra-violet stabilised, which should make it last long outdoors. The cost I have no details on.

Rotoplas Ltd
Talpiot Industrial Zone
P O Box 10285
Jerusalem
Israel.

REVEGETATING NEW ZEALAND

How to turn scrub and weeds into magnificent areas of native bush in just 20 years.

If you have a scruffy area of waste land (or know of someone else who does) that could be put to better use, then there is a good little book out which will help.

The "Revegetation manual" gives hints on how to plan and prepare a site, and how to use a nursery crop to protect young plants and to guard against fire and animals. The book is very well laid out, clearly illustrated, and has a good bibliography.

Evans, B. 1983. Revegetation manual, a guide to revegetation using New Zealand native plants. Queen Elizabeth II National Trust, $9.95. Available from most bookshops.

*** *** *** ***

VARROA SPREADS FURTHER

Latest news from Europe is that the Varroa mite is spreading further and further. It is now in Eastern Holland, and in France down to the Mediterranean coast.

The real problem with this beast is that by the time it is noticeable in a colony the infection is two years old. It is most likely that ordinary beekeeping management will have spread the mites elsewhere during that two year "incubation period". Affected colonies are likely to die within two years of discovery.

Diagnosing Varroa has been done by inserting collecting sheets into the hive for winter, and examining the debris for dead mites. Now the recommended method is to put a sheet of corrugated cardboard into the entrance, smoke the colony thoroughly with tobacco, and remove the sheet 24 hours later (described in the February 1983 Beekeepers' Bulletin).

Controlling the mite when it is found has also been a problem. The fumigants Folbex and Frow mixture have been sold for Varroa control, but now appear to be completely useless. A new substance, Folbex VA, is to be tested soon.

Varroa would be a total disaster for New Zealand beekeeping if it were ever introduced. Eternal vigilance against illegal imports is our only hope.

Dennis, C.B. 1983. Varroasis - even nearer. British Bee Journal July 1983 : 136.

Varroa is also spreading rapidly in South America. It was thought that the mite would "run out of steam" as it approached the temperate areas, because it is basically a tropical species. Roger Morse of Cornell University wrote recently "it appears that I, and others, have been wrong in thinking varroa disease was more severe in tropical areas than in temperate areas. Dr David de Jong has just returned from Argentina and reports that thousands of colonies there have died from the disease".

Morse, R.A. 1983. Varroa update - the situation in South America. Gleanings in Bee Culture 111 (9): 458.

***** *****

A SILVER LINING IN EVERY CLOUD?

From the same article on Varroa, Dr Morse writes "the varroa problem has generated a great deal of conversation and, we understand, a number of isolated and insular countries are thinking about expanding their package bee and queen production. Beekeepers in these countries think that should the United States become infested then they could serve as a source of disease free bees and enter what appears to be a lucrative market. This might be possible.

The July issue of the British Beekeepers' Association magazine indicates that in 1982 4,562 queens were imported into Britain. New Zealand sent 1,336 of these and the U.S. 3,196. New Zealand has long been known as a major honey producing area and has long contributed to the international honey market."

WAX CELL CUPS OR PLASTIC?

I've always maintained (without ever knowing for sure) that there is no difference in acceptance rate between grafting into wax and plastic cell cups. Most commercial beekeepers use plastic cell cups, so I guess they feel the same way. There are those who think that wax cell cups are more "natural", or perhaps they just enjoy puddling about with molten wax.

I wasn't aware of any scientific analysis of this, but now two Italian researchers from the Apicultural Institute at the University of Turin have compared the two types of cell cups. They used them for queen rearing and royal jelly production, and found no significant differences between them in the number of ripe queen cells produced, or the average royal jelly production per cell.

Manino, A.; Marletto, F. 1981. (Comparison of wax and plastic queen cell cups for queen rearing and royal jelly production.) Apicoltore Moderno 72 (6): 217-222.

*** *** *** *** *** *** ***

POOR OUTLOOK FOR BEESWAX

When I was in Rome last winter I met with Roger Morse, apiculture professor from Cornell University in New York and the author of many beekeeping books. He told me some interesting things about the beeswax market, which will be included in his book on beeswax due to be published shortly.

The price of beeswax on the US market has fallen from $US 2.00/lb ($NZ 6.60/kg) to between $1.15 and $1.20 ($NZ 3.80-4.00/kg). Because some suppliers have large amounts of wax in stock, the demand in many markets is almost non-existent.

There are three main markets for beeswax:

- beekeeping industry, for foundation. One factor that is causing a reduction in demand here is the lower number of people going into beekeeping. Enrolment is down in all agriculture courses, including beekeeping. There is also a reduction in interest in natural foods, part-time farming, and beekeeping as a hobby.

- Roman Catholic church, for candles. This church used to require candles to be of 100% beeswax (for symbolic reasons), but now candles are only 66 $^{2}/_{3}$% or even 51% beeswax.

- cosmetic industry. Fluctuations in supply of beeswax (due mainly to political instability in some developing countries) forced many industrial users to switch to synthetics. Once they had made the change they stayed with synthetics, because they are more consistent in quality.

*** *** *** *** *** *** ***

SOURCES OF FINANCIAL ADVICE FOR SMALL BUSINESSES

A recent survey of the small business sector in New Zealand indicated that financial problems were the greatest concern for small business. These included the problems of raising day-to-day working capital, control of debtors and cash flow, finance for large orders, and raising finance for plant and machinery.

A number of organisations have been set up to provide advice for small businesses on financial problems, marketing, exporting and other concerns. Listed below are some of these which are able to provide advice on financial management in a business and, particularly, advice for those people who are considering setting up their own business.

The list is not exhaustive, but your local regional development council will be able to advise you on where you can go for advice.

Trading Banks

- The Bank of New Zealand

The Bank of New Zealand is the largest financial institution in New Zealand, with over 240 full service branches. The wide range of lending facilities includes overdrafts for working capital, term loans for capital items, leases and commercial bills.

In the small/medium business sector the BNZ advises in areas other than traditional deposits and lending. To facilitate this advisory work the bank has developed a three-tier structure of branch, district and head office to service the needs of these clients. In most instances the local branch is able to provide this advice, but specialist staff are available from district offices and head office should the need arise.

Advice is available in investments, packaging facilities, importing, exporting, management principles, cash flow preparation, budgeting.

- Westpac Banking Corporation:
  Business Advisory Service

Westpac's Business Advisory Service was established to help managers of small and medium-sized businesses in establishing and maintaining a profitable business.

The service is staffed by experienced management consultants with a background in the management of small/medium-sized businesses in New Zealand. It is a free service available to the bank's business customers.

Included in the services offered by Westpac's Business Advisory Service are:

- business planning and budgeting
- cash flow management
- cost and production control
- feasibility/viability assessments
- marketing.

- The National Bank

The National Bank can provide advice on the financial structure and management of a business, or provide an introduction to a specialist who may be able to assist in some aspect of the business. The bank can also help with providing economic forecasts, or making enquiries on the reliability and financial strength of a potential trading partner either in New Zealand or overseas. Most banks have a close association with a finance company and a merchant bank, and are able to make introductions there or call on their associates' specialist services.

- The Australia and New Zealand Banking Group

The ANZ advised that they do not operate a specific advisory service for small business, but that bank managers are able to deal with most questions that customers may have.

Development Finance Corporation

- Small Business Development Division

The Small Business Development Division was set up as one of the DFC's three divisions in 1980, to provide an improved level of financial and advisory services specifically for small businesses.

The division is also responsible for the administration of several government schemes: Regional Development Suspensory Loans, the Applied Technology Programme, the Small Business Venture Capital Facility, and the Job Creation Suspensory Loans for Small Business Scheme.

- Small Business Agency

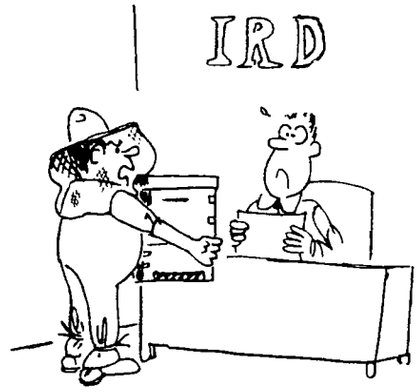
The Small Business Agency is operated as a separate division of the DFC.

The objectives of the agency are to promote the development of small businesses in New Zealand, and to encourage co-operation among organisations which are concerned with their activities.

It provides a diagnostic, advisory and referral service, with in-depth counselling and the provision of loan guarantees to selected small businesses meeting certain criteria (e.g. export potential).

Contact: Development Finance Corporation
P O Box 1566
Christchurch

Phone: 68-759



"You wanted to know about my deductions for veils?"

Accountants

Accountants can provide a wide range of services to small businesses in addition to preparing annual accounts and taxation returns. Their assistance can include:

- financial planning and budgeting
- capital investment appraisal
- preparation and analysis of operating results
- obtaining finance for working capital and fixed assets
- setting up internal financial control systems.

Qualified public accountants are listed in the yellow pages of the telephone directory under "Accountants - Chartered".

The New Zealand Society of Accountants can provide information on the type of accounting and financial services available from accountants, and assist companies to locate accountancy firms able to provide particular services required.

Contact: NZ Society of Accountants
P O Box 11 342
Manners St
Wellington

Management Consultants

Professionally qualified management consultants are able to provide comprehensive advice and assistance to industry and commerce. They can make a practical and objective assessment of problems and opportunities, and the alternative ways in which these can be tackled.

Assignments are normally preceded by an investigation and discussion from which a report is prepared. This report will recommend the type of consulting assistance required, the benefits expected and the costs of carrying out a project, and is prepared without cost or obligation.

Refer to the yellow pages under "Consultants - Industrial and Management". Some of the larger accountancy firms also have consultancy divisions.

The Business Development Centre, University of Otago

The Business Development Centre provides a management consultancy service to help improve the business activity and performance of public and private companies.

Assistance is only given in the South Island, and includes advice on general management and the channelling of professional and advisory services to those who can use their services.

- Enterprise Boards

The Business Development Centre has promoted the establishment of the "enterprise board" concept to encourage and stimulate manufacturing and service industries. The boards meet with people who have ideas for new enterprises to vet the project's practicability and, if agreed, arrange an initial feasibility study. The board is also able to support the venture with financiers, suppliers and planners, and arrange regular follow-up on the business development.

Contact: Business Development Centre
University of Otago
P O Box 56
Dunedin

Small Enterprises Network

The network offers advice and practical help to people with an idea for a small business and who have little information on how to get it off the ground.

They fix priorities for development, advise on the financial and legal aspects of setting up the business, budgeting, bookkeeping, planning and finding premises.

If they cannot advise directly, they are able to find someone else who can.

Contact: Small Enterprises Network
16 Kensington St
Wellington

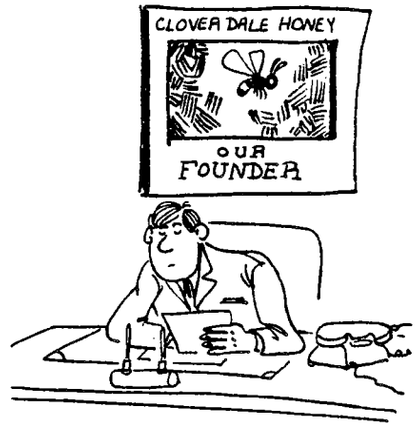
Regional Development Councils

The sad story of beekeeping and the regional development councils was told in the November 1983 issue of this bulletin. Pressure from the regional councils has gained a temporary halt on the cutting of funds for beekeeping, pending a review on loans to beekeepers by the Rural Bank.

If you are interested in using this form of assistance then move quickly, in case Wellington wins and beekeeping assistance for priority areas is stopped for good.

Contact: Rex Harrison
West Coast Regional Development Council
P O Box 361
Greymouth
Phone: 6334

Laurie Duckworth
Marlborough Regional Development Council
P O Box 652
Blenheim
Phone: 83 249

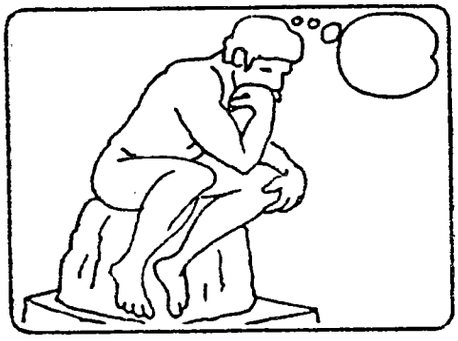


Parts of this article have been adapted from an item in the October 1983 Small Farmer magazine.

*** *** *** *** ***

O, THE JOYS OF ACADEMIA!

Recently I was using the backs of some old university notes for scrap paper, and came upon this gem of a definition of life.



"Life is a partial, continuous, progressive, multiform and conditionally interacting self-realization of the potentialities of the atomic electron states."

Yes I'm perfectly serious, and in fact the author of that piece is a well-known scientist and philosopher.

*** *** *** *** *** *** ***

A beekeeper was in my office recently moaning about the non-existent honey flow, and wondering what had gone wrong this year. "It couldn't have been mismanagement", he roared, "I didn't touch them over spring".

HONEY BEES AND THE MINING BOOM

What to do with those hives after the pollination period may become more of a problem, as bee pasturage gets shorter. Perhaps mining companies may provide a solution.

Old-time miners recognized that the vegetation above the ground was an indicator of the minerals contained in it. One way of sampling plant matter is to collect pollen, and an easy way of doing that is to let the bees do it for you.

To find out if plants concentrated minerals from their environment in pollen, hives were put near a smelter in British Columbia. Pollen collected from the hives showed very high concentrations of lead and zinc.

These minerals were from the smelter. Did pollen also reflect what was in the soil? To check this out, hives were shifted to near a known molybdenum mine. The pollen collected there had 40 times as much molybdenum as the pollen collected at the hives' original site.

Now mining companies are getting interested in the idea of using pollen analysis to determine where to do test drilling. Hives could even be shifted into remote spots by helicopter.

Free, J. 1983. Bees as prospectors. Farm news from Britain 10: 4. Lilley, W. 1983. Bee miners join British Columbia gold hunt. American Bee Journal 123 (9): 635-637.

*** *** *** *** *** *** ***

For wasp nests in wall cavities, try cutting a Pest Strip into segments and posting them through the entrance hole. The fumes given off may kill the nest. As an alternative you could pour in some concentrated liquid insecticide.

FROM THE IT-COULD-ONLY-HAPPEN-IN-AMERICA DEPARTMENT

I couldn't believe it at first, but there it was in black and white. We've heard about bees being killed by pesticides in fruit growing areas, we've discussed the problems of bees from apiaries near busy roads being killed by passing traffic, and we've even learnt about the effects of putting hives under high tension lines.

But a danger to bees from space rockets?

In an experiment carried out by two United States researchers, bee colonies in the field were exposed to exhaust from solid fuel rockets that contained varying concentrations of hydrogen chloride. Brood production was depressed in all treated colonies, and two did not recover. Honey production was reduced or non-existent, stress symptoms were observed, and agressiveness increased in the most affected colonies.

The report concludes by saying that "space shuttle flights may have adverse effects on colonies near the launch site; however, repeated exposure of colonies is not anticipated." (Is this because they are actually incinerated on their first exposure? The mind boggles.)

Romanow, L.R.; Ambrose, J.T. 1981. Effects of solid rocket fuel exhaust on honey bee colonies. Environmental Entomology 10 (5): 812-816.

*** *** *** *** *** *** ***

FROM THE MISCELLANEOUS-USES-FOR-BEE-PRODUCTS DEPARTMENT

The New Zealand Herald recently published an article entitled "Contraception through the ages", to mark the 30th anniversary of the Family Planning Association. Among the copious quantities of trivia we find that Japanese women ate the bodies of dead bees as an oral contraceptive. (They were luckier than their African sisters, who resorted to swallowing froth from a camel's mouth or drinking water that had been used to wash the dead.)

Apart from grass, seaweed, and dried figs, early attempts at diaphragms included beeswax, and an Egyptian special - a mixture of crocodile dung and honey. Thank goodness for the twentieth century!

VENTILATION FOR WINTER

One way to help colonies to overwinter is to provide hives with adequate ventilation. Colonies with good ventilation

- use less stores,
- maintain bigger clusters (which are more efficient), and
- have lower Nosema levels in spring.

Good ventilation is important everywhere, but especially in wet areas (no names mentioned). Apart from moisture in the air, a considerable amount of water is produced by bees when they eat honey.

This water comes from three sources - the 17% or so of the honey that is already water, the water added by bees to honey to dilute it for feeding to larvae, and (most importantly) the "water of combustion" - the water produced as a by-product of food breakdown.

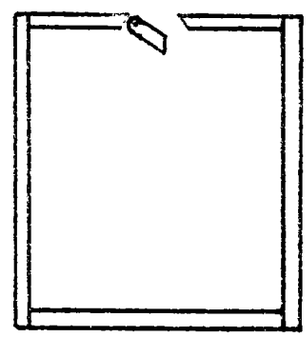
All in all, for every kilogram of honey used by the bees about a litre of water is given off. In other words, a flagon full of water must be disposed of for every frame of honey eaten.

This water has to go somewhere. A small part of it is contained in the faeces voided by bees on cleansing flights. During the warmer seasons of the year much of the moisture-laden air is fanned out the hive entrance. In winter, though, this isn't possible.

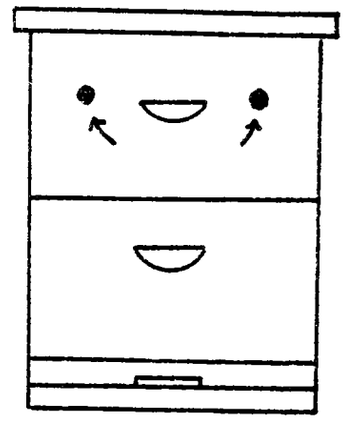
Once bees begin their winter cluster the bees can't ventilate through the bottom entrance, so the warm air rises from the cluster and water condenses inside the hive. This puts a lot of extra stress on the colony, and makes it harder for them to maintain cluster temperature.

Dry colonies can withstand very cold conditions, but when moist they find even a few degrees of frost a problem.

In winter an upper entrance is essential for proper ventilation, yet this is a much-neglected feature of the hive types we use in New Zealand. It is not very hard to think of solutions to the problem and I offer a few here, though no doubt you can think of many more.
The top entrances would have to be screened if wasps are a problem, and can usually stay open all year.



- gaps in the rim of the inner cover, provided the hive lid is not too snug. The gap could be modified as an opening entrance for when the cover is used as a slip board (see diagram).



- holes bored in the hardboard of the inner cover, combined with blocks in the corner of the hive lid to raise it off the inner cover.

- auger holes in the front end of the second brood box. The holes will have to be no bigger than 10 mm, to stop furry grey invaders from using them. And don't put them in the hand hold, as I've seen some people do.

*** *** *** *** *** *** ***

HONEY PACKAGING

More on the Teckpak Safe-a-pak container mentioned in the last issue of the Bulletin. Following some high level market research (a beekeeper told me), I can now reveal that:

- a clear version of this pack will be on the market very soon
- a 1 kg honey container is also about to be launched
- there is normally a 10 000 minimum order for custom printing
- Teckpak are also selling a round cut comb container which holds 250 g of honey and sells for around 14¢.

*** *** *** *** *** *** ***

Q. How do you dehydrate Australians?

A. Forbid them to drink from cans.

Pain in the neck

MELBOURNE, Dec. 15.

The Victorian Agriculture Department has warned Victorians not to drink directly from cans while outdoors because of the danger of being stung by the European wasp. The department said wasps could get into opened cans of drink, sting the mouth or throat and cause severe swelling which may block the airway. "The victim will be in agony and liable to choke," the department warned in a special leaflet to be distributed to local councils.

HIVE STRAPS

Some of the best hive straps on the market are made right here in Nelson province. W A Coppins & Sons of Motueka make two types, both of which use 24 mm wide black nylon webbing. This is ultra-violet resistant, and should have a long life in the field.

One model of strap has been in production for several years now, with some thousands sold. It uses a small plastic buckle like the ones used on life jackets, and while this doesn't look strong enough for use on hives it actually is. There is a way of using a hive tool as a lever to tighten the strap up, and the strap releases by pushing a clip in the buckle.

Cost is about $3.10 for a 3 metre strap with buckle fitted.

The firm has been working on another model, which should be on sale by now. It uses a simple tensioner/fastener made out of a length of 6 mm galvanised steel or high-tensile aluminium that has been bent according to an ancient recipe. The aluminium has the advantage of not rusting on the hive lid. Price is unknown at this stage, but it will be the cost of the steel or aluminium, the strap at 48¢/m, rivets at 8¢ each, and a labour charge for assembly.

Contact Bill Coppins at:

W A Coppins & Sons
255 High Street
Motueka Phone: MU 87 296

Disclaimer:- mention of any product by MAF does not imply endorsement or recommendation over similar products not mentioned.

Cheers.

Andrew.

A G Matheson
APICULTURAL ADVISORY OFFICER

STOP PRESS

A lot of things have happened since I sent this issue off to the printers. Of course we've had chalkbrood hitting the national headlines, and in this stop press I've written about the disease itself as well as about what went on up North. (Judging from the number of people who asked how my "holiday" went, I think the record needs putting straight.)

We also have dates for the visit of Dr H Shimanuki from the USA, for some NBA branch meetings, and for the Telford business management course.

* * * * * * * * * * * * * * *

FOR YOUR DIARY

Mark these dates in now!

- Dr Shimanuki will be meeting with two groups of beekeepers in the Nelson region:

  Nelson/Marlborough beekeepers:
  Friday 2 March, Richmond School, 8 pm.

  West Coast beekeepers:
  Monday 5 March, RSA hall, Hokitika (near the government office block), 7 pm.

Dr Hachiro Shimanuki works for the US Department of Agriculture in Beltsville, Maryland, and is a world authority on bee diseases and protein diets for bees. He has a wealth of knowledge on other subjects too, of course, and will be showing slides on general beekeeping as well as his specialist subjects.

"Shim" and his wife Vivian are both keen beekeepers, and are in New Zealand for two months. He is on sabbatical leave from the USDA, and his visit here has been sponsored by MAF.

These meetings promise to be highly interesting - make an effort to be there!

- West Coast extraction evening.

The West Coast NBA branch is having an extraction evening at John Glasson's shed at Blackball on Friday 24 February. The format is:-

- informal b.y.o. picnic tea from 5 pm
- a look at the extraction plant in operation afterwards.

The evening will be fairly informal, so feel free to be there for any part of it. John wants a hand to push those boxes through, so come along and get covered in honey from top to toe!

- Telford business management course.

New dates for this are:

Monday 9 July - Thursday 12 July

See page 2 of this magazine for details.

- Honeydew seminar.

See page 8 for details. This will be held in Christchurch on Friday 13 April 1984. More information from John Smith, MAF, Private Bag, Christchurch.

* * * * * * * * * * * * * * *

SALES TABLE

Fred Galea has 40 variable quads (baby nucs) for sale. At the moment they are stocked with bees and one queen per quad. Contact Fred at Richmond 7180.

* * * * * * * * * * * * * * *

Cartoons from:

- New Zealand Herald (Minhinnick)
- Evening Post (Lodge).

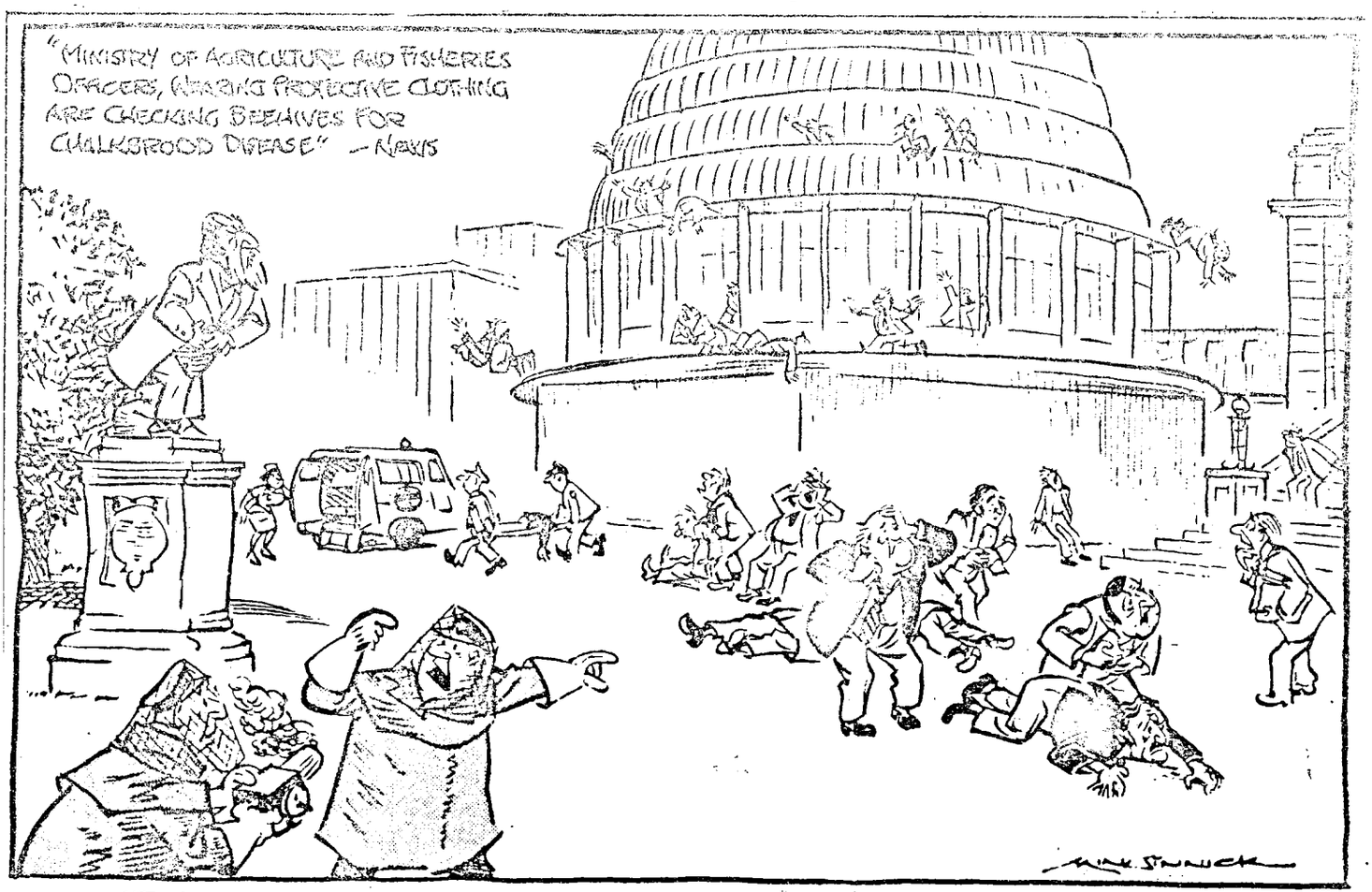
NORTHLAND'S CHALKBROOD

New Zealand has been reported in the textbooks as having chalkbrood for over a quarter of a century. In 1957 a brood sample from Southland was tentatively identified as having chalkbrood. No further formal records of the disease were made until late last year, although from time to time beekeepers have reported "mouldy brood", "chalky brood", and "chalkbrood", without ever being sure of the cause.

Northland beekeepers became concerned in September 1983 about an increase of "chalkbrood". Samples taken by MAF on 30 November were identified positively in mid-December by a DSIR mycologist (fungus specialist) who has had experience with chalkbrood in North America.

A part-time inspector surveyed hives in the Kerikeri area over December and January and it appeared that the disease was widespread, at least in that area. A meeting was held at MAF's Auckland office on Friday 20 January, and that afternoon it was decided to mobilise apicultural staff throughout the country:

- to find out how widespread the disease was,
- to make MAF staff familiar with chalkbrood, and
- to test MAF's exotic disease procedures.



"Bring up the bee smoker, Harry, and pray Heaven we are not too late!"

About 20 MAF staff assembled in Kerikeri on the following Monday; a scientist, 7 out of 9 apiculture staff, and the rest Field Officers or Livestock Officers who have been trained in bee disease diagnosis. In 3½ days of inspection we tried to cover as wide a field as possible, so we checked a random sample of hives in a random sample of apiaries. 443 apiaries were visited from south of Whangarei to north of Kaitaia. All the hives (over 3000) were checked for chalkbrood mummies outside the entrance. All these hives with mummies outside were inspected, as were 20% of other hives.

Using this rapid sampling procedure we found chalkbrood in 13% of the apiaries visited, and 21% of the hives. The figures could have been much higher, but we concentrated on areas where the disease incidence was not known, rather than areas where it was.

Unfortunately the press got hold of the story earlier than was anticipated, and even more unfortunately the early media coverage contained quite a few errors. Apart from the normal quota of silly mistakes due to ignorance of beekeeping (like outbreaks of "chalkbrook" and "chalkwood" in "bee cones" in the hives), the stories also contained a number of wrong assumptions. There was a lot of arrant nonsense spoken about the disease's effects on kiwifruit, which made it sound as if Northland horticulture was on the verge of extinction.

So, what effect will this disease have on you, the beekeepers of the Nelson region? First, let's look at some facts surrounding the present situation.

- chalkbrood is regarded as a minor disease in other countries where it is found (e.g. Canada, USA, UK, Europe).

- virtually no control measures are practised in those countries because the disease usually clears itself up, or is caused by actions of the beekeeper which can be remedied easily.

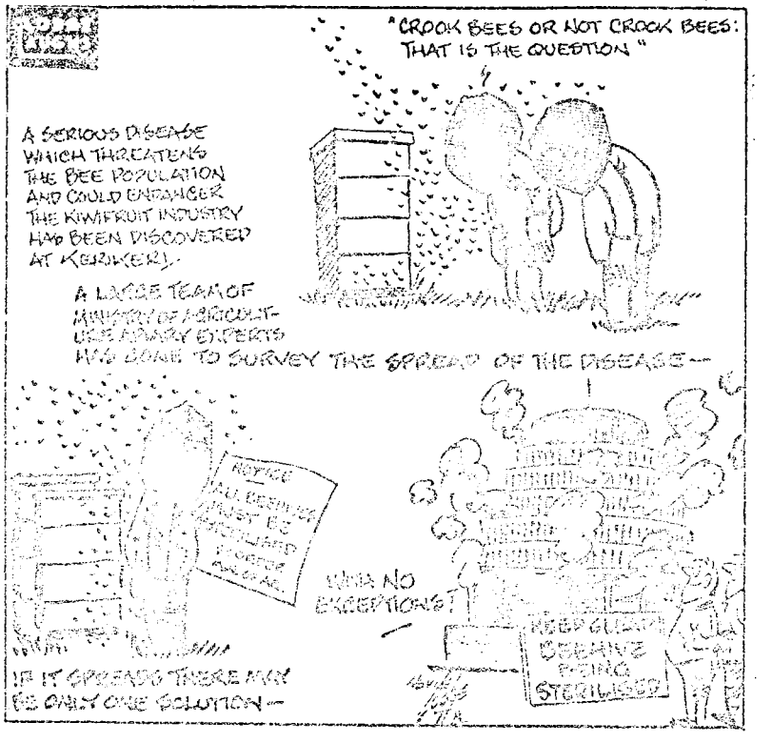
- chalkbrood has been present in parts of Northland for at least 3 years, and probably quite a lot longer.

- in that time a lot of queens have come out of Northland (over 80% of New Zealand's sales).

- there is no real way the disease can be confined to Northland or, for that matter, to the North Island.

- unconfirmed reports of chalkbrood have already come in from the South Island.

If New Zealand beekeepers were to stop buying queens from Northland, several things would happen. Other suppliers would not be able to fill the gap, so a lot of hives would go unrequeened. The effect on honey production (and on kiwifruit production, for that matter) would be much greater than if chalkbrood were to be found throughout New Zealand. The commercial viability of many of New Zealand's queen breeders would be threatened by a "quarantine", and that would be to the long-term detriment of the country's beekeeping industry.



The chances of queens spreading the disease are probably not high, but I suppose it is inevitable that the disease will reach other parts of the country.

MAF has produced two items on chalkbrood, which might be loosely titled:

"All you ever wanted to know about chalkbrood (but were afraid to ask)"
or
"How I learned to stop worrying and love the fungus".

Cliff van Eaton has written an excellent article for next month's New Zealand Beekeeper, which we hope may have a colour illustration.

I have written an Aglink on brood diseases, which now includes chalkbrood. This is being produced with colour illustrations of AFB, sacbrood, and chalkbrood, and it should be available in a few weeks - ask for FPP 124 Brood diseases, in honey bees, significance and control. (It will also be mailed out with the March New Zealand Beekeeper.)

(And for the record, it was very interesting and even enjoyable, but it certainly wasn't a holiday. We worked long hours (and no, we don't get paid overtime), the hive gear was often pretty crummy, and the bees were wickedly savage.)

* * * * * * * * * * * * * * *