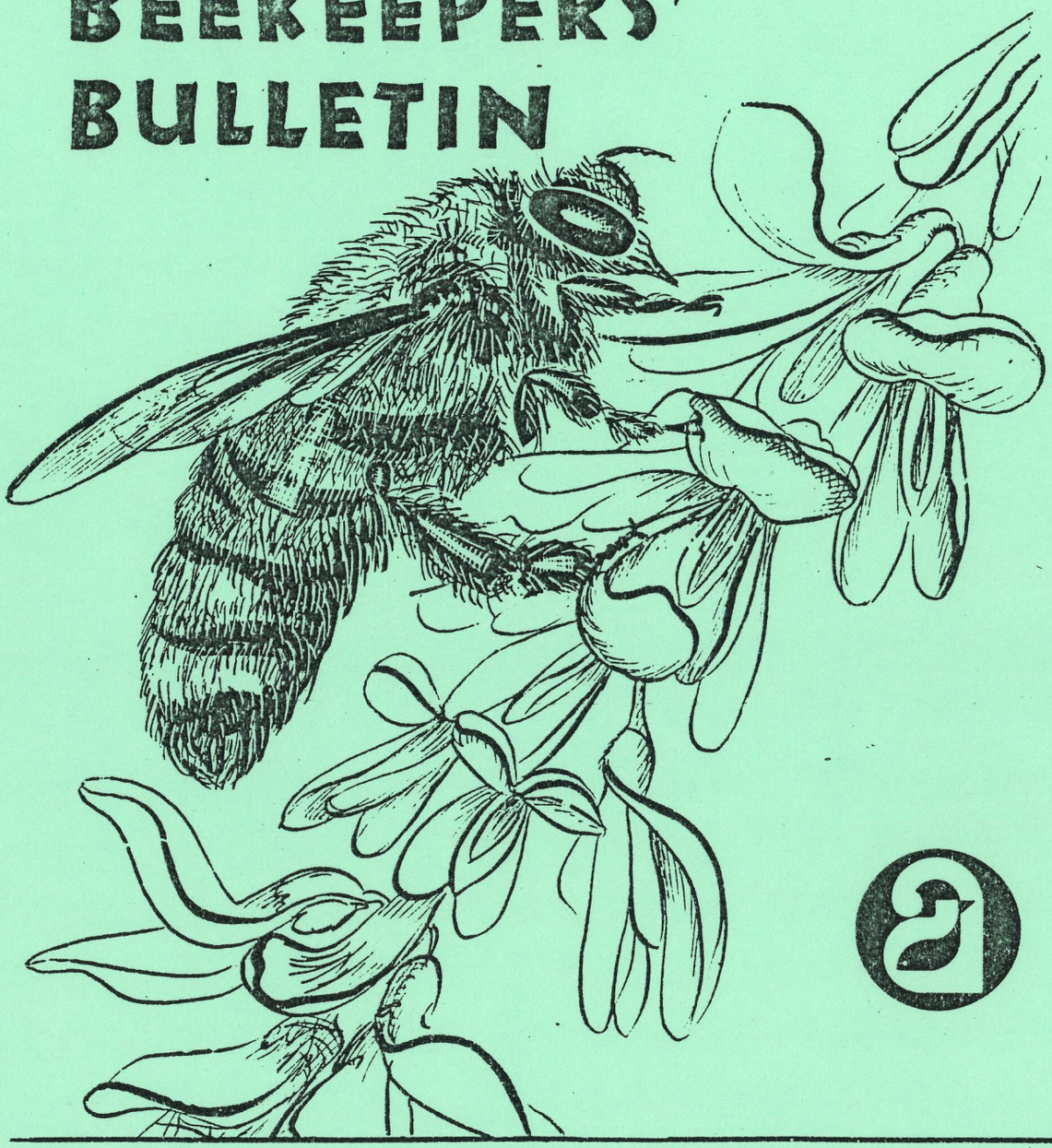
THE BEEKEEPERS' BULLETIN



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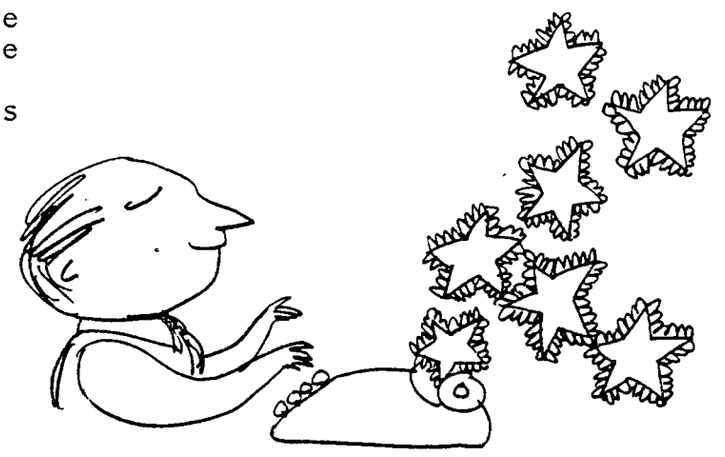
Apicultural Advisory Officer
Ministry of Agriculture and Fisheries
Private Bag
NELSON

Telephone: 81 069 (Work)

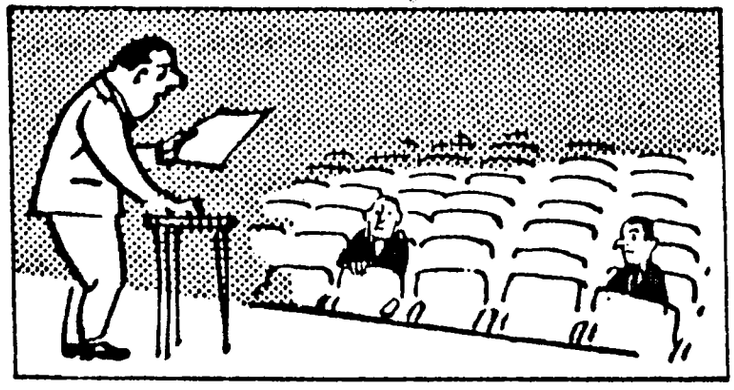
Volume 6 number 1
August 1984

Another conference has come and gone, the time for holidays is over, and it's back to the grindstone for another season. Just to prove it the weather has packed up at last, after a June that gave us better weather than many Decembers.

The hives I've looked at have had a lot of brood for this time of year. Watch the stores level if spring turns out to be as bad as many beekeepers expect.



This year's conference at New Plymouth followed a similar format to previous years', but had an extra part to it - industry planning. We spoke about it, and divided into "buzz" groups to discuss various sections of the plan. You have probably all heard this term being thrown around at NBA meetings recently - what does it mean?



Now to get your reactions to this topic, I will ask the audience to divide into Buzz Groups.

Quite simply it means that the NBA - your industry organisation - is attempting to chart its course for the next few years. Instead of bumbling along from year to year, responding only to crises, the

association is saying "these are the important things for us", and "this is where we want to go as an industry."

The way of planning the NBA is using, the tool if you like, is known as Management by Objectives. (It's usually abbreviated as MbO, which has been pronounced by some as "MumbO").

In a sense MbO is not new, it is just a formalised way of doing what you and I already do in our work and ordinary lives. MbO is new in the way it makes us face up to what we really are going to do, and makes us accountable for achieving those things.

Industry planning will involve you at branch meetings, in contributing ideas to the plan as well as carrying parts of it out.

Quotable quotes from conference

* "Beekeepers have to be optimistic to the point of stupidity" (from a beekeeper)

* When the conference was discussing beekeeping in the high country, one delegate from the little island off Picton asked how high this high country really is. He was answered by a delegate from the deep south, somewhere near Antarctica:

  "I'm not sure exactly how high it is in feet; all I know is that the 'high country' gets lower as you go south, until down our way it's nearly at sea level".

* On the dangers of the NBA becoming too inward-looking, one executive member warned that "the organisation may become so introspective it disappears up its own logo".

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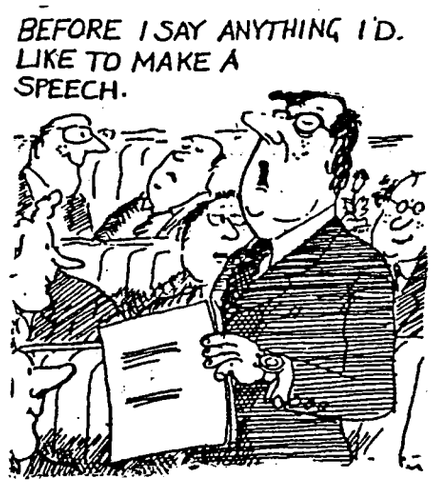
ANOTHER KIWI JOKE FROM OZ

* What's the difference between a Kiwi and ET?

* ET went home!

MAF APICULTURAL STAFF

A lot of the conference remits were griping about MAF advisory and inspection servicing of the beekeeping industry. It's a pity that branches proposing these remits hadn't done their homework first, as several contained misinformation or errors of fact.



Quite a few changes have recently taken place in the apiculture section, or are about to occur. For your information, I've outlined the present distribution of staff and possible future changes.

Whangarei	A new Apicultural Advisory Officer (AAO) position has just been established here. It has been offered in the first instance to Brian Milnes, presently Apiary Instructor at Auckland.
Auckland:	Colin Rope, AAO Brian Milnes, Apiary Instructor
Hamilton:	Murray Reid, AAO. Also has national responsibilities for AAOs and the apiculture industry.
Tauranga:	Trevor Bryant, AAO.
Palmerston North:	Bill Rodie, AAO, is about to retire. His place will be taken by Cliff van Eaton, who is presently at Gore.
Nelson:	Myself.
Christchurch:	John Smith, AAO.
Oamaru:	The previous AAO, Kerry Simpson, is currently on two years' leave without pay, and is working in a volunteer position at a high school in Tuvalu in the Pacific Islands. His position has been permanently filled.

Gore: Presently occupied by Cliff van Eaton, AAO. He will be transferring to Palmerston North in 1985, and a replacement has already been found.

There are also about 30 Field Officers and Livestock Officers who assist AAOs with disease inspection and honey certification work. Twenty of these officers hold full warrants under the Apiaries Act 1969, and in that respect have as much authority to administer the Act as I do. In Nelson there are three such officers, and I am training three more this season, beginning with a three-day course next month.

Registration of apiaries is done by administration staff. The Nelson Registrar of Apiaries is Robyn McFadgen.

Pesticides Regulations are administed by the Field Officer group, located at Nelson, Motueka, Blenheim and Greymouth.

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More from conference:

* A sign of the times?- "For sale: 4 000 co-op shares at $1 each".

* Some present may have wondered why several delegates tape recorded the whole proceedings. One person suggested, a little unkindly, that they must be chronic insomniacs - keeping the tapes to use on those nights when it's extra difficult to nod off.

Bee Lore

Mans' first airplane flight recorded in Gleanings. After the Wright Brothers made their historical flight at Kitty Hawk, N. C., they were unable to record the event in any scientific journal because the editors thought it was a hoax. So a personal friend of the Wright Brothers, A. I. Root, of Medina, Ohio, published the story of the flight in the March 1, 1904, issue of GLEANINGS IN BEE CULTURE. Thus it remained for a beekeeping journal to publish the first report of man's first successful attempt at flight.

AAO TRAINEE FOR NELSON

The new AAO for the Oamaru district will be training with me in Nelson. He is Mark Schrader, and is currently working as a technician in the apiculture unit at Wallaceville with Pat Clinch.

In the six months or so that Mark will be working here I want him to see as many aspects of beekeeping as possible, as well as the advisory training he will take part in. I will probably be asking some of you for a contribution here, and hope I can count on your assistance as usual.

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WILLOWS

I've mentioned before some of the willows you can buy in New Zealand. In August 1983 (vol 5, no 1) I wrote about Salix triandra "Semberflorens", that flowers for about six months of the year.

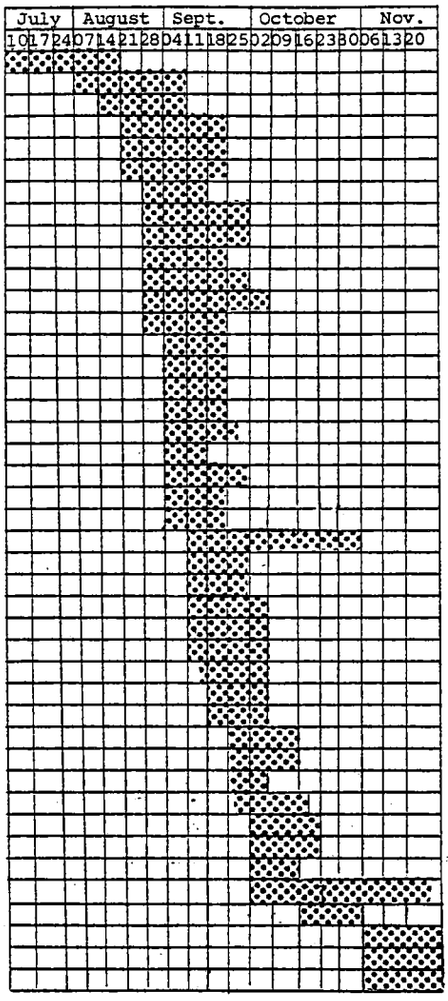
Several new willows have been available from 1 July this year, I've listed them below. along with others to make a continuous sequence of flowering from mid-July to early April.

These flowering times were recorded at Palmerston North, so you can expect a little variation at other sites.

Limited quantities of cuttings of these clones (in bundles of 25 cuttings per clone) are now available. Price is $35.00 per 100 cuttings, packing and postage included.

Orders to: National Plant Materials Centre
Aokautere Soil Conservation Centre
Ministry of Works & Development
PALMERSTON NORTH

WILLOW SPECIES COMMON IN NEW ZEALAND



Common Name	Species and/or Variety	Sex (in N.Z.)
musk willow	*aegyptiaa (medimii)*	M
bitter willow	*elaeagnus (incana)*	F
pussy willow	*discolor (caprea* cv "Pussy Galore")	M
goat willow, or French pussy willow	*caprea*	M
weeping willow	*babylonica*	F
(none)	*sepulchralis (alba x babylonica)*	F
(none)	*acutifolia* (subsp. *daphnoides)*	M
violet willow	*daphnoides*	M
(none)	*purpurea* cv. "Irette"	M
(none)	*elaeagnus x daphnoides* cv. "Tiritea"	M
common osier	*viminalis*	M/F
(none)	*calodendron (dasyclados x caprea)*	F
Peking willow	*matsudana*	F
(none)	*matsudana x alba* (1001) "Cannock"	F
(none)	*matsudana x alba* (1003) "Te Awa"	F
(none)	*matsudana x alba* (1002) "Aokautere"	M
(none)	*matsudana x alba* (1130) "Hiwinui"	M
(none)	*matsudana x alba* (1143) "Adair"	M
(none)	*matsudana x alba* (1149) "Wairakei"	M
(none)	*matsudana x alba* (1184) "Moutere"	M
common sallow	*cinerea* subsp. *oleifolia*	M/F
white willow	*alba*	M
golden weeping willow	*alba* 'Chrysocoma' *(alba* 'Tristis'; or *vitellina pendula)*	M
purple osier	*purpurea* cv. PMC	F
bitter willow	*purpurea* cv. "Booth"	F
(none)	*purpurea* cv. "Pohangina"	M
(none)	*matsudana x alba* (1179) "Makara"	M
(none)	*matsudana x alba* (1040) "Tangoio"	F
(none)	*glaucophylloides* (piperi)	F
golden willow	*alba* var. *vitellina*	F
crack willow	*fragilis*	M
corkscrew willow	*matsudana* cv. Tortuosa	F
silver willow	*alba* f. *argentea*	F
(none)	*fragilis* var. *latifolia* (Gatungensis)	M
dwarf purple osier	*purpurea* f. *gracilis* ('Nana')	F
(none)	*cordata*	F
(none)	*triandra* cv. 'Semperflorens'	M
(none)	*alba* 'Britzensis'	M
(none)	*meyeriana (pentandra x fragilis)*	M
bay willow	*pentandra*	M/F
(none)	*nigricans*	F

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A thought for a bad season: "When things look really bad try plastic surgery - cut up your credit cards"

QUEEN REARING THIS SPRING? THEN READ THIS

Selecting workers of the right age to go into a cell-starting colony is one of the most important parts of queen-rearing. Starter colonies must have sufficient nurse bees with large hypopharyngeal glands to make sure there's enough brood food (royal jelly) for the developing larvae.

Starter colonies that are in continuous use must be restocked with nurse bees on a regular basis. Where do beekeepers get these bees from?

Most beekeepers shake bees off brood frames to get young bees, with the hope of getting bees with enlarged hypopharyngeal glands (let's call them HGs). Bees that are too old have small HGs, which produce digestive enzymes, and bees that are very young have small, undeveloped HGs.

A study carried out recently looked at four different ways that are commonly used to get bees for stocking starter colonies. The resulting bees were dissected and the HG weighed. Remember, the bigger on average the HGs, the more brood food or royal jelly and, other things being equal, the bigger the queens produced.

Four methods of getting nurse bees were studied. All involved taking four central brood frames with adhering bees (CBFs) from large support colonies.

1. CBFs are transferred directly to the starter colony.

2. CBFs are moderately shaken over their brood box to encourage foraging (older) bees to fly from the combs. These combs, with their much reduced numbers of adhering bees (younger ones), are then transferred to the starter colonies.

3. CBFs are put into a small empty hive at some distance (within 50 m) of their colony. After allowing time for flying bees to return to their original hive (24 hours), the combs with remaining bees are transferred to the starter colony.

4. CBFs are moved to a box, with its own flight entrance, which communicates with their original hive through a dividing screen (top nuc). After flying bees have returned to the original hive entrance, the combs and remaining bees are transferred to the starter colony.

In all these procedures the CBFs can be put into the starter colony with their bees, or the remaining bees can be shaken into the starter colony and the combs returned to the support colony.

Shifting four CBFs to a nuc to lose the old bees was the best method (i.e. it gave the highest average weight of HGs). There was no significant difference between shifting the frames to a separate nuc box and shifting them above a screen board to a top nuc, before transferring them to the starter colony.

The second best method was shaking CBFs lightly to encourage old bees to fly off, then using the bees that were still on the frames.

Taking CBFs and transferring them directly to the starter was a little worse than that, and the bees with the runtiest HGs of all were taken from the hive entrance. See the table of results.

Method	Mean gland weight (mg)	
Displacement to a separate nuc for 24 hr	11.71	the difference between these is not statistically significant
Displacement to a top nuc for 24 hr	11.57	
Brood frames after light shaking	9.94	
Brood frames with all adhering bees	8.50	
Bees from hive entrance	5.08	

There's important lessons here for queen rearers. Frame-shaking has been used for years as a quick way of separating young bees from old ones. It does have drawbacks though, as simply taking all the bees from a frame (by transferring the frame and the bees, or by shaking all the bees off) gave one of the worst results in this trial.

Shaking frames lightly to make the older bees fly off gives slightly better results. There are reasons why the results are still fairly poor. Although older bees will tend to fly from a comb more readily than younger bees, and younger bees will tend to have larger HGs than older bees, light comb shaking will not necessarily be effective in separating bees with large glands from those with small ones.

If you're making up a starter to receive cells within 24 hours you need bees with large glands, not just young bees. Some young bees have very small HGs, simply because they have not developed. This may explain why, in these experiments, shaking gave poorer results than the displacement methods.

A simple displacement method is to put CBFs straight into a starter without shaking them. Most of the flying bees will return to the old hive site, leaving younger bees behind. The problem with this is that you don't actually know how many bees are left behind. There is a rsik of not enough bees remaining to feed the cells properly.

The methods tried in this experiment give better control over the bee numbers because they involve shifting the frames and selecting the bees before adding them to the starter. The number of bees left for boosting the starter is easily seen.

Although both displacement procedures were equally effective, the one using a screened brood box has an advantage over the one using a separate nucleus box. The bees on the displaced combs in a top nuc derive heat, food, queen substance, and behavioural interaction through the screen separating them from their parent colony. To allow this the mesh size of the screen should be large enough to permit worker contact through it, without encouraging bees to attempt to move through it bodily, or to wedge their heads in it.

Shifting bees to a top nuc or a separate box doesn't involve much more work when making up a starter. It is a bit more time-consuming for restocking starters than the old shaking methods, but what are you after - quality or quantity?

Pickard, R.S.; Kither, G.Y. 1983. An evaluation of shaking and displacement methods for separating a sample of honeybees with large hypopharyngeal glands from the remainder of a colony. Journal of Apicultural Research 22(2):101-106.

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DRUM LINERS

A new range of polyethylene and nylon liners are made by Rheems Ltd. They're a bit pricy at around $7 - $8 each (and there's 20 in a pack), but they enable you to use a cheaper or recycled drum, either closed or open-mouth type.

The liner is fitted inside the drum and inflated with compressed air. Once the plastic bag is pushed against the drum walls it will stay there because of the partial vacuum that is created.

Canadian beekeepers were using something similar a number of years ago. They had rolls of lightweight plastic tubes. They tied a knot in one end, placed the "bag" into the drum, filled it up with honey, then tied a knot in the top. Cheap and simple. The beekeepers loved this system but the packers hated it, as you can imagine. The liners from Rheems are a much tougher and heavier grade of plastic.

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Because people are fallible they will make mistakes, and we therefore try to make systems foolproof. We fail for two reasons -

* It is impossible to make anything foolproof because fools are so ingenious.

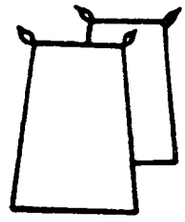
* Build a system that even a fool can use and only a fool will want to use it.

-oooOooo-

IMPORTING SUGAR

According to the Department of Trade & Industry there are two types of import licence for sugar; one for white and one for raw. Beekeepers can import raw sugar themselves, but not white.

Fiji and Australia both have long-term contracts to New Zealand Sugar, and would probably not be interested in small orders to other buyers in this country.



However, Papua New Guinea is developing a sugar industry, and may wish to export small consignments. They have a product called "milled white", which is bleached raw sugar and thus would probably have the same mollasses content and keeping properties as raw sugar.

Anyone interested in following this up should contact Mr Vaugh at T & I in Wellington.

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MITE YOU SEE THIS?

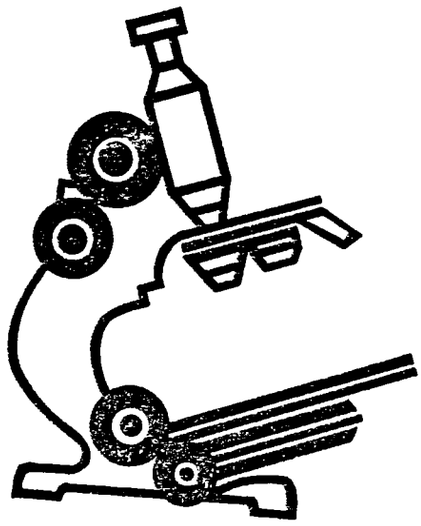
A small mite with a long name has been causing a bit of a stir lately. It's been found in the UK on queens coming from New Zealand. Now a MAF scientist wants to find out more about it.

It's called Mellitiphis alvearius and has been reported from Britain, Europe, and New Zealand. It may occur elsewhere. The mite doesn't harm bees, but just lives in association with them. You may well have seen it in your hives, scurrying about on the top bars or in the debris under the hive mat.

What does it look like? The adult mite is brown or dark brown, almost circular in shape and about 0.7 mm across. Young mites are white in colour, and about the same size as the adult.

The mite was reported from New Zealand in October 1973, after specimens were sent away from the West Coast. Apparently it has also been noticed in Nelson and Canterbury.

If you see this mite, please try and capture some specimens for identification. Let me know, and I'll send some sample jars for future specimens.



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MARKERS FOR HIVE LIDS

* Another marker to try is the "Marsh 88" marker, which is available from:

R L Button & Co Ltd
25 Luns Road
Upper Riccarton
Christchurch
ph 489 469

Dries rapidly, doesn't fade

* You could also try 'Everon' spirit-based marker, sold at hardware or garden shops.

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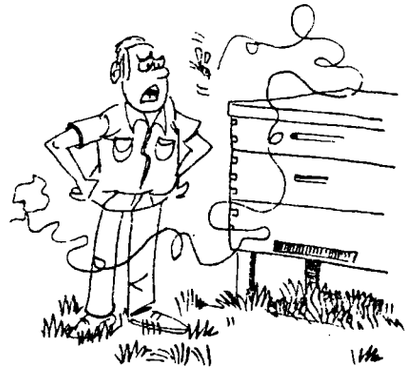


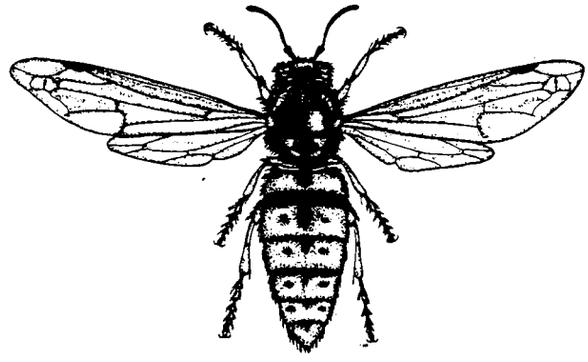
"You can't fool me! You've been into another patch of marijuana blooms!"

WASPS

The press got a real buzz out of the recent wasp "plague" on the West Coast. I was telephoned by reporters from all over the country, as the plight of the Nelson Creek publican got around.

The wasps concerned were probably our old friends the German wasp, or Vespula germanica. There's plenty of information about their life history and control in AgLink FPP 196. It has recently been rewritten to include drawings and information about other wasp species too.

At last year's MAF beekeepers' seminar in Nelson we heard about a newcomer to New Zealand, Vespula vulgaris or the common wasp. At first we thought it was restricted to Dunedin and the Wellington area, but now other sitings are coming in thick and fast. It's widespread in Christchurch, as well as being found in the Wairarapa and near Auckland. Now it has been found closer to home: around the airport in Nelson and in the Lee and Roding Valleys, where it seems to be well-established.



German wasp

No-one yet knows whether the common wasp will displace the German wasp (in which case we'll have the same overall level of wasps), or whether it will add on to the effect of the German wasp.

The two types of wasp seem to have the same behaviour and life cycle. One observation has been made on a cool day (28 May 1984) that common wasps were sluggish and falling from trees, while the German wasp was still very active. We don't know for sure whether it attacks beehives. I'd be keen to hear of any records of the common wasp.

The three features that distinguish the two wasp species are: a black face marking, the colour of the nest, and black markings on the abdomen. Both species have a black marking on the face: in V. vulgaris this has a conspicuous anchor shape; while in V. germanica the marking is reduced and may only consist of a few dots (see fig. 1).

V. germanica build their combs and nests of grey wasp paper, but in V. vulgaris nests the paper is light- or reddish-brown in colour.

The two species have different markings on the back of the abdomen, but these are quite variable in each species and are not a completely reliable guide. Generally, V. germanica has black spots separate from the black stripes, while in V. vulgaris these spots are usually joined to the stripes (see fig. 2).

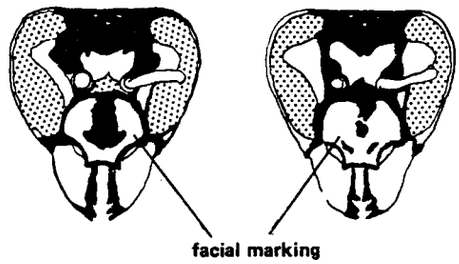


Fig. 1: Facial markings of *V. vulgaris* (left) showing the characteristic anchor shape, and *V. germanica* (right).

Fig. 2: Abdominal markings of *V. vulgaris* (left) and *V. germanica* (right).

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BEEKEEPING POSITIONS AVAILABLE

Two permanent beekeeping positions are available in the Bay of Plenty.

1. Mr J L Brown
   Katikati Honey Centre
   R D 2
   Katikati (Phone 490 810)

   Requires a young person, will give comprehensive beekeeping training. The business is involved in extracted and cut comb honey production, pollination, queen-rearing, and retailing.

2. Mr A C Murray
   P O Box 320
   Opotiki (Phone 1038D)

   Would prefer an experienced person, but will train someone if necessary. Currently expanding from 1 500 hives to 2 500, would consider sharefarming or partnership with the right person.

If you're interested, contact these beekeepers without delay.

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SERVICES FOR SMALL BUSINESSES

I recently went to an exhibition of services that are available to small businesses. This was held at the Rutherford, and organised by the DFC and Department of Trade and Industry.

I must confess to having been surprised by the wide range of services that is available to businesses. I've mentioned some of these before (in the February 1984 issue), such as:

- Westpac Business Advisory Service
- Small Business Agency
- Development Finance Corporation

- accountants and management consultants

- Business Development Centre, University of Otago

There are some others that had a display at the exhibition. It's up to you to avail yourself of the services they offer, if you feel they could help your business.

- Nelson Polytechnic

  Courses in business studies, accounting, staff supervision.
  Address: Private Bag, Nelson (ph 81189)
  Contact: John Black

- Department of Scientific & Industrial Research

  Technical advice, industrial development
  Address: P O Box 22 303, Christchurch (ph 62 369)
  Contact: Dennis Hills

- Export Institute of New Zealand

  Information and advice for exporters
  Address: P O Box 828, Nelson (ph 82 304)
  Contact: Secretary

- Department of Labour

  Information on all aspects of employment and job schemes
  Address: P O Box 442, Nelson (ph 81478)
  Contact: Jack Delaney

- New Zealand Industrial Design Council

  Product design and advice
  Address: Private Bag, Te Aro, Wellington (ph 727 362)
  Contact: Ian Barnes

- Customs Department

  Information on import/export controls, sales tax, duties
  Address: P O Box 66, Nelson (ph 81484)
  Contact: Graeme Skinner

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INFORMATION FOR EXPORTERS

* The Ministry of Foreign Affairs is compiling address lists of companies which may be interested in receiving confidential reports from New Zealand trade offices overseas on economic background and export prospects.

  The Ministry restricts distribution to those companies which can best make use of the material, often based on target markets.

  Contact the Economic Division of the Ministry of Foreign Affairs, Private Bag, Wellington.

* The February 1984 "New Zealand Exporter" had an interesting article on the US specialty food market. It looks at the growth of that market and its outlets, and contains the results of a comprehensive market survey.

  For further information contact:

  John H. Peace
  British Trade Development Office
  150 East 58th Street
  New York
  New York 10115
  USA
  Copies of the full report are also available from that address but you'd have to be serious about exporting to buy one - they cost $US 250 each!

* If you want to tackle the Middle East market you could do worse than contact Mr Adel Yousef. He is the Director of Oppex, which is the exporting arm of Otago Press and Produce Co. They are experienced exporters of fruit and vegetables to the Middle East.

  Mr Yousef is an Arab and has excellent connections in the Middle East. His company can typeset Arabic script, and they also have Arabic Letraset.

  Oppex
  Otago Press & Produce Ltd
  P O Box 517
  Dunedin (ph 774 760)

SPEAKING OF EXPORTING

Social and business habits vary from country to country. A promising deal can easily be lost through breach of some etiquette or other, or "mis-translation" of a word or misuse of certain colours.

Ad men for Pepsi-Cola had their slogan "Come alive with pepsi" translated into Mandarin Chinese. The translation turned out to mean "Pepsi brings your ancestors back from the grave". Then there was the GM corporation who were marketing their Chevrolet Nova in Mexico and wondering why sales were very quiet. It seems the word Nova or Na-va in Mexican means "won't go"!

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HIVE CONSTRUCTION

If you're making up gear this winter, for increase or routine maintenance, then use this ready recknoner. It might help with working out what you need to order.

Paraffin wax

Paraffin dipping used boxes (which were already painted)	6 boxes per kg (120 boxes per 20 kg packet)

New boxes use about 20-30% more wax.

Painting

Repainting used boxes after dipping (two coats)	66 full-depth boxes per 4 litres
New boxes, not dipped	probably about the same

Nails

Supers :	50 x 2.5 mm, galvanised	450 per kg
	60 x 2.8 mm, galvanised	270 per kg
Frames :	30 x 1.4 mm	2 600 per kg
	40 x 1.6 mm	1 500 per kg

Frame wire

1 x 2 kg reel per 1 000 frames (3 wire)

Assembly time

Wiring frames only (3 hole)	6 boxes per hour
Composite time for assembling and painting super, wiring and waxing 9 frames	45 - 55 minutes
Composite time for one hive: four boxes, lid, floor, excluder, inner cover and frames. Assembly, preservation, wiring and waxing frames.	8 hours

I'd be pleased to hear of any similar details that you've recorded in the past, or alterations to these figures.

-oooOooo-

Pollen is now a prohibited import in Australia. This new quarantine provision, enacted on 1.9.83, was made because of increasing concern about the risk of importing chalkbrood with the pollen.

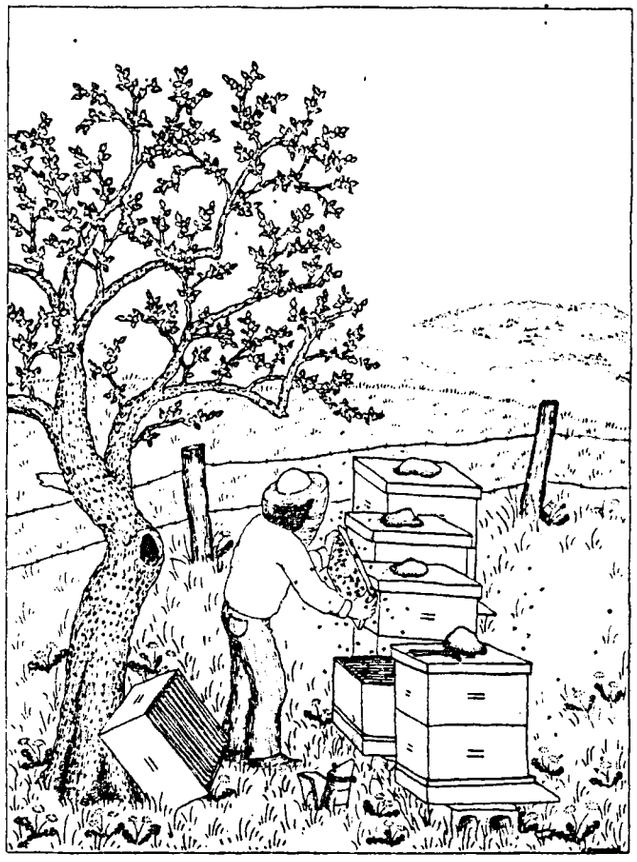
-oooOooo-

KNOW YOUR DISEASES - 2 PARALYSIS

Symptoms

This virus disease has two distinct sets of symptoms, or syndromes. One includes an abnormal trembling motion of the wings and body of affected bees. They usually can't fly and end up in a mat at the front of the hive. Sometimes this heap of bees numbers thousands.

These affected bees often have partially spread, dislocated wings, and bloated abdomens. The bloating is caused by the honey sac being filled with liquid, which also accelerates the onset of dysentery.



The second set of symptoms is often called the "hairless black syndrome". At first the affected bees can fly, but they become almost hairless and look very black with broad abdomens. Older bees in the colony nibble the affected bees, and guard bees may prevent them from returning to the hive.

Both sets of symptoms may occur in a colony at one time, though usually one predominates.

The most obvious effect of paralysis is a mat of dead and dying bees outside a hive entrance. Those living tremble and have disjointed wings. This often happens in hot dry weather, such as during a honey flow.

Cause

This disease is caused by a virus called chronic bee paralysis virus (CBPV). The susceptibility of a particular colony to CBPV is strongly linked to certain inherited characteristics. In other words, some strains are very susceptible to it, while others are not.

Cure

Requeening will almost always cure a bad attack of paralysis. This works because the queen in an affected hive carries a genetic predisposition to paralysis - it is unlikely (you hope!) that the new queen you put in will be susceptible to the same degree. In my experience requeening almost never fails.

First check that the disease was not caused by other agents, such as insecticide poisoning, tanalith (arsenic) poisoning, nosema disease, (Varroa!).

By the time you notice the effects of this disease the colony will be quite weak. Rather than simply put a queen in the hive, kill the old queen and unite on a nucleus. This will strengthen the colony at the same time as requeening it.

Of course we all carry enough spare nucs over the season, don't we ....

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TRADE TABLE

* Steve Bozi of Rangiora is producing a new type of queen cell cup and holder. The cell cups are the same as the ordinary plastic ones, but have a rectangular flange on the top (widest) end.

This flange fits into the custom-made galvanised iron holder bar. The flange holds the cup between two grooves in the galvanised iron, but because it is wider than it is long the cups can be taken out simply by rotating them through 90°.

The cell cups can be washed in boiling water, or dipped in beeswax up to 120°C. They come in any requested colour, and cost 10¢ each.

Holder bars are $1.00 each.

Contact : S Bozi
Kowhai Apiaries
11 River Road
Rangiora (ph 8121)

* Robin Jansen of Taupo is selling the Taumaranui Honey Co. Factory and land : $48,000. Up to 150 hives are available at $100 each (3 high).

Contact : R L Jansen
P O Box 480
Taupo Phone 86 788 (day)
86 228 (evenings).

* Lindsay Feary wants to buy an extractor and a stainless steel tank (about 1 000 litre or 1.5 tonne). Contact him at 3 Mawhera St, Dobson or phone Dobson 691.

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

AND WHAT ABOUT YOU?

It's said there are three types of beekeeper : those who make things happen, those who watch them happen, and those who wonder what has happened!

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LET US SPRAY

Some where, some time, somebody, wrote an article on the benefits of spraying weeds around beehives. But this someone can't find it! Anyway, I seem to recall the researcher proved weed control was economic in terms of increased honey production. This was a result of the foraging bees making more trips per day, because they didn't have to scramble through dense herbage. Walking and crawling are very energy-demanding processes for bees.

Grass control increases the life of floor boards and the bottom brood boxes. It also reduces stock pressure on hives and fences around the apiaries, and creates more pleasant working conditions. It creates drier hives, which must reduce nosema and chalkbrood incidence. Lastly I feel there is our professional image to uphold. If I were a farmer trying to keep a weed-free and tidy farm, I would be "disturbed" if my beekeeper had an apiary that disappeared amongst metre-high grass, weeds, and thistles!

The best method for good grass/weed control is to use Paraquat, Preglone, Roundup, or a slasher to remove or kill the grass. Once bare ground is visible, spray with a long-term residual herbicide such as Phytazol, Weedex, Hyvar X, Prefix, Caseron, Permazol, or Zylem. Some of these commercial brands contain more than one herbicide, and if used properly you should get 1-2 years control. Roundup or Paraquat will only give 2-5 months control before new seeds germinate. It may pay to check with your farmer first before using any long-term herbicide.

Blackberry and gorse are easily killed with chemicals containing 2,4,5-T, such as Tordon Brush Killer.

A stirrup pump or air-pressure sprayer is adequate for most situations. Write "herbicides" on your sprayer and keep it for that purpose only. Some of the long-term herbicides are available in granular form and these are certainly easy to use, such as Prefix, Caseron and Hyvar X. If you can't affort herbicides then use desiccants or burning agents such as salt, diesel, or old sump oil.

Most herbicides are non-toxic to bees unless you drown them in it. However, you should still take reasonable care.

If you've washed your sprayer after using 2,4,5-T or any other residual herbicide be careful where you tip the washing water. I've killed a very large pepper tree, and barberry and hebe shrubs with washing water tipped down a storm water gully trap. The tile drain from the gully trap went past these trees, as I discovered to my cost.

Acknowledgement: This article was lifted from Murray Reid's district newsletter.

Disclaimer: Mention of any brand names does not imply recommendation by MAF or endorsement over similar products not mentioned.

Further information: AgLink FPP 807 : Vegetation control, herbicides (non-selective), properties and uses. Ask for it at any MAF office.

-oooOooo-

KIWIFRUIT PLANTINGS

I'm often asked "how many hives are going to be needed for kiwifruit pollination in Nelson in 199x?". If I had a crystal ball that accurate I'd be making my living in other ways!

What we can do is try to estimate the area planted in kiwifruit. MAF no longer does orchard surveys, but the best estimate of the horticultural staff here is shown below. The last time I put this in this newsletter was two years ago (November 1982; vol. 4, no. 2), and these latest figures differ from my earlier estimates by less than 10%.

KIWIFRUIT TRENDS IN NELSON PROVINCE

Year	Area in Kiwifruit (ha)	Change from previous year's
1973	5	
1974	5	0
1975	8	+3
1976	11	+3
1977	33	+22
1978	93	+60
1979	172	+79
1980	367	+195
1981	699	+332
1982	910	+211
1983	1045	+135
1984	(1175)	(+130)
1985	(1310)	(+135)
1986	(1445)	(+135)
1987	(1580)	(+135)

(Figures in brackets are estimates)

The number of hives needed is much harder to predict. If we look at the area of vines that need pollinating (say 3-4 year and older), we can see a doubling in pollination demands in the year 1982-83, and again in 1983-84. The rate of increase drops to 50% 1984-85, 22% 1985-86, and 14% from 1986-87.

* * * * * * * * * *

ATTENTION ALL POLLINATION BEEKEEPERS!

A new permit system is being introduced for kiwifruit pollination hives, which will affect a lot of you. Under the Apiaries Act I'm obliged to issue a permit for each move, but have not required this for the past few years provided the normal rules are followed (ID number on apiaries, and no disease).

This system created no work for you or me, but has had its drawbacks. In the event of a disease outbreak at pollination time we'd be severely hamstrung by lack of knowledge of hive locations. It's also impossible to gauge trends in pollination hive numbers, and this information is being asked for more and more.

The new system will overcome these problems.

What I'm asking for from every beekeeper doing kiwifruit pollination is:

- a list of pollination contracts (orchardist's name and address),

- the hive numbers for each contract.

These will have to be supplied BEFORE hives start going in, although I appreciate that some arrangements aren't made until fairly close to blossom time.

These details will be kept in strict confidence, like any other information you supply to MAF. The only information made public will be totals and trends, with no reference to individual growers or beekeepers.

What will the beekeeping industry get out of this exercise?

- better protection in the event of a disease outbreak;

- a more accurate prediction of hive requirements in the future;

- information on current hive usage by growers, e.g. numbers of hives per hectare.

If you don't like this system we can easily go back to the old system, where you'd have to apply in advance for a separate permit for each move. I'd rather not, and hope you'll co-operate with the scheme I'm proposing.

****

POLLINATION SERVICE

Nelson branch of the NBA is progressing well towards providing a businesslike pollination service to horticulture. They are doing this by:

- providing grower organisations with a list of pollinators who are in the branch's scheme,

- providing an information sheet for growers,

- beekeepers agreeing to provide hives of at least a certain standard,

- arranging for independent arbiters in case disputes arise between growers and beekeepers.

The branch secretary is posting information to all known pollination beekeepers. Contact Rex Bolwell, R D 3, Motueka (MU 87477) promptly if you intend doing pollination but haven't received details of the scheme.

To be involved in the scheme you must

- apply to the local secretary (by 31 July, really),

- be a financial member of the NBA,

- pay $5.00 to the secretary to cover printing and postage costs.

A list of pollinators in the scheme is sent to the various fruitgrower organisations. Beekeepers are divided into three geographical areas, according to where they wish to work:

- Waimea

- Motueka, Riwaka, Moutere

- Golden Bay

After registration with the secretary you will receive:

- The number of "Pollination Service Agreement" forms you require.

- The number of "Pollination Service Information" sheets you require for the fruit growers.

- An information sheet for the beekeeper's reference.

The pollination service beekeepers agree that their pollination units are expanding in strength, and have a minimum of 6 full-depth frames of brood (or equivalent).

This scheme will do a lot to improve the image of the beekeeping industry and the good relations between grower and beekeeper. It deserves the honest support of every beekeeper doing pollination.

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NELSON DISTRICT STATISTICS

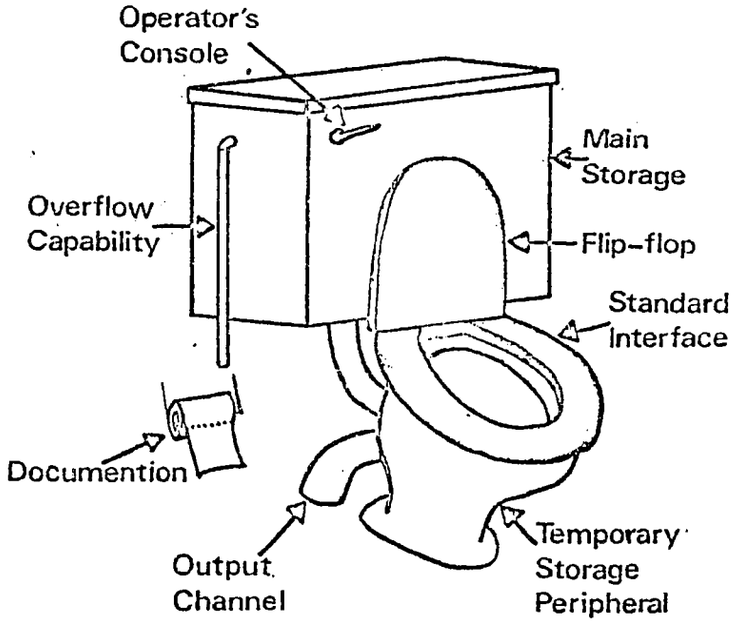
The beekeeping industry in the Nelson apiary district looked like this as at 31 May 1984:

571 beekeepers, 2011 apiaries, 20 748 hives

Those figures are very little different from last year's, which were 575, 2694, and 20 046 respectively. Why has the rapid growth of the past 6 years or so come to a halt? Remember that these figures are largely taken off your spring hive returns, and I think that with a couple of bad seasons in a row the numbers overall really have stayed static.

We can also now "blame the computer". As we put the data onto our computer we took the opportunity to purge the records of any anomalies, which may have reduced the figures a little.

COMPUTER HARDWARE



TANALIZED TIMBER (sitting on the fence)

You've probably been warned on a number of occasions about using tanalized timber and plywood where bees have access to the treated timber.

However, in discussions on the subject I am sometimes confronted with, "But so-and-so uses tanalized floors (or boxes) and they don't have any problems". And I have to admit that I have seen properly protected timber used successfully with no apparent harm being caused to the bees.

Well, how do they do it? First remember one thing. Bee colonies that are being poisoned by tanalized timber don't necessarily die like someone's poured a cup of insecticide in the top. Often the bees die off gradually, and in spring you might only notice a hive that's "slow to build up".

If you don't see the symptoms, it doesn't mean they're not there.

In attempting to use tanalized timber remember it is the arsenic salts that kill the bees, and the bees take these off the surface of the timber. So protection principles rely on stopping these salts leaching to the surface of the timber and/or removing them once they are there.

This is the recommended procedure (by beekeepers who insist on using tanalized timber). The timber must have been treated while still in the rough state. It must then be thoroughly dried. This usually means fillet stacking and leaving it for 9-12 months. During this drying process arsenic salts will leach to the surface.

The next step is to dress the timber, which removes these surface salts. Lastly the timber needs water-proofing to stop these salts coming to the surface again.

If you are protecting floorboards coat the upper surface only, because the timber must be free to breathe through the lower surface. Thick layers of cool paraffin wax have been used successfully, but it is better to use a paint system. This must be done thoroughly and carefully, especially for boxes.

Here's the recipe for boxes. Paint the inside with a lead-free primer, an undercoat, and a top coat. All these must be oil-based. The outside of the boxes can be stained or left au naturel, but if you want to paint you must use a water-based paint. The impervious oil-based systems inside stop arsenic salts leaching to the surface of the boxes, where bees could take them up with condensation moisture. The water-based external paint can breathe and allow internal timber moisture to move to the outside if necessary.

The top surface of floorboards should be painted with the oil-based systems as for the inside of boxes. This must be done thoroughly. Don't paint the underside of floorboards.

Having said all this I'm still not very happy with tanalized timber for floors or boxes, because I know someone won't protect the timber properly and will lose bees. There are alternatives which are nearly as good as Tanalith, if used properly. These include Metalex, Tricunol, and Woodlife II, which I've mentioned in past newsletters (e.g. vol. 2, no. 3 & 4; vol. 4, no. 2).

Remember tanalized or Tanalith is a trade name that has come to be used for all treated timber containing copper - chrome - arsenic chemicals. Other treatments also contain these chemicals in one formula or another. Some of these are Supatimber or K33, Boliden, Celcure, Hager, Bolit, Immutan and Osmosar.

(This article was adapted from one in Murray Reid's Waikato Bee Notes.)

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TIMBER PRESERVATION

What's the latest in timber preservation for beehives? Some advances have recently been made, so lets review the current "state of the art".

Currently-available ways of protecting hives are, in a rough order of increasing effectiveness (i.e. from the worst to the best):

1) Paints, or similar discrete plastic films.

2) Envelope treatment of the surface layers with a water repellent (such as paraffin wax).

3) Envelope treatment of the surface layers with fungicides which are soluble in organic solvents (such as Metalex).

4) Full impregnation of the wood with a fungicide (which is usually water-based).

1 Paints

The preservative function of paint is often confused with its aesthetic value. Its main purpose is to seal the exposed surface of the wood and prevent free entry of water. If used on its own, paint is only a temporary protection, but it will appreciably lengthen the life of hive parts.

Take care when painting hives.

- Drive down nail heads and cover over,

- Use a good primer and two coats of acrylic paint,

- Follow label directions.

2 Envelope treatment with a water repellent

Even the best coat of paint will eventually become chipped and cracked, thus allowing water to enter the wood. For these reasons a paraffin wax envelope provides better protection from water entry.

New Zealand leads the world in the use of paraffin wax dipping for hive parts, and a lot has been written elsewhere about the subject. See the two articles from the New Zealand Beekeeper which are listed at the end of this section if you wish to find out more about it.

One problem with wax dipping is that it is not inherently toxic to fungi (rot). Periodic retreatments are necessary to ensure that the unprotected core of the wood is kept free of water.

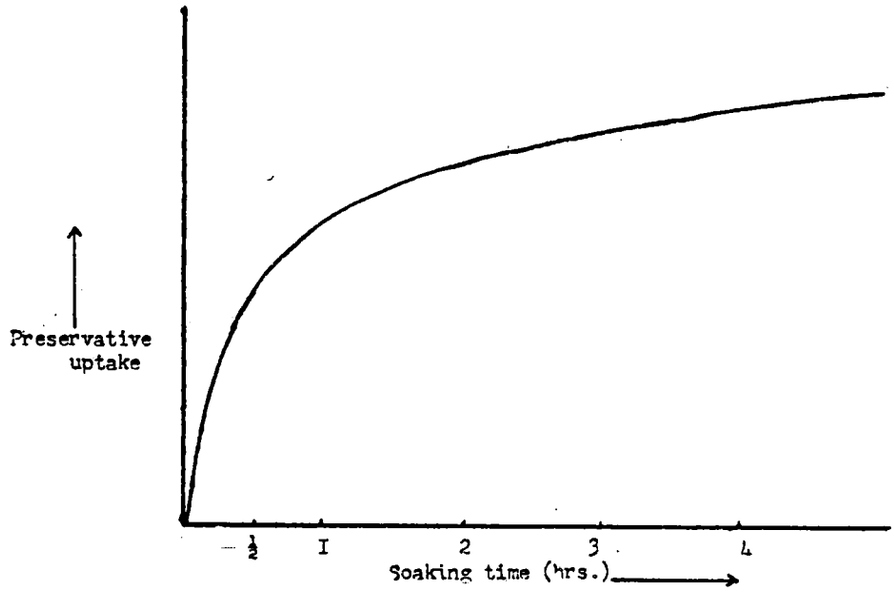
An advantage of paraffin-dipping is that it slows up physical decay of the wood. Timber exposed to sun and rain changes in moisture content, and this causes expansion and contraction. In time this leads to splitting and warping of wood, and loosening of nails. The wood also becomes bleached because of the removal of natural oils and waxes. It goes grey and becomes rough on the surface. Paraffin-dipping, repeated when necessary, will prevent this from happening.

3 Envelope treatment with fungicides

This method creates a fungicidal zone below the surface of the wood, thus isolating the untreated core of the wood in a chemical envelope.

The fungicides are normally mixed with an organic solvent (such as toluene, petroleum, turpentine). This means that the fungicides are not affected by water once they are in place and the solvent has evaporated.

Cold soaking is an acceptable means of impregnation of dry, pre-dressed hive components when a high throughput is not required. Water-based preservatives are not suitable for this process, as they penetrate the timber too slowly, but certain light organic solvents penetrate the dry timber quickly. The time of soaking depends on the solvent used and the species of timber involved. For most timbers, uptake of solution follows the following graph:



Treated timber must be ventilated thoroughly to remove all the solvent before painting. For mineral turps, this usually takes a few days.

Metalex (copper naphthenate) is one such fungicide, and is commonly used in New Zealand. Pentachlorophenol (PCP) also fits into this category, but is not common here. It has been used a lot in the USA, but is likely to become less widely-used as concern grows about its extreme toxicity (to humans).

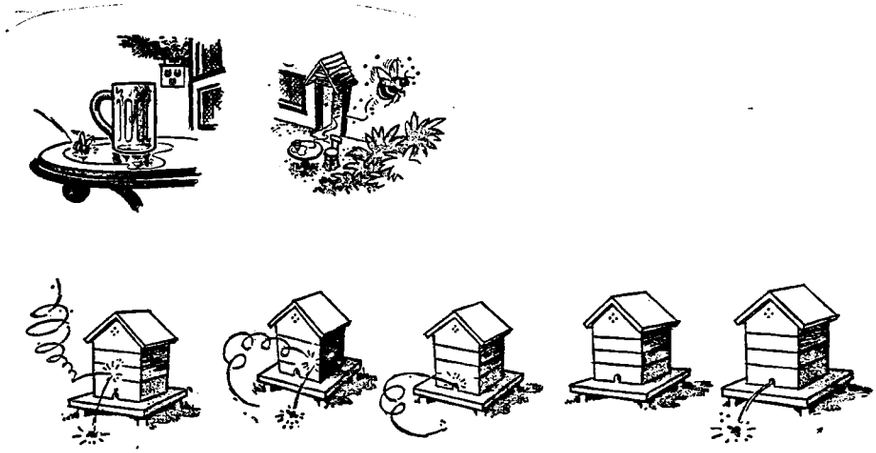
There are two new "hot prospects" in this group of chemicals; tributyl tin oxide and copper-8-quinolinolate. Both have been tried by the Bee Research Unit at Madison, Wisconsin and have proved effective as hive preservatives.

Tributyl tin oxide is not available as a pure formulation, though Tricunol contains some of it (as well as copper naphthenate. Copper-8-quinolinolate is present in the timber preservatives Timtex PQ56 (10% a.i.) and Timtex PQ 57 (5% a.i.), but I don't know of any timber firms using this at the moment. It could become available in the future.

4 Full impregnation

In this instance the timber is fully impregnated with a fungicide, which becomes more or less fixed there. Tanalith is the most common of these, but there are several available which are non-toxic to bees.

The safe preservatives belong to the group known as alkyl ammonium compounds (AAC), and are water-soluble. The AACs got a clean bill of health from the Wisconsin Bee Research Unit. Two trade products from the AACs are Tanamine 3 (Hickson's Timber Impregnation Co (NZ) Ltd, Onehunga, Auckland), and Protek Q. Some beekeepers are using hives made from timber treated with AACs without problems. The timber is put in a bath of cold preservative, heated up to nearly boiling, then allowed to cool again. The only drawback is that the chemicals are water-soluble, and the timber needs a long drying time.



Anon. 1984. Using an acceptable preservative can double the life of wooden beehives. American Bee Journal 124(3):168A.

Cross, D.J. 1983. Preservative treatments of wood used in hives. Bee World 64(4):169-174.

Matheson, A.G. 1980. Easily-constructed paraffin wax dipper. New Zealand Beekeeper 41(4):11-12.

Reid, G.M.; Matheson, A.G. 1978. Waikato version of a paraffin wax dipper. New Zealand Beekeeper 39(2):27-28.

Williams, D. 1980. Preserving beehive timber. New Zealand Beekeeper 41(4):13.

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YOU KNOW ITS GOING TO BE ONE OF THOSE DAYS WHEN ....

... you wake up face down on the pacement.

... you put your bra on backwards and it fits better!

... you call suicide prevention and they put you on hold.

... your birthday cake collapses under the weight of the candles.

... you meet a TV camera crew in the driveway on your return home.

... your twin brother forgot your birthday.

... your tax refund cheque bounces.

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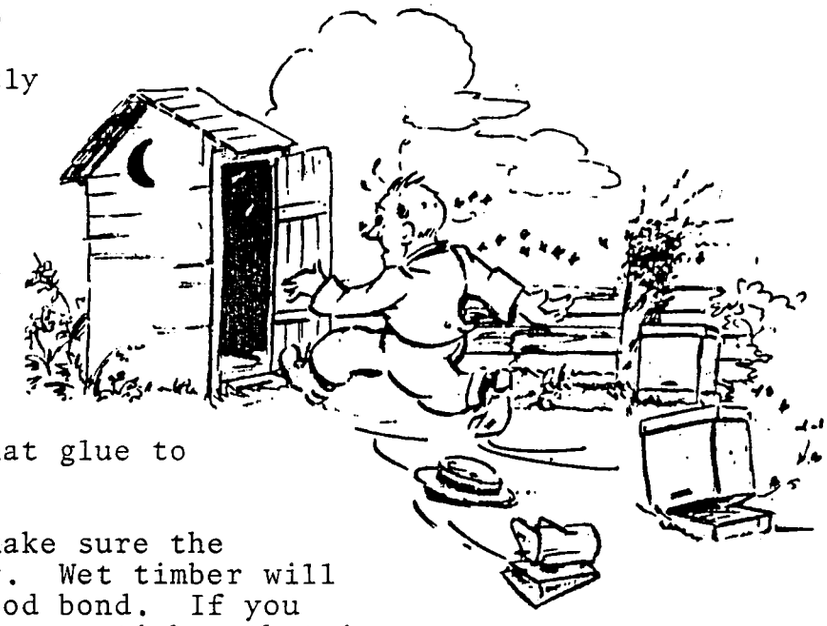
GLUING HIVE PARTS

Not many beekeepers that I know do glue hive parts during assembly. If you're spending part of each winter nailing up old wobbly boxes, it might pay to think about gluing the new ones. The properties of several glues are outlined in a table at the end of this article. It covers PVA, casein, epoxy resin (eg Araldite), and resorcinol formaldehyde.

There are several points to observe when gluing, and these are applicable to all types of glues. Firstly read the instructions on the container. This may sound trivial but if this is done you know exactly what you can expect that glue to do.



When gluing make sure the timber is dry. Wet timber will not give a good bond. If you glue wet timber or timber that is not quite dry and fix it in place, failure of the wood or glueline could occur. The timber still has to shrink as it dries to equilibrium moisture content (EMC). EMC is related to the moisture content of the surrounding air.

Glueline failure or wood failure are usually the two terms associated with how good a glueline is. If you break the wood at the glueline and it breaks along the join in the timber, and it is as smooth as when you glued it, then this is glueline failure. If when you break the wood it seems like splinters stuck to the edge which was glued, then this is wood failure. This means it was a good glueline. There are varying degrees of wood failure and the more wood that adheres to the glueline the better.

You must prepare the surfaces carefully before gluing. A clean smooth surface is essential. Often a light rub with fine sandpaper will help, but if this is done make sure the fine sawdust is removed before gluing.

The best face to glue is the edge. End grain does not give a very strong join when glued. For this reason supers should not be just glued. Nailing or screwing is necessary as well. Another reason is that because of the stress supers are subjected to, wood failure or glueline failure would occur if nailing or screwing was not done.

If preservatives are used, the wood should be glued before it is treated. This is necessary because certain preservatives interfere with the bonding of the glue to the wood. Water-based preservatives will present a problem if the glue you use does not have good weather resistance.

Stronger joins can be achieved if you fit the sides together in some way, such as a rebate or ship-lap. These joins are stronger and achieve better gluelines because they increase the surface area available for gluing.

When joining timber together, it is best if you glue in the rough form. The only dressed part would be the two faces being glued together. Dressing will then be done after the join has bonded satisfactorily. It is hard if joining dressed timber to get a flush fit of the two pieces, particularly in relation to thickness.

Don't expect the glue to fill large gaps. Beware of the shelf life of the glue you are using. Always observe the setting times, and in particular the temperature necessary for curing the glue to achieve ultimate strength.

Resorcinol formaldehyde would probably be the most effective glue to use, but be careful to observe the temperatures required for setting and the shelf life.

A new development that you will probably see in a few years is tannin formaldehyde as an alternative to resorcinol formaldehyde. Resorcinol is a derivative from oil and as such will rise in price. The tannin at present used is an extract from wattle (Acacia spp.) bark, but indications are that it can be extracted from Pinus radiata bark.

At present tannin formaldehyde is used in high-temperature gluing in Australia. It most probably will become available later as a glue that can be used at normal ambient temperatures.

Weatherhead, T.F.; Kennedy, M.J. 1980. Adhesives and wood preservatives for the beekeeper in the 1980s. Australasian Beekeeper 82 (4):88-94.

PROPERTIES OF FOUR COMMONLY-USED GLUES

	PVA (POLYVINYL ACETATE EMULSIONS)	CASEIN		EPOXY RESIN		RESORCINOL FORMALDEHYDE RESORCINOL PRENOL FORMALDEHYDE
FORM	White-cream viscous liquid	Ready-mixed cream	Granules of lactic or acid casein	Honey-like liquid or coloured paste with liquid hardener	Solid sticks, powder	Viscous reddish brown liquid with liqu or powder hardener
PREPARATION	No preparation required	Mixing with water	Mixing with water and alkaline materials	Careful mixing with hardener	No preparation, resin melted on to surface to be glued	Mixing of resin and hardener
SHELF LIFE at 20°C in suitable closed container	Usually no limit	9-12 months	Up to 2 years	Resin at least 6 months Hardener at least 1 year	At least 2 years	Resin - 3 months or more Hardener - 6 months or more
ASSEMBLY TIME at 20°C	Up to 10 minutes, or 20 minutes with special formulation	Up to 40 minutes		Several minutes to one hour	Equal to shelf life	Up to 60 minutes
PRESSING TIME	Up to 2 hours at room temperature	2-4 hours at room temperature Several minutes above 100°C		Up to 48 hours at 20°C Approx. 1 hour at 100°C	24 hours at 20°C Several minutes at 100°C	24 hours at 20°C Several minutes at 100°C
SETTING MECHANISM	Loss of water	Chemical action combined with loss of water		Polymerization (cross linking of molecules)		Poly condensation
TIME TO DEVELOP ULTIMATE STRENGTH	1 week	1 week		Up to several weeks		1 week at 20°C
GAP-FILLING PROPERTIES	Good	Good		Excellent		Good
WEATHER RESISTANCE	Low	Moderate		Moderate to Good		Excellent
REMARKS	Very strong adhesive but strength under permanent load is lower. Dissolves in water.	Stains badly, but this tendency may be reduced with special formulations. Poor mould resistance which may be improved by fungicides.		Adhesive not soluble in water. Hardeners may be severe on unprotected skin.		Setting temperature should be above 20 and for maximum wet strength with some hardwoods above 60°C.

(Prepared from CSIRO Division of Forest Products Trade Circular 49 : "Wood Adhesives - A Summary of their Properties and Uses".

NEW BEEKEEPING BOOK

A new beekeeping book for New Zealand is being published. It's called "Practical Beekeeping in New Zealand", and is written by someone called Andrew Matheson. This book is the much-awaited replacement of the old MAF Bulletin 267.

It tries to cover all aspects of New Zealand beekeeping, including:

- the New Zealand industry and its history
- nectar and pollen sources
- honey bee biology
- seasonal management of bees
- hive construction and design
- properties and processing of honey and beeswax
- pests and diseases
- pollination
- beekeeping legislation
- and other topics.

It is NOT a revision of the old "Beekeeping in New Zealand, but is a totally new book. It is NOT a MAF Bulletin, but is published (as well as printed) by the Government Printing Office's Publishing Division.

A few details: size 240 x 180 mm (a bit smaller than this magazine); 184 pages; 115 photographs; 30 line drawings; an index and glossary. Price is a genuine, old-time bargain at $17.50.

Scheduled release date is October 1984. It will be available from leading booksellers, Government Bookshops, (not MAF), or by posting your order to:

Mail Orders
Government Printing Office
Private Bag
Wellington.

-oooOooo-

Now that spring is here again, it might be timely to reflect on this poem by MAF's AAO (laureate), Kerry Simpson.

REFLECTIONS UPON KICKING OFF THE FIRST HIVE LID IN SPRING

Hail sky bright blue, no sign of rain!
Just wait till the willows flower again.
Dreaming of flows that never stop
So I forget that last year's crop.
When levering out stuck frames I hope
Grubs will not be brown and rope.
Lots of brood and not much feed,
We cater for their every need
With overdraft or hard earned loot.
Don't spill the syrup down your boot.
To orchards then, with straps of iron
And carbaryl and gusathion.
Ere summer comes we shift them back
On rainy nights with aching back.
Dull November starves some bees,
While others hang about in trees.
But later on, no time to play,
We'll gather honey while we may.
Those rotten lugs, I curse them so
When heavy frames fall on my toe.
Tons of drums, but all's not well, it
Still remains a job to sell it.

Though beekeeping be full of strife
We have, at least, OUR WAY OF LIFE.

Bye for now

Andrew

(Andrew Matheson)
APICULTURAL ADVISORY OFFICER