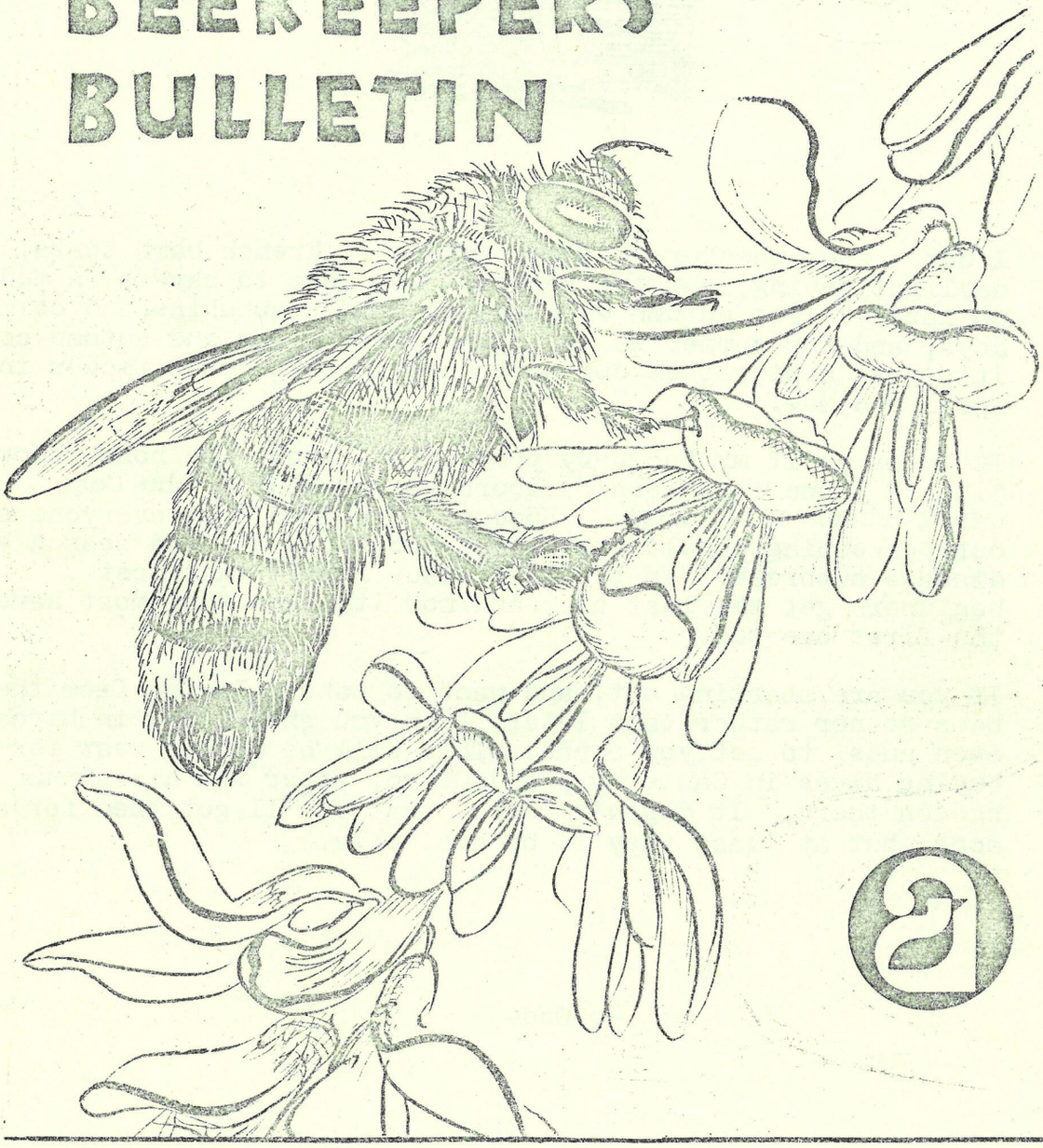
THE BEEKEEPERS' BULLETIN



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Volume 3 Number 4

May 1982

I don't know whether to blame sunspots, French bomb tests, or daylight saving, but the seasons sure seem to have been muddled up lately. For autumn we have had summer sunshine and calm days, and for summer we had equinoctial gales and autumn coolness. It's just a pity that our main honey plants don't flower in April and May.

It looks as if my February predictions about the honey flow - 1.5 - 2 tonne in Nelson/Marlborough and 2.5 on the Coast. were perhaps a bit high. Someone once said that everyone starting out beekeeping should experience two things: a bad season and a disease outbreak. In the last issue I said that most beginners get the last one, and now it seems that most have had the first one too.

If you are starting out, and want to make a living from the bees sooner rather than later, then you should buy in hives, or even nucs, to get you ahead. This will be a good year for buying hives in Canterbury and Otago, after the disastrous season there. It doesn't follow that you'll get them for a song, but at least they'll be available.

-ooOoo-

LOOKING BACK

This issue of "The Beekeepers' Bulletin" is volume 3 number 4, which means that it marks the completion of three years' publication. In the first issue I said that it was YOUR NEWSLETTER, and wouldn't function adequately without comments, contributions or criticisms.

I intended that it function as a regular contact between the MAF and beekeepers in my district, especially those of you in far-flung areas that I don't get to visit as often as I should. It is also meant to keep you up to date with local and international beekeeping news, results of apicultural research, and to make you think critically about the ways in which you run your business and do your beekeeping.

My thanks to all of you who have, either verbally or in letters, made comments about the newsletter. I would only continue with it if I believed it was serving a definite purpose, and was cost-effective. The feedback convinces me that it is.

Criticisms? Not many from the beekeeping industry, but I'm happy to hear any you might have. The most recent one was from the chap who said it wasn't long enough. He wanted an extended lunch hour on the days the Bulletin landed in the mail box.

A lot of things have been written about in the last three years - some relevant to you and others not, some designed to inform, some to make you think, and others just for a laugh. There may have been articles which made you think "That's a good idea", "Must get one of those", or "Had better do something about that". And so often we forget about them as day to day chores take over.

In the back of this issue you'll find an index to some of the articles which you might want to refer back to. This Bulletin is a topical newsletter, and so I don't expect you to bind each volume in black leather with gold lettering on the spine. Yet it has been a surprise to me how many back issues I've seen kept in beekeepers' offices or smoko rooms. I can probably help out with particular articles if you want to follow anything up.

2(4) means volume 2 number 4. Issues are dated August (no 1), November (2), February (3), May (4). Volume 1 was 1979-80, volume 2 1980-81, volume 3 1981-82.

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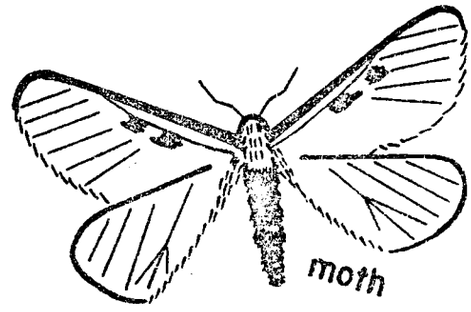
A MATTER OF DEGREE

How much cold is required to kill wax moths? Some beekeepers are interested in treating wax moth by freezing them to death, so they need to know the answer to that question. As far as I know, the only people who have tried to answer it were from the US Department of Agriculture in the late 1960's.*

The different stages of wax moth (egg, larva, pupa, adult), have different resistances to cold temperatures. Usually, but not always, eggs are the most difficult to kill. The time taken to achieve 100% kill of <u>all</u> stages depends on the temperature used.

Temperature	-1°C	-7°C	-12°C	-15°C	-18°C
Time taken to kill 100% of all wax moth stages	8 hr+	4½ hr	3 hr	2 hr	2 hr

Remember that these experiments were done in laboratory conditions; you can't expect to put a moth-ridden super into a freezer at -12°C and pull it out 3 hr later with all moths killed. It takes time for the combs to cool down to the freezer temperature, and generally 12 - 24 hr freezer time is recommended to allow plenty of margin for error.



As with fumigation, extreme care must be taken to prevent reinfestation after treatment and before comb honey is packed.

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* Cantwell, G.E.; Smith, L.J. 1970. Control of the greater wax moth, <u>Galleria mellonella</u>, in honey comb and comb honey. <u>American Bee Journal</u> 110(4):141.

FOUNDATION MILLS

The two foundation mills in the North Island are in full operation. Steven Mahon (Ceracell Foundation Ltd, P.O. Box 204, Warkworth) charges $1.15/kg for converting wax to medium brood foundation in carton lots. New cartons are $1.85 each.

Lindsay Hansen (Bee Industries, R.D.2. Taupiri, Waikato) says that his conversion rate will be about $1/kg, but that's for 250 kg lots and over. Cartons are $2 each.

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DISCLAIMER

Mention of any proprietary product does not imply endorsement by the Ministry of Agriculture & Fisheries or recommendation over similar products not mentioned.

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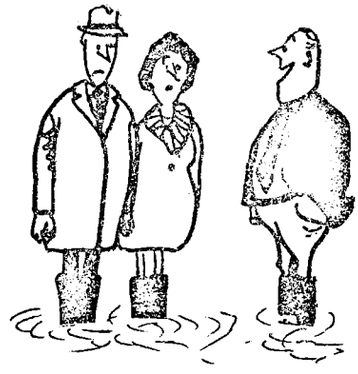
STORMS AND FLOODS

This was not meant to be a regular column, but here we go again. My sympathy to the West Coast beekeepers who lost apiaries in March's gentle autumn rains.

As one West Coast beekeeper said to me recently - we don't mind hundred-year floods, but we do object to having two in a single summer.



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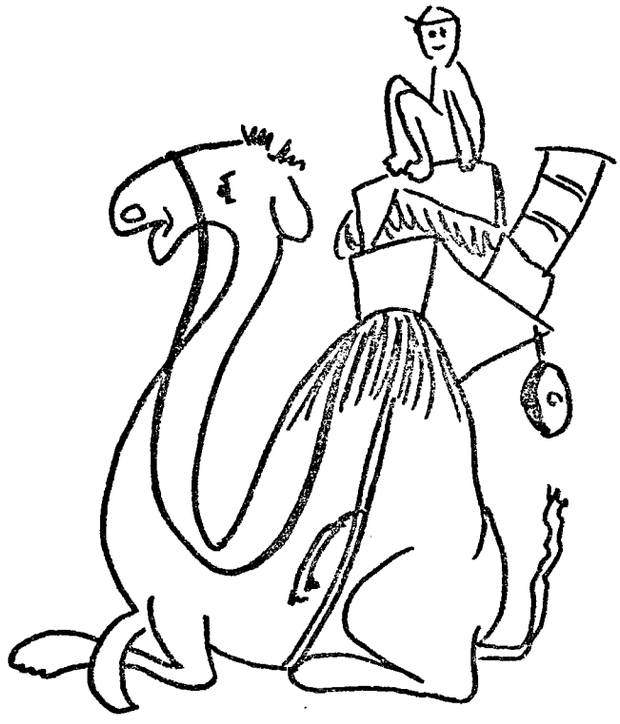
OVERSEAS VISITOR

A visitor to our shores from September 1982 to May 1983 will be Dr S.C. Jay, on sabbatical leave from the University of Manitoba. "Cam" Jay is a world authority on honey bee orientation (that's to do with how bees keep track of their movements). He highlighted the problem of drifting in commercial apiaries, in a series of five articles published in the late 1960's. You may have read a little about drifting in this

Bulletin from time to time.

It seems likely that Dr Jay will be based in the North Island and will do some work on honey bee orientation in kiwifruit plantations. It is hoped that he will also have time to look at honey bees in oversown high country in the South Island.

His travel within the country will be determined to a large extent by funding, but he may be able to visit beekeeper groups in some areas too.



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SALES TABLE

Philip Cropp of Motupiko has a three-compartment baffle tank and a honey pump for sale.

* * * * *

BEEKEEPING PAMPHLETS

Two new Aglinks on beekeeping have just been published:

FPP 534 Beekeeping/beeswax/production and processing

FPP 536 Beekeeping/wax moths/ life history and control

There is more good material on beekeeping in Aglink system which has not yet been printed. Two on nectar and pollen sources (FPP 529 and 530) are due out shortly. Others may appear in the next year or so.

Remember that Aglinks are available free of charge from any MAF office or myself.

At the Nelson office I have other pamphlets, all of which are available on request.

Standard hive dimensions
Planning an apiary site
How to reduce drifting in apiaries (surprise!)
Beekeeping in urban areas
Laws affecting beekeeping
Harvesting honey
Honey house design
Honey composition, proterties, and processing

* * * * *

An American beekeeper wrote an article in Gleanings recently, describing how he made a bee blower himself, using a 3 h.p. 4 stroke motor. I have copies of the article if anyone is interested.

* * * * *

ETHYLENE OXIDE FUMIGATION

Some people are using EtO ("Fumigas 10") for fumigating comb honey and stored combs for wax moth control, because of the supply problems with methyl bromide, the extreme toxicity of it, and worries about residue problems.

The gas is fairly safe and easy to use, but failures can result from poor application.

* Remember that Fumigas 10 is 10% ethylene oxide and 90% carbon dioxide. These are both very heavy gases, so

- insert the gas lead at the top of the stack
- seal the bottom of the stack very well. This should be done by heaping sand on the bottom piece of polythene. Think of the gas as water trying to find its lowest level, and work out where it is likely to leak out.
- take extreme care not to allow reinfestation between fumigation and packing

* Polythene-covered stacks on concrete slabs (as set up for methyl bromide treatment) is the best arrangement for ethylene oxide fumigation. As the gas readily penetrates wood, don't use a room as a gas chamber.

* Follow the dosage instructions carefully, and re-check your calculations to prevent mistakes.

* Although EtO is much less toxic than methyl bromide (which is nearly as dangerous as cyanide fumes), treat it with respect. Fumigation should be done out of doors wherever possible. If it must be done indoors, allow plenty of ventilation.

* Remember that you're fumigating wax moths, not bees. These two species have a different tolerance to the gas, so don't worry if you have live bees left after the treatment. Put wax moths in if you want to test your efforts.

* * * * *

DISCUSSION GROUP

The first meeting in the new series of West Coast beekeepers' discussion groups will be held on Thursday 15th July. The change of date is necessary because of the involvement of other speakers. This means that the dinner will also be changed to that date.

The day's sessions will be on financial management, probably including budgeting, accounting, interpretation of accounts, taxation, and estate planning. It is intended to be a follow-up to the discussion group session on record keeping and budgeting held at Ahaura in May last year. We'll have specialists along for some of the sessions.

Venue is the Ministry of Works conference room in Greymouth. This is on the second floor of the new government buildings, next to the fountain. Kick off is at 9 am sharp. Tea and coffee are provided, lunch arrangements and programme details will be advised nearer the date. For any further information get in touch with Heather Detlaff, Ross 118.

-ooOoo-

DUST GUN FOR WASP NEST DESTRUCTION

Still being plagued by wasps in your apiary sites? Then you've got some overwintering nests nearby. Everybody knows of simple ways to destroy wasp nests once they are found, such as throwing some petrol or insecticide down the hatch. A variety of other methods are outlined in Aglink FPP 196 - German wasp: nest eradication methods. This pamphlet is available free of charge from any MAF office or myself.

Occasionally we come across grandaddy nests that won't respond to such gentle tactics. One West Coast remedy I've heard of is the use of copious quantities of gelignite - while this is effective, in the instance I heard about it also removed all the windows in the farmer's house some hundreds of metres away. This method can also be effective on nearby people, or at least their eardrums.

MAF officers have been issued with carbon dioxide dust guns, not for routine wasp nest destruction, but for the problem cases we encounter from time to time. Their design was written up in the July 1955 issue of the Journal of Agriculture by Trevor Palmer-Jones.

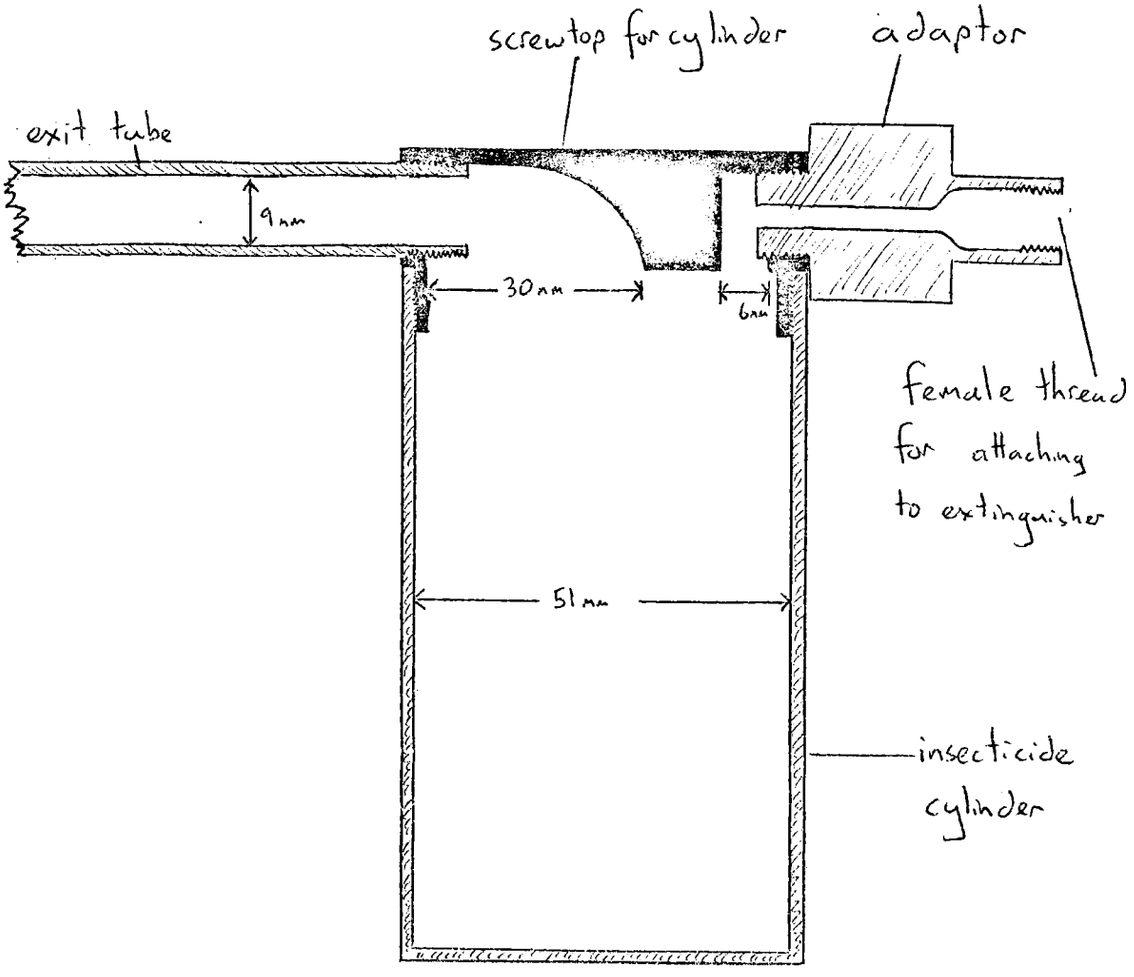
Now some of you may not have that issue lying close to hand on the coffee table, so I've put some design details in this issue in case you want to build one for yourself.

The dust gun consists of five pieces: a carbon dioxide fire extinguisher, an adaptor, the screw top for the cylinder, the cylinder which holds the insecticide, and a tube through which the insecticide leaves.

A 2 kg carbon dioxide (CO_2 or dry ice) fire extinguisher is perhaps the best to use. By ringing three firms in Nelson I obtained prices varying from $84 to $143, so shop around. One charging of the extinguisher will probably last for 2 or 3 years of intermittent use. Recharging the cylinder costs around $10.

The adaptor has a female thread (11 mm I.D.) which screws onto the extinguisher (after the normal outlet is removed), and a male thread which screws into the screwtop of the cylinder. Some models incorporate an expansion chamber in this adapter, but mine does not.

The top of the canister has a small downward-projecting hold for letting the gas in, and a larger hole for allowing the dust/gas mix to leave. The body of the canister, which is unscrewed for filling with insecticide dust, is 130 mm high, 51 mm internal diameter, and is made of 3 mm brass.



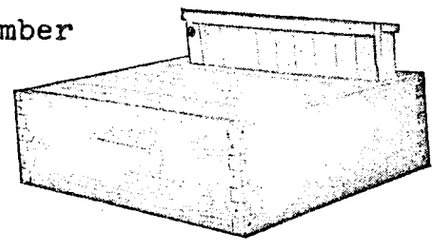
The outlet tube simply screws into the top of the canister. It has an internal diameter of 9 mm and is 215 mm long. This is pushed into the nest entrance.

I use carbaryl insecticide (Sevin, septan) because it is easily obtained, is not very toxic to humans, and breaks down in a few days when exposed to sunlight and water. DDT works well, but is not as readily obtainable. I also don't want to be responsible for the chlorinated hydrocarbons that my grandchildren might eat one day.

Two or three lots of powder scooped up with the end of a hive tool is enough to kill a nest - the canister doesn't normally need to be more than ¼ - ⅓ full. A few short bursts of CO_2 and the powder is all ejected.

The gun is not (repeat NOT) designed for use with cyanide dust or granules. Having a tablespoonful of carbaryl chucked back in your face is certainly unpleasant, and it means you have to wash it from your eyes and mouth. With cyanide you might not get the chance to.

TO THREEQUARTER OR NOT TO THREEQUARTER .....



There's an ever-increasing number of sensible beekeepers around the country who are changing to three-quarter depth gear. The trend starts with honey boxes, and old full-depth supers go down to serve out the rest of their time as brood boxes. But when people get all ¾ depth honey boxes and all FD supers the changeover stops. They think they've arrived, and start off buying FD supers again (as brood box replacements).

New beekeepers coming into the industry look at these wise old fellows and start building their outfits the same way: FD brood boxes and ¾ depth honey supers. Perhaps they don't realise that what they've seen with other beekeepers is a changeover programme that got stuck half way.

Have I offended anyone yet? OK, I know that two FD boxes is a good combination for wintering, and you don't want a triple brood nest, and you're not lifting them much anyway. And of course if you only had a double ¾ depth brood nest there wouldn't be enough room for the queen to lay. Or would there? I've heard a lot of authoritative statements on that last question, mostly contradictory, so I sat down to work out a few figures.

First we have to decide how many eggs a queen can lay in a day. Most people have an off-the-cuff answer; 1000, 1500, 2000 or whatever. But what evidence is there for these figures?

Many references still use the figures obtained by WJ Nolan of the US Bureau of Entomology who wrote up some observations in a 1925 bulleting. It seems that they're still the most acurate available. Nolan took weekly photographs of every frame containing sealed brood in a group of experimental colonies, and made counts from the negatives. The equivalent of 53 individual seasonal brood-rearing records were used.

The highest daily average during any 12-day period was 1587 eggs. Most of the queens had a lower average than that. Quite obviously egg-laying rate varies, particularly with food intake to the hive, but estimates such as 3000 or 5000 eggs per day are grossly optimistic.

H.M. Laidlaw in his recent book "Contemporary Queen Rearing" states that "the queen will lay as many as 1500 eggs in a 24-hour period, and perhaps somewhat more, though often queens will lay less at their peak of production".

The number of eggs laid in a particular brood comb depends on the number and distribution of cells cleaned by the workers, which in turn depends largely on where honey and pollen are stored in the hive. This will change from month to month, and will also vary with different management practices. Use of excluders, two queen versus single queen systems will all make a difference.

The number of cells per comb is as follows:

One comb, both sides

¾ depth	full depth
5,700	7,740

One box (nine combs)

51,300	69,700

Two boxes (nine combs per box)

102,600	139,000

Three boxes (nine combs per box)

153,900	209,000

(Reference: The Hive and the Honey Bee, 1975 ed, p317)

Worker bees take 21 days to develop from egg to adults so one queen laying 1500 eggs per day will require 33000 cells for uninterrupted egg-laying (allowing one day for empty cells to be cleaned).

Let's assume that only two-thirds of a brood box is available for egg-laying, because of honey and pollen stored in it, broken bits of comb and so on. One three-quarter depth box gives a queen sufficient space to lay (two thirds of 51300 is 34200).

It seems, then, that a double ¾ brood nest should be ample for single queen management. I know good commercial beekeepers who run their hives with such a double ¾ brood nest, in much worse climates than you're likely to encounter.

A two-queen system using two ¾ depth brood boxes also seems possible, as in this management system hive bees keep the brood nests relatively free of honey, so that the queen has plenty of room to lay. Remember my calculation showing that a normal 1500 eggs-a-day model should feel happy in a ¾ box, was based on the assumption that only two-thirds of the comb space was available to her.

If one queen were removed before the end of the honey flow and an excluder left above the first box, then the second box would be completely full of honey for wintering.

Look at your local conditions, and don't be afraid to experiment.

-ooOoo-

"If you can't do it excellently, don't do it at all. Because if it's not excellent, it won't be profitable or fun. And if you're not in business for fun or profit, then what the hell are you doing here?"

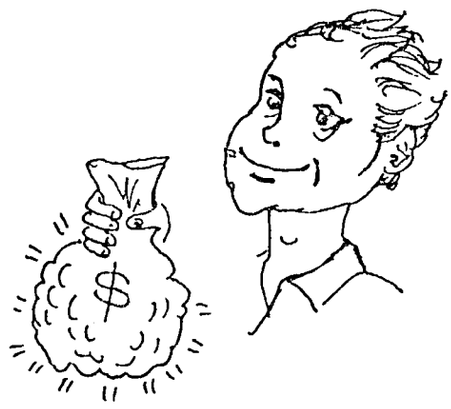
Robert Townsend, former boss of Avis Rental.

* * * * *

"Not the 'Yet-another-record-breaking-year' set, you fool!" I want the 'Just-about-keeping-our-heads-above water' figures!"

CASH FLOW FORECASTING MADE SIMPLE

MAF's Nelson office has recently purchased a small computer, and there is one program available which is of immediate use to commercial beekeepers. It will do cash flow forecasts much more easily than by manual means and, more importantly, will update them in a matter of a few minutes.



Cash flow forecasting is a means of looking ahead and determining what peaks and troughs you can expect in your cash situation. This is particularly important for beekeepers, whose income tends to come in a few big dollops, but whose expenses pile up with monotonous regularity. Even if a budget shows that you can expect an overall surplus for a particular financial year, this doesn't mean to say that you won't need overdraft facilities for most of it.

Forward budgeting helps you plan to use money to its maximum effectiveness, it helps you to avoid cash crises (like the poor chap with the bucket over his head), and it impresses the bank manager. This last point is important, as he/she will be much more disposed to extending overdraft facilities if you go in with a written plan of when income and expenditure are expected, rather than a few vague ideas carried around in your head.

Effective cash flow forecasting requires

- a cash recording system which keeps details of monthly income and expenditure by categories.

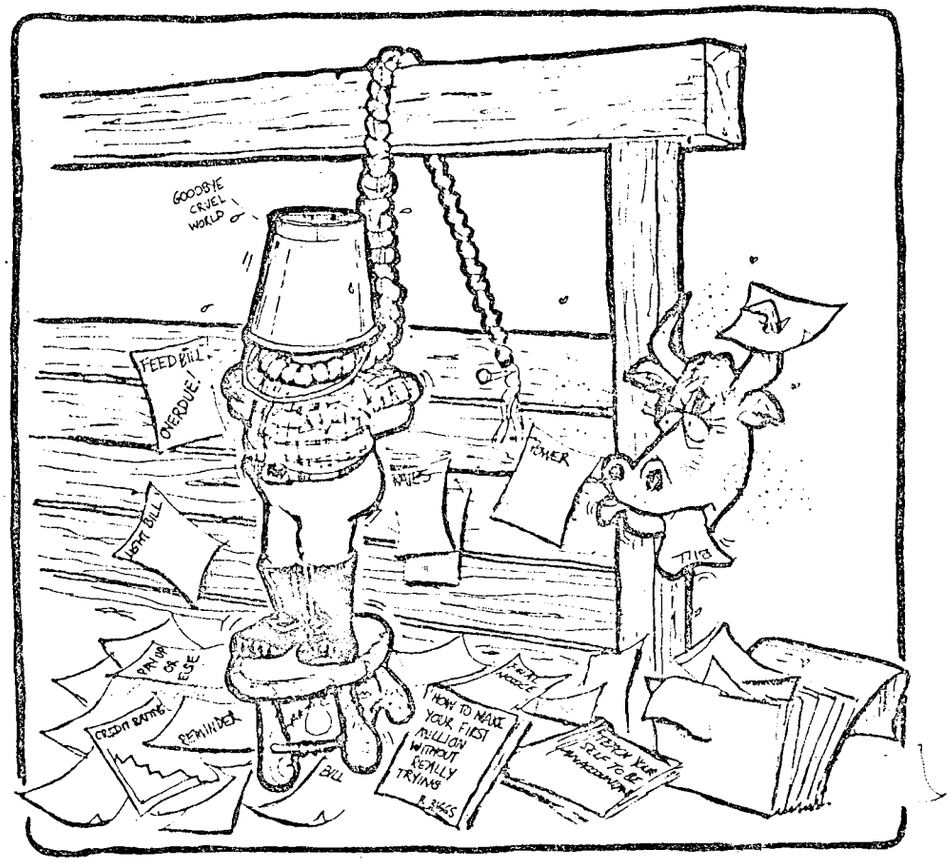
- this cashbook to be kept up to date

- cash forecasts to be adjusted in line with reality on at least several occasions throughout the year.

Where does the computer come into all this? Doing a monthly cash forecast at the beginning of the year is one thing, but it's only useful if it's kept up to date. This is the sticky bit as it requires several free evenings, and you'll have a callous on your 'calculator

finger' by the end of it. If you're using the computer all you need to do is to jot down the revised figures on your standard cash flow form, send them off to me, and in a couple of days you will get back in the post a printout showing the actual figures and comparing them with the original forecast.

Many of the causes of financial stress in farming can be attributed to poor planning and control. Don't let things go this far!



In case you're interested but worried by the thought of sending your monetary secrets around the country, there are a few points worth thinking about:

- all your financial information is stored on your own personal file in the computer's memory system.

- no-one else in the office can look at this file because access to it is governed by a password, unique (and confidential) to the adviser concerned.

- any financial information that I am privy to (like anything personal which you disclose to me) is kept completely confidential.

A sample cash flow printout is included in this issue and it shows the basic format. The headings I have chosen to illustrate the types of things which might be used, but your file can be set up with whatever categories are appropriate to your business. The balance date can be altered if necessary too.

Just a couple of points about the printout. The "actual" and "forecast" lines will be different on an update - this example is a forecast done at the beginning of the year. The figures are purely imaginary and don't come from anyone's books - who expects a beekeeper to make a profit in a year like this anyway?

If you keep a cash book and currently do a cash forecast or will be soon, then you might like to get in touch with me over the use of the computer. If you'd like to know more about cash records and basic budgeting then collar me about that too. If enough people nag me, we could think about scheduling another "Business Management for Beekeepers" course in 1983.

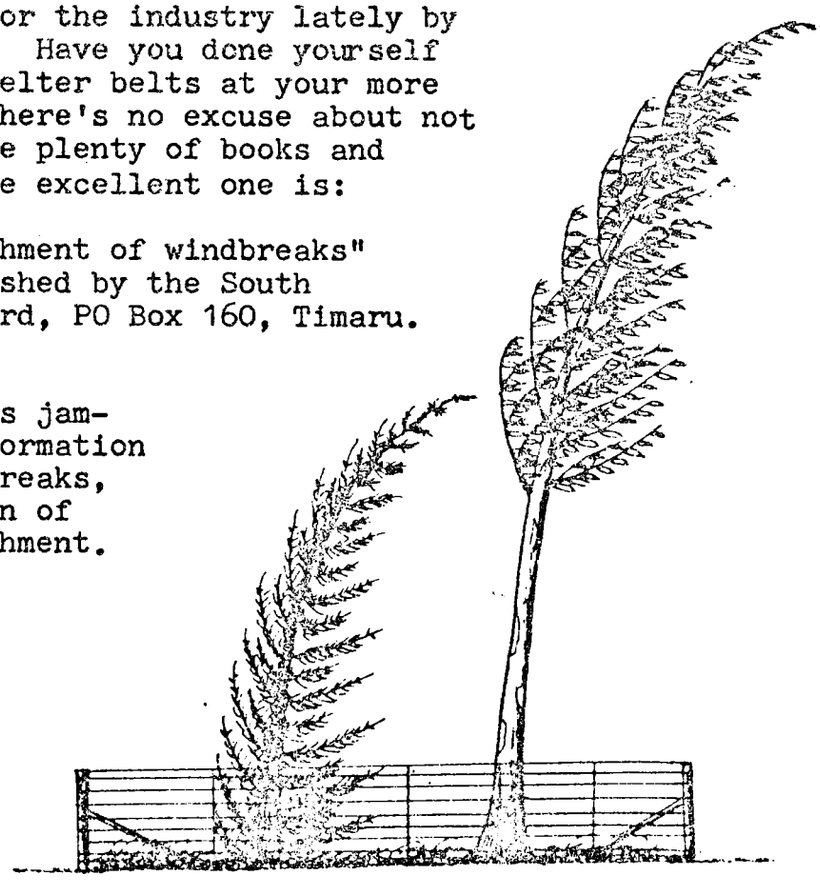
-ooOoo-

PLANTING TREES

Have you done your bit for the industry lately by planting some bee trees? Have you done yourself some good by planting shelter belts at your more exposed apiary sites? There's no excuse about not knowing how, as there are plenty of books and pamphlets available. One excellent one is:

"A guide to the establishment of windbreaks" by D.J. Stringer. Published by the South Canterbury Catchment Board, PO Box 160, Timaru. Price about $2.50.

It contains over 50 pages jam-packed with detailed information on the benefits of windbreaks, drawing up a plan, design of windbreaks, and establishment. A valuable handbook.



cash forecast

opening balance £ 5000.00

YOUR NAME

income

	Total	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
HONEY BULK	32000	7200	3600	3600	3600	3600	3600	3600	3600	1200	1200	1200	
HONEY PACKED													
HONEY COMB													
HONEY CAKE SALE	3600	300	300	300	300	300	300	300	300	300	300	300	300
BEESWAX	2000	500								1000	500		
POLLINATION	3000				1500	1000	500						
POLLEN	1100					500					600		
NUCS													
QUEENS													
OTHER													
total income													
actual	45700	8000	3900	3900	5400	5400	4400	3900	3900	2500	2600	1500	300
forecast	45700	8000	3900	3900	5400	5400	4400	3900	3900	2500	2600	1500	300

expenditure

	Total	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
SUGAR	10000		10000										
QUEENS	1250			625					625				
HIVE R&M	1200	600	500		100								
PACKAGING	500							500					
FEEDING	1450		750			100				400	200		
EXTRACTION COST	250						50	100	75	25			
WAGES	2800						400	800	800	800			
VEHICLES	3100	100	150	200	200	200	350	500	400	400	300	200	100
PLANT&BLDG R&M	300	25	25	25	25	25	25	25	25	25	25	25	25
INSURANCE	499	41	41	41	41	41	41	41	41	41	41	41	41
ACCOUNTANCY	500				500								
ADMINISTRATION	300	25	25	25	25	25	25	25	25	25	25	25	25
MORTGAGE P&I	1000			250			250			250			250
CURRENT A/C INT	499	41	41	41	41	41	41	41	41	41	41	41	41
TAXATION	8000			3000		2500				500			
PERS DRAWINGS	7000	583	583	583	583	583	583	583	583	583	583	583	583
OTHER	1500	125	125	125	125	125	125	125	125	125	125	125	125
total expenditure													
actual	40150	1541	12241	6716	1641	3641	1891	2741	2741	3216	1341	1041	1191
forecast	40150	1541	12241	6916	1641	3641	1891	2741	2741	3216	1341	1041	1191

	Total	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
monthly surplus/deficit													
actual	5549	6458	-8341	-3016	3758	1758	2508	1158	1158	-716	1258	458	-891
forecast	5549	6458	-8341	-3016	3758	1758	2508	1158	1158	-716	1258	458	-891
monthly balance													
actual	10550	11458	3116	100	3858	5616	8125	9283	10441	9725	10983	11441	10550
forecast	10550	11458	3116	100	3858	5616	8125	9283	10441	9725	10983	11441	10550

↑ closing balance

Note - this has been reduced in size (and in clarity) to fit on this page

YEARLY SUMMARY

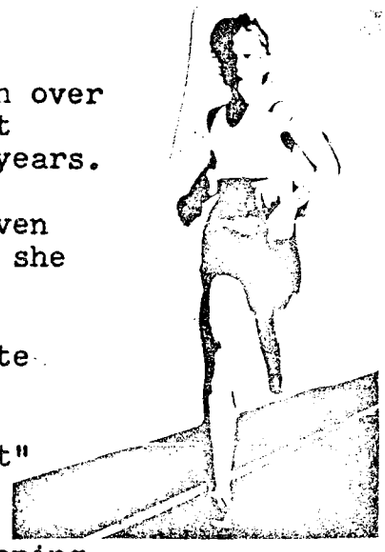
opening balance- $ 5000.00 YOUR NAME

period	income (actual)	expenditure (actual)	surplus/deficit (actual)	balance (actual)	balance (forecast)
Jul	8000.00	1541.67	6458.33	11458.3	11458.3
Aug	3900.00	12241.7	-8341.67	3116.67	3116.67
Sep	3900.00	6916.67	-3016.67	100.00	100.00
Oct	5400.00	1641.67	3758.33	3858.33	3858.33
Nov	5400.00	3641.67	1758.33	5616.67	5616.67
Dec	4400.00	1891.67	2508.33	8125.00	8125.00
Jan	3900.00	2741.67	1158.33	9283.33	9283.33
Feb	3900.00	2741.67	1158.33	10441.7	10441.7
Mar	2500.00	3216.67	-716.67	9725.00	9725.00
Apr	2600.00	1341.67	1258.33	10983.3	10983.3
May	1500.00	1041.67	458.33	11441.7	11441.7
Jun	300.00	1191.67	-891.67	10550.0	10550.0
total	45700.0	40150.0	5550.00	10550.0	10550.0

Actual size

ATTENTION ALL RUNNERS

How much faster can women run the marathon?



Allison Roe of Auckland, the world's fastest woman over the 42 km distance, said recently that she thought 2 hr 20 min could be broken within the next five years.

Roe's current best is 2.25.38, and she has now given away the secret of her training. She stated that she doesn't believe in following the pre-race high carbohydrate diet that was so popular a few years ago, but rather increases the level of carbohydrate intake only gently before a marathon.

"I just have a bit more honey and things like that" she said.

("Roe sets sights on marathon barrier." Nelson Evening Mail, 16 March 1982)

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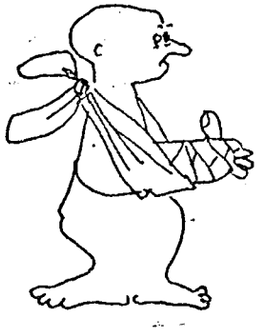
LIVING DANGEROUSLY

Most beekeepers that I know live rather dangerously. When they're not handling lethal chemicals like cyanide or methyl bromide, they're busy trying to incinerate themselves with hot paraffin wax. Backaches, hernias, tendonitis, venom-induced anaphylactic shock - the list of occupational hazards is pretty long.

But it doesn't include cancer, according to a recent study by a cancer research institute in the US.* The authors analysed the causes of death of 580 US beekeepers who died between 1949 and 1978, and found no significant difference between the proportion of beekeepers dying from cancer (15%) and that in the population at large (17%).



The death rate due to tumours in the respiratory system (eg lung cancer) was in fact about half what would be expected; the writer of the report concludes that this might mean that fewer beekeepers smoke cigarettes (although he didn't check that). At least it looks like we won't ever see government health warnings on bee smokers.

The study concludes with the amazing statement that "the results indicate that a long period of exposure to repeated bee stings has no adverse carcinogenic (cancer-forming) effects." Now you can sleep more easily at nights!

* McDonald, J.A.; Li, F.P.; Mehta, C.R. 1979. Cancer mortality among beekeepers. Journal of Occupational Medicine 21(12):811-813.

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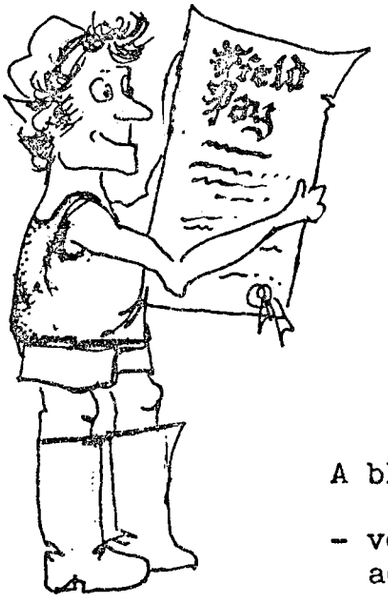
COMBINED FIELD DAY



The Marlborough and Nelson NBA branches held a combined field day during the last weekend in February. It started with a gathering at Whites Bay on the Port Underwood Road. Here Reg Clarke discussed the management practices he has had to adopt in this area, because of the long winter and early spring flows of Spanish heath and honey dew.

A blind honey tasting showed that:

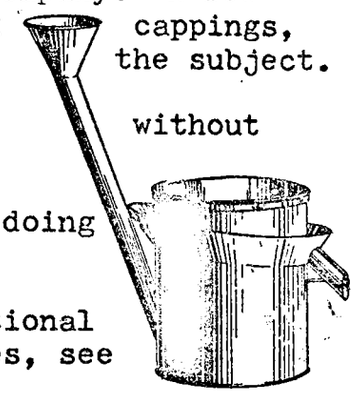
- very few people can identify accurately honey tastes
- the "best quality" honey was judged to be a mixture of honey from burr combs and drip tray scrapings.
- the "best tasting" honey was the local manuka/bush blend, which had a very slight edge over Molesworth honey
- despite that, the manuka/bush blend was reckoned to have a lower market value

The weekend also included a dinner attended by over 70 people and spiced up with some local mead, and a visit to Craig & Astrid Deans' outfit at the Waihopai Valley. It was a very successful event, and hopefully will be repeated somewhere in the "Top of the South" next year.

MELTING SPUN CAPPINGS

There's been a lot of interest in cappings spinners in this district, with quite a few either being bought or made.

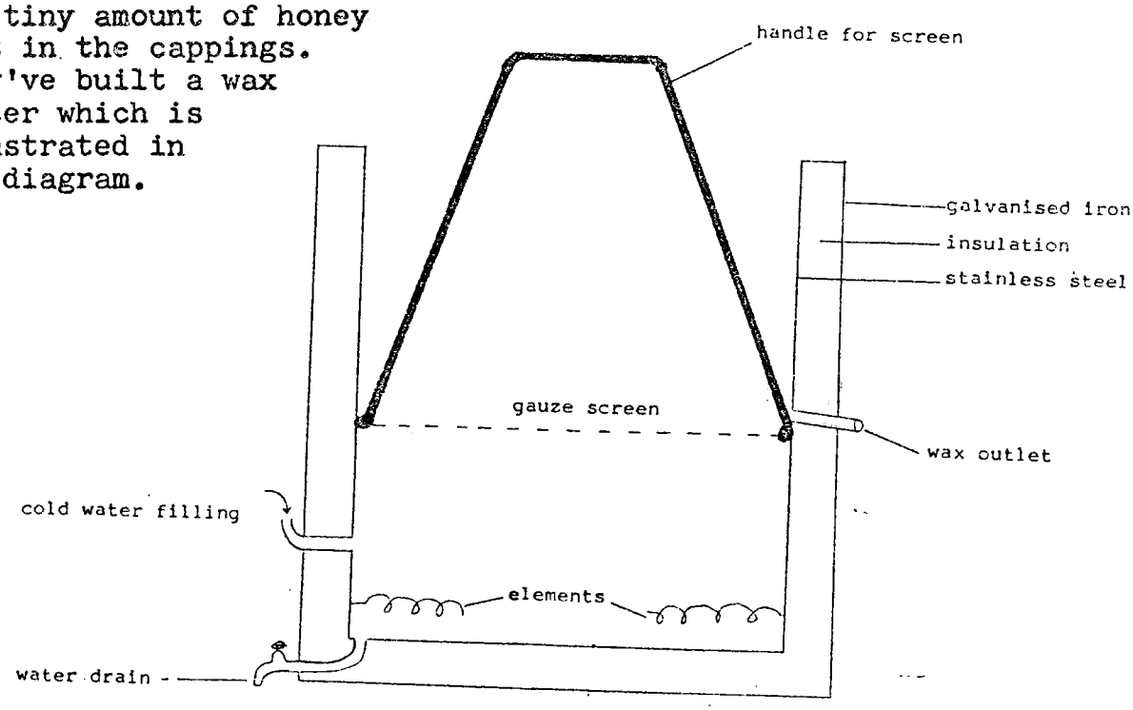
Since the discussion group meeting on cappings processing held at Paroa in January last year, we have seen several more built. Spinners are easy to run, and are very efficient at separating honey and wax. But then what? If there's a festering heap of spun cappings in your shed, then you're probably in good company. A few people have asked me about rendering cappings, so I've put down some thoughts on the subject.



If you simply want to render wax without worrying about recovering any honey, then your task is made very simple. There's a whole host of methods for doing this, including:

- steam chest with a boiler (conventional chest or Tweedale system with tubes, see March NZ Beekeeper)
- steam chest without a boiler (e.g. Sandy Richardson's see the March NZ Beekeeper)
- hot water wax melter. There are many different types of these.

One I saw at Allan Ward's in Gore a few weeks ago was particularly good. The Ward's have a honey/wax spin-flout separator (Cook and Beals type) and so aren't interested in recovering the tiny amount of honey left in the cappings. They've built a wax melter which is illustrated in the diagram.



A Ward & Sons cappings reducer
(not to scale)

The inner container is stainless steel, about 900 mm or so across and about a metre deep. This was already to hand and didn't cost them much. But to have the outer galvanised sheet made, the elements fitted, and the taps put in, cost about $1000.

Enough water is put in to cover the elements - about 300 mm in this case. There are four x 4 kW elements for rapid heating. Wax is melted in the water, and overflows through the outlet into moulds. The wax is of very good quality, as impurities are filtered out by a screen which is lowered into the vessel. This consists of a circular pipe frame, made to fit inside the stainless steel vessel. There is a piece of wire gauze across the circle, and it is fitted with a big handle for lifting it in and out.

That's all very well if you have no honey in the cappings, but if you want to salvage honey then your options are considerably reduced. Rod Buchanan washed the spun cappings from 4 tonne of honey, to measure how much honey was still in the cappings from spinning. He got 40 kg of wax and 50 kg of honey, so 1¼% of the crop could be washed out of the cappings.

Keith Detlaff melted spun cappings from one tonne of honey, and got 19 kg of wax and 23 kg of honey. That's 2.3% of the crop, although whether this means a more accurate measuring system, a less efficient spinner, or a different season, I'm not sure. But anyway, it amounts to a 200 l drum for every 13¼ tonnes produced. If granulation had started, even more honey would be trapped in the cappings.

What types of equipment can you build to save this significant quantity of honey?

- Ovens

  An oven like a Penrose model holds cappings (spun or otherwise) in baskets lined with scrim or cheese-cloth. Radiant elements melt the wax, which runs out with the honey into a separator.

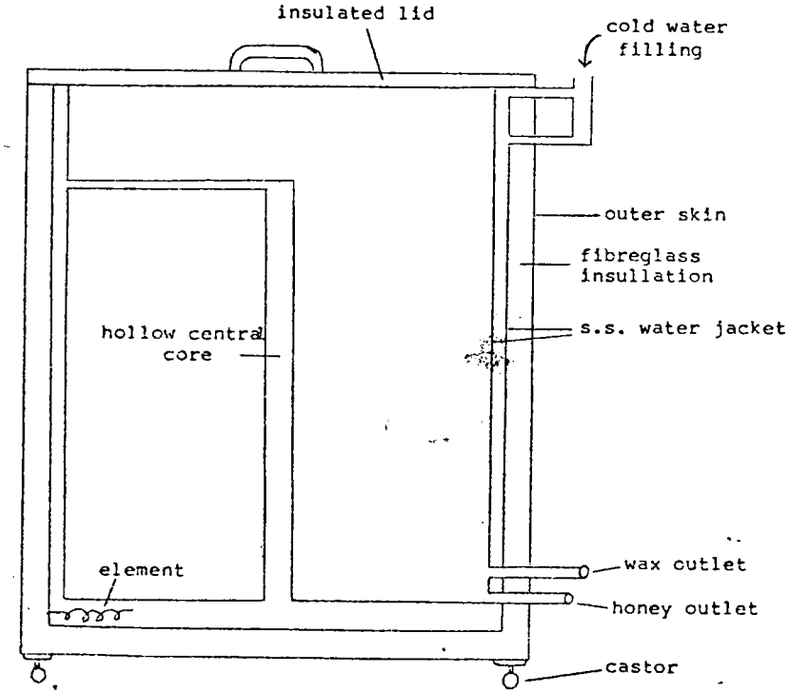
  You'll find a picture of a honey/wax separater on p 134 of "Beekeeping in New Zealand", and a diagram on p 131. Separators have an outlet at the top for the wax, and a goose-neck outlet from the bottom for the honey. They can be heated with a steam pipe (as in the picture), or by a water jacket, or simply insulated to retain heat. Wax is run off into moulds and honey can be run back with the rest of the crop (or sold at a premium price as "special blend").

- water-jacketed reducer

Any sort of vessel which is heated by a water jacket can be suitable for melting down spun cappings. The molten wax/honey mixture is run out continuously, and put through a separator. The separator must be either well insulated or heated. Ralph Glasson's little machine works just like this, and is built out of a pressed stainless steel tub.

While in Hamilton on leave just before Easter I paid another visit to Norman Finlay, a commercial beekeeper at Ohaupo. Norm is an inventive fellow, and is very skilled at making beekeeping gadgets. His paraffin dipper, hive lifters, and cappings spinner have all featured in the NZ Beekeeper.

Norm has built a cappings reducer, which Murray Reid will be writing up in more detail in a future issue of the Beekeeper. It consists of a double-skinned stainless steel tank, about 600 mm in diameter and 700 mm high. This acts as a hot water jacket for melting the cappings. There is a layer of Batts insulation between that and the outer aluminium skin. The hollow centre is to achieve even heating, just like those cake tins with hollow centres. The top of the hollow centre piece is connected by a pipe to one side, to allow water to circulate properly.



N. Finlay cappings reducer (not to scale)

Two spinners full (120 - 160 boxes) fills up the cappings vessel. This takes about 24 hr to melt out, and yields 1 - 1½ x 60 lb tins. Although that looks like only about 1% of the crop, those figures are just guestimates at this stage, as the reducer hasn't been in operation long enough for accurate records to have been made.

The honey is run out through the gate which should be right at the bottom of the vessel. The wax is run out its outlet, also fitted with a gate, which should be just above the honey gate. The last bit of wax has some slumgum in it, but this can be kept separate for rendering again later.

A nice feature of this unit is that it is on castors, so it can be wheeled over to the spinner for filling and then put out of the way.

- Brandt melters

These are usually run for rendering cappings that haven't been spun, but can be used for melting spun cappings as well. Steam is the normal heat source, although I don't see why hot water couldn't be used if the system was well-built and insulated.

Cappings are dropped onto a grid of copper or stainless steel pipes, and are quickly melted. The honey and wax mixture is run through a separator in the usual way. The large D-shaped tank that John Glasson uses are of this type.

General principles

It is fruitless using electricity to heat the air, when wax is what you're trying to melt. I suspect that many existing systems could be made a lot more efficient if their owners invested in some fibreglass insulation.

Heat and molten wax put together constitute one of the highest fire-risk areas the honey house. Put in good thermostats, and pay attention to general safety precautions. The oddest flukes can happen, as one red-faced West Coaster with a blackened wax melter can testify.

A GARDEN PARADISE?

You may remember that some weeks before the election, the government released an outline of a plan to plant roadsides and other areas with trees and shrubs. On launching the idea in October, Mr Muldoon said that the aim was to transform the country "into a total garden paradise unprecedented anywhere in the world."

I had mixed feelings about the scheme - while I could see many benefits, I would also be worried about indiscriminate roadside plantings. For instance, the MOW have planted hydrangeas on roadside cuttings on one very scenic road through rugged bush country in the North Island. Not exactly an appropriate choice of species!

But the potential for planting bee forage trees to aid colony development in spring and provide extra surplus honey, makes the idea quite exciting. I, and no doubt others too, wrote to voice concern that this be taken into account when selecting species.

The lead story in the 17 May issue of National Business Review is about the scheme. The government has set up a "Landscape Enrichment Commission", which will employ seven people full-time and cost over $250,000 to run. It will plan the planting of over 1.3 million plants per year, costing more than $5 m by the time they're in the ground.

The steering committee set up by the Government has produced a report of 100 pages and presented it to Rob Talbot, Minister of Tourism. It begins by saying:

"Some scepticism has been expressed personally to committee members regarding the proposal, emanating from the proximity of the announcement to the 1981 election.

"Members consider an early implementation as outlined will quash this concern and meet with the wholehearted endorsement of the general public."

The objectives of the scheme are to:

- dramatically increase the numbers of tourists coming to New Zealand and their length of stay

- achieve "a heightened sense of national pride"

- employ more people

- boost Kiwis' enjoyment of their own country.

But for us, the real oil comes later in the report. The committee believes that there is potential for increasing honey production by planting bee plants along roadsides. However, the committee has considered possible problems in doing this. It notes that:

"Obviously a bee in a motor vehicle would be very disturbing and could cause a potentially dangerous situation.

"However, bees like other insects do not usually find their way into a speeding motor vehicle but gain their entry when the vehicle is stationary.

"Therefore, the placement of hives in relation to stopping areas is an important factor as is the management of the bees."

And the committee has another solution to this particular worry: "It would appear from information available that to plant to encourage bees is not necessarily going to create any additional dangers for the motorist but further research into this question both here and overseas needs to be carried out by the (proposed) commission."

It might now be time to get your requests in for suitable species: gorse, nodding thistle, blackberry ....

Cheers

(A.G. Matheson)
APICULTURAL ADVISORY OFFICER

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