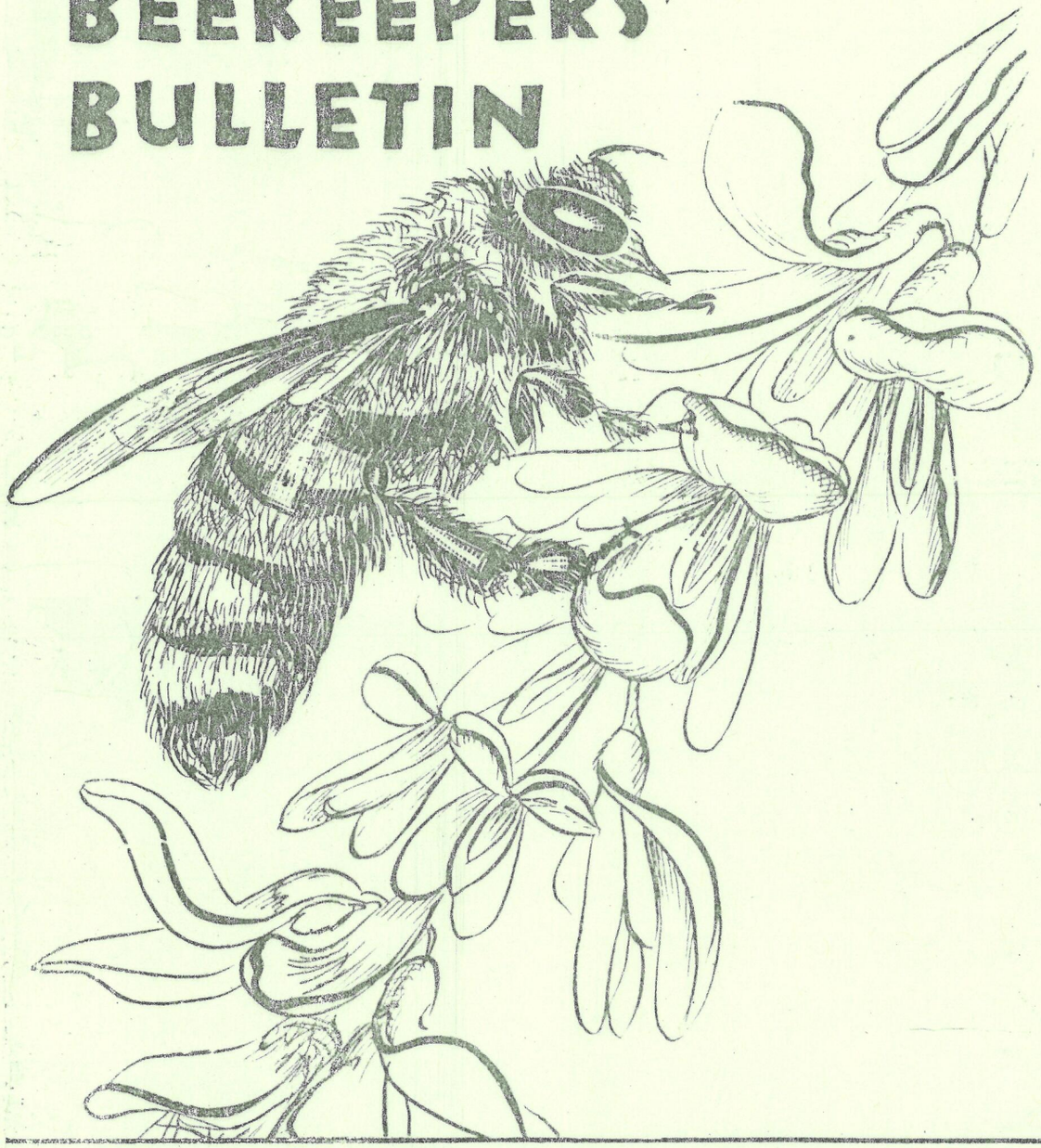
THE BEEKEEPERS' BULLETIN



Ministry of Agriculture & Fisheries

Volume 2 Number 1
August 1980

Welcome to the spring "Bulletin" for this year, especially to those of you receiving it for the first time. This little magazine is somehow created out of the chaos on my desk, and is typed, copied, assembled and mailed by the efficient staff here at the Nelson office, each February, May, August and November. Comments, criticisms and contributions are welcome.

The winter has been a little milder than usual, and the weather office report that Nelson, Blenheim and Hokitika had a mean June temperature at least 0.5 degrees above average. It may not sound much, but it is a significant trend when taken over the whole month. The national rainfall for June was 40% above average.

July has been, up here at least, fine with cold nights and warm days. Rainfall for Nelson was 65% below average. Remember to check colonies soon for stores - warm weather means more activity, including more eating!!

-ooOoo-

HONEY/WAX RATIOS

The article on this subject in the last Bulletin provoked quite a bit of interest. Colin Rope of Auckland reminded me of the fact that bees of a certain age will produce wax during a honey flow whether they "want" to or not. (Like cows and milk production?). He reports seeing hive bees dumping surplus wax scales outside the hive entrance during a honey flow.

Nevertheless, I'm sure that the amount of wax produced varies with demand. And of course wax production uses energy, whether it is voluntary or not. Trevor Bryant (presently in Alberta), says that recent research at Beaver Lodge shows that, other factors being equal, colonies given foundation store up to 25% less honey than those given drawn comb, while those given only starter strips store 50% less.

-ooOoo-

Every man's work, whether it be literature or music or pictures or architecture or anything else, is always a portrait of himself.

- SAMUEL BUTLER

-ooOoo-

WEIGHTS AND MEASURES

Honey must be sold by weight (not volume), and this rule applies even to gate sales. Containers of honey must be weighed on scales that are;

(a) metric, and

(b) tested and stamped by an Inspector of Weights and Measures.

The onus is on the user of the scales to approach the Inspector (Labour Department), although in point of fact they do make routine visits to establishments that are known to be selling produce. The weights and measures Inspector in Nelson is Wally Golledge, himself a hobbyist beekeeper.

In order to rationalize the conversion to the metric system, honey can only be sold in containers of approved sizes, namely;

250 g, 500 g, 900 g, 2 kg, and multiples of 1 kg thereafter.

The 900 g size instead of 1 kg is, of course, a relic of the old 2 lb pottle.

Honey sold in glass containers is exempt from this rule, and can be sold in any quantities. However, the weight must be rounded off to the nearest "rational" figure, e.g. 450 g rather than 454 kg

Containers must also be clearly labelled with the name of the product (e.g. "honey", "pure honey", "comb honey", etc.), the net weight (metric) and the name and address of the producer or seller.

This may seem elementary, but I guess that I'm not the only one to see honey sold without any labelling, or in odd containers, especially in the fruit stalls around Nelson. This is a bad advertisement for the product.

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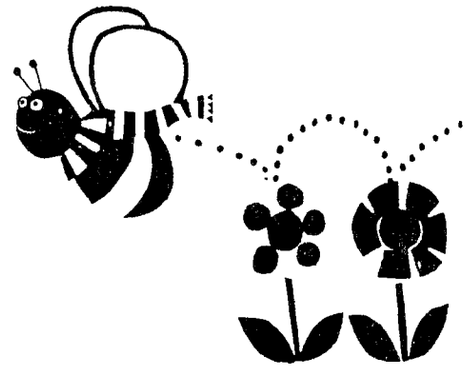
POLLINATION

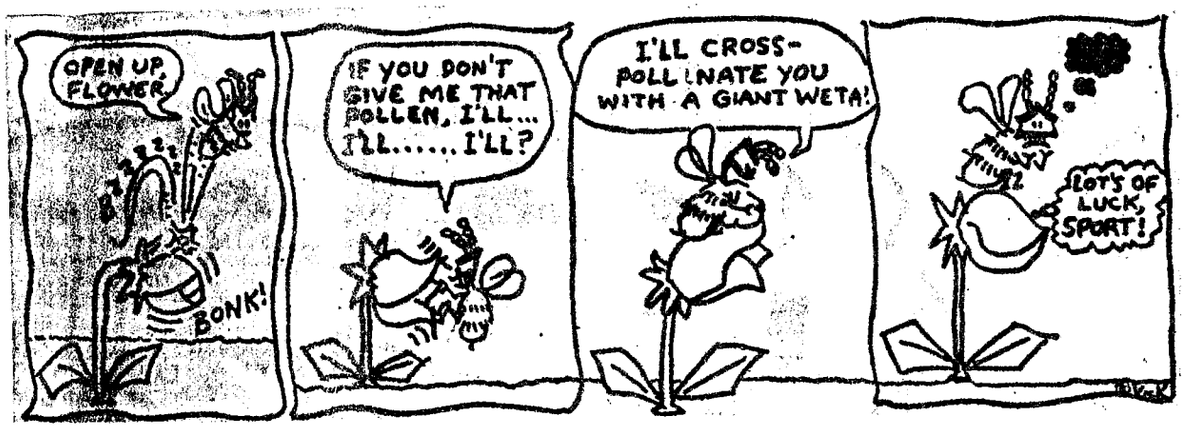


How many hives of honey bees are needed to achieve satisfactory pollination of crops? Well, that depends upon a lot of things; weather, competing nectar and floral sources, abundance of feral pollinating insects, etc.

Rough guides for some crops, taken from overseas and New Zealand research;

almond	5-6 hives per hectare
apple	2-5/ha In good weather conditions, supplementary pollination may not be necessary. However, growers should prepare for the worst by ensuring high bee numbers.
apricot	1/2 ha
avocado	5-6/ha
blackberry	At least 2/ha?
blueberry	4-5/ha?
cherry	2-5/ha
citrus	varies
currant (red and black)	5/ha
feijoa	no recommendations, but bee management is probably necessary for commercial plots.
gooseberry	no supplementary pollination is necessary for small plots.
kiwifruit	8/ha
lucerne	if honey bees are used, there should be enough hives present to ensure 3-6 honey bees per square metre of crop during the hottest part of the day. Hives shifted in at the beginning of flowering should be augmented by more hives part way through flowering, to a total of around 10-12/ha. Leafcutter bees are desirable.

macadamia	no recommendations. Probably the 5-6/ha of almonds would be satisfactory.
onion seed	no recommendations. Growers in California use anything between 12 and 45/ha during the flowering period.
peach and nectarine	1 hive/2 ha.
pear	1 hive/2 ha.
plum	1 hive/2 ha.
quince	none needed.
raspberry	1 hive/0.75 ha or 1.3/ha.
red clover	there should be enough bees present to trip flurets as they appear, probably at least 3 hives/ha. Bumble bees should be encouraged by the building of domiciles, planting of off-season nectar and pollen sources, and exercising care with pesticide usage.
strawberry	probably none needed unless there is a large area involved, or there are competing nectar and pollen sources.
sunflower	2/ha, scattered throughout crop.
tamarillo	can be self pollinating, but is assisted by wind or insect visitors. Honey and bumble bees visit the flowers. No recommendations.



-ooOoo-

There was an interesting article in the New Zealand Farmer recently about some black currant growers in Canterbury. They have a contract with a local beekeeper to supply five hives per hectare for the flowering period. Last October the weather was so bad that the bees only worked on nine days, and the direct result was a yield reduction of just over 1 tonne/ha. (This year's price $1 100/tonne).

There is "currantly" 756 ha planted in the country - requiring 3 780 hives for pollination. Of this area, 88% is of the one variety "Magnus", which means that 3 315 of those hives are needed over the same three week period.

Ministry of Agriculture and Fisheries predictions for black currant plantings by 1985 range from a pessimistic 2 500 ha (12 500 hives needed) to an optimistic 5 500 ha (27 500 hives needed).

By 1985 there will also be 1 220 ha of kiwifruit in full bearing and 4 780 ha in part bearing - needing nearly 29 000 hives.

-ooOoo-

A reminder to those providing a pollination service this season - don't forget to get a permit from this office before you start shifting. You'll get a "blanket" permit in return for a list of orchards and crops serviced. Help us to help you.

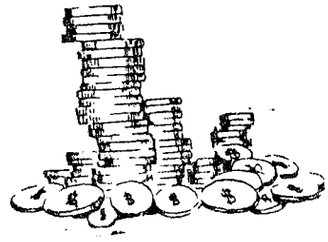
-ooOoo-

PARAFFIN DIPPING COSTS - AN ESTIMATE

18 boxes per kg of wax, wax at $1/kg Cost per box 5-6 c
(or 2 oz per box)

15-20 boxes per hour, labour at $3/hour Cost per box 15-20 c

TOTAL COST PER BOX 20-25 c



Has anybody kept accurate records of costs involved?

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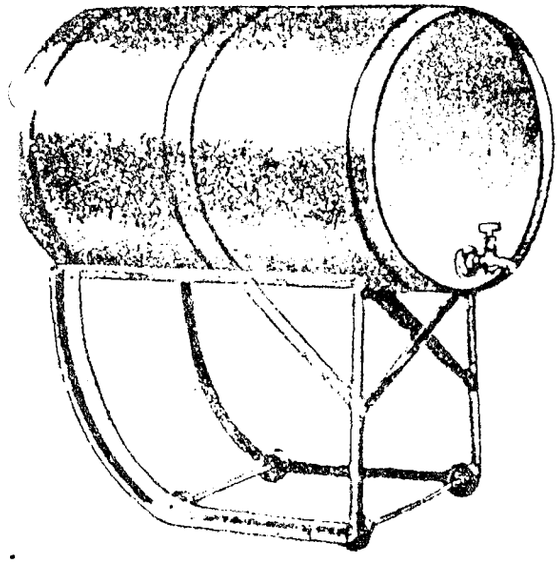
MELTING DRUMS OF HONEY



Question from the last issue - what do I mean by "black heat" elements, for use in melting drums of honey? Well, it is just one of those terms which slip into our conversation and don't have very much meaning. I simply meant an ordinary oven-type element. Apparently these can be purchased from manufacturers of ovens either before or after they are bent into shape.

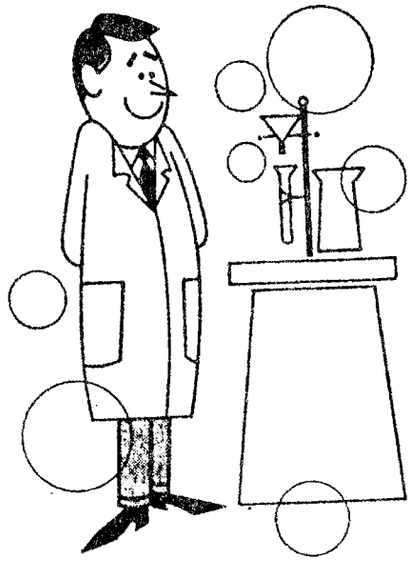
Apologies to the person who spent an afternoon spreading shoe leather over the streets of Greymouth, looking for black heat elements!

-ooOoo-

RESEARCH REPORT

A question that is sometimes asked is whether the foraging activity of honey bee colonies is affected by the presence of high-voltage transmission lines. Research shows that the electric field created by these power lines does have a profound effect on the behaviour of bee colonies.

In 1973 a German entomology journal published the results of work done in the 1960's. In Germany apiaries are often established in forest clearings made for high-tension transmission lines. The behaviour of experimental colonies in hives below these cables was compared with that of control colonies 60-800 m away.



During the fine summer of 1964 bees located near 110 kV lines were more active than controls and gathered twice as much nectar, but lost more weight. In the cool, wet summer of 1969, bees under 220 kV lines showed increased aggressiveness and swarming tendencies. The researchers recommended that colonies should not be positioned with 50-100 m of high-voltage cables.

The Electric Power Research Institute of California recently published a lengthy study of the effects of high-voltage transmission lines on honey bees. The performance of colonies situated under 765 kV transmission lines was compared not only with hives 400 m away, but also with hives situated underneath the lines but shielded from the electric field by using a metal shield (Faraday screen).

The colonies under the transmission lines but screened from the electric field performed the same as did those away from the lines.

However, the unshielded colonies under the lines weighed less, stored less honey, used much more propolis and had higher mortality of brood. In addition, 58% died out over the winter as compared with 13% of the control colonies. The different foraging behaviour of bees in colonies under the lines may be associated with physiological changes in the body caused by the electric field.

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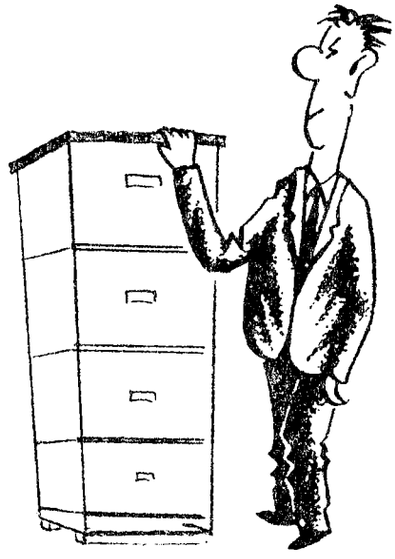

DISTRICT HIVE HOLDINGS

At 31 May 1980 the hive holdings for the Nelson apiary district were:

438 beekeepers 1 422 apiaries 14 253 hives

Last year's figures were 369, 1 264 and 13 450 respectively.

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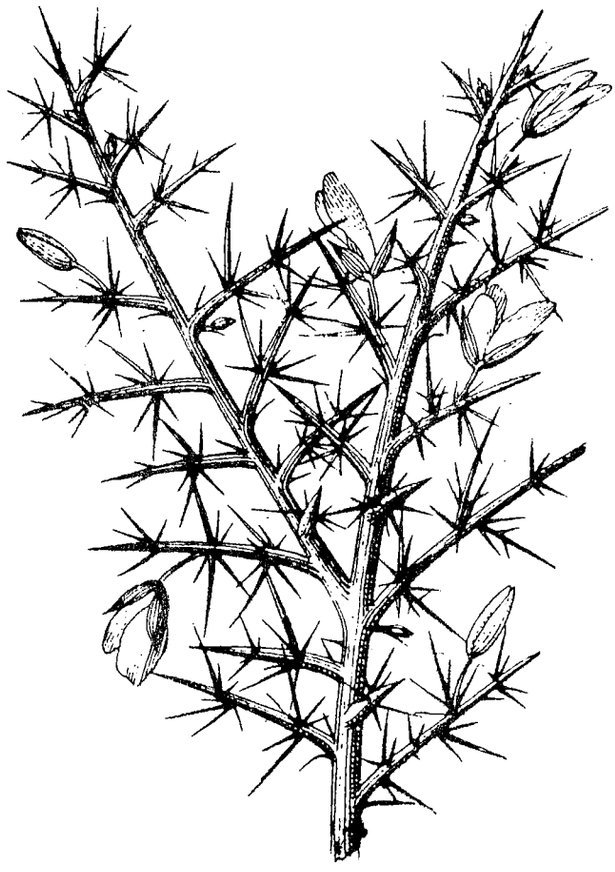


GORSE

Gorse was introduced in the very early days as both a hedge plant and a fodder crop for domestic stock (this was a common usage in England). It has of course spread to almost any areas disturbed by man, and consequently is a Public Enemy to many people. In 1978, for instance, over $6 400 000 was spent on chemicals alone for its control.

Most people, apart from beekeepers, do not see gorse as a beneficial plant. However, in a recent article in Forest and Bird magazine, a D.S.I.R. ecologist points out that there are many good points about gorse. It helps stabilise and enrich bare soils. Above all, it is an important nurse plant for regenerating native bush.

Burning gorse is an almost useless method of getting rid of it. With soil reservoirs of up to 14 million seeds per hectare, gorse is usually very quickly re-established. If left alone, reverted farmland and cleared bush now covered with gorse will eventually be replaced by native bush. Gorse is among the first plants to colonize cleared land, and it soon establishes a dense ground cover that excludes other seedlings.

Gorse is a highly productive plant, and of course it is a legume, so it fixes its own nitrogen from the air. A lot of this production ends up as a rich, nitrogenous litter. As the gorse ages it becomes more open, permitting the establishment of native seedlings.

The species to appear first depend with the type of site, rainfall, nearness of seed sources, wind conditions, etc. At the D.S.I.R. experimental catchment near Wellington the first species to become established under gorse include hangehange, karamu, mahoe, koromiko,

rangiora, kohuhu, five finger and kamahi - all nectar and pollen sources.

These shrubs and trees grow well underneath the gorse and eventually overtop and kill it after about 40 or 50 years. Ultimately many are in turn replaced by larger species of forest trees. If left alone, much of the "wasteland" covered in gorse will end up recovered with native bush.

Gorse - in more ways than one, the beekeepers friend.

-ooOoo-

KEEP ON TRUCKIN' ....

The Carriage of Goods Act 1979 came into force a couple of months ago, changing the situation regarding liability for goods in transit, and cover for losses sustained. Beekeepers should be aware of the changes.

In broad terms, the carrier with whom you contract to carry your goods is liable for actual damage or loss that occurs while he is responsible for them, up to a maximum of $500 per unit <u>whether he is to blame or not</u>. The goods, of course, must have been properly prepared or packed.

There are other special arrangements which can be made, instead of the ordinary conditions outlined above:

- "declared value risk", in which the carrier is liable for the full value of the goods, as declared in a written contract. Obviously you will have to pay more for this.

- "owner's risk", in which the carrier has no liability. The freight charged under these conditions must be cheaper than that for "ordinary terms". Again, a written contract is necessary.

- "declared terms", in which the carrier and owner agree on whatever terms they wish.

Get all the information about this new law in "Moving Goods - a customer's guide to the Carriage of Goods Act 1979", legislation series no. 6. This is obtainable from the Justice Department (not the Ministry of Transport).

If you are shifting goods for another person you are technically a carrier, and so should be familiar with the other side of the coin. Get a copy of "Carriers' guide to the Carriage of Goods Act 1979" Department of Justice legislation series no. 6A (which also includes a reprint of the customer's guide).

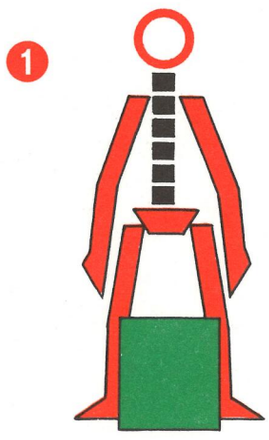
-ooOoo-

Do you know? No. 40

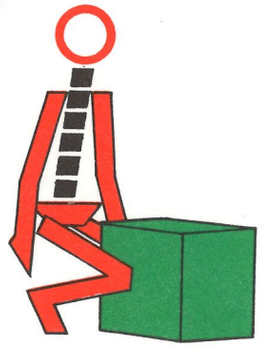
In NZ over 17 000 people suffer serious back injuries each year.

Cut the Stress

When you lift-bend your knees not your back



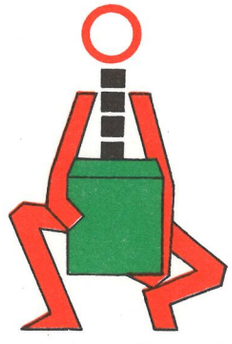
1 Size up load — good balance



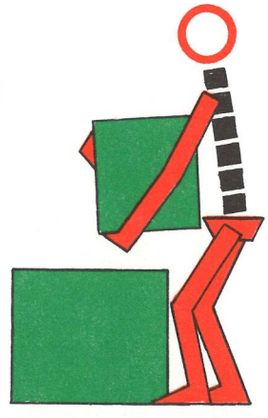
2 Bend knees — keep back straight as possible (not necessarily vertical)

3 Grip load with palms of hands and fingers

4 Use body weight to start load moving — then lift by pushing up with legs



5 Keep arms and elbows close to body



6 When lowering load — bend knees — do not stoop

Don't take a risk- if it's too heavy get help.

Accident Compensation Commission

CRAZY STORIES DEPARTMENT

We often hear about the effects on beekeeping of changing agricultural practices - weed eradication, removal of hedges, increased spraying, etc. But have you ever thought of the reverse situation?

From the Accident Compensation Commission's May report comes this little tale:

Bee brought down topdressing plane

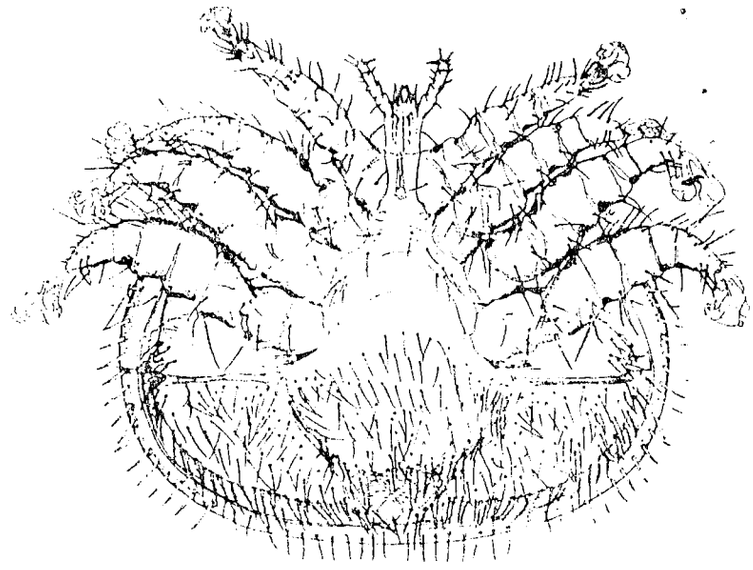
Aerospace Industries, Hamilton manufacturer of the Fletcher FU 24 series of agricultural aircraft, was (at the time of this report last year) developing an aircraft modification following a crash caused by a bee.

A plane was substantially damaged when a bee in a fuel tank obstructed the tank outlet, causing the engine to lose power soon after takeoff. While making a forced landing, the plane ploughed through two fences.

Arising from this accident, the Office of Air Accidents Investigation made a recommendation to the Civil Aviation Division that fuel-tank finger filters should be required on all Fletcher aircraft. It was in response to Civil Aviation Division requirements that Aerospace Industries began developing the modification.

-ooOoo-

VARROA UPDATE



Line drawing of adult female Varroa jacobsonii, *ventral aspect* (×100).

In the first issue of this bulletin (August 1979) I mentioned the dangers of the mite Varroa jacobsoni, which is parasitic on honey bees. It is spreading in various parts of the world, and it now seems possible that Varroa has been introduced into the United States.

In August last year a student from the University of Maryland collected a drone honey bee from a flower, and when the specimen was examined in November, two mites were found floating in the vial of alcohol. They were later found to be Varroa jacobsoni, which suggested that the bee had carried them.

All bee colonies within a 5 km radius of the collection site were examined, but no mites were found. In spring 1980 all colonies within a radius of 8 km were to be examined, about 150 in all.

This mite is very difficult to detect in bee colonies for the first 2 or 3 years after it gains a foothold in the hive. For this reason the colonies will be killed so that the contents of the hive can be closely examined. A local package producer is providing 10 lb packages to replace the bees killed. No results of the campaign are yet to hand.

The only ray of hope is the possibility that the mites were not actually from the drone collected in Maryland at all. The laboratory has been studying Varroa on bees from South America, and it is possible that the mites in question remained in the vial when a previous speciment was discarded, and were not washed out.

Nevertheless, with Varroa found in South America, it is probably only a matter of time before it moves to North America, through natural dispersion of bees.

TELEPHONE ENQUIRIES

Frequently I get greeted with "oh there you are. I've been trying to get hold of you but every time I call the office, I'm told you're out".

The operator, however, often tells me that people have called and haven't left their name. To save wasted toll calls - if you ring the office and I'm out, leave your name and telephone number if you want me to get hold of you. I sometimes return to the office in odd moments and work through a pile of messages.

-ooOoo-

And finally, a thought for spring:

> Worrying is like rocking back and forth in a rocking chair - it gives you something to do, but it doesn't get you anywhere.

Andrew Matheson

Andrew Matheson
APICULTURAL ADVISORY OFFICER

STOP PRESS!

SOUTH ISLAND ELECTRICITY SUBSIDY SCHEME

A 25% concession on electricity usage is allowed on selected manufacturing industries, in the tourist trade, and in agricultural activities using an artificial environment. In the list of activities for which the concession is applicable, beekeeping is not specifically mentioned, although all food product industries qualify.

The scheme is administered by the Department of Trade and Industry and the money comes out of the rural development vote. Application forms are available from your local power board, but they must be sent to Trade and Industry who decide whether you are eligible or not.

You won't find out if you are eligible unless you apply.

-ooOoo-