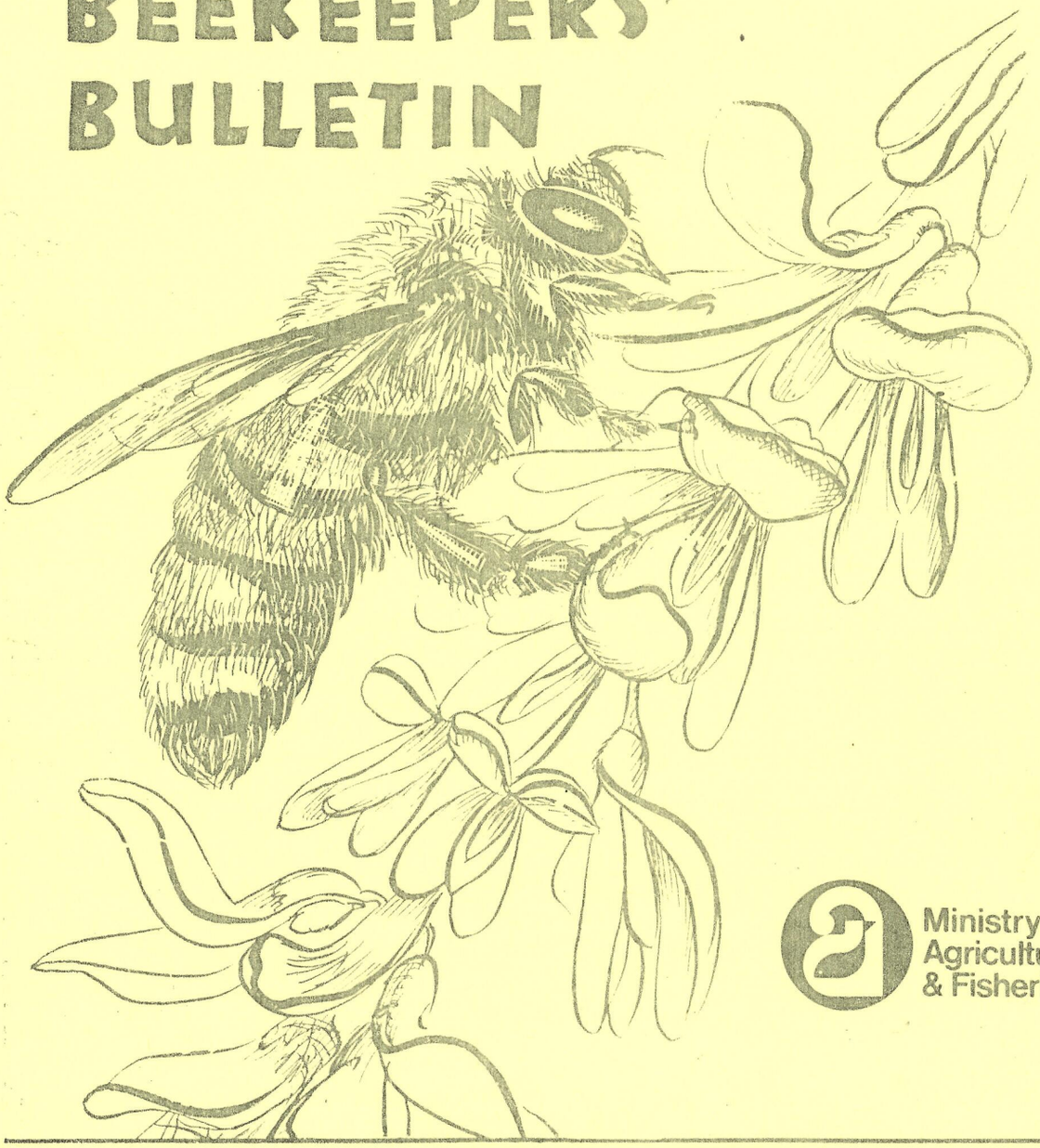
THE BEEKEEPERS' BULLETIN



Ministry of Agriculture & Fisheries

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Volume 1 Number 4
May 1980

While I'm writing this the rain is pouring down outside and the heater is working away. Winter will soon be upon us I think, although after such a beautiful autumn it's hard to believe.

Reading is a good wintertime activity for beekeepers, and you might start off with H.H. Laidlaw's "Contemporary queen rearing". This is a Dadant publication which came out last year, largely as a successor to the long-time favourite "Queen rearing" by Laidlaw and Eckert. The new book is a very readable, basic manual designed "To instruct the beekeeper in rearing the best possible queens: as a hobby or on a commercial scale".

I'll be doing a little writing this winter; that erstwhile beekeepers' handbook, Bulletin 267 "Beekeeping in New Zealand" is now 32 years old, and a replacement is long overdue. Murray Reid, Kerry Simpson and myself will be putting pen to paper this winter, and hopefully the new publication will see daylight in the not-too-distant future.

Winter is also time for attacking that pile of hive equipment that has been put away for repairing (sometime). There is a lot of money tied up in woodware these days, so it makes sense to either have it in use or, if it's past that, use it for firewood.

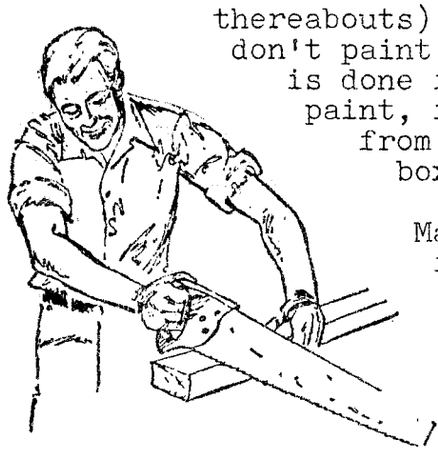
Because woodware is so expensive, and tanalized timber can't be used, it is also good economics to do your utmost to preserve it well. There are basically three cold-soak treatments, as well as paraffin wax.

The most common cold treatment is Metalex, which is the proprietary product containing either copper (green) or zinc (clear) naphthenate. The green solution is definitely the best for beehives. The Metalex is diluted with three parts of power kerosene, and the hive parts given a good soak. Using turpentine as a dilutant dries out the wood too much, and it may later crack. After a good soak (less than that is a false economy), gear should be aired for several weeks before painting.

Creosote is only used occasionally these days, and is really only suitable for floorboards. Use a 5% solution, and air things very well after soaking.

Pentachlorophenol (PCP) is also used as a preservative, diluted (to 5%) either with power kerosene if you want to paint over the top, or old oil or diesel if you don't.

An increasingly common piece of beekeeping apparatus is the paraffin dipper. Hot-dipping in near-boiling paraffin wax is one of the most effective (and cheapest) methods of hive preservation.



Hive woodware is immersed in the wax (at 160°C or thereabouts) for five minutes or so. Some people don't paint boxes after dipping, but if painting is done it should be with acrylic (i.e. water-based) paint, immediately after the box is removed from the wax. The paint is pulled into the box as the wax cools.

Make sure that the gear is dry before it is dipped, otherwise you may trap water in the timber, which then rots from the inside out.

Paraffin dippers may be used for sterilizing diseased gear provided that the equipment is:

- in good condition (the old stuff isn't worth salvaging anyway)
- given 10-15 minutes in the bath.

I have plans for dippers which take one or two boxes at a time and also the larger push-through models, should anyone want them.

-ooOoo-

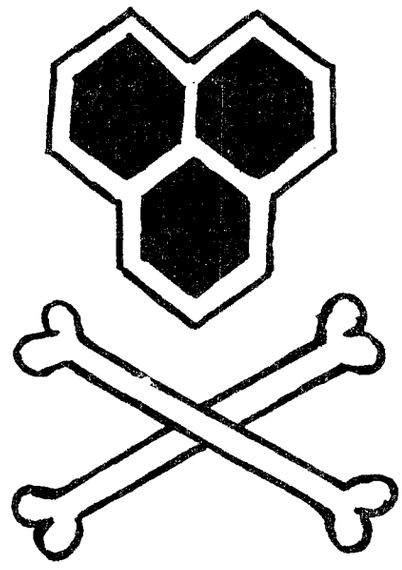
POISON DANGER WARNING TOXIC LETHAL DEADLY FATAL

Some of you may have encountered difficulties buying cyanide and methyl bromide, or you may have heard rumours that control of these chemicals is about to be tightened up. The Health Department inform me that there are no immediate plans to control these chemicals more strictly than at present.

For your information, there are two sets of legislation involved. It may seem like a lot of red tape, but these are very toxic chemicals, so some control is warranted. Both sets of regulations are administered by the Health Department.

Sale of Registered Poisons (e.g. methyl bromide, calcium cyanide) is controlled by the Poisons Act 1960. These poisons may not be sold to the general public, but may be sold to a commercial grower (i.e. someone who derives most of their income from primary production). You must either be personally known by the vendor, or you must sign for the poison in a book.

Use of these chemicals is controlled by the Fumigation Regulations 1967. Normally you must be a licensed operater, with a certificate of confidence from the Health Department, before you can use them. However, there is an exemption for commercial growers using the chemical on land owned or occupied by them and used exclusively for agricultural or horticultural purposes. Such people do not need to be licensed. This exemption obviously applies to the use of methyl bromide for fumigating comb honey or empty supers at the honey house, and probably also applies to using cyanide for killing diseased hives and wasp nests at out-apiaries.

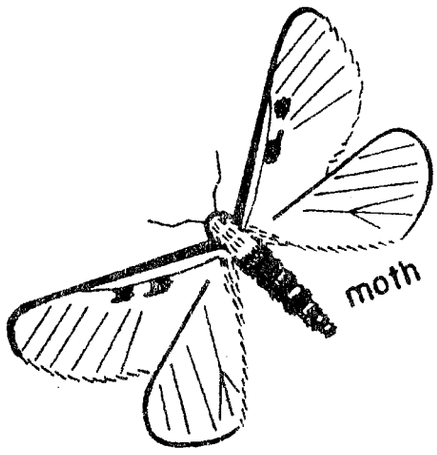


Despite the freedom which you enjoy under the law - remember that methyl bromide and calcium cyanide are LETHAL.

DON'T - use them indoors.

DO - wear a respirator when using cyanide.

- buy a halide leak detector for using methyl bromide. These can be obtained from commercial refrigeration firms and only cost around $30-$40. Like other forms of life insurance, this is tax-deductable.



WAX MOTH WARNING:

Next to your bees, good-quality combs are your most valuable asset. Look after them and don't use them for wax moth fodder.

And in your keenness to destroy these little varmints, don't dose them with an insecticide which will stay around in the combs. Some people have tried dichlorvos (Vapona) "pest strips" - to their cost. Just watch the bees die next season! And then there was the character who let off a "borer bomb" in his comb barn; it killed the wax moths very effectively by leaving a fine coating of lindane everywhere. Unfortunately lindane is an insecticide with a long residual action, so you can guess what happened when the combs went out onto the hives.

The only safe chemicals to use are paradichlorobenzene (PDB) crystals and methyl bromide (<u>without</u> chloropicrin). PDB should be used in closed stacks of supers and fumigation repeated after two weeks, as eggs are not killed. Check the stacks approximately every month and repeat the dose if necessary.

Calcium cyanide, ethylene dibromide, carbon disulphide and other chemicals have also been used from time to time, but are not recommended because of either inflammability or high human toxicity, or both. None of these chemicals, including PDB, is suitable for treating comb or feed honey.

Methyl bromide should only be used out of doors, as it is highly dangerous.

A method of wax moth prevention (or treatment) that I advocate for hobbyists is freezing. This may be suitable for you if you have access to a large sized freezer (such as is common in many fruit-growing areas). Placing supers of comb in the freezer for 24 hours kills any wax moth eggs that may be present. If the supers are then stored in closed stacks, no reinfestation can occur and no fumigation is necessary. The method is also suitable for salvaging material in which wax moths are already active, and indeed is suitable for treating comb honey either before or after packaging. The honey is not damaged.

-ooOoo-

FROM THE BIG BEEHIVE

Bee diseases and pests that are controlled by the Apiaries Act 1969 vary in severity, and so the powers contained in that legislation vary accordingly. They are ranked in schedules, which previously have been:

- First schedule (MAF has wide powers, compensation may be payable): acarine.

- Second schedule (MAF has lesser powers, no compensation payable). American Foul Brood and European Foul Brood.

- Third schedule (not notifiable). Nosema, Braula ("bee louse"), greater and lesser wax moths.

At the apiary section staff meeting held in Tauranga last November, several changes were agreed upon by staff. Some of these have been enacted by an order in council (effective 21 February 1980), which adds the serious parasitic mite Varroa jacobsoni to the first schedule, and chalkbrood (Ascosphaera apis) to the third schedule.

This doesn't mean that these pests have reached New Zealand, but it does mean that MAF has the power to deal with them should they arrive here. Other changes were discussed by staff, and there were suggestions that all serious bee diseases and pests not presently found in New Zealand should be placed in the first schedule. This certainly applies to such things as the parasitic mite Tropilaelaps clareae, which has a similar effect to that of Varroa.

These and other changes may have to be included in an amendment to the Apiaries Act. What do you think?

-ooOoo-

PERIPATETIC* PUBLIC SERVANTS

Trevor Bryant, Apicultural Advisory Officer, Gore, is presently in Canada on a one-year advisory exchange scheme. Each year the New Zealand government sends two advisory officers to the U.K. and one to Canada. They may be general farm or horticultural advisory officers, or may be apicultural, agricultural engineering or economics specialists.

The U.K. and Canada send advisory officers to New Zealand, but they are not necessarily from the same discipline and do not go to fill up the vacancies left by our exchangees.

Trevor is currently stationed at Edmonton with the Alberta Department of Agriculture, but will probably get around to see a bit more of the country too. He will be communicating a lot of what he sees back to other staff, and will undoubtedly also share this with beekeepers through magazine articles.

P.S. Contrary to popular opinion, exchangees do not get elevated to Canadian salary scales while they are away. They pay Canadian costs but get paid on New Zealand levels!

While Trevor was away, advisory and technical matters in his district were to be handled by Vince Cook in Oamaru. However, Vince has recently resigned from his job, and has left to take up a new position overseas. He is to be the National Beekeeping Specialist with the U.K. Ministry of Agriculture.

This is obviously a very important post and his appointment is a demonstration of Vince's ability. No doubt many beekeepers will be sad to see him leave New Zealand.

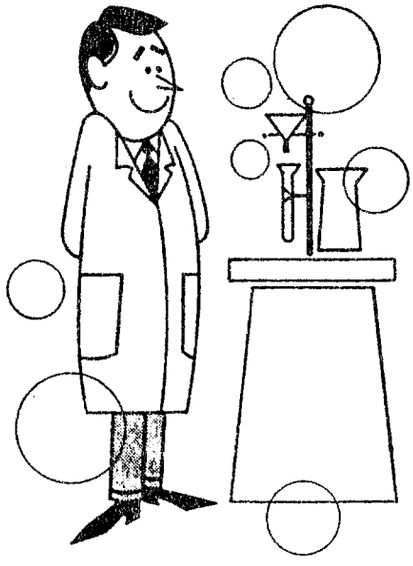
* Concise Oxford Dictionary, 6th edition, p 821.

Vince Cook's place in Oamaru will be taken by Kerry Simpson, currently AAO in Palmerston North. Kerry has previously had the job of servicing the Wairarapa, Hawke's Bay and Poverty Bay areas while having to live in Palmerston North. The official word is that Kerry's old position will not be re-filled. Bill Rodie in Palmerston North will have to service Hawke's Bay and the Wairarapa (as well as Taranaki, Manawatu and down to Wellington), while Poverty Bay and the East Coast will be tacked on to Doug Briscoe's Tauranga district.

The "sinking lid" is sinking rather heavily. From 13 people in the apiary section in 1975, we are now down to 8, a 40% reduction in 5 years.

-ooOoo-

HOW MUCH HONEY FOR HOW MUCH WAX?



A recent enquiry prompted me to do a thorough search of the literature on the question of the so-called honey/wax ratio. Everybody knows that it takes 8 lb of honey for the bees to make 1 lb of wax, or 6:1, or whatever. But where do these figures really come from?

The popular press seems to frequently quote figures like 8:1, or something similar, and these apparently all originate from an experiment done by a USDA researcher in the war years. He was not trying to find out how much honey it took to stimulate the bees' physiological wax secretion process. He was simply trying to develop a method for feeding honey bee colonies to produce drawn-out combs. He had to feed from 6.66-8.80, average 8.42 lb (or kg) of honey to have 1 lb (or kg) of wax added to the foundation.

Later work by one researcher shows a ratio ranging from 2.95:1 to 6.27:1 in a light nectar flow, from 8.24:1 - 16.03:1 during dearth conditions, and up to 30.1:1 during unfavourable conditions during April (northern hemisphere).

A Polish scientist found an average ratio of sugar fed to wax produced of 10.65:1, over a three year period.

More recently, Tibor Szabo of Beaverlodge Research Station in Alberta developed a method of feeding colonies after the honey flow, to obtain a supply of drawn-out combs. These bees would otherwise be gassed off, and he hoped that his method would be useful for obtaining drawn-out combs in areas where this might not otherwise be easy. His researches came up with a sugar:wax ratio of around 10.22:1.

What does this all mean?

- it is very difficult to determine how much energy is actually used by bees in secreting wax.
- the efficiency of wax production varies considerably between colonies.
- the "honey/wax ratio" is likely to be higher than the oft-quoted 8:1.

-ooOoo-

FROM THE ARCHIVES

An article in ABJ for 1961 makes interesting reading. The author, Leonard Haseman of the University of Missouri, intercepted a comb infected with foul brood which one beekeeper was going to "plant" in another's yard in 1924.

After positively identifying it as Bacillus larvae, he placed the comb in the vault of the university, where it has remained ever since.

That was in 1924, and every few years a sample has been removed from the comb, to see if the B.L. spores were still viable. Up until the time of writing, 35 years later, normal Bacillus larvae cultures could be raised from the comb.

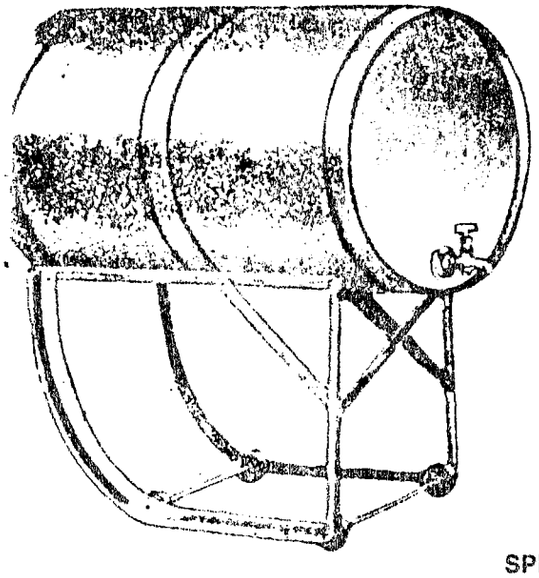
To my knowledge, the experiment was continued for at least another decade with the same results, and I suppose it may even be still going today.

-ooOoo-

MELTING THAT HONEY ...

Melting out one or two fourty-fours (oops! 200 litre drums) to provide honey for gate sales or a little packing can be a bit of a problem. Using your hot room is fine for melting out large numbers of drums, if you've got a hot room that can do it, that is. However, if you only want to do one or two drums, it's a waste of energy. One method that's common in parts of the country uses a heated drum cradle.

Drum cradles can either be bought* or made by an engineering firm. A reflector sheet, usually of stainless steel, is placed



Drum and Barrel Racks

L30 DRUM RACK
This sturdy unit is fitted with four 4in. (101.60mm) nylon wheels well spaced to provide ample wheel base. Also fitted (as an extra) with safety chain and lifting handles if required.

SPECIFICATIONS

Model	Length	Base Width	Top Width	Top Rail Height	Height to Bung	Weight
L 30	30in. 762mm	19½in. 495.30mm	15½in. 393.70mm	20in. 508mm	22in. 558.80mm	30 lb. 13.61 kg

under the drum and onto it is attached the heating element. A 2400 W oven-type black heat element is common, and this can be plugged into a standard ten amp power point. A heat probe is placed on the outisde of the drum, to control the temperature.

Two people can easily put a drum onto the cradle, using the method shown. Some way must be found to prevent heat loss, and this can either be an asbestos blanket or heavy tarpaulin draped over the drum, or better still, a small insulated "hot room" which can be lowered over the drum and cradle.

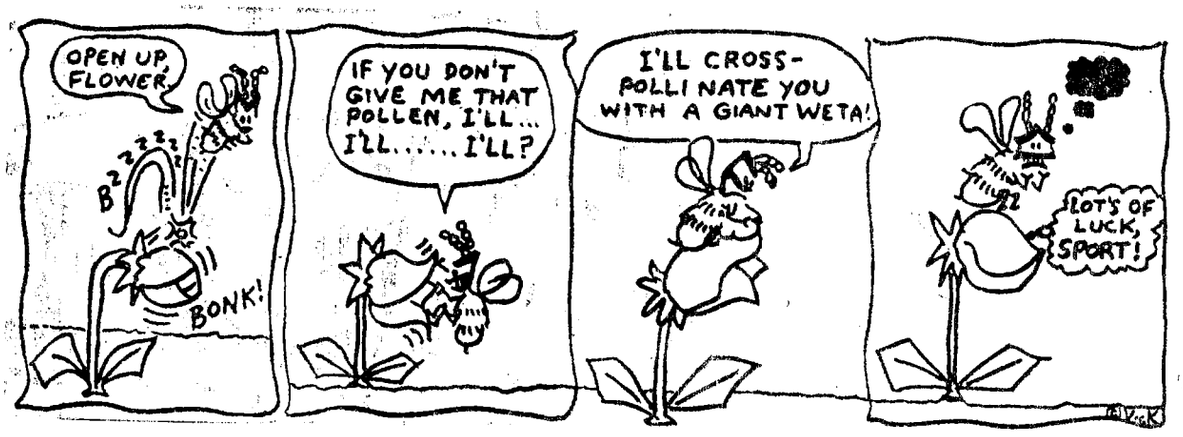
* Swinnock & Co. Ltd., P.O. Box 12-184, 17 O'Rourke Road, Penrose, Auckland, telephone 598-624. L30 drum rack $78 plus freight.

Sometimes the melted honey is allowed to run straight out of the drum, but more commonly the whole drum is melted out at once. Overheating is prevented by two things:

- the thermostat should prevent any honey from being heated above 55°C,
- as the honey closest to the element melts, it makes its way to the top of the drum fairly rapidly.

After the unit has been operating for a while, the top of the drum is quite hot, the centre quite cold and the bottom warm. Little darkening of the honey occurs.

This system provides a cheap and easy method of melting out single drums of honey, with next to no damage to the product.



Do you know? No. 41

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

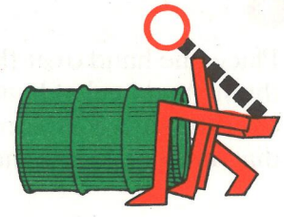
Cut the Stress

When you lift - bend your knees not your back

Raising drums

1

Place one foot slightly forward. Bend your knees. Take firm grip with both palms. Keep the body close to the drum.

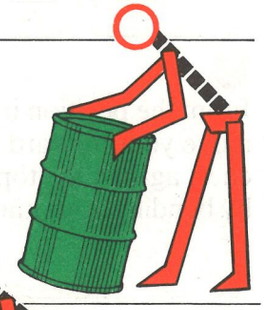


2

With a continuous, smooth movement, lift with your legs. Keep your chest close to the top of the drum.

3

As the drum moves upward and forward, the right hand is transferred to the top of the drum.



4

The right foot is moved forward as the drum comes to rest upright on the floor

Accident Compensation Commission

Do you know? No. 41

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

Lifting device

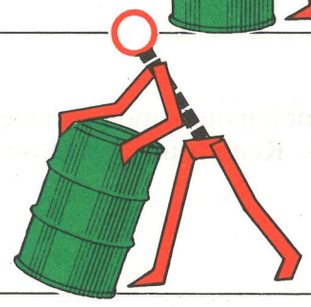
A simple handling lever can reduce effort during constant drum handling. Plans for such a lever are available from your local ACC adviser.

When you lift - bend your knees not your back

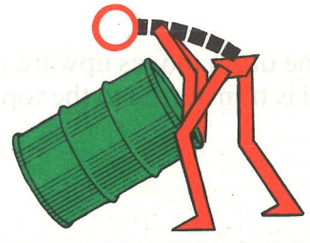
Lowering drums

1. Place one hand over the front end of the drum, thumb and heel of hand inside the rim,with fingers over the side. Position other hand as shown in diagram 4 and raise the left leg as a lever.

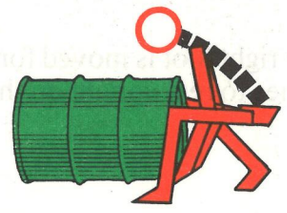
2. Using the weight of your body in counter-balance, pull the drum over towards you. Allow your body weight to move backwards, extending the elbow of the forward arm until the arm is straight. At the same time, bear downwards with the extended leg.



3. From the position in diagram 2, it is quite easy to move your forward hand and foot. Place your chest against the top of the drum. Start lowering by bending your knees.

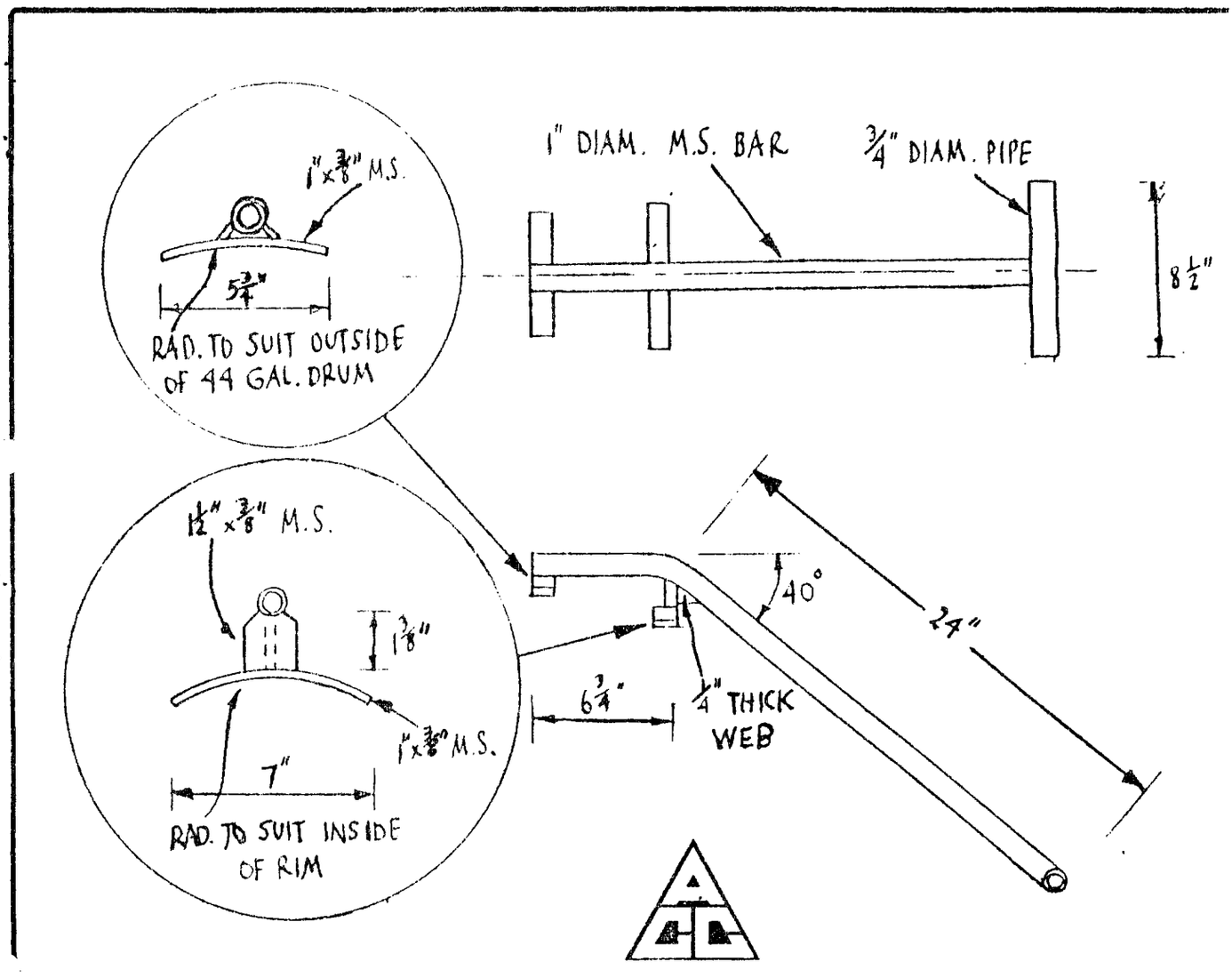


4. Bend your knees and lower the drum to the ground. Hands should be kept either side of the impact point on the drum.



Accident Compensation Commission

PLANS FOR A DRUM LIFTING DEVICE



PITY THE CHAP WHO INSPECTS YOUR BEES

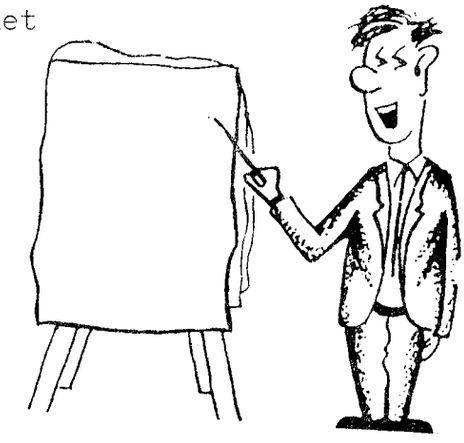
If he's neat, he's conceited, and if he's careless he's sloppy. If he's pleasant, he's a flirt and if he's brief, he's a grouch. If he hurries, he overlooks disease and if he takes his time, he's suspicious of your beekeeping. If he finds AFB he had it in for you and if he doesn't find any, he was too easy. If he burns your bees, he didn't give you a fair chance and if he doesn't burn them for you, he didn't want to help you. If he digs the hole and covers the burned residue before you get home, he didn't want you to see what he did. If he doesn't, he was too lazy to finish the job.

He can't win.

-ooOoo-

BEE CLUBS

Two domestic/hobbyist bee clubs have recently been formed in the district. First to hit the road was the Motueka Beekeepers' Club which got underway on 15 April. Interested and prospective beekeepers met in a rather cold church hall for the inaugural meeting, but fortunately there was enough enthusiasm generated to keep everyone warm. President is Ian Paterson, and the club's address C/- P.O. Box 144, Motueka. Evening meetings are held on the third Tuesday of each month, with field days as desired.



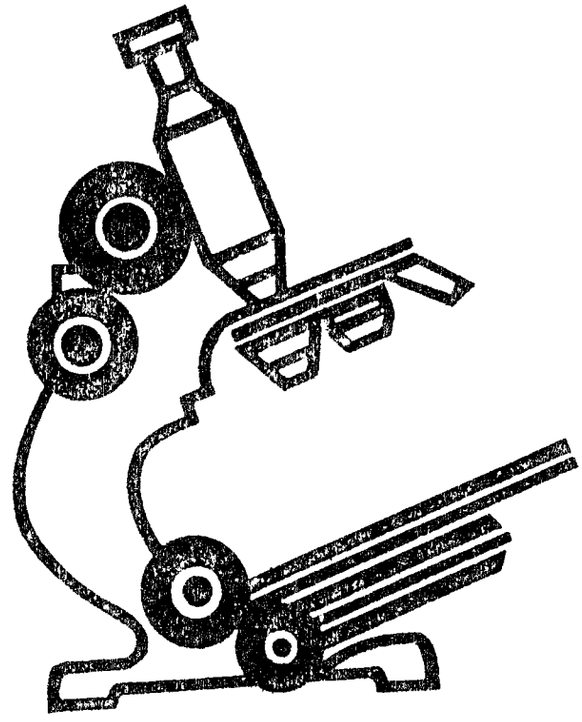
Hobby beekeepers in the Nelson district felt that their interests would best be served by the formation of a separate club, where bees rather than industry matters are discussed. President is Seamus Egan, and the club's address C/- 48 Abraham Heights, Nelson. Evening meetings are held on the second Wednesday of each month, also with field days as appropriate.

I know that all beekeepers will be pleased to see other beekeepers get together to share ideas and help one another. I hope that you will give them all the support you can, whether it is a matter of being a guest speaker, taking (or hosting) a field day or maybe, in the future, donating a nuc or few queens to get them started with a club apiary.

Hopefully we will see other clubs being formed, starting with Blenheim perhaps?

-ooOoo-

POLLEN ANALYSIS IN HONEY



Over the past year or so, Dr. N.T. Moar of the D.S.I.R.'s Botany Division has been carrying out, on a part-time basis, a study of pollen types contained within honey. Even honey from pure honey combs contains pollen grains, up to 173 million per gram according to one researcher, and a microscopical analysis of this pollen is sometimes used to detect the floral origins of the honey.

EEC countries adopting the Codex Alimentarius standards may require a certain percentage of the pollen to be of a particular type before honey can be sold under a varietal name, e.g. "rata", "clover", etc.

A survey of pollen types in New Zealand honeys will be useful background information on this subject. Dr Moar is retiring in a year or two, and his successor won't have a part-time interest in pollen analysis of honey.

I have collected samples from one or two of you last season, and would be grateful for some more next season. More about this closer to the time.

Andrew Matheson
APICULTURAL ADVISORY OFFICER