THE NEW ZEALAND BEEKEEPER

February 1973

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N. B. A. Financial Crisis

On page 14 of the November issue of *The New Zealand Beekeeper* under the subheading "Finance" a resolution was passed calling on Branches to remit outstanding balances on hand to the Natinal Secretary to tide the Association over a very lean period.

That this was a necessary decision nobody has questioned. If this were a Limited Liability Company trading it would certainly face receivership and possible liquidation.

Yet the response to this unenviable decision has been quite mixed, all the way from most co-operative to downright hostile. Some of the Branches would seem to have the impression that the funds called on are not urgently required.

If this money is not forthcoming together with donations which were asked for at the December meeting of your Executive how do the objectors suggest the Association be financed until a new Levy Scheme is implemented?

As a newcomer to the industry I have been impressed with the smooth and efficient way that your Executive conducts its business. Its impartiality has never been called in question nor do its members receive any remuneration for their services. If they were to claim wages for their work on behalf of the members of the Association the cost would run to many hundreds of dollars per year.

Here then is the crunch. Like the protesters we seem to have with us on every hand, the Branch objectors did not offer any viable alternative to present troubles. Until a satisfactory alternative is put forward, discussed and agreed to by your present Executive the dissenters have no option but to do as instructed. The problem can scarcely be shelved until the next Annual Conference in May. To pass the buck to a new Executive via the Ballot Box then will be too late.

NEWS FROM LEADING BEEKEEPING

BRITISH BEE JOURNAL

The African Bee in Nigeria

The report of the death of Mr Wilkinson, leader of an Outward Bound adventure party, by stinging, at Kurra Falls, Nigeria, earlier in the year, prompts me to contribute these notes, as I am well-acquainted with African bees and with this area.

It appears that most of the members of the party were severely stung, but that the effects were fatal to Mr Wilkinson due to greater severity of stinging, and perhaps a measure of sensitivity, but also through the unprepardness of the party to deal with such an emergency, and the impossibility of procuring medical assistance in the remoteness of Kurra — some 50 rough miles away from the nearest doctors and hospital.

These bees, *Apis mellifera unicolour var. Adansonii,* are liable to sting any moving creature when they have developed a brood nest, or to attack en masse if they are disturbed, to the extent that clothing and flesh are so covered with stinging bees that they look like fur, and literally thousands of stings can be incurred. They also go berserk if there is no water to be had in the dry season.

One is particularly vulnerable in light tropical clothing and a "bush" first-aid kit should be carried and include adrenalin ampules and anti-histamine lotion or ammonia, in addition to anti-snake venom, bandages and normal specifics. Individuals will rarely do this for themselves, but an organised party should certainly be so equipped. It is worth remembering that insect repellants provide excellent protection during the period of their efficacy, and can be quickly applied if an emergency seems to be imminent.

Lecture on Honeydew at Leamington Conference

For practical beekeepers probably the most significant lecture given at the Leamington Conference was the one on "Honeydew" by Bernard Mobus; which was a follow-up to the one he gave at the National Honey show last year. Honeydew has always been a dirty word in British beekeeping, we have all tried hard to believe that *our* bees never touch the stuff. Vaguely we have been aware though that the highly prized fir tree honey of Germany came into this category. Mr Mobus showed us pretty convincingly through some first-class photographs that our bees do indeed gather aphid secretions from a wide range of sources. Furthermore, according to him our "honey" crops are not merely none the worse for it but the food value is actually improved thereby. The addition, in certain circumstances, of fungicidal material is another matter.

PUBLICATIONS AROUND THE WORLD

BEEKEEPING

Effects of E.E.C. Entry on British Beekeeping

Our entry into the European Community will involve us in many questions as beekeepers, not least of all the adoption of agreed regulations regarding the marketing of honey. These matters have been discussed at Brussels for some time and we are in touch with the Ministry on them and our observations are sought for — and given. Apart from the obvious need for clarification on questions of clear definitions the main concern of discussions so far seems to revolve round the H.M.F. and diastase content of honey offered for sale. It may be that as British beekeepers as a rule do not subject their honey to much heat treatment and not many indulge in pressure filtration these questions are of not too great importance to the beekeeper in a small way. It is too early to say what the position as to sugar will be on entry.

THE IRISH BEEKEPER

Wasps

The scarcity, in fact almost complete absence, of wasps this autumn is proof of the unseasonable weather of early summer when the queen wasps that emerged successfully in late spring, after a mild winter, failed to establish new colonies in May and June and died of starvation. Many beekeepers are not aware of the amount of stores stolen from bees, especially from weak colonies, in the autumn and the failure to successfully over-winter nuclei or small colonies is often due to undeteced robbing by wasps.

THE IRISH BEEKEEPER

Believe it or not!

Noted philosopher, Albert The Great, alchemist, teacher and theologian of the Middle Ages, had a special contraceptive formula — "Spit thrice in the mouth of a frog or eat bees."

HONEY INFORMATION SERVICE (AUSTRALIAN H.B.)

Individual medical men in different parts of the world have used royal jelly for centuries in such fields as those now identified as carcinoma, geriatrics, leukaemia, malnutrition in babies, etc.; and there are many who swear to its curative value for anaemia, arthritis, bronchial asthma, paralysis, rheumatism and ulcers.

There still seems to be no conclusive evidence as to whether, why or how royal jelly benefits patients; but, in addition to the wide and age-old beliefs of people in many parts of the world, many of them doctors, the following facts about Queen Bees seem relevant:

fed on royal jelly they hatch in 16 as against 21 days taken by worker bees.

They grow to twice the size of the worker bees.

They live 30 times as long.

They can lay their own weight in eggs every day in the honey season.

THE SCOTTISH BEEKEEPER

Queen Fright

During a recent manipulation of one of my hives I had a most unpleasant experience.

I work most of my hives with a deep and shallow chamber for brood chamber. I always turn the hive lid upside down as recommended by the literature, and place the top box on it. I wanted to find the Queen to clip her. I went through the removed top box first, but although there were eggs present — no Queen. I then went through the main box eggs, but again no Queen. I let the box settle then went through it again — no Queen. I decided to try another day, and lifted the top super back into place, put the crown board on and turned to lift the roof — I hesitated — "What was that lying prone on the upturned lid?" My heart skipped the proverbial beat. It was the Queen. She was curled up and deadly still. I felt hopeless at her loss. From the back of my mind a memory of something read stirred — "Queens have been known to fall, in a senseless state from the comb — replace in the hive and she will recover." I did replace her, but not with a great deal of hope. I checked the hive the following week, and to my delight she was hale and well and laying fine.

I thanked the man who wrote the book which had governed my action, quickly — and took note for the future. A little bit of knowledge in this case was far from dangerous. — Apis Fanatica.

He's a "Bee-Plus" Student

There is a university student in Tampa, Florida who is assured a "Bee-plus" standing while earning his degree in architecture. And after receiving the degree, he plans to continue and expand his bee-keeping activities in addition to his professional career.

Wilson Abreu, a citizen of Brazil, began his venture in bee culture while attending the University of South Florida. His initial purpose was to aid his father in developing a strain of bees superior to the African bees the elder Abreu now hives in his Rio de Janerio apiaries.

"African bees are hardy, and they are good honey producers," Wilson says, "but they are too aggressive — too hostile by nature." But if they could be crossed with a gentler strain, he reasoned, the result might be a hybrid honeybee that was a good honey producer, yet gentle.

Wilson, a tall, dark-haired man in his mid-20's, decided to try. In May 1971, he acquired two hives of Anatolian bees with the hope of shipping Anatolian queens to his father for cross-breeding. Later, he bought 10 more hives. From that point on, his colonies grew with no outside bolstering. By the middle of 1972 he had shipped some 200 queens to his father's model bee yards in Brazil, and he now has 200 hives of honey producers in his own two bee yards.

His queens have all been produced in one specific box which he calls his "Queen box". The box will be good for queen production for about two years, he says, then a new box (or boxes) will be necessary.

Wilson says that although the initial stages of the Abreu cross-breeding endeavour were not spectacular, successful results began to be manifest in 1971. The venture now looks so solidly promising that he is intensifying his queen shipments to South America.

In spite of his modest start and a "bee time" limited to weekend work, young Wilson sees bees as an integral part of his future plans. With an architecture degree in his pocket a year and a half hence, what role will bee-keeping play then?

A growing one, he claims. "My bees won't be just a sideline or a hobby, but a big business effort." Within the next three years he expects to have 4,000 hives. He plans to bottle his honey for retail consumption, thus maximizing profits.

When you wonder aloud how he can manage all that work in addition to a career as architect, he smiles. "My brother has a degree in business administration. He will give me assistance with the business angles."

Wilson Abreu may not have the Midas touch, but after all it's the "plus" touch that usually makes the difference between mediocre and excellent. And that he undoubtedly has.

GLEANINGS IN BEE CULTURE

Kids and Other Predators

I use a few hives of angry-type bees distributed through my garden to keep thieves and mischief-making kids out of the corn and pumpkins, etc. The old New Brunswick black bee, allegedly a native bee, was very fierce but I have not had a hive of them for many years. — Alan C. Reidpath, N. B., Canada.

Cardinal Points in Beekeeping

1. Bees need an abundant store of honey (25 or more pounds during the active season and 40 to 60 pounds going into winter), pollen, plenty of room for brood rearing, a source of water, protection from the wind, and exposure to sunlight.

2. There should be empty comb space in hives before and during a honey flow. When every cell becomes occupied with brood, pollen or honey, the bees will swarm or stop working — in either event causing a loss of honey. It is especially important to give them plenty of comb storage space to discourage swarming.

3. For successful wintering, a colony should have a young queen of high-producing stock, a large cluster of young fall-raised bees, at least 40 pounds of sealed honey, and several combs containing large areas of pollen. For these requirements a colony should have a two-storey standard hive or at least a brood chamber and one super.

4. Starvation is one of the principal causes of unprofitable beekeeping. If bees are short of honey, feed them a syrup of two parts of granulated sugar to one part of water. Lack of pollen can be compensated for by using a mixture of soybean flour and brewer's yeast available through bee supply dealers.

5. It is unprofitable — and in many states illegal — to keep bees in box hives or "gums".

6. Nectar resources may be improved by planting such crops as sweet clover. Trees and shrubs of value for nectar and pollen production should be planted for shade and as ornamentals. Much wasteland can be utilized for these purposes.

THE SCOTTISH BEEKEEPER

Honey Ice Cream

We made ice cream with honey. It is lovely. Chill a large can of Carnation milk (in N.Z. use Ideal or Anchor unsweetened milk) then whisk it in a chilled bowl with a chilled whisk until the amount is doubled. Next add one and a half tablespoons of caster sugar, and one and a half tablespoons of liquid honey. Whisk again until thick. Put the bowl with contents in the freezer. It is ready to eat when frozen. — Gordon Ferguson (aged 10).

BEE WORLD (ENGLAND)

Those Brazilian/African Bees

A characteristic that really does seem to differentiate Brazilian from European bees in Brazil is that the former readily nest in the wild: in hollow trees, crevices in rocks or buildings, or burrows in the

ground. Brazilian colonies utilize cavities much smaller than those acceptable to European bees: "thus the countryside becomes filled with small colonies". In an area of savanna, not near any apiary, there were 108 nests/sq. km! It seems to be this readiness to form reproductive, hunger and mating swarms, and to occupy small cavities, that has led to the spread of the Brazilian bee through areas which European bees have never penetrated, and to the astonishing rate of spread northwards — up to 200 km in one year.

The most widely publicized characteristic of Brazilian bees has been their aggressiveness. Slight jarring or disturbance of the hive can elicit extreme reactions from aggressive colonies. When testing one colony — by counting the stings received by a small piece of soft black leather moved about in front of the hive — the operator had to depart immediately after the hive had been inadvertently jarred. The leather received 92 stings in 5 seconds and the person carrying it was followed by bees for over a kilometre from the hive.

The Committee made observations on colonies in apiaries at various places between the Equator and latitude 30°S, a distance of 300 km (2000 miles). There was a marked difference between the equatorial region and the more temperate parts to the south. "All colonies of Brazilian honey bees from the northern parts of Brazil were highly aggressive. To the south there was much variability; some colonies were gentle," and were worked without protective clothing. It is not yet clear whether the differences are genetic or environmental or both.

BRITISH BEE JOURNAL

Profit From Pollination

The Essex Bee-keepers' Association is congratulating itself on another successful "pollination" year.

The County Pollination Scheme supplied nearly 700 stocks of bees to fruit farmers and seedsmen during the spring and early summer, at a cash benefit to themselves of over £2,000. Since farmers and horticulturists are not given to distributing cash handouts for nothing, they obviously regard this service as well worth the cost.

The Scheme originated 18 years ago, when Chelmsford Division of the Essex BKA began the first organised scheme for their own members. This proved so successful, and expanded to such an extent that 10 years later it was decided to re-cast the scheme on a County level. Any Essex BKA member can take part by paying a small fee for organising expenses, share of transport costs, etc.: and in return undertakes to supply only healthy stocks of suitable size so that the hirer gets value for his money.

Contrary to popular belief, bee-keepers neither expect nor get much in the way of a honey crop from these stocks. In order to have large enough colonies so early in the year, he must feed his bees heavily to stimulate breeding, so that the stocks reach their peak performance much earlier than nature arranges. These large stocks may well gather in plenty of stores from the fruit they pollinate; but the upset

caused first by moving the hives out to the orchards, and then removing them before the growers start their summer spraying programmes, brings about two serious interruptions in breeding. There is therefore a great lack of foraging bees at the time when the normal honey flow comes in. The depleted colonies keep going by eating up the stores their now defunct sisters brought in from the fruit flow, and very little is left for the autumn honey harvest. Bee-keepers regard their pollination earnings as an insurance against a bad honey season in the rest of the apiary. — Gwynneth Gossling.

GLEANINGS IN BEE CULTURE

All that Food to Raise Bees!

(By W. A. Stephen)

Nearly everyone who has had bees has lost colonies to starvation. Often it has been one of his best colonies. What would you think of a dairyman who let one of his best cows starve? Or a poultryman who lost a pen of prize hens because he neglected to feed them? Or a pig raiser whose pigs suffered because of malnutrition? Or a bee-haver, perhaps even a bee-keeper, who didn't check his bees when he should to see if they had honey in the hiv; and pollen?

I've heard the statement more than once, "If they don't make it they can starve." Needless to say, this is the attitude of the bee-haver. Their bees thrive or starve depending on natural conditions. Their owner doesn't help them out. He takes the surplus available and depends on Nature to provide for his bees.

Well, how much do bees need anyway? Just to stay alive, very little. To generate heat and survive the winter, not very much. But when brood rearing gets under way it's a different story. To figure it out base your calculations on one cell of honey for each young bee; and an equal amount of pollen.

Consider a medium-strength colony of 42,000 bees. A queen, heading such colony, would be laying 1,000 eggs per day or enough to keep 3½ combs full of brood, requiring 3½ combs full of honey. This amount would weigh 21 pounds which would be used up in 21 days One pound per day.

How about pollen? To figure this out is not so easy but certain authorities give statements we can use. Todd(5) says that one pound of pollen will produce 4,500 bees. To get our 42,000 bees then will require over nine pounds of pollen! Where does it all come from?

The beekeeper can provide a pollen substitute necessary when the season and weather are unsuitable for pollen collecting. When pollen-producing plants are in bloom and the weather is fine bees, "fending for themselves", must take a lot of trips to fetch pollen. Parker(3) calculated that the average bee-load of pollen is 15 milligrams. At this rate it would take 272,500 pollen loads to raise our medium colony of bees. A U.S.D.A. release(6) cites 72,500 pellets to the pound of pollen. One bee carries two pellets, so 36,250 trips would be necessary to bring in one pound of pollen or 326,250 trips for the nine pounds of pollen required to raise 42,000 bees. Averaging U.S.D.A.'s and

Parker's figures gives us close to 300,000 bee-trips. If used in 21 days this means over 14,000 trips a day. On the basis of an 8-hour day this is 30 trips a minute or one bee returning every two seconds.

The above calculation is based on the untenable assumption that the bees could work eight hours a day, every day. The idea is ridiculous but the needs of the colony are real. Nevertheless, it is possible to go on with our calculations and determine how many bees would be required to make all these trips and to bring in all this pollen. Each pollen collecting bee averages ten trips a day, according to Singh(4), so the number of field bees out visiting flowers must be at least 1,400. If suitable conditions exist for only half the time, twice that number will be required. If the weather restricts flight to only one day a week nearly 10,000 bees would be tumbling into the hive at the rate of more than three per second.

Have you ever seen such activity kept up all day? Neither you nor anyone else has. Of course, with 42,000 bees in the colony there could be 21,000 field bees. If half of these are pollen carriers there would be over 10,000 available for pollen collecting, which is enough even allowing for a few laggards.

Even though you aren't able to follow the mathematical gymnastics of all these calculations, I hope that you are now more conscious of the need for Farrar's(1) recommendation of 500 square inches of reserve pollen for colonies going into winter, and to look more favourably on pollen-clogged combs.

By the way, according to Jefree(2) those 500 square inches of pollen would weigh about four pounds — only enough to raise 18,000 bees using Todd's(5) figures.

A beekeeper looks into his colony and sees a nice comb of pollen. Some bee-havers feel that such a comb restricts brood rearing. Beekeepers know that it will soon be used up. Whenever I see this it makes me feel good because I know that there is ample pollen for a few days at least. In fact I am as apprehensive about pollen-clogged combs as I am about a money-clogged bank account. I know that it takes more than I imagine in both honey and pollen to raise bees.

Honey Lotion

Some time ago I discovered that I could apply a thin coating ot honey to the skin by mixing it with water and applying the mixture.

By applying it to my elbows and knees it conditioned the skin and made them very smooth. It healed the cracks between my toes. Applied to any rough skin it smoothed it up. I have not had any chapped hands since I have used this.—Ralph R. Hart, Painesville, Ohio.

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FIRST AUSTRALIAN BEE CONGRESS

By R. F. POOLE

The First Australian Bee Congress was held at the Broadbeach International Hotel, Gold Coast, Queensland on 13th, 14th, 15th and 16th October 1972 and was attended by beekeepers from Australia, New Zealand, Canada, U.S.A., Japan, South Africa, and the President of Apimondia Prof. Eng. V. Harnaj of Bucharest, Romania. The N.Z. contingent comprised Mr & Mrs R. Glasson, West Coast, Mr N. Tuck, Kihikihi, Mr E. Smaellie, Wellington, Mr P. Berry, Havelock North, Mr I. Dickinson, Milton (President N.B.A.), Mr A. K. Ecroyd, Christchurch, Mr R. Davidson Jnr., Timaru, Mr D. Penrose, Christchurch, Mr & Mrs R. F. Poole, Alexandra (Chairman H.M.A.), Messrs Smaellie and Berry delivered papers at the congress.

All told 45 papers were presented and these are to be published in book form. Anyone interested in obtaining a copy should write to Mr R. H. Lawrie, Bee Congress Secretary, Box 107 Mt. Gravatt, Queensland 4122. At present the price stands at $8.00 but increased orders could reduce the price. Reservation orders are now requested so that quantities can be estimated. Send no money at this stage. Reports from those attending indicate that the majority of papers will be of great interest to New Zealand beekeepers.

At the opening session of the First Australian Bee Congress the following persons were introduced as representatives of Overseas and Host Countries. (Left to right: Mr T. E. Rainey (Connecticut, U.S.A.) Leader of the U.S. party; Mr W. F. Huston (California, U.S.A.); Mr R. F. Poole (Alexandra, N.Z.) Chairman N.Z. Honey Marketing Authority; Mr J. C. (Tim) Smith, Capilano Apiaries, Queensland and N.S.W.

A number of marquees had been erected in the hotel grounds and these contained various displays. A lot of publicity had been given prior to the Congress, and many schools in the area had done projects on beekeeping subjects. During the four days of the Congress these displays were open to the public and many parties of school children were shown through, and one of the local radio stations broadcast from a mobile studio in the display area.

New Zealand was represented in the Trade display by a Penrose uncapping machine, a Davidson uncapping machine, and bechive woodware from Alliance Bee Supplies Ltd. In the Honey display, the N.Z. Honey Marketing Authority had a stand showing its various retail packs of named floral sources. The public was allowed to taste the various honeys and right through the Congress this stand always had the biggest crowd round it. It's popularity can also be gauged by the fact that a number of jars of honey were souvenired by the spectators. The only other stand to suffer in this way was the West Australian display which lost two bottles of honey mead. There were also displays of beekeepers trucks with various types of boom loaders and two mobile honey houses as used by migratory beekeepers were open for inspection.

During the Congress a couple of scenic bus trips were available to a bird sanctuary, kangaroo park and Marineland, and following the Congress a six day bus trip from Brisbane to Sydney calling at many beekeepers establishments en route was well patronised. Social functions included a film evening and a barbeque dinner by the hotel swimming pool.

Australian Bee Congress: Some Random Notes

The addresses given at the first Australian Bee Congress are to be compiled into a book and those interested in obtaining a copy are advised to write to: Mr R. H. Lawrie, Bee Congress Secretary, P.O. Box 107, Mt. Gravatt, Q'ld. 4122. At present the price stands at $8.00 but increased orders could reduce the price. Reservation orders are now requested, cash not required, so that quantities can be estimated.

During the 10 minutes of questions and discussion after each address, we made a few hurried notes, and give a few of the notes at random.

Gordon Townsend from Canada said honey should flow into a pump and not be sucked in.

Supers of 6 to 7 inches are the best depth for clearing bees with repellant.

New methods of disposing of a queen without opening the hive may change the whole management process in beekeeping. This may be done through virgin queens which can be produced for 30 cents each.

Mr Rosser asked did not the pollen improve food value of honey. Mr Townsend replied yes! if you get it up to ten per cent, but it troubles the packers.

Mr Baybrook asked what was the effect of honey on zinc? Mr Townsend replied he would rather see stainless steel.

Francis Smith, W.A. said field extracting quickens the extraction of unripe honey. With a Central Plant there is better home life. Staff is easier to obtain by casual labour. A hot water circulation system is preferable to steam. Some queens can and do lay more than one ten frame box under certain conditions.

Queen excluders make management simpler.

W. F. Huston, California, U.S.A., said it was his third trip to Australia and the only chasm is still the language. You people of Australia have a tremendous potential if you could have good bees at the right time. Half the honey is lost when bees are not strong enough. If you feed invert sugar every ten days with any natural pollen you will soon have enough bees.

Mr Huston has 34 other beekeepers working with him on pollination of alfalfa.

"Sulphathiozole and Terramycin are used to prevent A. F. B. but if we find one case of A.F.B. we burn it. Never go onto chemicals until you have to".

Wheast is obtained from the whey of cheese and fermented yeast, then dehydrated. It stimulates the bees but without some natural pollen it won't work. With a combination of wheast and natural pollen you can get three times more brood."

Robin Guy, Zululand, South Africa. They make hives from the bark of trees that produce their honey, so a tree is killed for each hive made. Honey Badgers can digest beeswax. South African bees work in conventional hives successfully but equipment is expensive. Double overalls and gloves are needed as our bees are more aggressive in Central Africa than in South Africa.

Neville Connor, P.D.S. Brisbane, Q'ld said the Australian Market must be looked after, even if it means selling for less than the export market price. We must increase efforts on quality and increase efficiency in marketing to feel sure of a bright future.

Charles Roff Advisor in Apiculture for Department of Primary Industries Q'ld, author of nine books and 197 other publications on beekeeping, flora and wildlife gave a fine description of the Paroo beekeeping area with the aid of a map and films of trees of the area among which were Napunyah, Poplar Box, Red Gum, Bloodwood, Coolibah, Turkey-bush and other flora. Some 4,500 metric tons of honey have been produced from the area since 1966. Bees swarm throughout a heavy flow. Yapunyah flowers in April so you should have a look at it by the 1st of April.

There are no toads out there. There is a trend for more bees to remain in the area. In answer to a question on price, Mr Roof said 17 to 18 cents but if you are a good bargainer you may get 20 cents (That was made in October).

James C. Smith, Capilano Apiaries Q'ld, said they had 20 market outlets 16 years ago but only 6 today.

Glass is heavy, plastic is light, honey is better in glass than plastic but plastic will develop.

Wayne A. Harrison, N.S.W. (previously California U.S.A.) spoke of the big extractor his father's brain child, where supers with fixed combs are uncapped and extracted automatically. The extractor holds 72 supers and 700 supers of honey are extracted per day. Bees are removed from the supers with carbolic and benzaldehide.

William F. Huston California U.S.A. Bees for pollination are put on Tasmania Blue Gum for winter pollen, Alfalfa is very difficult to pollinate. When it is being watered there is not much honey.

In a storm the seed will go to ground. Pollination of alfalfa is a scientific process. Leaf-cutter bees assist but can not do it alone.

1st AUSTRALIAN BEE CONGRESS, BROAD BEACH

Relationship Between Queen Bees and Honey Production

Paper Presented by Neville A. Cutts, N.S.W.
Department of Agriculture (Apiculture)

It has long been established that the Queen is the centre point of the hive, around which the welfare of a colony of bees revolves. The queen is not only responsible for laying all the eggs necessary to maintain colony population. She also provides Queen Scent (odour) to maintain the morale of a colony.

She must have the ability to lay large supplies of viable eggs, right throughout the season and well into Autumn, to ensure a strong colony, particularly when preparing to work winter honey flows, for example: Spotted Gum, Mugga Ironbark, White Box and Tea Tree. Naturally, the yield or amount gathered by a colony is closely associated with the queen. This in turn is related to work force or number of field bees available for nectar gathering.

What a lot of beekeepers lose sight of is how this high population of field bees is obtained, above the basic number required for hive duties, in caring for brood, etc. Estimated number of hive population:

1 QUEEN

10,000 workers, 6,000 or 8,000 maintain colony
20,000 workers, 10,000 maintain colony
40,000 workers, 15,000 maintain colony

The stronger the colony the higher the proportion of bees available for honey gathering over and above those needed for brood rearing.

WHICH BREED?

This point is not important. Have seen black, yellow, black and red cattle. Surely if one strain was best the other strains would disappear. Bees are no different. There are many strains, however, no single strain has advantage.

A particular strain is the result of — or — developed by the genetic combination of the parents' lines. What a given colony is, therefore, must be determined by the queen and the drone with whom she mated. Unless compatable, cannot obtain a highly productive colony.

HATCHABILITY AND BROOD PATTERN

A good brood pattern, basically is the result of a queen which can lay a high percentage of viable eggs — eggs which hatch and go on to develop into bees.

50% and the colony is basically a three frame nuc, and needs assistance by adding other frames of brood in order to survive. It thus would be useless as a productive colony and should be replaced. Nevertheless, this trait can be quite valuable in a breeding programme — strange as it may seem — daughters of low hatchability lines X mates with totally unrelated drones and the high hatchability is restored.

In my capacity as Queen Breeder, N.S.W. Department of Agriculture, I make use of these factors in developing and maintaining various lines and strains of queens for use in the breeding programme, carried on at the Hawkesbury Agricultural College, over 95% hatchability if the figure drops to 65% then the colony won't get out I also make available to queen breeders and beekeepers, who can use such queens specially treated instrument inseminated queens mated to drones of selected strains — which will produce daughters with this high hatchability factor.

TWO THINGS TO NOTE

1. Some queen breeders and commercial beekeepers often consider that because a breeder queen is only maintaining a small brood nest that she is not suitable for breeding purposes. This is not necessarily so. If that queen is unrelated to drones in the area then the daughters that she throws will have good hatchability. "I am not concerned about the breeder herself because after all she is only providing the genetic material. What matters is the performance of her daughters, that's what I look for."

If the queen is related to drones in the area then low hatchability of daughters can be expected because in effect they are being mated to their brothers and thus inherit low hatchability.

2. Some beekeepers choose the out-standing hive in the apiary which they consider will make a good breeder in the hope that daughter queens will be as good. Not necessarily so, for they are often disappointed. Tell you why! Requeen 100 hives with 100 queens. These queens being sisters. Next season what happens? You decide to raise some queens so you select a breeder and raise your cells the queens hatch and mate. The problem is that the queen mates a drone closely related to herself and the result is low hatchability. Don't get caught as this can be costly and time has to be taken to correct the situation. Think of the family tree of your bees and be sure to try and cut out inbreeding.

Think, too, of the egg laying capacity of your queens. A laying rate of up to 1800 eggs a day for a sustained period is needed to sustain a large colony. If through inbreeding or other factors the queen's egg producing capacity falls off to say 900 eggs per day the colony strength falls off and the effective field force is reduced drastically. In fact the queen may have trouble getting out of the single.

Mr Coutts also answered many questions related to queen breeding from the audience.

The Behaviour of Bees in Relation to Pollination

Paper Presented by Keith M. Doull, Waite Agricultural Research Institute, The University of Adelaide, Adelaide, S.A.

Efficient pollination of the flowers of any entomophilous crop requires that there should be close association between growers, beekeepers and bees.

The bees are indispensable and are the most important element of the association and unfortunately beekeepers are often the most disruptive element — at least as far as the bees are concerned.

Pollination is simply an accidental side effect of the activities of bees foraging for food for their colonies and the activities of growers and beekeepers must be directed towards creating and maintaining in the fields and in the hives the environment that will provide the bees with the strongest stimulus to seek and gather nectar or pollen from the particular crop.

Provided growers and beekeepers carry out their activities effectively and provided of course that weather conditions are suitable the bees will fulfil their part in the association efficiently for foraging is the result of their instinctive and therefore unavoidable responses to stimuli they perceive from their environment.

Some flowers may be pollinated equally well by bees that are seeking either nectar or pollen. The type of hive management required to provide efficient pollination of these crops is different from that required where the flowers of the crop can be pollinated efficiently only by bees that visit them for the specific purpose of gathering pollen.

The beekeeper's first task must be to gain an understanding of the nature of the flowers of the crop to be pollinated, and of the type of foraging activity that is required for most efficient pollination.

The number of foragers returning to the hive with pollen from any particular crop, or the amount of that pollen appearing in pollen traps is not a true guide to the type of foraging activity that will result in the pollination of the crop in question. Nor is it necessarily any guide to the efficiency of pollination of the crop.

Pollen that is brought into the hive may have been gathered by bees that were actively seeking pollen, or by bees that gathered pollen while visiting flowers in search of nectar. The two types of foraging activity may be readily distinguished by observation of the behaviour of the bees on the flowers.

A bee that is foraging for nectar may be distinguished by the fact that after alighting on a flower and locating the nectary it extends its tongue and begins to imbibe the nectar. It remains still a few seconds and after taking up all

the nectar flies without hesitation to another flower and repeats the process.

Nectar collecting bees must often crawl over or through the anthers of flowers to reach the nectaries and their bodies usually become dusted with pollen. Most of them disregard this pollen which falls from their bodies as they fly or is removed when they groom themselves. However, some bees that are obviously seeking nectar are apparently still able to respond to the pollen on their bodies for they pack it into their pollen baskets and thus return to the hive with both pollen and nectar. Clearly the collection of pollen by these bees is incidental to the collection of nectar.

About 25% of foragers from any hive are actively seeking pollen in response to the stimulus presented by the brood. Their behaviour is quite characteristic. They do not show any interest in the nectaries of the flowers they visit for normally they leave the hive with reserves of honey sufficient to provide the energy required for their flight to and from the flowers.

After alighting on the flower they scrabble actively over the anthers and stigma, biting the anthers and pulling them down towards their bodies. This activity releases pollen which accumulates on the bees' bodies. After they leave the flower they normally hover for a few minutes busily scraping the pollen off their bodies and packing it in their pollen baskets.

The type of foraging activity that is most likely to lead to efficient pollination of any crop is determined in the first instance by a number of factors that originate in the plant and in the crop.

Flower structure is particularly important for in general maximum yields of seed and fruit from entmophilous crops are obtained only when bees are available to transfer pollen from the anthers — the male parts of the flowers — to the stigmas — the female parts of the flowers.

Where bees must make contact with both anthers and stigma of all flowers they visit, pollination may be effected by bees seeking either pollen or nectar. However, in some flowers bees may obtain nectar without making contact with anthers or stigma, and such flowers may be pollinated only by bees that are actively seeking pollen.

The quantity and quality of nectar and pollen produced by any crop and the ease with which bees may collect them determine the profitability of the crop as a source of food for bees. These are therefore important factors affecting the efficiency of pollination and the ability of any crop to compete with alternative sources of nectar and pollen.

Quality of nectar in terms of this discussion means basically the amount of sugars in the nectar. Honeybees exhibit a preference for nectar containing more than 20% of sugars, and the higher the sugar concentration the more profitable will be the flowers as a source of nectar. A few plants produce nectars with a very low concentration of sugars, and are poor competitors for visits by nectar-collecting bees.

In general, when able to choose between sources of nectar, bees will prefer the one from which they can gather a full load of nectar in the shortest time. Thus they prefer crops in which individual flowers produce comparatively large amounts of nectar, or that have an abundance of flowers. For example, clovers, which normally produce nectar containing 30% to 40% sugars, and which may have several million flowers per acre, are very strong competition for visits by nectar-collecting bees, even though the amount of nectar produced per flower is comparatively small.

The quality and quantity of pollen are also important. Quality is determined by the strength of the stimulus that the pollen presents to the bees for bees seeking pollen are induced to alight on flowers and to scrabble for pollen by stimuli presented by certain chemicals in the pollen. Pollens of different plant's vary in the amounts of these chemicals they contain, and thus in the strength of the stimulus they present to pollen collectors.

Both the abundance and concentration of nectar are subject to considerable fluctuation during any day, and from day to day. The threshold temperature for nectar secretion — that is, the lowest temperature at which the flowers will begin to secrete nectar — and the temperature above which nectar secretion stops, are usually specific for individual species or varieties of plants, and in changeable weather nectar secretion of some flowers fluctuate with temperature. Irrespective of temperature, however, nectar secretion is always reduced in dull, cloudy weather. The amount and concentration of nectar secreted is also influenced by the moisture level and nutrient status of the soil, by atmospheric pressure and humidity, and by wind and rain.

The quality and quantity of pollen produced by the flowers of any plant may also vary, so that the attractiveness of the flowers to pollen-collecting bees also varies. Little is known of the causes of these variations, but there is evidence to suggest that it is associated with the state of growth of the plant. For instance, it appears that lucerne plants that are producing fresh vegetable growth following rain or excessive irrigation may produce a high proportion of infertile pollen grains.

Thus the attractiveness of any crop will vary at different times during the day, from day to day, and at different stages of flowering, and it is not uncommon to find adjacent crops of the same plant exhibiting different levels of attractiveness to honeybees.

Growers' efforts may effect the amounts of nectar and pollen produced by the flowers and thus will affect the attractiveness of the crop to bees. For example, most irrigated seed crops appear to be more attractive to bees and to produce better yields of seed when they are subjected to some degree of moisture stress before and during early flowering.

In some cases soil nutrient status affects nectar secretion as for example in clovers which often benefit from application of potassium fertiliser.

The distribution of pollenizer varieties is important with many orchard fruits. Individual foragers usually confine their activities to relatively small foraging areas, and pollenizer varieties must be so placed that bees will regularly move between these trees and the main variety.

Co-operation between growers and bee-keepers to identify the main competing flora may also lead to improved pollination. In some instances flowering may be delayed to avoid the worst effects of competition while in orchards it may be helpful to mow the ground cover and so remove weed flowers that are often important competitor sources of pollen.

Flowers of all plants are receptive to pollen for restricted periods, and even though many flowers may remain open for 7 days or more, most flowers must be pollinated within a day or two of opening. Thus for example delays of one or two days with Delicious Apple produce fruit set of only 27% and 11% respectively while with Almonds virtually no nuts are set if pollination is delayed for four days after the flowers have opened.

This has several implications for the beekeeper. It means that there should not be any delay in placing hives in the crop once flowering has started, and it means that there must always be enough foragers working of all flowers once they have opened. It also has particular implications in the pollination of crops that flower in Spring when the weather may be cool and changeable. In such weather conditions, bees tend to forage close to their hives, and so the hives should be dispersed in small groups throughout the orchard.

The management of colonies for pollination has important effects on their efficiency as pollination units.

The behaviour of honeybees is influenced by their reactions to what may be called "reward — no reward" situations. If any activity fails to produce a "reward," they eventually stop responding to the stimulus that elicits the activity. For example, when storage space in the hive is filled with pollen and honey, incoming bees are unable to dispose of the food they carry, and eventually cease foraging.

Management of colonies used for pollination must be such as to ensure that this situation does not arise and that there is always sufficient comb space for storage of all the pollen and nectar the bees can gather. It is never possible to forecast yields of nectar and it is always advisable to start off with one more super than is thought necessary. Routine management must include examinations of storage space and if necessary the removal of surplus honey or the provision of additional supers.

Colonies used for pollination of crops that requires the activities of nectar collecting bees should be as strong as is possible. If the crop has a short flowering period, little harm will be done if brood rearing is restricted. In fact this will improve pollination for with less brood there is a weaker stimulus for pollen collection and a higher proportion of bees will gather nectar.

However, where the crop has a long flowering period, the need to maintain the optimum force of nectar-collecting bees must be balanced against the need to maintain colony strength. In general, with these crops it is necessary to inspect the brood-nest regularly and to ensure that the queen has plenty of room in which to lay eggs.

Colonies that are to pollinate crops needing the activities of pollen-collecting bees require careful and regular attention to maintain the optimum rate of brood rearing and to ensure that, if possible, they suffer a continuing mild shortage of pollen. The proportion of bees that seek pollen is directly related to the amount of brood to be fed and in broad terms, the management required for these colonies must include the regular removal from the brood-nest of combs containing honey and excessive amounts of pollen, so that the queen may maintain a high rate of oviposition.

In some cases — particularly in Spring — brood rearing is inhibited by a lack of nectar, and it is often beneficial to feed the colonies with thin syrup or even to give them sticky combs.

Finally, some brief comments on the type of pollination activity that is likely to provide most efficient pollination of some crops grown in Australia.

The flowers of all **Clovers** may be pollinated equally well by bees that visit them to collect either nectar or pollen. The anthers and stigma are enclosed in the keel petals, and are exposed when a bee alights on the flowers. As the bee pushes her tongue or head into the throat of the flower, the anthers and stigma are pressed against the underside of the bee's head, and pollination occurs. The anthers and stigma return to their position in the keel petals when the bee leaves.

Clover flowers are not ideally suited for bees that are actively seeking pollen, for they cannot complete the full scrabbling behaviour pattern. However, some bees exhibit modified gathering behaviour in which they scrape their forelegs over the anthers to release the pollen.

The most efficient pollination of clovers will be achieved with strong colonies managed for maximum honey production.

Many of the varieties of Fruit Trees grown in Australia differ from those grown in other countries. Varietal differences in flower structure influence the type of foraging activity most likely to lead to effective pollination, and since information on flower structure is not readily available, it is possible to speak only in broad generalisations.

Pollination of orchard fruits is unusual in that the grower does not always require pollination of the maximum number of flowers. In the case of apples, pears, peaches and apricots, for example, a commercial crop may be obtained if 10% to 15% of flowers set fruit, while for cherries and almonds pollination of all flowers is required.

Pears provide the main problem in orchard pollination, for with nectar usually containing less than 20% sugars, they compete very poorly for nectar collectors. Pollination of pears is best achieved by bees actively seeking pollen. Unfortunately, it appears that pears may also be poor

competitors with alternative sources of pollen. In fact the evidence suggests that fruit trees often compete relatively poorly with alternative sources of pollen, especially with ground flora, which normally flowers profusely at the same time as fruit trees.

The evidence available suggests that most effective pollination of orchard fruits may be achieved with colonies managed to produce a maximum stimulus for pollen collection, but there is room for research on this aspect of pollination.

Lucerne pollination is a continuing problem in Australia. Bees may obtain nectar without pollinating the flowers and nectar collectors in general pollinate only 1% to 2% of the flowers they visit, whereas bees seeking pollen will trip and pollinate up to 98% of the flowers they visit. Unfortunately Lucerne is a poor competitor for pollen collecting bees. The pollen presents a relatively weak stimulus, the flowers are difficult for bees to work and produce relatively small amounts of pollen. Best yields of lucerne seed are produced in conditions in which there is minimal competition for pollen, where the weather is fine, dry and hot, and where honeybee colonies are carefully managed to maintain a high rate of oviposition and a continual shortage of pollen. There are a few areas in which this combination of conditions occurs with any regularity.

The flowerheads of Sunflowers consist of a large number of small florets with both anthers and stigma rising above the corolla tube so that any bee alighting on the flowerhead in search of nectar will pollinate the florets. Bees appear to visit sunflowers mainly to obtain nectar and hives prepared for maximum honey production are likely to be most efficient pollinators of sunflowers.

The flowers of Oilseed Rape compete strongly as sources of nectar, for they produce relatively large quantities of nectar with a high concentration of sugars. The available evidence suggests that bees do not normally visit oilseed rape specifically to gather pollen and hives managed for maximum honey production are probably best suited for pollination of this crop.

In overseas countries — particularly in U.S.A. — new methods of culturing crops and particularly the use of male sterile hybrids are creating increased pressure for efficient pollination services. Up to the present, Australian growers have not used these techniques, and do not usually face major problems of pollination, since wild swarms of honeybees often account for a high proportion of foraging bees in their orchards and crops.

However, the need for higher yields and lower costs of production per pound of seed or fruit will change in time, and the Australian beekeeping industry will need to improve its services to growers to meet these needs.

STARTER NEEDED IN BULK EXPORT HONEYS

By C. G. Rope, Honey Grader, Auckland

Years ago when honey was packed in 4 gallon tins made out of tin-plate, it was evident the product could not be transported safely before the honey had become firmly granulated. Otherwise, liquid honey would soon leak out or damaged tins, become lost, and damage other cargo.

When leaking honey became exposed to robber bees, "swarms" of them soon appeared in a gluttonous frenzy and when this occurred at a railway station or dockyard, passengers, crews, waterside and railways workers alike were exposed to considerable and unreasonable nuisance. Not only that, the escaping honey became a possible source of infection for bee colonies by the brood disease, Bacillus larvae.

Recent years have witnessed a change in the honey industry from 4 gallon tins to 5 gallon and 44 gallon steel containers. At first the question arose as to whether it was any longer necessary to wait until the honey had set hard before it was shipped? Trial shipments of liquid honeys in the new containers were undertaken and these travelled well enough to indicate the export of liquid honeys might be a practical proposition. But time was to prove otherwise and recent misadventures with liquid honey shipments have demonstrated the shortcomings in these containers.

It is easy to imagine people trying to stand upright in a pool of slippery honey as it seeps away throughout the hold of a ship. One can envisage, too, a railway waggon with its floor spread with honey, and the sky and waggons "alive" with robber bees! And insurance premiums rising! Incidentally, the writer has had first hand experience with such happenings and has found honey full of stinging bees not the best for sitting in before an audience with not much respect for a gents decorum!

But not to digress. There is another consideration important to the subject. Some overseas customers are prepared to pay more for a smooth-grained honey worth 100 points for condition and suitable for them to repack much as they receive it. The simple economics of the situation are that the more money the importer is prepared to pay, the more the honey farmer will ultimately receive.

To meet present day needs, the N.Z. Honey Marketing Authority has advised its suppliers that "starter" must be added to the current season's crop, and since that notice was circularised, numerous enquiries have been received by the Ministry of Agriculture and Fisheries requesting advice.

The Authority has subsequently explained to me the object of their present policy is to ensure all honey received into their receiving depots EITHER will be firmly granulated on arrival OR will be sure to granulate not too long AFTER DELIVERY. To achieve this end, they are asking their suppliers to introduce some "starter" (or "seed" crystals) into the liquid honey before despatch; then there will be no likelihood of the honey remaining liquid in store for many months before it's condition becomes suitable for export.

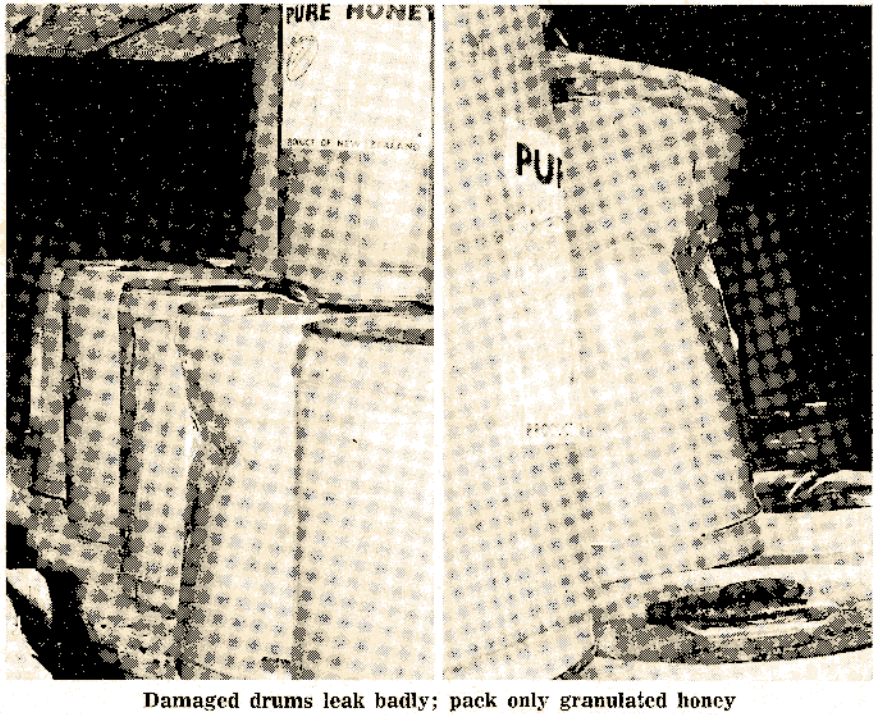
HOW CAN THIS BE DONE?

The very least one can do is to put a teaspoonful of FRESH fine grained "seed" crystals into every 5 gallon can of cool liquid honey (it has to be BELOW 26° Celsius or 80°F., otherwise the crystals will dissolve and be destroyed), or, in the case of 44 gallon drums, tip a cupful or more of "seed" crystals into the liquid honey in every drum. This may be considered by many to be very rough and ready advice, but it is better than not doing anything at all and as a last resort, it will suffice. Most honey farmers, however have plenty of honey tanks and some machinery for stirring honey and will have little difficulty in carrying out a more thorough job of incorporating the crystals evenly throughout the honey.

To build up a stock of "starter", first buy from a grocer say a 5 lb tin or more of recently packed honey that is quite firm and has a smooth texture. This honey should be crushed with a wooden paddle or a steel press and worked into a paste by adding liquid honey, a little at a time, until one has 3 or 4 gallons of cloudy liquid honey. This should be kept in a covered container in a cool, dry place for a few days, stirring once or twice daily until the honey has become fully crystallised. The optimum temperature range for fast results is from 7 to 14° Celsius (45 to 57°F.). A household refrigerator is too cold, unless it is run continuously on the "defrost" setting. Whenever some of the "starter" is taken away for use, more liquid honey can be added and mixed in with the granulated honey left behind; and so the process continues. Some people prefer to obtain their "starter" in bulk from a honey packer or from the Authority but isn't this perhaps, somewhat like taking coals to Westport?

About 1% of "starter" should be enough to "seed" a tankful of clarified honey and achieve ultimate granulation, but if more is used the process is faster. Honey which was HEATED during extraction and clarification requires extra "starter".

Continued on Page 26



Damaged drums leak badly; pack only granulated honey

It is advisable to use seed crystals freshly made from the current seasons crop to minimise the danger of sugar-tolerant yeast plants becoming introduced. Yeasts cause honey to sour and ferment. Experienced beekeepers may wonder at the need for me to give such elementary advice, but at the very time of writing these words, I received a phone call from a fully-commercial beekeeper seeking advice as to whether cartons of honey blown up by fermentation and sent back to him by a grocer would "do to start off his honey for sale to the Authority"! Of course such a practice would cause early fermentation in his entire crop and any detectable sourness would jeopardise the grades of the honey and the subsequent payout.

The kind of granulation to aim for is a firm, natural, fine crystalisation free from air bubbles and, of course, other extraneous matter. If the honey goes coarse, the farmer will receive the same price for it, but coarse grained honey requires more heating to reprocess and if it is just as easy to produce one as the other, why not the better of the two?

Under no circumstances is a soft, creamy, whipped-up type of airy granulation advocated! Such honey, regardless of its moisture content, has a much reduced life in storage, if ferments more readily and tends to break down sooner into layers, liquid on top, due to accelerated changes in the chemistry of the sugar dextrose hydrate.

To ensure continuity of supply to customers, some honey has to be kept in reserve for say up to a year or more. There is no doubt that for this and other reasons, quality counts, and ensures for the N.Z. Beekeeper a payment far above what he could otherwise attain on world markets.

AMBROSIA
(Food and Drink of the Gods

1 cup orange juice
½ cup grapefruit juice
1 level tablespoon lemon juice
¼ teaspoon salt 1 quart milk
1/3 cup honey or more to taste

Combine fruit juices and salt. Warm 1 cup of milk and blend in the honey; add this to cold milk and stir well. Add milk mixture gradually to the fruit juices. Beat with egg beater, electric mixer or blender until thoroughly blended and smooth. Chill and serve.

TIMARU BEEKEEPING SEMINAR

September 1972

Address by Chris Dawson on Presentation of Black Locust Trees

Your Worship and Mrs Hervey the Mayoress,

Mr President,

Distinguished Guests,

Ladies and Gentlemen.

As labourers in the realm of Nature, we beekeepers are always delighted to assist Nature in her work of beautifying our land. So we are pleased to know that our Mayoress has aroused local enthusiasm for making Timaru a more beautiful city. This gathering of beekeepers and their wives would like to help her, and on their behalf I have pleasure in presenting some trees for this purpose.

These miserable sticks — I'd be ashamed of them did I not KNOW that these rather insignificant prickly sticks — young trees of the Pseudo Acacia Robinia, will, given reasonable conditions, in twenty years be twenty-five to forty feet high, with branches spreading to a diameter of sixty feet. One specimen in our own Botanical Gardens is a joy to behold. Beneath these trees whole families could have picnic parties, and the boys and girls could enjoy themselves like monkeys climbing around the branches.

Possibly during our lifetime, perhaps in the year 2000 celebrations, the children could gather there with their little helicopters before taking a day's outing to the forests near Hokitika, just a short journey across the mountains.

Meanwhile other ceratures will be enjoying these robinias, for the flowers are very attractive to bees and from them they are able to collect good crops of nectar.

A number of authorities have told us of the value of robinias. May I quote from the writings of four of them. **BOB WALSH** (created a Life Member of our National Beekeepers Association just two months ago) says in his book NECTAR AND POLLEN SOURCES OF NEW ZEALAND — "Robinia Pseudo Acacia or Black Locust is a splendid source of nectar". To no other tree or plant does he give higher praise.

TARLETON RAYMENT, that Australian who has contributed so much to our literature on Australian and New Zealand Honey Plants and Bees, says: "This is common enough in the flower gardens of Australia. It bears beautiful symmetrical clusters of creamy white flowers and gives a great flow of delicately flavoured honey and cadmium-coloured pollen. It is a handsome tree and the scent, combined with the humming of bees, is sufficient to awaken the apiarist on a sunny morning." Have you not got an alarm clock? Plant a Robinia instead!

HONEY PLANTS OF NORTH AMERICA by **JOHN LOVELL** says: "This is one of the finest honey trees of the Eastern and Southern States and has become extensively naturalised in Canada, New England and the Eastern States." Frank Pellett in AMERICAN HONEY PLANTS says much the same.

Lastly, **DOROTHY GALTON** of England, writing of the steppe-lands of Ukraine and Moldavia, says, "Of all plants, Robinia and willow-herb give the biggest yields of honey in favourable conditions, up to 240lbs per acre. (Quoted from the American Bee Journal of December 1971).

Mrs Hervey, you by now realize that though we are presenting you with miserable sticks, to your children and grandchildren we are giving several tons of honey every year. We wish you well in your endeavours to beautify Timaru and South Island Beekeepers will now have a special interest in the corner where these trees will thrive.

It is a very great pleasure to present these Robinias.

Address in Reply by Mr Russell Hervey, Mayor of Timaru

Mr Mervyn Cloake,
Mr Bartrum,
Mr Dickinson, National President,
Members of the South Island Beekeepers Association Seminar,
Greetings and thanks for invitation.

In this life we are never finished with learning. As a Mayor, I can assure you that you learn a great deal in a short space of time. I have. So I am always grateful for details of your activities, for one needs to be well informed in speaking with experts. Otherwise I could only rely upon what I had to be told many years ago about the birds and the bees.

The Bible refers (Exodus 5) to a land flowing with milk and honey. As a child I could not dismiss from my mind the awful thought of what a mess the whole thing must have been. Milk and honey. It must have been quite different in Biblical times. Perhaps solidified honey and powdered milk, but think of liquid honey and milk all mixed up and flowing together. Nevertheless the bee, responsible for the honey has been praised for the most part in song and story. Although some writers take a different view — there is no perfect place to live in. If you lived in the land of milk and honey, you would probably be kicked by a cow or stung by a bee — Shakespeare in "The Tempest".

"Where the bee sucks, there suck I." The Tempest.

"Her lips were red and one was thin, compared to that was next her chin." (Some bee had stung it newly) — Sir John Suckling.

"How doth the little busy bee." — Isaac Watts.

"You are my honeysuckle, I am the bee." Albert Fitz.

"There's a whisper down the field where the year has shot her yield,
And the ricks stand grey to the sun, singing 'Over there, come over,
For the bees has quite the clover and your English Summer's done.' "
— Rudyard Kipling

Merle Oberon, well-known Hollywood film star, is reported to have said in relation to her diet that she eats asparagus with ust a little melted butter; grilled sole and only one potato; strawberries with just a suggestion of cream and then, surprise, a spoonful of honey. She states "Honey is one of the reasons for my vitality and general fitness."

One of our most distinguished New Zealanders, Sir Edmund Hillary, was a beekeeper. That he possessed such outstanding qualities of strength, courage, leadership, enterprise and initiative may well have been due to his interest in bees and his knowledge of the value of honey.

Honey rates well in comparison with its competition for the consumer dollar as the following examples show:

Honey — 33c per lb.
Car — 78c per lb.
Steak — 95c per lb.

Establishment North Island Bees. (Excerpt from 'The Illustrated Australasian Bee Manual by Isaac Hopkins — fourth edition 1906). It was on the 13th March, 1839, that the Good Ship 'James' anchored off the mission station of Mangunga, Hokianga, New Zealand. This ship brought a party of missionaries, among others the Rev. J. H. Bumby and his sister, Miss Bumby, who accompanied her brother as housekeeper. This lady brought with her the first bees I ever saw."

Establishment South Island Bees. "Mrs Allom arrived in the barque "Clifford" in May, 1842. The bees were consigned to Captain Wakefield, head of the Nelson settlement. (William Adams, great grandfather, who became the first superintendent of Nelson). Subsequently Mrs Allom received the silver Isis Medal in 1845 from the Society for the Encouragement of Arts in London.

South Canterbury Intensive Beekeeping area. 14,000 hives of bees of bees operated by 23 commercial beekeepers. Annual average honey crop about 500 tons. Honey finest quality is mainly white and delicately flavoured. Finds ready export market throughout New Zealand and overseas, notably in Japan, U.K. and Europe. As far as South Canterbury is concerned, the total 500 tons is worth about $250,000 to the district.

At Pleasant Point, the Honey Marketing Authority maintains a packing plant where about 500-600 tons of honey from South Canterbury through to Southland is processed and packed. Half of this honey is derived from South Canterbury. In some years up to 250 tons is exported through the Port of Timaru. The total production of honey in New Zealand is about 5,000 tons annually but the best of this is found in South Canterbury, so that about half of the annual production of South Canterbury is sold in the North Island.

The industry receives support finance from Reserve Bank as an important essential sector of the Primary Producing Industry. As in most industries, improvements in technique result in increased production and this, doubtless, applies to the production of honey, for there is clear evidence that the export market could absorb greater quantities of the high quality honey produced in this district.

It is well said that the activities of the honey bees has probably a greater worth, more by far, than the honey they produce since they make a vital contribution through pollination, to the production of farm seed crops such as white clover, red clover, lucerne and sunflowers. Farmers and apiarists, therefore, have a common and sustained interest between the honey bees and flowers.

This city of ours of about 30,000 people, reside in an area which is bounded by primary producers of about a similar number. We have a common interest in their great endeavours. Economically we are both members of society whose interests are inextricably woven into a splendid fabric. Each is inter dependent upon the other and in this dependence we find our destiny, for we go forward together.

Thanks for your invitation to be with you today, for we acknowledge your industry is essential to us all.

RUSSELL HERVEY

CORRESPONDENCE

10 Northfield Close,
Aldershot, Hants.
England.

Dear Sirs,

May I crave your indulgence? Perhaps you will be good enough to help me with the following information. I am considering emigrating to your country, and as I run a small honey farm in this country, I want to continue in the craft in my new life.

The general facts are these, I am 54 years old, my wife being 50 years old both fit and well. My daughter who is going to work for the Bank of New Zealand is 25 years old. I have about $30,000 capital available, at the moment with some prospects.

Would you help me by sending me any information concerning the employment opportunities that there may be in that field. I feel that I should work for at least a year with an established honey farmer, if at all possible to get to grips with the local conditions, etc., that I realise must be quite different to those that I am at the moment familiar with. I hold all types of driving licences, up to and including heavy goods, willing to do anything that will put me in touch with the craft of beekeeping in your country.

I fully realise that your department is not perhaps geared to answer this type of request, but I sincerely hope that you will be able to help me.

Briefly, what I really require is to be put in touch with some established farmer who I could then perhaps make some kind of arrangement with.

May I conclude by saying thank you in anticipation for your help and advice.

Very Sincerely,

W. H. DICKS

EDITOR'S NOTE — Would any interested beekeeper please write to Mr Dicks.

TIME

Paper Presented by J. Smith, Apiary Instructor, Christchurch

It's often said that all beekeepers are mad, yet I have never heard it said that they have a sense of humour. Therefore, I feel I must compliment your committee on their sense of humour in inviting an officer from the Department of Agriculture to talk on the value of time and the elimination of surplus operations. But perhaps it's very relevant that you picked on me, the lowest of the low in the Department. Maybe you hope I haven't been in the Department long enough to pick up bad habits.

As this seminar looks as if it's going to be rather long and hard, perhaps you'll forgive me if I try to ease your load by being somewhat flippant in the handling of my subject.

Over the years several apiary officers have produced for themselves trade marks — for instance, Walsh's book on nectar has become widely known as Bob's Book. Also, there is Griff's Graphs. So, may I now introduce mine, which, for the want of a better phrase, I've called Smith's Slogan . . . . It is — "If the job does not give you pleasure or profit, why do it?"

Right now I know somebody is saying to themselves "there he goes, claiming somebody else's idea" and Robert Townsend, in his book "Up the Organisation" said the same thing very much better when he stated "if you aren't in business for fun or profit — what the hell are you doing here". It's not by accident that I've put pleasure before profit, because in beekeeping, perhaps more than in any other job I know, we work for pleasure and by that I don't mean you're not making any profit these days by being apiarists — small profit, perhaps, but still some profit. However, the main consideration that causes most of us to remain in beekeeping is that we find working with bees a very pleasant occupation. So, let me say right now I approve of working for pleasure, and indeed, I would not be attached to the beekeeping industry if I did not.

However, I do feel there is a danger of kidding ourselves that certain jobs within the industry give us profit when really it's just sheer pleasure. This attitude of mind isn't good when trying to utilise your time to its best advantage. Let me give an example of what I mean — about 30 years ago beekeepers in New Zealand made their hive boxes out of old petrol cases and their frames out of scrap wood. These frames were made to the Simplicity design, hacked out by hand with old saws, or in some cases, even pocket knives and we all know what awful frames they were. Jigs were used for nailing, end bars split like kindling wood and when you did finish the frame and attempted to wire it the end bars would just break inwards against the nails. A few years later somebody re-designed the top bars to make a stronger job and this was followed by an improved bottom bar. This frame was standand until about 10 years ago and indeed, my own introduction to N.Z. beekeeping was nailing these old type frames where, if you weren't very careful you broke the lugs off the bottom bar.

Now, about 7 years ago, a hive manufacturer realised that a boxed joint on the bottom bar made a much stronger frame and quietly introduced them on to the market. When any of you who had old end bars or bottom bars left over from the previous season discovered they didn't fit you will remember this happening, although I know many beekeepers were unaware that a change had taken place. Then came the big breakthrough — again the manufacturer produced what I consider to be the Rolls Royce of frames. It had an improved top bar, improved end bars, a thicker and well fitting bottom bar, an extra wire to give it extra strength and in fact, it looked and felt like a piece of cabinetmaker's art. I'm told that the re-tooling for this frame cost several thousand dollars, yet it was and still is, sold at the same price. So, therefore, the beekeeper had a better article for the same price.

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Practical Aspects of Some Recent Research

By Murray Reid, Apicultural Advisory Officer, Christchurch

The 9th Pollination Conference in Arkansas 2 years ago was indicative of the changes in growth in apicultural research in North America. Of the 40 papers presented, more than half were research reports and 16 were given by apiculturists. However, plant breeders, physiologists, agronomists, horticulturists and entomologists are not reducing their interest.

The research being done on all aspects of entomophilous insects as well as plants requiring insect pollination is voluminous. I have limited my talk to research highlights from places I have visited and think have practical application in New Zealand. Research work of both a pure and applied nature is being carried on by personnel in universities, government research centres, commercial enterprises, and by beekeepers themselves.

In the Canadian Government research station in Ottawa Drs Boch, Gochnauer and Shearer are working on a number of projects, particularly bee diseases and the chemicals involved in the bees "language". This group conducted some of the early research into nosema disease and the use of Fumagillan to control it. At the moment they are studying the nature of the spore itself and trying to find a way to abrade or chemically reduce the resistant nature of the spore shell. This would mean lesser amounts of the drugs could be used for nosema control and thus safeguard the internal flora and fauna in the bees intestine. Bees cannot survive with a sterile alimentary tract.

They have also isolated and identified **Ascosphaera apis,** from chalkbrood disease of honey bee larvae in Canada. This disease is suddenly becoming very prevalent in Canada and the U.S.A. and causing some concern to beekeepers. At the moment, there is no recommended cure except requeening. Even this is not proving very successful. There are antifungal agents being developed, such as actidione but I don't know if these are being tested on bees or not.

Some of these scientists were also involved in developing a synthetic aromatic compound that is one of the attractant chemicals in pollen. This substance is octadeca-trans 2, cis-9, cis-12 trienoic acid. When this chemical or others that show similar powers of attractiveness, can be synthesized economically, they could be used to make present day pollen substitutes such as soybean flour, brewers' yeast, casein, dried egg yolk, etc., palatable to the bees. This would save the need to trap, and preserve natural pollen.

In N.Z. there are few, if any, areas where pollen can't be trapped, but in the orchard areas of California and Florida and the large single-crop areas of Utah and Nevada and parts of the Prairie Provinces, pollen bearing sources are generally limited or may have a debilitating effect on the bees.

At the University of Guelph in Ontario, the concept of feedlot beekeeping is being examined. This practice involves a beekeeper renting or buying some land and planting a crop(s) on it for the production of honey, trapped pollen, seed or timber. Professor Townsend has been importing, propagating and establishing numerous species of Black locust trees (**Robinia sp.**). These trees are being selected for suitability to local conditions (especially poor soil types), their ability to produce nectar, resistance to disease and insect vectors, and possible incidental use as a source of timber. Plantations of several varieties would be established so that the flowering periods overlapped thus giving continuous nectar and pollen production from early spring to late summer.

One commercial beekeeper in Ontaria has proved the worth of the idea despite some problems from drifting herbicides. 40 acres of sweet clover, with buckwheat as a nurse crop, supported 60 colonies. This field produced 200 lbs. per

colony of good white honey, sufficient feed for winter, plus 30 lbs./colony of buckwheat honey. The latter is a very dark, almost black honey packed as a specialty line. The beekeeper also harvested 350 bushels of buckwheat seed and an undisclosed amount of clover seed.

This idea is receiving attention from the department and interested beekeepers in this area, and in Canterbury. Sweet clover and a type of sage (**Vitex negundo**) are being tested under field conditions for honey production.

Professor Townsend is also interested in honey processing. He has recently found a method of blending honeys at moderate temperatures (38°C). using the "creamer" on a continuous flow pasteurising and cooling unit. The required percentages of two different honeys to meet a certain colour classification are calculated directly from the Pfund readings of the two honeys. The honeys can be blended uniformly by the creamer even if their water contents are different.

Townesend has also conducted trials on the darkening of honey through overheating and staining. Overheating occurred mainly in the cappings melters which were generally of the Brand type. Old dark brood combs definitely caused staining of the honey. It seems the darkening chemicals are water soluble and affect the honey as long as the moisture content is greater than 21 - 22%. "Unripe" nectar, of course, may average as much as 60% water so the best way to avoid this staining is to use only light coloured combs for honey production.

Following on from my thesis work a large programme on queen physiology is being initiated. Guelph has had students working on queen behaviour for many years but with the possibility of the African bee entering the States and affecting the source of queens and package bees, as well as an increasing interest in overwintering colonies for economic reasons, the need for understanding queen nutrition, physiology and reproduction is paramount.

If queens, most easily reared and mated in the late summer, could be kept through the winter with no loss in viability or fecundity, then considerable economic benefits would result. Beekeepers would have an assured supply of queens in the spring to replace winter losses, or colonies killed in the autumn, for 2-queen colonies, for package bees, or to increase number of colonies.

I kept queens in small plastic Foti cages for over 3½ months in an incubator without changing the attendants. As a test for physiological degradation I measured among other things the total protein and free amino acids in the haemolymph or blood. However, we also need to know what effect storage has on the ovaries or the level of queen substance possessed by these queens. Introduction of queens that have been overwintered outside the cluster often results in drone layers or in their supercedure.

A PhD student has recently completed an exhaustive study on factors affecting the survival and motility of sperm in the spermatheca of the queen. The day is not too far away when it will be economically feasible to store sperm from selected drone stock over the winter and artificially inseminate spring reared queens. Artificial insemination, of course, is an indispensible tool in the creation and establishment of breeding stock.

Dr Smith was engaged in establishing and testing a line of bees under Ontario conditions that had been selected for their preference to collect lucerne pollen. By continual inbreeding scientists have developed a line that collected 88% of its pollen from lucerne and one that collected only 0.1%. A normal commercial strain collected 26% lucerne pollen. Thus, the tendency to collect lucerne pollen is hereditable. Dadant & Sons have worked in close association with a Californian Seed Producers' group to investigate the commercial possibilities of these "tailor made" bees. I think in future bees will be specially bred for particular crops and vice versa. This project is also remarkable because for the first time divergent groups are working together for their mutual benefit, viz. a bee supply manufacturer, 8 seed companies, 20-30 commercial beekeepers and an equal number of seed growers.

Another interesting piece of economic research recently completed in Ontario was a two year marketing study requested by the beekeepers to provide them with a firm basis on which to make a request to the provincial government for a hive subsidy. Several interesting findings came out of the study: firstly in 1969 it was established that it cost beekeepers 13.16c/lb to produce their honey for a profit of 3.5c/lb. In 1970 it cost 17.20 c/lb at a profit of 1.5 c/lb. These figures don't include returns for wax or pollination fees. Average colony production in these years was 90 lbs and 69 lbs respectively.

Secondly, an estimate was put on the value of bees to the agriculture-horticulture industry. Of the crops requiring pollination in Ontario 63% could be attributed to honey bees. These crops had an estimated market value of $C34,456,000, so the value of the bee industry in this respect was $C21,704,000. In the U.S.A. the percentage of crops requiring pollination by honey bees is even higher being nearer 80%. $1 honey = $17 fruit and seed.

The research group at the University of Manitoba in Winnipeg, headed by Dr Cameron Jay, is mainly concerned with colony population studies. This has involved extensive research into the drifting behaviour of foraging bees and the best arrangement of colonies to offset it. Any convenient arrangement that faces entrances in different directions is recommended.

They have also carried out studies on colony growth and honey yields of package bees under local conditions. Canada annually imports 220,000 packages with queens usually in the 2 lb or 3 lb size. Research has shown that the larger packages produced more brood though differences were not usually significant after about 50 days of development. Maximum capped brood occurred at about 74 days of development and all sizes peaked at the same time. Package size also influenced the brood rearing efficiency and thus they usually caught up to the larger ones if hived at the same time.

In a good production year there was no significant difference between honey yields in small and large packages but in a poor season the larger units produced more honey. However, the larger packages swarmed more readily. Thus, it seems a 1½ - 2 lb package if hived early enough and fed adequately will be just as productive as a larger and more expensive unit.

Several scientists are combining their efforts on a project to try and identify and synthesize, the volatile chemicals produced by uncapped brood that acts as ovary inhibitors in worker bees. They see the possibility of using these chemicals in disposable styrofoam pollination units that have been tried in cranberry bags. Such units wouldn't need queens, the brood simulating compounds serving to keep a maximum number of bees in the field and stimulate them to gather pollen.

The research group at Beaverlodge in Alberta has been concerned largely with studies on wintering and queen evaluation particularly N.Z. and Californian Stocks. Packages can be produced economically in British Columbia from overwintered colonies but queen production is more difficult. Management practices employed by these beekeepers that we can copy include the provision of at least 80 lb of well ripened honey stores, continuous feeding of pollen supplement during the brood-rearing period (at least 3-4 lb per colony), large fertile queens and feedings of the antibiotic fumagillin to control nosema, plus stimulative spring feeding of syrup or honey even if there is a spring flow from willow or dandelion.

In the wintering studies the N.Z. stock didn't build up as quick in the spring as the California colonies. Over the 3 year testing programme our bees averaged 5½ 2 lb packages, the Californian bees 6½. The N.Z. bees also seemed more susceptible to disease particularly E.F.B. However, honey production from the two groups was not significantly different. Research at the moment is directed at evaluating hybrid stock (N.Z. queens and Californian drones). They are attempting to combine the gentleness of the N.Z. queens with the better wintering performance of the Californian stock. In the 1970-71 season hybrid bees produced 20 lbs of honey per colony more than the parent stocks.

This brief look at bee research in Canada is really just the pimple on the tip of the iceberg. Little mention has been made of what research is being done in the States or the U.K. or Europe. However, I'd like to mention briefly one piece of research work I saw at the University of Davis in California. There Dr Laidlaw was maintaining about 25 lines of mutant stock for genetic research. These mutants were identified mostly by eye colour in the drones viz. yellow-green, brown, tan, red, garnet, white (4 kinds), chartreuse, and even some eyeless ones. Other drones were hairless and one stock produced diminutive wings in the workers. These were being tested for possible use as pollinators. Their dance routines, capacity of their honey stomachs, ability to carry pollen loads, and their flight distances were also being examined. It seems they have a flight range of about 1 km from the hive compared with 3 km for normal bees, so with a limited flight range they would make ideal pollinators on large paddocks of seed crops or orchards.

I would like to talk with you for a lot longer on the research work being done in the field of apiculture and plant breeding — things I have seen or been associated with. Most of you probably think that work done by Agricultural Departments or Universities is too far removed from the economic realities of commercial beekeeping. This is generally not the case. Most of this work can be of some benefit to you even if it is only to extend your knowledge and appreciation of the complexity of the insect from which you make your living.

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Let's look now at what happened. As soon as the beekeepers got consignments of these frames they found they had something which looked and felt good, was easy to assemble with perhaps only one real drawback, it was slightly harder to wire. So, what di dthey do when faced with a better article? Sixteen at least rushed out and bought a nice, air-operated staple gun at a cost of about $200. Suddenly, there appeared to be surplus time available after nailing. So, rapidly applying Parkinson's Law, this time gap was filled with one more process, that of gluing. Gentlemen, I suggest the reason that you are now gluing frames is not for profit but pleasure — the pleasure of having bought a well fitting frame, the pleasure of using your new toy — the stapler — and the added pleasure of unnecessary gluing of a frame to improve it in a very, very small way to make it perfect.

Let's clearly understand that while I'm open to arguments, like a good politician when viewing the opposition, it will be very hard to convince me there are any increased profits in the gluing of these frames. Gentlemen, I repeat, in this and many other cases throughout the industry, it's pleasure, not profit, which fills your time, and personally I'm glad it is.

Before this seminar is over we are all going to see many ideas and many machines which could be transplanted into your work programmes or honey houses but remember the surgeon who wanted to perform a transplant operation for the sake of performing a transplant operation — he transplanted a hernia on himself from one side of his body to the other. This took skill, time, and above all "guts" but it didn't give him either pleasure or profit or increase his standing with other surgeons. So it will be with many ideas and gadgets you'll see during the coming three days. All of these ideas and machines will be right for the man who has thought them up or owns them, for indeed we all realise **nobody** would be performing an unnecessary operation. But, to transplant this into your work programme an unnecessary time without either increasing your pleasure or profit. So I will suggest now, at the start of the seminar, when thinking about new ideas or machines, that you ask yourself carefully, first, will it save me time and if it does save time, will that saved time give any increased profit or pleasure or will it be that you will apply Parkinson's Law where the job expands to fill the time normally allowed for it. As, for instance, when buying a staple gun to increase the speed of operations and using the saved time to glue the frame. These are very hard questions to answer truthfully. You may enjoy clipping your queens' wings and therefore, any arguments I can put forward to change you from this surplus operation would not be successful. But I know since

asking myself each time I attempt to do a job, "Why am I doing this? and so often receiving the reply" for nothing, as it's not giving either pleasure or profit. I've stopped this surplus operation, enjoyed life a little bit more and not really upset any work programmes I had. Therefore, I suggest that you approach each job you undertake in beekeeping with the question, "Is this a surplus operation?" If the answer is "yes", why not eliminate it? In the final analysis every job should satisfy the maxim "if it doesn't give you pleasure or profit, why do it?"

HONEY CROPS PROSPECTS IN NEW ZEALAND

Summaries of reports from Apiary Instructors on seasonal conditions and honey crop prospects as at mid-January to the Superintendent Beekeeping, Ministry of Agriculture and Fisheries, Wellington.

NORTHLAND

Warm temperatures and generally settled conditions commencing in the early spring and prevailing up until December, promoted excellent pasture growth and both Manuka and pasture sources have bloomed profusely. Rainfall over the spring months was adequate and queen rearing programmes generally ran smoothly. Pollen shortages were virtually non-existent.

During November heavy swarming was evident in several areas. With continual steady build up in colony strength this problem was soon remedied.

Cool unsettled climatic conditions prevailed throughout December and seriously curtailed flow from Pohutakawa. However, pleasing crops have been gathered in most areas from early Manuka, buttercup, cabbage tree, Lotus Major and clover sources.

Should the present warm settled weather conditions persist over the next few weeks, an above average overall crop can be expected. Some fears are held that due to the earliness of the season and the dry conditions at present, the pasture flows may cut out early. However, the situation could well be saved in the northern regions with flows from bush sources which have yet to flower.

AUCKLAND

The Auckland district experienced warm settled climatic conditions throughout the spring and early summer months.

Food reserves in early August were short in most hives and several cases of starvation were reported. This situation was remedied by early flows from Hangi-Hangi, Willow and Manuka and colonies quickly built up in strength until a serious swarming problem arose in early October.

Ample rainfall fell in October. November and December rainfall was below average and in early January pastures showed signs of dying off due to lack of rain.

Food flows of nectar were gathered from privet, buttercup and in isolated areas from barbery during November. Cool unsettled conditions prevailed throughout December and eliminated any chances of a crop from Pohutakawas.

Heavy flowering of Chinese privet and fennel is now evident. Honey gathered from these sources (as well as from pennyroyal — which has yet to flower) is of a poorer quality but will help to supplement winter stores. To date, crops have generally been average throughout the district.

HAMILTON

Bees were in good condition to take advantage of the early spring sources. Very few hives were lost through starvation. Loss by wasps was also well below average.

Heath, willows, five finger, all flowered and by the end of September it was not uncommon to find hives with a good supply of honey to spare.

Winds and rain from mid-October kept the bees confined to the hives, By the end of the month many hives had swarmed and were very low in bees.

November weather was very changeable with cool temperatures. Although not much rain fell, cold winds prevailed for most of the time; these conditions lasted into early December. Swarming continued and crops from buttercup and the barberry were most disappointing.

Weather during mid-December was fine and although wind strength on the average was a little strong, bees worked pasture sources and surplus honey was obtained from these.

Of the bush sources, Rewa Rewa showed no flower; Tawari flowering was a little below average and produced a small crop, while Kamahi showed good flower but produced below average. Both of these sources were cut short by the sudden change of cold winds, overcast skies and rain during the latter part of December.

January conditions have been reasonably good and bees have been working pastures which could produce good crops. Manuka is also showing up well. Should fine weather continue, the overall crop is expected to be about an average crop for this district.

TAURANGA

Bees emerged from the winter in good condition and although the early part of spring was unsettled with cloud, wind and rain, hive progress was good. The usual "settled" period of weather during October did not eventuate. The general condition of the bees by October-November was excellent. Early nectar sources flowered well except Rewa Rewa which was poor and little surplus honey was secured from this source.

Hives in Bay of Plenty areas, however, did exceptionally well. Apart from building up well, surplus honey was also secured. Some feeding was necessary in the Rotorua district, mainly because of cloudy and cool conditions. At the present time, clover is flowering abundantly with reasonably settled weather. Above average crops are forecast.

HASTINGS

With dry weather conditions during the spring and early build-up of bee strength, swarming was prevalent and much earlier than usual for this district.

Manuka and clover came into flower earlier than normal nd with bees working these sources feeding was reduced to a minimum being the lightest for many years.

Good rains fell in early December reviving pasture sources in most areas and bringing on a good blooming of clover. Because of further dry conditions, pastures have gone off quickly in central Hawkes Bay and rain is now needed.

Manuka and Kanuka yielded well and good crops have been gathered from these sources. The clover yield has been disappointing and much of the honey crop to date is mainly Manuka and mixed sources. Present indications are for an average crop for this district.

PALMERSTON NORTH

Winter conditions were the coldest for 40 years with numerous heavy frosts. Cold strong winds were experienced during the spring with the result that very little nectar was gathered from early sources.

Dry settled conditions prevailed during November and colonies built up strongly with very little supplement feeding being required. There was a good flow from Manuka, Kowhai and Kamahi with a light flow from clover.

Since the beginning of December, drought conditions have developed in the coastal areas of Manawatu and South Wairarapa. On heavier land, pasture conditions are better and on the higher country because of more rain, pastures are good.

With more rain and continued warm weather, an average crop could be produced with ample feed honey being secured from Manuka.

HAWERA

Due to unsettled weather conditions for the last month with wind, cool nights and very little rain, the prospects for a good season appear to be rather remote. The coastal belt has dried out considerably and apiaries

situated there will suffer accordingly.

However, inland field flowers are in abundance and beekeepers in this area should with favourable weather, harvest a reasonable crop. Bush apiaries in most areas are flourishing and as yet apiaries situated in the high country have to experience a flow, this being later as a rule than the rest of the district.

NELSON

Generally the district experienced a cold dry winter with heavy frosts. The spring months were overcast with cold winds, with lower temperatures and cold nights.

Rainfall in Nelson areas has been adequate, although overcast conditions have not been suitable for nectar secretion. White clover, pasture sources and manuka flowered well and an average crop can be expected.

MARLBOROUGH

Severe conditions prevailed in Marlborough. The crop in this district is expected to be very light, possibly a crop failure.

The West Coast experienced a very wet November and December. Bees could not take advantage of the Kamahi and sugar feeding was necessary.

With improved weather conditions and indications of a good flowering of Rata an average crop could be harvested on the West Coast.

The season is late and extracting is only just beginning. With the drought in Marlborough, the overall crop for the district is expected to be below average.

CHRISTCHURCH

The winter of 1972 was the coldest, while being the sunniest for many years, which enabled the hives to winter well.

A feature of September and October was the return of the persistent northwesterly winds, making the spring warmer and wetter than usual. October and November continued with warm winds from the north, while in December when these were needed, the weather turned cool, sunny and dry with chiefly south westerlies. Overall, there has been more rainfall than in 1971, but still with nearly 100 mm below the average for the area.

When viewed through the eyes of a beekeeper, the spring of the 1972/73 season has been one of frustration, with poor queen mating followed by adverse weather for honey collection.

Even to the last week in December, the countryside appeared such as to look forward to an above average crop, but two days of high temperatures and north west winds in early January burnt the clovers off without the bees having much chance to gather a surplus. At present (early January) the best one can hope for is an average crop.

OAMARU

Colonies generally came through the winter in good order. Winter rains got pasture growth away to an early start and there was sufficient rain to maintain growth until early December. Most early nectar sources, particularly willow, brassicas and native fuchsia, yielded well and pollen was abundant. By the end of November white clover was flowering profusely over the whole district, colonies were strong and a very heavy crop seemed assured.

This situation quickly changed in December as persistent cold windy conditions restricted bee activity and dried out pastures. Early January has been dry and warm and drought conditions prevail in most parts of the district. Very little honey has been gathered and prospects are for a crop well below average.

GORE

Spring pasture growth was abundant as a result of wet winter and relatively mild spring. However, early summer weather was mainly windy, at times strong, generally cool and wet, especially in coastal areas. This restricted bee activity also helped dry out pastures in inland areas.

Early nectar sources yielded fairly well and white clover, although somewhat late, especially in coastal areas, is generally flowering well.

Bees peake dearly but declined severely due to windy weather; now doing reasonably well in coastal areas but lack strength in some inland areas.

Executive Meeting at
CHRISTCHURCH IN DECEMBER

A meeting of the Executive was held in the Library of the Department of Agriculture, Christchurch, at 9 a.m. on Tuesday, 5 December, 1972, those present were I. J. Dickinson, President (in the Chair); Messrs J. Bray, M. Cloake, M. Haines, B. Penrose and E. Whalley; E. R. Neal (Association Secretary was in attendance).

"N.Z. BEEKEEPER" JOURNAL

On the motion of Mr Cloake, seconded Mr Penrose, it was **resolved** that the Editor of the Journal bring down a report on the Journal with particular reference to the cutting of costs in respect of the usuing of two colours, the quality of the paper, the format, and any other relevant information.

CARRIAGE OF BEES BY AIR

The Secretary reported on a conversation with an officer of N.A.C.

On the motion of Mr Haines, seconded Mr Whalley, it was **resolved** that the Secretary write to N.A.C. saying that the N.B.A. had approved the 'White' type of wooden cage and the 'Haines' type of plastic cage for carriage of queens by air and that Mr Haines undertake to supply the necessary photographs re the bundling of cages.

Mr Haines reported on packaged bees and said that one of the dangers was of sharp projections which could damage the packages, also stray bees which were attracted to the packaged bee. He wondered whether there was a repellant which could solve the second problem.

On the motion of Mr Haines, seconded Mr Bray, it was **resolved** that the Secretary write to N.A.C. that Mr Haines is still investigating the question of packaged bees.

NOXIOUS WEEDS

Mr Cloake reported that he was dealing with this matter at branch level and that he would report back to the next meeting.

METRIC MEASUREMENT

On the motion of Mr Penrose, seconded Mr Dickinson, it was **resolved** that correspondence be entered into with the H.M.A. and the N.B.A.

SUBSCRIPTIONS

Mr Penrose moved that the motion regarding subscriptions previously lying on the table be uplifted. On the motion of Mr Cloake, seconded Mr Haines, it was **resolved** that Executive prepare a notice of motion for presentation at the 1973 Annual General Meeting that all subscriptions be subject to a surcharge of $2.00 per annum throughout the whole scale, effective as soon as possible under the Rules.

Mr Cloake moved that the motion on the Journal previously laid on the table be uplifted. On the motion of Mr Bray, seconded Mr Haines, it was **resolved** that the Journal be charged to all members at $1.00 and to non-members at $2.00 with effect for non-members when renewals came up and for members from May 1973 onwards.

LIAISON WITH PACKERS

The President reported on correspondence he had received from the New Zealand Honey Packers' Association. Mr Whalley moved and Mr Bray seconded a motion that the N.B.A. accept the invitation to send a representative to the N.B.A./Packers talks on 7 December 1972. Mr Penrose moved and Mr Haines seconded an amendment that the word 'representatives' (plural) be submitted for the word 'representative' (singular) and that the pronoun 'a' be deleted. Upon the amendment being put, it was carried and the substantive motion became that the N.B.A. accept the invitation to send representatives to the N.B.A./Packers alks on 7 December 1972. This when put was carried.

On the motion of Mr Dickinson, seconded Mr Cloake, it was **resolved** that the representatives be the Vice-President plus Mr Bray plus Mr Haines. On the motion of Mr Penrose, seconded Mr Whalley, it was **resolved** that the action of the President and Mr Bray at the preliminary Timaru discussions with some of the Executive of the New Zealand Honey Packers' Association, with particular reference to the formation of a Packers Sub-Committee within the N.B.A. be recorded and further that this concept be approved in principle with the Executive of the N.B.A. nominating one of their number to be the Packers' Association nominee.

SEMINAR

Mr Cloake reported on the Seminar held on the 14, 15 and 16 September 1972. He said that the reason the Seminar proceedings had not been published was published was because of the serious financial state of the Association. The Seminar Sub-Committee felt that steps should not be taken to publish until after the Executive meeting of 5 December 1972, because it might be necessary to call on the profits of the Seminar. He said that there was approximately $200.00 in hand and there were several ways in which to publish the papers. He enumerated these.

Mr Penrose moved that the Executive congratulate the Seminar Sub-Committee for the prudent handling of the finances and suggested that the Sub-Committee prepare papers for distribution under the plan costing $60.00. This motion **lapsed** for want of a seconder.

On the motion of Mr Whalley, seconded Mr Penrose, it was **resolved** that the recording of the Seminar talks be in subsequent issues of the Beekeeper Journal.

On the motion of Mr Dickinson, seconded Mr Bray, it was **resolved** that the Executive record their thanks in appreciation of the work carried out by the Seminar Sub-Committee.

PROPOSED ALTERNATIVE MARKETING SCHEME

The President tabled a letter he had received from Mr Lee of the Department of Agriculture containing suggestions in regard to ascertaining the industry's feeling on the scheme.

On the motion of Mr Bray, seconded Mr Cloake, it was **resolved** that the matter be deferred until the March meeting of Executive on the grounds of

(1) the financial state of the N.B.A. and (2) that the time was not opportune owing to the present good payout from the H.M.A.

RULES

The Secretary reported that he had delayed having the change of Rules implemented on the grounds of cost.

On the motion of Mr Whalley, seconded Mr Haines, it was **resolved** that the registration of the Rules be implemented forthwith.

RETAIL PRICES

The President wondered whether Executive were considering recommending higher retail prices. Mr Bray mentioned that the H.M.A. had had to reduce their suggested prices under the Stabilisation Regulations.

LIBRARY COMMITTEE

Mr Cloake explained that Mr Bartrum had been a member of the Library Committee but was no longer on the Executive.

On the motion of Mr Bray, seconded Mr Penrose, it was **resolved** that Mr M. Cloake be appointed a member of the Library Committee.

NEXT MEETING

On the motion of Mr Penrose, seconded Mr Haines, it was **resolved** that the next Executive meeting be held in March 1973 in Wellington immediately following the Waikato field day and that a large motel be utilized to accommodate Executive members rather than a hotel.

CRISIS IN THE INDUSTRY

Letter from the Chairman, National Beekeepers Association (Mr I. Dickinson) to the Chairman, Honey Marketing Authority (Mr Poole)

Dear Mr Poole

As you are aware, the National Beekeepers' Association has recently been going through a period of financial crisis and the calling up of Branch funds and donations from members has in the immediate future averted the winding up of the Association.

My Executive are determined that this Association should stay a fully effective organisation representing all sections of the industry and to do this are seeking the support of you and your members on the Authority in approving changes to the regulations in relation to the funds to the National Beekeepers' Association through the proposed industry fund account as accepted by and passed at the last Conference.

For this Association to be fully effective and to be free of any possibility of control or direction implied or otherwise, it is imperative that the funds from the industry fund be divorced completely from the control of the Honey Marketing Authority as at present and be at the discretion of the Minister of Agriculture and Fisheries. On the 19th December I as President of the Association along with Mr Neal, the Secretary, called on the Minister and stated our position as it is and also what we desired in regard to an effective way to finance the industry. The Minister indicated that as the H.M.A. would not have the control of the funds for the National Beekeepers' Association, their opinion would be asked for before a decision to amend the regulations was made. I am sure that you agree that it is a matter of great urgency that these regulations be amended at the earliest date, especially those changes that extend the levy to cover all honey.

The Association has proposed to the Minister that funds for the N.B.A. be at his discretion and that they would be approved after the perusal of past balance sheets and budget accounts. Also that subscriptions to the N.B.A. be an authorised deduction from the proposed production levy. The Executive feel that a rate of so much per hundred hives could be struck to cover the needs of the Association and a member would pay his subscription to the N.B.A. Secretary direct and he would then be issued with two receipts, one for his own records and proof of membership and the other would accompany his declaration and return to the H.M.A. in payment of the production levy. The amount paid to the N.B.A. would be an approved deduction from the amount he had to pay to the H.M.A.

By keeping our subscription based on hives, our present voting procedures still standard the beekeeper operating under 30 hives will still pay his subscription to the N.B.A. in the normal way as at present. It is understood that the Minister has indicated that the beekeeper operating under 30 hives, should not have to pay the levy, but it is our opinion that 20 hives would be a better level in view of the fact that a considerable return can be made on 30 hives and that there are quite a number of beekeepers in this bracket who are in total placing a considerable amount of honey on the local market.

The simplicity of this scheme is its main strength and would mean that every subscriber to the industry fund would probably become a member of the N.B.A., because it would in fact cost him nothing additional in the way of a subscription. This situation would surely be one worth striving for, as it would give unity to our industry.

Should you or your members require any clarification on any points, we would be only too pleased to do so to enable this matter to proceed as quickly as possible.

Yours faithfully,
NATIONAL BEEKEEPERS' ASSOCIATION OF N.Z. (INC.)
I. DICKINSON, President

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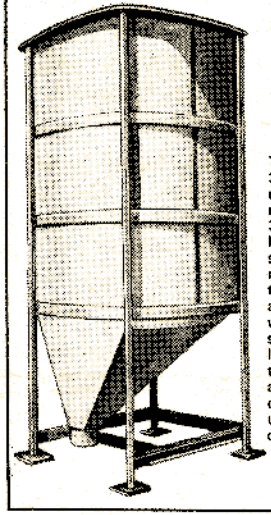
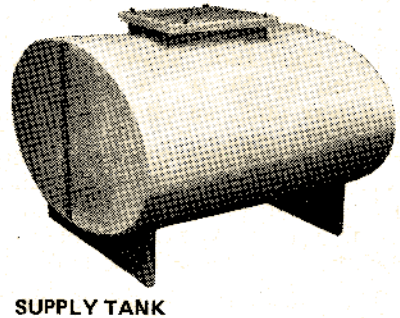


SILO STORAGE TANK

for bulk supply honey

This tank can hold 3 tons of honey, measures approximately 8' deep x 3' x 3', and can have a built in sight gauge or be made completely **translucent.** It can also be supplied with or without a stand in a high or low position, so that if necessary a 44 gallon drum can be placed underneath the outlet.



SUPPLY TANK

This of 200 gallons capacity and is suitable for the water/sugar mixture used for bee feeding. It is also ideal for crop spraying etc. This tank can also have a built in sight gauge or be completely **translucent.** It has a detachable hatch and can be supplied with or without a stand.

Fibreglass containers are stain and acid resistant and can be used for all types of chemical or food storage. Cast-in colours make for easy visual identification and promote safety. Fibreglass containers can also be adapted to any installation or designed as both storage tanks and dispensers. These containers are available in standard shapes and sizes, but can also be custom made to suit your particular requirements. These fibreglass units meet with Dept. of Agriculture approval.

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IMPROVED DEVICE FOR PRESERVING HIVE PARTS

By V. A. Cook, Apiary Instructor, Dept. Agriculture, Oamaru

S. Line (1964) described a method, devised by Mr R. Berry of Havelock North, of preserving hive parts with paraffin wax. This method entails pushing the hive parts through a tank of wax heated by a wood fire. Guide rails ensure that the equipment being treated becomes completely submerged in the wax.

In addition to its value as a means of preserving hive parts, hot wax treatment can be used to sterilise equipment salvaged from diseased colonies after the combs and bees have been destroyed.

The illustration shows an improved version of Mr Berry's device designed by Mr F. A. Bartrum of Pleasant Point. It comprises a large wax tank, an oil fired heating unit and a draining tray.

The heating unit consists of three burners from an oil burning, drip feed, down-draught boiler, which are located at the front of the wax tank. Heat generated in the burners passes through the lower part of the wax tank by way of fourteen 2" boiler tubes into a smoke chamber at the back of the tank.

The smoke box is detachable to give access to the boiler tubes.

A 12ft high, 6" diameter rolled steel chimney is mounted over the smoke chamber.

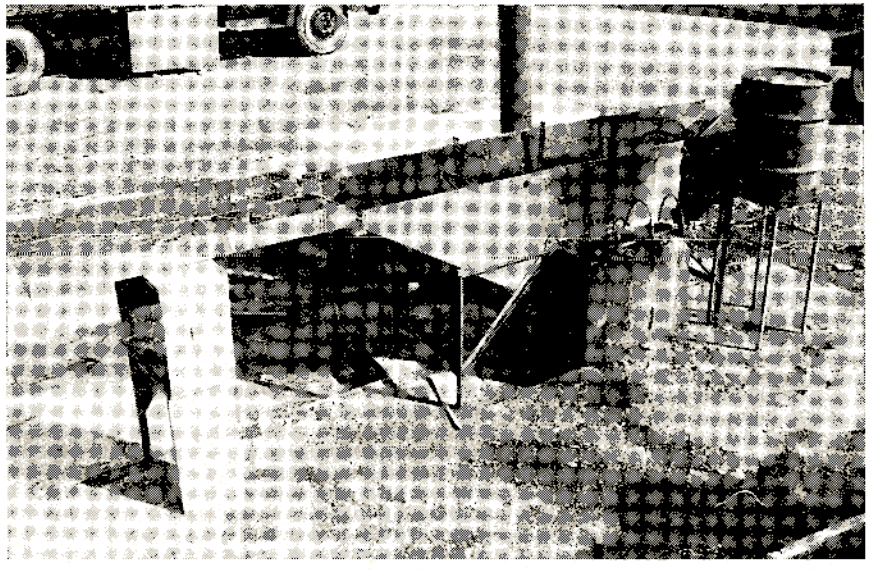
Two $\frac{3}{8}$" iron guide rails guide equipment being treated over the heating tubes. Further guide rails in the upper part of the wax tank can be adjusted to allow treatment of $\frac{1}{2}$ depth supers, bottom boards, lids, $\frac{3}{4}$ depth and full depth supers.

The fuel used is home heating oil. The rate of flow into the burners is controlled by needle valves.

Paraffin wax is procurable from petroleum companies.

The procedure for lighting the heating unit is as follows. The chimney is removed and a sheet of newspaper, soaked in heating oil is inserted in the smoke box and lit. The chimney is quickly replaced. The resulting draught up the chimney draws air down through the burners. A piece of burning newspaper is immediately placed in each burner and the fuel supply is turned on.

The boiling point of paraffin wax is about 680°F. At about 316°F white vapour comes off the surface and this temperature is suitable for both preservation and sterilisation purposes.



Oil fired device for sterilising and preserving gear salvaged from diseased hives. Designed by Fred Bartrum of Pleasant Point.

Ten minutes immersion at this temperature is sufficient to sterilise equipment taken from B.L. infected hives after the bees and combs have been destroyed.

For preservation purposes equipment is immersed for about two minutes.

Operating costs are influenced by many factors such as the wax temperature, atmospheric temperature, labour costs and the rate at which equipment is passed through the wax. Assuming an operating rate of 25 supers an hour and a labour cost based on a wage paid to a fully qualified assistant, the cost of treating one full depth super is about 6 cents.

Treated supers have very little wax on their exterior surfaces which can be painted to improve their appearance. Some beekeepers apply paint with a brush while the boxes are still hot.

Copies of plans and specifications of this device are available from local Apiary Instructors.

Acknowledgement — Mr Bartrum has generously made available full details of the appliance described in this article, for the benefit of any beekeeper who wishes to build one.

REFERENCE

LINE, S. (1964) Method of preserving hive boxes with paraffin wax N.Z. J. of Agric. 109: 329-331

Beekeepers' Technical Library

The library has received the following donations of books and pamphlets. To the donors, we express our sincere thanks.

Presented by Miss Sally McArthur of Brentwood Bay, British Columbia, Canada —

HERE COME THE BEES *by Alice E. Goudey,* 1967, 96 pages. A simple explanation of the complex life of the bees.

LIFE OF THE HONEY BEE *by W. Sinclair,* 1969, 52 pages. A Ladybird Natural History Book suitable for children.

Presented by Wheeler's Bookshop, Remuera.

BEEKEEPING TECHNIQUES *by A. S. C. Deans,* 1963, 172 pages with illustrations, tables and graphs.

DICTIONARY OF BEEKEEPING TERMS — Vol. 3, English, French, German, Czech, Polish, Russian with Latin Index. Edited by *E. E. Crane, M.Sc., Ph.D.*

Presented by Mr Dudley Lorimer of Hamilton.

AUSTRALASIAN BEE MANUAL. Third Edition by *Isaac Hopkins,* 1886. A valuable book.

Presented by Mr Reginald Gilberthorpe of Hornby.

BEES AND HONEY by *G. A. Carter,* 1946, 114 pages.

THE APIARY by *Alfred Neighbour,* 1878, 365 pages.

HIVE AND THE HONEYBEE, edited by *Roy A. Grout,* 1946, 660 pages.

Presented by Grahame M. Walton, Apicultural Advisory Officer, Palmerston North.

THE ECONOMICS OF THE SINGLE QUEEN AND TWO-QUEEN SYSTEMS OF COLONY MANAGEMENT by *G. M. Walton,* 1972, 32 pages, two copies.

Presented by Mr Murray Reid, Apicultural Advisory Officer, Christchurch — Booklets.

Beekeeping in Illinois by *Albert R. Jaycock.*

Caring for bees in Schools by *M. V. Smith.*

Fruit Pollination by *M. V. Smith.*

Classifying and Grading of Honey by *G. F. Townsend* and *P. W. Burke.*

The Pollination of Fruit Trees by *J. B. Free.*

And a large assortment of leaflets and reprints on various subjects related to Bees and Honey.

Catalogue of books and list of rules available free on request.

Books may be borrowed by members by sending loan fee of 20c which includes postage.

Beekeepers Technical Library,
Chris Dawson, Librarian,
P.O. Box 423 Timaru, South Canterbury.

CADETSHIP IN BEEKEEPING

By Ivan Dickinson, Cadetship Co-ordinator

The National Beekeepers Association, in conjunction with the Federated Farmers Cadet Schemes, have a Cadetship in Beekeeping available to young lads wishing to take up beekeeping as a career. Applications in the first instance are made to the Cadetship Co-ordinator care of the General Secretary. Beekeepers wishing to take a cadet are also asked to register there name with the co-ordinator.

After receiving an application from a lad wishing to become a cadet the co-ordinator advises him where he can be placed and which Farm Cadet Scheme he will be under the control of. Whatever scheme he does join from there on he is completely bound by the rules and constitution of that scheme, the only difference is that he does his cadetship with a beekeeper and not a farmer. The beekeeper who takes the cadet is also bound by the same rules of the scheme. While a beekeeping cadet is in a Farm Cadet Scheme the appropriate scheme will have another beekeeper as an advisory member to their board of management to assist where necessary. Wages, conditions of employment etc. will be in accordance with those operating with the scheme that the cadet joins.

Where there is no known places where cadets can be placed notice to the effect that a lad is seeking a position to take a cadetship will be placed in the New Zealand Beekeeper, and beekeepers will be asked to make application to take the cadet.

The purpose of the cadetship is to provide a basis for young people coming into the industry to gain a full and as comprehensive knowledge of beekeeping as possible in the three year term of the cadetship. While the cadet is under training and during the three years he will undertake study to enable him to pass up to the intermediate stage of the Diploma in Apiculture at which he will receive a Certificate in Beekeeping. This will serve as his own personal record of attainment in beekeeping and as a valuable reference in applying for positions with beekeepers in his future career.

The Cadetship Co-ordinator is seeking applications from Beekeepers to sponsor a lad wishing to take a cadetship. He is 17 years of age and has recently sat and passed five subjects in the University entrance examinations. He owns nine hives and has operated them for some time as a hobby. Very keen and eager to take up beekeeping as a career.

APIARY INSTRUCTORS

Ministry of Agriculture and Fisheries

The Ministry of Agriculture and Fisheries has vacancies for Apiary Instructors at various locations throughout New Zealand. Duties include inspection of apiaries for disease and giving instruction to beekeepers by publication of written articles and by giving addresses and demonstrations on general aspects of the industry.

Qualifications required are sound practical experience and knowledge of all aspects of commercial beekeeping, including the life history and habits of bees, bee diseases and methods of treatment, queen rearing and honey crop harvesting.

A salary of up to $4467 p.a. is payable depending upon qualifications and experience. Further advancement beyond this rate is available on merit.

Some assistance may be available to married men required to move their household to take up appointment.

Applications should be made on Form PS 17a (obtainable from all Post Offices) and forwarded to:— **The Director,**

Advisory Services Division, Ministry of Agriculture and Fisheries,

P.O. Box 2298, Wellington.

BRANCH NOTES

WESTLAND

Bees have made a good recovery after the torrid treatment they received by the weather in the spring and right up to Christmas.

Losses in some cases were as high as 20% of hives, with a lot of the surviving hives left weak.

There can be no doubt that those who were able to feed liberally or were fortunate enough to have ample stores on the hives will reap the benefit now. The climatic conditions since Christmas couldn't have been better for the industry with the fine warm weather and the odd day or night's light rain interspersed.

Kamahi flowered prolifically and clover is now flowering abundantly and the bees are working it, even on the heavy country, which is unusual in this area.

In this part of the province you couldn't say this was a rata year although there is more than the odd tree in flower. Reports from both north and south of here indicate that they have had more rata bloom than we have had.

Some beekeepers have their first crop in and away while others are in the process.

Samples of honey are surprisingly mild in view of the heavy flowering of kamahi.

The Kumara Racecourse is an ideal place for a Field Day with ample room under cover if the weather turns hostile. A fair number of Coast and Canterbury beekeepers gathered there again on November 4th to enjoy a day of discussion and demonstration of gadgets.

Means of handling 44gal drums came in for considerable discussion, also a method of injecting starter effectively without taking too much time. Glasson Bros. seemed to have the simplest and most effective barrow but no one seemed to have the "best" idea for injecting starter without taking up valuable time or expensive machinery.

The drums could be a great time-saver when packing leaving a substantial amount of honey and the scum in the tanks each time until the last packing. If the starter has to be stirred into the tanks as well as having to skim the tank each time there is also the time taken stirring. Would putting a dollop of starter into a drum and filling the drum be effective?

A question was asked: "Why cannot a drum be supplied with a side bung as close as possible to one end?" This would mean stands would not need to be so high or have so much overhang. Drums could be rolled under, filled and rolled away with no need for barrows. The rolling would help mix in the starter. When melted down for blending the drums could be easily drained. Also, loading and unloading would be easier.

It would be a gamble to estimate the crop prospects. If the weather continues to be kind I would expect the crop to be better than average.

— Reported by Peter Lucas

HAWKES BAY

On November 18th 1972, a very pleasant and interesting Field Day was held at Mount St Mary's Mission Station, Greenmeadows.

The afternoon was opened by Brother McGowan outlining a brief history of the Mission Station, and this was followed by a series of talks and practical demonstrations. Guest Speaker for the afternoon was Graham Walton, Agricultural Advisory Officer, Palmerston North, discussing "The Economics of Beekeeping."

Afternoon tea was served by the Students and members were then conducted on a tour of the Honey House, and the Library, (one of the largest private collections in N.Z.) the beautiful hillside gardens. The afternoon was brought to a close by a conducted tour of the well known Mission Winery and Cellars.

Members met recently to make a presentation to Mrs Gwen Doward, our onetime secretary and president; for her untiring efforts for the branch over many years.

The President, Mr W. Watts, on behalf of members, wished Paul Marshall success in his new venture. Paul has gone into the Beekeeping business, and now owns "Honey House," formerly operated by Walter Watts.

Our congratulations go to Bill Ashcroft, Mayor of Havelock North and a longtime member of this branch, for being mentioned in the New Years Honours.

F. D. Maultsaid (Mrs. L. H.)
Scribe to the Branch. H. B.

NORTHLAND

Manuka and buttercup have yielded an average crop but the clover seems above average and good in colour. We have been fortunate in the middle north with rain every week to keep pastures growing well.

The pennyroyal is starting to dome in at the right time to give plenty of stores for the winter and possibly a late crop.

This Branch held a very successful Field Day in November when the Apiary Instructor, Brian Milne, gave an interesting talk on general methods of Beekeeping for novices and not so novices.

Our thanks go to Terry Gavin for letting us use his honey house for the Field Day. I know just how much work it must make for him cleaning up after these Field Days.

Mr Harold Holdaway, who will be remembered by many of the older beekeepers, has been a patient in hospital recently. We wish him a speedy recovery and look forward to seeing him amongst us soon.

The location of our April Field Day has not yet been decided but members will be notified in plenty of time.

—Reported by Arthur Tucker

WAIKATO

Little honey has come from our bush sources this season. With the cold and cloudy weather right up to Christmas the only honey we have had by then is from buttercup.

However, at the time of writing we are getting clover honey and a late flow is on which could continue into February provided the heat continues also.

The effects of intensive grazing in this area are now showing in the effects on beekeeping this season. In some parts it is hard to find a paddock of clover flower and the resulting crop is patch to poor.

Our Field Day is at the Opal Springs, Matamata on 10th March.

— Reported by Norman Tuck

OVERSEAS JOURNALS

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Attractive 3- 4 bedroom house on adjacent section, available if required. Good secondary school close by.

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Commencing salary payable up to $4000 per annum.

The position entails managing and developing Lake Te Anau Apiaries. No packing or extracting involved.

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Two Frame Honey Extractor
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302 North Road, Christchurch

Advertiser interested in buying up to 500 hives for 1973-74 season.

Please write to —

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RD5, Taihape

The National Beekeepers' Association

(For the advancement of the Beekeeping Industry in New Zealand)

'Better Beekeeping—Better Marketing'

SUBSCRIPTIONS

0 to 20 hives	$2.00		1001 to 1100 hives	$22.00
21 to 200 hives	$4.00		1101 to 1200 hives	$24.00
201 to 300 hives	$6.00		1201 to 1300 hives	$26.00
301 to 400 hives	$8.00		1301 to 1400 hives	$28.00
401 to 500 hives	$10.00		1401 to 1500 hives	$30.00
501 to 600 hives	$12.00		1501 to 1600 hives	$32.00
601 to 700 hives	$14.00		1601 to 1700 hives	$34.00
701 to 800 hives	$16.00		1701 to 1800 hives	$36.00
801 to 900 hives	$18.00		1801 to 1900 hives	$38.00
901 to 1000 hives	$20.00		1901 to 2000 hives	$40.00

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All financial members of the Association are automatically indemnified against Public Risk claims up to $10,000 in any occurrence of injury or death to persons or livestock directly attributable to the action of the members' bees and arising from his or her negligence as the beekeeper. The cover is underwritten by the New Zealand Insurance Company Ltd and the premium met by the Association from consolidated funds.

THE N.Z. BEEKEEPER

This Journal is issued to all members of the National Beekeepers' Association and direct subscribers.

Literary contributions and advertisements must be in the hands of the Editor, Mr N. S. Stanton, P.O. Box 4106, Auckland, not later than the **25th of the month preceding publication.**

Nome-de-plume letters must be signed by the writer and address given, not necessarily for publication, but as proof of good faith. Letters accepted for publication do not necessarily express the views of the Editor.

ADVERTISEMENT RATES

Quarter Page	$5.00	Per Inch	$1.50
Half Page	$9.00	Min. Charge for each insertion	75c.
Full Page	$16.50		

FRONT PAGE STORY

BLACK LOCUST BLOSSOM

The Black Locust tree (**Robinia pseudoacacia**) has received publicity as a honey source following its establishment as a major honey plant in Hungary and Rumania.

At the beekeeping seminar held at Timaru in September 1971 Mr C. E. Dawson, NBA Librarian, presented a young black locust tree to the Mayoress of Timaru, Mrs Hervey. Everyone attending the seminar also received a young black locust tree and reports from some of the recipients indicate that the trees are thriving.

The trees will not flower for several years and some beekeepers have asked for information about the flowers and the time of flowering.

The black locust tree is native of the U.S.A. where it is said to be planted extensively for erosion control on worn-out land. It is widely distributed in New Zealand but not common.

A few established specimens have been located in North Otago and South Canterbury, the largest being about 50 feet high. They flower in November when the profusion of white and pinkish-white blossom makes them strikingly beautiful. The picture shows blossom on a tree at Geraldine.

The flowers attract honey bees, and the honey is reputedly white and delicately flavoured.

Photo: V. A. Cook

BOUGHTWOOD PRINTING HOUSE, North Shore