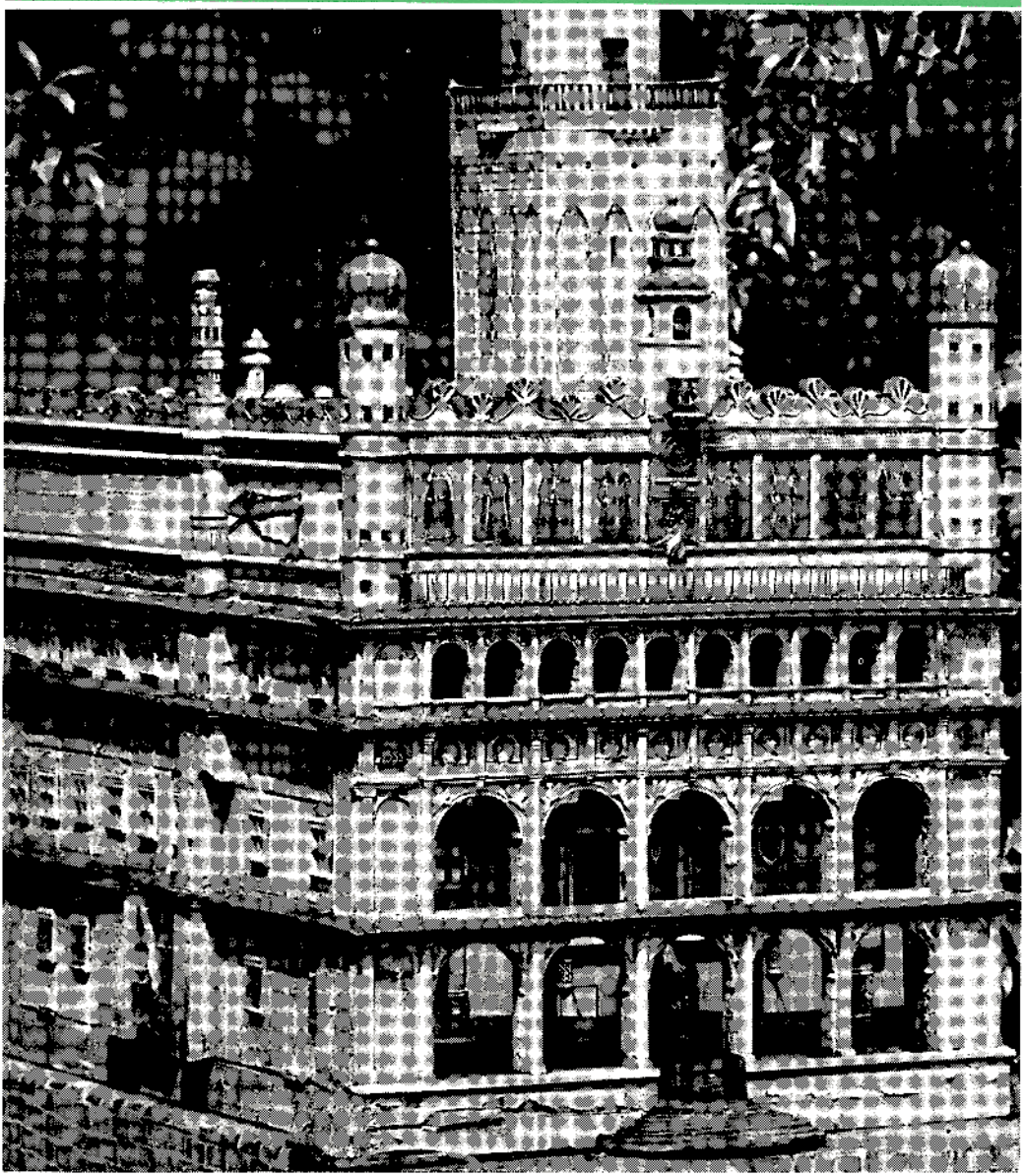
THE NEW ZEALAND BEEKEEPER

November 1972



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Editor: Norman S. Stanton

NOVEMBER, 1972

CONTENTS

New Industry Appointments

Election Results for Producer Representatives to the Honey Marketing Authority are clear-cut and conclusive.

Newly elected members Forsyth and Poole can undertake their onerous task with the knowledge that they have the overwhelming support of the majority of the industry, and no persons democratically elected to office can ask for more.

Similarly, the defeated aspirants to the Board of the H.M.A. must surely realise that their oft-expounded views and policies do not have popular support or favour with the electorate. On this occasion there was no postal strike or other industrial disturbance to cast doubt on the election results, and the voting figures cannot be disputed.

There will undoubtedly be changes in the modus operandi of the Board's policies in the immediate future, some of which will have far-reaching effects, and the industry will profit from many of the recommendations made by the independent Caucus Committee.

In some instances personal opinions will of necessity have to be subjugated to the will of the unseen majority, to the benefit of the industry and not the individual. Greater application must be given to the example set by the hives from which the industry gains its daily bread than from selfish and individual gain.

Exhortations, criticisms, and beseechments have been made to the industry by this writer for a stormy period of almost ten years, but as with all decades, time has run its course.

Other business commitments preclude the possibility of continuing to edit this Journal, and a newcomer with wide journalistic experience has been appointed by Executive to occupy the Editorial chair.

It is my pleasure to commend to you my successor, Mr Norman S. Stanton, a working journalist and resident of Auckland, to whom all editorial matter should now be addressed at P.O. Box 4106.

Please support him with your willing co-operation in supplying branch and industry notes well in advance of publication time, for without industry news and views the Journal cannot serve its proper purpose.

To the many friendships founded during my occupancy of the chair, I give my thankful greetings. To those with whom the pen and tongue were crossed, may there be no hard feelings, and the hope that both sides learned something from the others' point of view.

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AT THIS POINT your new Editor takes up his pen (typewriter) to give as much help and service to the industry as possible. He confesses to being a second-generation would-be beekeeper hobbyist who never quite acquired the exprimental hives he would have liked to. As the former editor of "N.Z. Woman" and present editor of "TV Annual" and a number of other booklets he brings a wealth of practical editorial experience. This experience also includes a first-hand knowledge of practically every corner of New Zealand acquired with a great deal of travelling over a long period. If there are criticisms of the content of your magazine or the industry at large, please do not hesitate to write. A considerable degree of licence will operate in the publication of letters so long as they are not personal, vindictive or libellous.

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AN ARTICLE ENTITLED "African Bees . . . the Present Situation in Paraguay" as published in "The American Bee Journal" September 1972 has some interesting information to add to the great deal of literature being published about African or Africanised bees as P. A. Boggino, the author of the article prefers to call them. He says that the aggressiveness of these bees was an important factor which discouraged people from dedicating their lives to beekeeping. Hundreds and thousands of domestic animals — hens, dogs, parrots, rabbits and even cows and horses — were killed in a period of five years.

Conscious of the importance of apiculture for Paraguay, the government has hired a Japanese specialist, Tomio Takeshita, to promote the industry. Under his direction a National Course on Apiculture has been completed — the first one ever. From this course 67 people graduated with the title of Practical Apiarist.

We cannot deny that Africanised bees have certain important values, if used correctly, which can compensate somewhat for their negative influence. For example, the queens of a Pacific species (Italian, Caucasian and Carniolan), when fertilised by African drones, give in their first offspring, a bee that is extremely good: tame, prolific, without tendencies to swarm, and very industrious.

There are, therefore, beekeepers who recommend the Africans as a sort of "Superbee" because of their productive qualities. But I do not believe in their all-round superiority over the Italians, for example. One would have to dress like an astronaut to do important tasks around the hive; besides, there is the constant danger to domestic animals or passers-by. I ask you, wouldn't it be more reasonable and pleasant to have 30 colonies of timid bees, which gave the same amount of honey as 20 colonies of aggressive bees?

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THE BRITISH BEE JOURNAL of July 8, 1972 reports: Dr Michener, Professor of Entomology, Kansas, following a visit to South America to investigate the spread of the South African Bee (Adasonii) from the 26 swarms which escaped from Sao Paulo in 1956, reports that they have now almost completely replaced the native honey bee in Brazil and are well established in Urugauy, Paraguay, Bolivia, Argentine and parts of Peru. They are spreading slowly south and rapidly north. "They spread 200 miles a year and could well be in U.S.A. Southern States in 10 to 15 years," he said.

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QUALITY, PACKING, CLEANLINESS. It seems strange that in the 1970s a beekeeping magazine (The Scottish Bee Journal, September 1972) should be devoting space to the latter in relation to honey. During the last few weeks we have seen honey extracted and bottled under all sorts of conditions. Because beekeping in this country is mainly a hobbyist pursuit, few beekeepers have properly equipped and fitted extracting rooms. Most extracting is done in the domestic kitchen. Nevertheless most beekeepers contrive to maintain the highest standards of cleanliness in relation to their honey. Sometimes they even succeed in this in their garden shed.

Others are not so heedful of even the basics of cleanliness in handling food that is to be consumed by other people. In fact, in a few instances we found perfectly appalling conditions. In one particularly bad case the beekeeper's wife remarked, "I would never

put this filthy honey in my own mouth." She was right. We found him extracting honey in his garden shed. The combs were dark brown from many years of brood rearing; the inside of the extractor was similarly dark brown in colour from rust and dirt and when the lid was on the extractor some of his potting soil was dancing merrily on top of it as he churned away! He had his name printed on his labels 'Pure Scottish Honey'.

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TALES OF RELIEF, or actual cure of various muscular troubles through bee stings come so persistently over the years that many people think "there must be something in it" says the journal "Bee Craft" of September this year. In the tradition of their trade newspaper reporters do tend to dramatise these incidents when they come to their notice, but they must start with some reasonable evidence.

A case is reported in the "Sunday Post" of June 18 of a Glasgow teacher, John Scott, who had suffered years of back pains after being injured in a rugby match. Drugs and other therapy had brought little relief. Then one day he helped a friend with his bees and received two stings. The following morning his back felt better and later the pain went completely. He has remained free from pain since but the length of time is not stated.

It does seem rather hard to believe that just one "treatment" has made a permanent cure, but odd things can happen with back injuries, and for Mr Scott's sake we hope it is true.

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HONEY PRICES IN AUSTRALIA. The newspaper "Australian" reported on October 11 the following prices: Wholesale prices ex store Brisbane for clear honey — Bulk $14 per 60 lb tin, 2 lb jars $6.82 per doz, 1 lb jars $3.86 per doz. Packers prices to beekeepers: Extra light amber (pf 35-50) 17 to 21 cents per lb; Light amber (pf 51-65) 15 to 19 cents per lb; Pale amber (pf 66 to 72) 14 to 17 cents per lb; Medium amber (pf 66 to 90) 12 to 16 cents per lb; Dark amber (pf 91 to 144) 11 to 15 cents per pound. Minimum export prices $A per ton f.o.b.) to U.K., Eire, West Germany and Austria are: Light amber $490, Pale amber $480, Medium amber $470, Dark amber $460, Manufacturing grade $460.

★ ★ ★

EXPERIMENTS SHOW THAT bees from strong colonies live longer than those from weak colonies. They emerge from winter stronger individually. Their wings, muscles, tongue are all better developed. By weighing bees leaving the hive and later returning laden, Prof. Kavalev the Aussian authority, has found that strong colony bees carry a much heavier load than those from weak colonies. — "The Scottish Beekeeper".

BRIGADIER G. R. TEMPLER, past chairman Bee Farmers Association of Great Britain, in a recent letter to the Editor says that they have had a most curious season. Due to cold wet weather the bees were starving until July which should have been midsummer there. Then the sun came out and in four weeks they gathered 1½ tons of excellent honey into my 100 hives.

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MRS MARY J. WORKMAN, writing in the British Bee Journal of September 2 says: My husband asked me to go with him to help remove some bees from a local farmer's barn. The "swarm" turned out to be a bumble bees' nest; not so large, of course, but pierced accidentally by a pitchfork, the occupants made considerable noise. Realising their value to the community, we gathered them up in our hands and brought them home in a nucleus box, then transferred them to a hollow tree trunk in the apiary where sometimes a colony of hive bees live. We are hoping that they will readjust themselves to their new home and surroundings.

POZNAN TOWN HALL BEEHIVE

Here is the "Town Hall" shown on the front cover dissected to obtain access to the moveable frames on the inside. Occupants hurry and scurry through the appropriate "front door" entrance. Details of the unusual bee equipment museum in Poland are given on the back cover.

Letters to the Editor

Parsonage House, Woodbury,
Exeter, Devon, England
3rd November, 1972

Sir,

My wife and I hope to tour New Zealand in March 1973 in a motor caravan. We plan to spend the first two weeks in the South Island and then two weeks in the North Island.

We have kept 100 stocks of bees here for the past 20 years and so would be very happy to visit the apiary of any beekeeper who might be good enough to write us.

C. R. TEMPLER, Brigadier
(Past Chairman Bee Farmers Assn. of G.B.)

★ ★ ★

Drummond, No. 8 R.D.
Invercargill.
31st October, 1972

Sir,

May I express my thanks to those who voted for me in the recent Honey Marketing Authority Elections.

I also wish to thank Mr Neal the returning officer for his competent handling and control of the election.

I am gratified to see a marginal increase in the payout, but 18½ cents is well below overseas prices and only by continually pressing for improved marketing conditions can we hope to achieve true world market value for our honey.

J. A. DAVIES.

A CHECKLIST OF 'DO'S' & 'DON'TS'

for Beekeepers who want to get along with Farmers

By J. SMITH, Apiary Instructor, Christchurch

Perhaps in view of the very useful service at present offered by beekeepers of free pollination, it is sometimes very hard to understand the farmer's lack of interest or at times, open hostility at having bees placed on his land.

We all know the form this lack of interest takes, and the sight of stock damaged hives, burnt hives from uncontrolled, controlled burn-offs, hives dead from sprays and apiaries left with no means of access because of new drainage and ditches are familiar to us all.

As an Apiary Instructor I meet and talk to many groups of farmers and I always stress the farmer's dependence on bees to ensure that farming as practiced today continues.

However, out of the many discussions which have arisen from these talks I find there is a need of a Do's and Don'ts list for beekeepers. I have prepared the following list from things which have actually happened:

DON'T drive trucks over small plots of peas — you could ruin many weeks of research work.

DON'T drive a truck in a big U turn in a crop of wheat. You can, most times if you do have to, drive through a crop, back out on your track marks.

DON'T drive a truck through a farmer's yard at 3 a.m. on a Sunday morning — you could wake the dogs who would in turn, make sure the whole household, teething child and all, knew of your presence.

DON'T get stuck in the same wet patch week after week — you could find that after the third tow-out the farmer could do without bees.

DON'T place hives within 10 feet of a well-used gateway and 2 feet from the main farm track — even if you know the track belongs to another farmer.

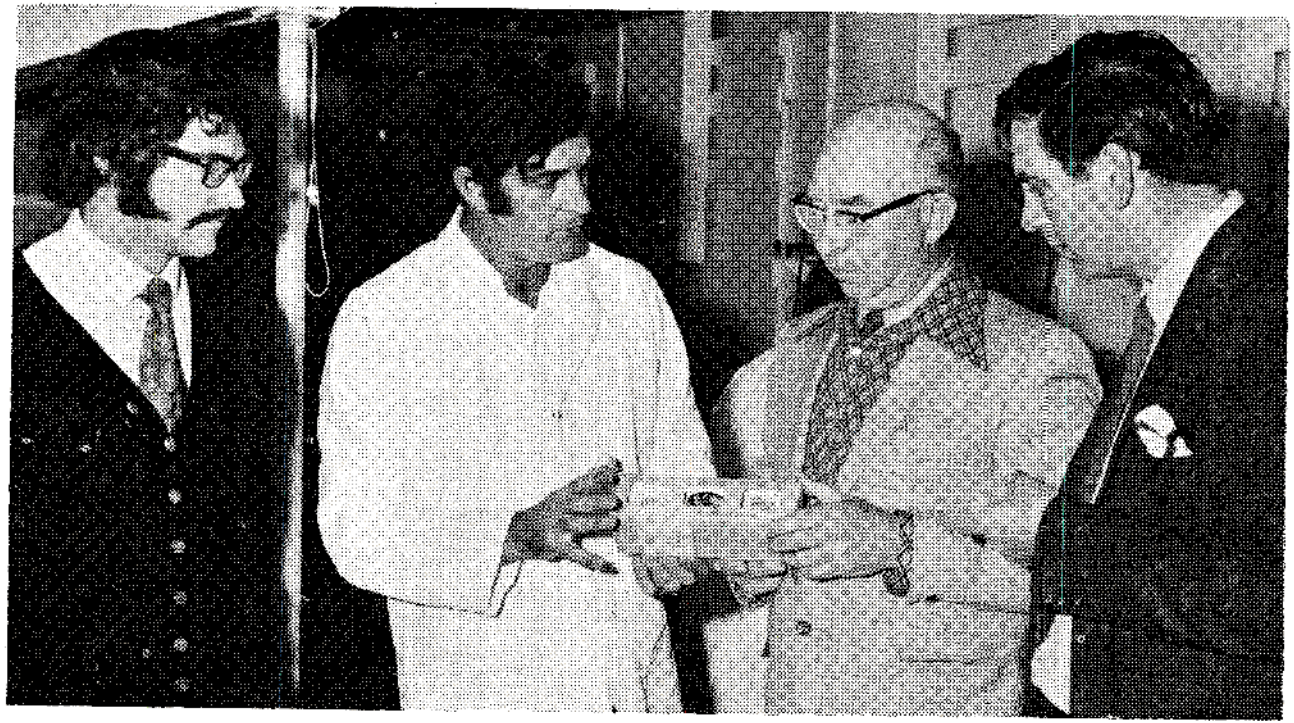
DON'T allow robbing to start while working an apiary — you could cause the farmer's wife to be housebound for two days.

DON'T stop for petrol with a large load of unblocked hives at a filling station in the main street of a town — you could cause what could be a fatal crash.

DO make a point of meeting the farmer on whose land you have hives — you may find he has strong views on working on Sunday's, Anzac Day or Christmas Day. Respect them.

DO act on toll calls regarding stock or wind damaged hives — you may find after a month the farmer thinks you are a no-hoper beekeeper.

DO accept the fact that swarms from your hives are your responsibility — you may find them returning you a outbreak of disease before the season is out.



PROFESSOR G. F. TOWNSEND VISITS SOUTH CANTERBURY

Inspecting a honey pack at the Honey Marketing Authority plant at Pleasant Point are (from left) — Mr M. Reid, an apicultural administration officer from Christchurch; Mr Merritt, the manager at the Pleasant Point factory; Professor G. F. Townsend, of the University of Guelph, Ontario, Canada; and Mr V. A. Cook, an apicultural instructor from Oamaru.

Picture courtesy The Timaru Herald

RECENT VISITORS OF PROMINENCE

Professor G. F. TOWNSEND of Guelph, Ontario, Canada

IN OCTOBER Professor Gordon Townsend from the University of Guelph, Ontario, Canada, and his wife made an all too brief visit to New Zealand before travelling on to Brisbane for the Australian Bee Congress.

Professor Townsend was Head of the Department of Apiculture at Guelph for 31 years until it merged with other Departments to form The Department of Environmental Biology. His chief field of interest and research is the processing, quality control and marketing of honey. In recent years Professor Townsend has been establishing on an experimental scale stands of the Black Locust tree **(Robinea pseudoacacia)** in an endeavour to evaluate the profitability for a beekeeper to grow his own crop.

The Apiculture unit at Guelph is currently undertaking research in nectar secretion, worker-queen dimorphism, queen introduction, colony aggression and honey processing. A graduate programme is offered to students. The New Zealand Department of Agriculture (now Ministry of Agriculture and Fisheries) has had a close affinity with the University of Guelph. Two members of its staff have completed M.Sc. degrees in apiculture in recent years.

Since 1969 Professor Townsend has been Chairman of the Bee Research Association, an international organisation with members in 90 countries, and are the publishers of "Bee World", "Apicultural Abstracts" and the "Journal of Apicultural Research". He has also assisted in the organisation of a number of International Apicultural Congresses under the sponsorship of Apimondia. Professor Townsend is currently in charge of a Canadian assistance programme towards better beekeeping in East African Countries. He is also the Canadian representative on an eight man committee investigating the spread and effect of the African bee **(Apis mellifera var adansonii)** in South America.

Whilst in New Zealand Professor Townsend visited the Ministry of Agriculture and Fisheries Honey Grading Laboratory at Auckland, Honey Marketing Authority facilities at Auckland and Pleasant Point, a number of producers and private packers, Massey University, Wallaceville Animal Research Centre, and Head Office staff of the Advisory Services Division M.A.F. Professor Townsend also addressed two meetings, at Rotorua and Timaru, attended in each case by approximately 40 commercial beekeepers.

At the Rotorua meeting Professor Townsend commenced by saying that if a beekeeper was to stay in beekeeping he must obtain that crop of honey. The price was secondary. In many areas of Canada in excess of 100 lbs per colony is required to break even on a commercial scale. The trend is to operate bees by manipulating boxes, not frames. Shallower depth supers are becoming more popular. Professor Townsend said there were too many beekeepers with bad backs. The time may come he said when labour laws may restrict lifting in excess of 50 lbs per person.

Honey quality is becoming increasingly important. Particularly so for New Zealand's exports to Britain when that country joins the Common Market. The measurement of H.M.F. and diastase in honey (determines abuse by heating or storage) has been accepted for the European Common Market, Britain and Japan will probably follow suit.

The world honey market is facing a shortage at the present time and Professor Townsend predicted that the higher prices for honey would continue for some time. There is an increasing consumer demand for Nature foods and honey falls in this category. Professor Townsend said that New Zealand could learn from the mistakes made by Canadians regarding the export of honey. He said that a free-for-all on the export market destroyed market stability and affected beekeeper incomes. An agency controlling the export market was essential — whether one individual or many individuals exported honey.

Professor Townsend illustrated, by way of slides, his impressions of the African bee in South America. He said that this bee has some good qualities but these are far outweighed by its bad qualities. Twenty-six African queens were introduced in 1956 into Brazil under experimental conditions. However, their progeny escaped confinement and are now spreading throughout South America at 200 miles a year.

The African bees are dominating the European type bees by sheer competition. African bees start foraging earlier in the morning, finish later at night and even work in rain and moonlight. At the present rate of expansion this bee could be expected to enter the United States within 15-20 years and as a result could have a devastating effect on the American pollinating queen breeding and package bee industries.

Professor Townsend said that the introduction of bees into a country must be rigorously controlled. He said that the South American incident could happen in New Zealand — we have the climate and flora. But to enforce a total ban on the importation of new genetic material in the long run, would be most damaging to brood viability.

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Dr STANDIFER of Arizona, U.S.A.

By S. M. Reid, Apicultural Institute, Christchurch

Dr Standifer attended the 14th International Congress of Entomology in Canberra, where he gave a paper, before coming to N.Z. to attend the 21st Annual Conference of the N.Z. Entomological Society held at Lincoln College, September 6-8. Dr Standifer visited with Mr E. Smaellie, Superintendent of Beekeeping and Mr T. Palmer-Jones at Wallaceville en route to Lincoln.

Dr Standifer is the Director of the U.S.D.A. Bee Research Laboratory in Tucson, Arizona. In this laboratory there are about 11-12 scientists on all aspects of honey bee biology, behaviour and breeding as well as crop pollination. A number of scientists from other genetics and agricultural engineering, co-operate on various research projects.

The local apiary instructor, John Smith, and myself showed Dr Standifer some of the beech honey dew producing areas in the upper reaches of the Lees Valley. There were some very larg apiaries here but access could only be accomplished by way of a four-wheel drive truck. Coming from a rather flat desert area, Dr Standifer was amazed at some of the places where we build our roads and a little uneasy at some of the river fords we had to make He was also very impressed with the activity and hospitality of a shearing gang and the controlled movements of the sheep dogs.

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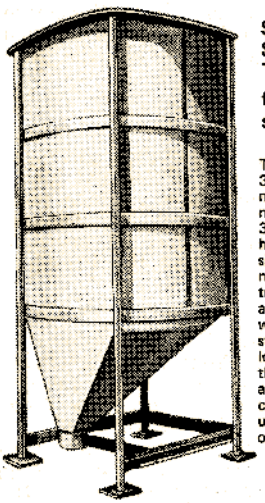
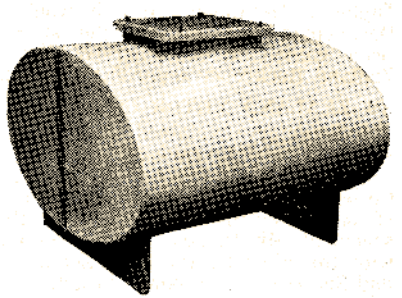


SILO STORAGE TANK

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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Executive Meeting at

CHRISTCHURCH IN SEPTEMBER

A Meeting of the Executive was held in Christchurch on September 11 and 12. Those present were Mr I. J. Dickinson (chairman), Messrs J. Bray, M. Haines, D. Penrose and E. Whalley. Messrs E. R. Neal (Association Secretary) and N. S. Stanton (Editor) were in attendance.

TARIFF AND DEVELOPMENT BOARD INQUIRY ON THE IMPORTATION OF HONEY

Mr Dickinson reported on the proceeding. It appeared that there was certain work to be done by the Honey Marketing Authority in supplying the Board with the price range of imported honies over the previous years.

CADETSHIP

Mr Dickinson reported that there were three stages in the Diploma of Agriculture. A junior certificate, an intermediate certificate and a full Diploma. He thought that it would be of advantage to have a certificate in Beekeeping instituted at the stage where the intermediate certificate had been gained. It was agreed that Mr Stanton run an article in the New Zealand Beekeeper regarding cadetship.

NEW ZEALAND MOTOR CORPORATION

The Secretary explained that he had had an approach from this motor firm which seemed to envisage discounts for members buying from that particular supplier. It was agreed that the Secretary write to the New Zealand Motor Corporation saying a pre condition would be that firms take a whole page of paid advertising in the N.Z. Beekeeper. On the motion of Mr Whalley, seconded Mr Haines, it was **resolved** that the Executive agree in principle with the offer by the New Zealand Motor Corporation and that the President and Secretary have power to act.

CONFERENCE 1972

Suggestions for improvement of procedure were canvassed. Mr Penrose congratulated the Far North Branch on its performance. From the Executive's point of view everything was excellent. There was no doubt that the folders, the public address system, and the Public Relations amongst the local people were ideal. The Kaitaia people certainly knew the Beekeepers were there. It was agreed that a check list be made up for future conferences. In regard to procedure at the meetings proper, it was suggested that to stop disorganised debate the President should make an example of someone early on in the meeting. It was agreed that the Secretary purchase a copy of Joske on procedure and also a stop watch. Some discussion took place on whether discussion groups would be practicable at conferences, but this idea was abandoned. It was also wondered whether there should be more direction by the Chairman, and also more assistance by the Executive in assisting the Chairman.

RULES

On the motion of Mr Dickinson, seconded Mr Whalley it was **resolved** that remit 34 in regard to alterations of rules be registered.

On the motion of Mr Penrose, seconded Mr Whalley it was **resolved** that Executive prepare a remit for the next Conference that Rule 30 be altered to delete "one vote only" and substitute "one vote for each full dollar of annual subscription actually paid by him in the preceding financial year".

SOUTHLAND BRANCH RESOLUTION AMENDMENTS TO REMITS

On the motion of Mr Bray, seconded Mr Haines it was **resolved** that the Southland Branch be advised that their resolution required a remit for the next Conference.

LEVY

On the motion of Mr Penrose, seconded Mr Bray, it was **resolved** that the Government be requested to amend the appropriate regulations in order to implement g (1) as amended and (i) as amended by Conference of the Caucus Committee report and that the Government be advised that urgency would be necessary as the industry was approaching a new honey season.

REMITS

Remits referred by Conference to the incoming Executive were dealt with individually. The numbers printed refer to the numbers on the Order Paper.

(6) — On the motion of Mr Penrose, seconded Mr Whalley it was **resolved** that this be referred to the Department of Agriculture.

(15) — On the motion of Mr Bray, seconded Mr Penrose it was **resolved** that the remit be received.

(17) — On the motion of Mr Penrose, seconded Mr Bray it was **resolved** that remit 17 be referred to the Department of Agriculture.

(23) — On the motion of Mr Bray, seconded Mr Penrose it was **resolved** that this be referred to the Municipal Counties Association in an endeavour to obtain their assistance in having more funds allocated to the Department of Agriculture for the destruction of wasps.

(24) — On the motion of Mr Penrose, seconded Mr Whalley it was **resolved** that remit 24 be received.

(26) — On the motion of Mr Penrose, seconded Mr Whalley it was **resolved** that Mr McIntyre in his position of Minister of Forests and also in his position of Minister of the Environment be written to twice separately.

(29 and 30) — On the motion of Mr Dickinson, seconded Mr Whalley it was **resolved** that the Branch be asked to put forward the ideas to the next Conference as an alteration to rules.

(31) — It was agreed that this remit needs to be referred back to Conference.

ROYAL INSTITUTE OF HORTICULTURE

It was agreed that the Secretary write again to Mr Lemmon, the Secretary re case being prepared to State Services Commission on recognition of Diploma of Agriculture.

METRIC MEASUREMENTS:

On the motion of Mr Penrose, seconded Mr Whalley it was **resolved** that the Executive approach the Department of Industries and Commerce to ascertain what are or will be commercially acceptable sizes in Japan, Canada, Australia, U.S.A., U.K. in tin and glass, and if proved to be cceptable the adoption of ½, 1, 2, 4 and 10 kilogram quantities, with a copy of the H.M.A. and a copy to the Packers Association. It was agreed that the Secretary then write to Alex Harveys, Winstones and the Metric Board.

ALISON HOLST

Mr Stanton reported that he had spoken on the 'phone to Alison Holst who was very interested. Mr Stanton said he would like someone to supply her with some honey. She may be able to make reference to it in her next book and perhaps on T.V.

ALTERNATIVE MARKETING SCHEME

A resume of Branch reactions to the alternative marketing scheme is detailed hereunder:—

Waikato resolution:	Against.
Southland and Otago:	Mr Dickinson reported against.
Canterbury:	Mr Bray reported against.
South Western:	Mr Whalley reported against.
Auckland:	Mr Haines reported that Auckland was for but wanted more information.
Far North:	Mr Haines reported for.
Northland:	Mr Haines reported for.

Note: All the foregoing refer to the Haines alternative scheme.

On the motion of Mr Whalley, seconded Mr Bray it was **resolved** that the matter lie on the table.

In summary there were five against and three for.

THE EKROYD SCHEME

The following is a summary of the reaction to the Ekroyd Scheme.

Waikato:	Against by resolution.
Canterbury:	For by resolution.
South Western:	For by resolution.
Otago:	Against reported by Mr Dickinson.
Southland:	Against reported by Mr Dickinson.
Far North:	Against reported by Mr Haines.
Northland:	Reserved opinion reported by Mr Haines.
South Canterbury:	Reserved opinion reported by Mr Dickinson.
Auckland Central:	Reserved opinion reported by Mr Haines.

On the motion of Mr Whalley, seconded by Mr Haines it was **resolved** that the amended alternative marketing scheme, namely, the Ekroyd Scheme be put to the industry and a sub-committee be appointed to examine it under the following terms of reference.

(1) Method of presentation of the Scheme.
(2) Ways of financing.
(3) The type of poll.
(4) Timing.
(5) The involvement of H.M.A. members or organization.
(6) The opinion of the H.M.A. Board.

Composition of the sub-committee:—

I. J. Dickinson proposed Whalley seconded Bray
K. Eckroyd proposed Bray seconded Whalley
J. Bray proposed Penrose seconded Haines
The sub-committee is to report back to December meeting.

PREVIOUS EDITOR OF N.Z. BEEKEEPER

On the motion of Mr Whalley, seconded Mr Penrose it was **resolved** that services in the past of Mr L. Goss be recorded as being much appreciated and a note in the N.Z. Beekeeper made to this effect.

FINANCE

On the motion of Mr Penrose, seconded Mr Haines it was **resolved** that all Branch balances as at 30th April, 1972 be called up for the general fund payable in two instalments, 50% being payable on the 30th September, 1972 and 50% being payable on the 15th December, 1972 as per the authority of the 1972 Conference. It was agreed that the Secretary also point out to Branches the intention of the Executive to seek 10% of the proposed Industry levy to finance the Association in lieu of all but nominal subscriptions.

HONEY MARKETING AUTHORITY ELECTIONS

On the motion of Mr Penrose, seconded Mr Haines it was **resolved** that the Association recommend to the Honey Marketing Authority that the maximum votes ceiling be raised from 30 to 100 votes.
Note: Mr Whalley moved an amendment that the ceiling be raised from 30 to 80 votes but this lapsed for want of a seconder.

COST OF PRODUCTION SURVEY

On the motion of Mr Bray, seconded Mr Haines it was **resolved** that it be recommended to the H.M.A. that in the elections a statutory declaration from the packer receiving the honey rather than the producer supplying the packer be sufficient.
Mr Penrose brought forward this matter and a resolution from the Southland Branch was tabled on the same subject. Some discussion took place and it was agreed that Mr Penrose pursue the matter further with departmental officers in Christchurch and report back to the next meeting.

CHANGES TO RULES

On the motion of Mr Dickinson, seconded Mr Penrose it was **resolved** that as an interim measure 50 only of the changes of rules be cyclostyled and these be circulated to the Executive and Branch Secretaries.

TIMARU BEEKEEPING SEMINAR
September 1972

The Carrying Capacity of Beekeeping Areas

Paper presented by V. A. Cook, Apiary Instructor,
Ministry of Agriculture and Fisheries, Oamaru

It is difficult to estimate the honey production capacity of any given area. There are so many variable factors involved, mainly under the very broad headings of vegetation, climate, and topography.

Nevertheless it is important to estimate, in a rational way, whether there is room for beekeeping industry development. I wish to discuss this question as it relates to the South Island.

I am well aware that this subject is a rather sensitive one. I have been told by beekeepers there is no room for more hives. It is generally true to say that in the view of a beekeeper, his area becomes immediately overstocked with bees if another beekeeper wants to move hives in. This attitude results from an imagined fear of undue competition rather than a realistic estimation. Indeed many of those who decry increased hive numbers and increased honey production are achieving both and, in some cases, at a fast rate.

Let us consider the situation for the South Island for the past ten years. Apiary statistics are prepared by the Ministry every second year as at 31 May.

Honey production figures are assessed by the Ministry in April of each year. There is no way of checking the accuracy of these assessments without access to the stock records of all beekeepers, but the figures are generally accepted as being reasonably reliable.

There has been a progressive increase in hive numbers from 77,065 in 1963 to 90,421 in 1972.

For the 5 year period 1962/63 to 1966/67 total South Island honey production was assessed at 11,844 tons. For the period 1967/68 to 1971/72 it was assessed at 13,618 tons, an increase of 1,774 tons. Therefore, the South Islandhas had an increase in hive numbers and an increase in honey production.

But it is not enough to talk about the South Island as a whole, because the beekeeping areas by no means cover the whole land area, and average honey production varies considerably from one area to another.

The Ministry has the South Island divided up into four apiary districts based on Nelson, Christchurch, Oamaru and Gore. The Nelson district comprises roughly Marlborough, Nelson and the West Coast; the Christchurch district covers Canterbury; the Oamaru district consists of South Canterbury and most of Otago; the Gore district covers Southland and those parts of Otago south of Dunedin.

An apiary district is the smallest area for which honey production and apiary statistics are kept; they are therefore the smallest areas which can be used for comprisons based on official statistics.

It must be stressed, however, that when average figures are given they are not intended to suggest uniformity; it is recognised that apiary districts are relatively large areas in which honey production varies greatly from place to place and from season to season.

The following table shows the apiary and honey production statistics for the two five year periods 1962/63 to 1966/67 and 1967/68 to 1971/72 for the four South Island apiary districts.

	1962/63 to 66/67			1967/68 to 71/72		
District	Average number of hives	Average crop in tons	Average per hive in lbs	Average number of hives	Average crop in tons	Average per hive in lbs
Gore	21,603	595	62	22,869	951	93
Oamaru	24,795	718	65	27,869	935	75
Christchurch	24,667	851	77	26,769	587	49
Nelson	9,012	205	51	9,459	250	59
	Overall average per hive, 64 lbs			Overall average per hive 69 lbs		

Overall average production per hive for the two five year periods increased from 64 lbs to 69 lbs.

The figures show that in the three districts Gore, Oamaru and Nelson, production per hive has increased as hive numbers have increased. Only in the Christchurch district has production decreased.

It was suggested by the Ministry in 1970 that there was scope in the South Island for 20,000 additional hives to produce 800 tons of honey. These figures related mainly to Otago and Southland and also to bush areas of the West Coast.

Some beekeepers consider that any extra hives would have to be placed in difficult country and operating costs would be higher than present average hive operating costs. I do not share this opinion, which suggests that any additional hives would have to be placed in areas not previously available for honey production, presumably newly developed high country.

Some newly developed land is in steep country which can be described as difficult, but much of it is not very high, is readily accessible and well within the reach of existing beekeepers' headquarters.

There seems to be no doubt that much more honey can be produced from bush sources on the West Coast, although it is said that finding suitable apiary sites could be a problem in some areas.

Lack of co-operation between beekeepers is preventing the full utilisation of some newly developed clover areas. There are situations where beekeepers are 'holding down' very big areas with just a few hives. There is much to be gained from beekeepers associating with the aim of fully exploiting such areas.

What of existing beekeeping areas; are they fully stocked? There is no real evidence to suggest they are; there is much to suggest a big potential for increased stocking and production. And I am thinking mainly in terms of the number of hives per apiary.

In the Oamaru and Gore districts (South Canterbury, Otago and Southland) there are 3,662 registered apiaries in the commercial group (beekeepers with 30 or more hives) containing 51,897 hives, an average of 14 hives per apiary. There is a variation in the number of hives per apiary of course, but many are close to the average, and there are as few as five hives in some apiaries.

I have been told by beekeepers of apiaries of half a dozen hives which supposedly gather all the honey available; if more hives were added, it is said that only the same total honey crops would result. This I cannot accept. If an area is such that it will only support six hives, I would have to suggest that you try beekeeping somewhere else.

I have taken note in recent seasons of a few long established apiaries containing between 40 and 50 hives closely surrounded by apiaries of 10 and 12 hives set out about a mile apart. The large apiaries have done just as well, and in some cases better in terms of production per hive, as their smaller neighbours.

If in the Oamaru and Gore districts alone an average of six hives were added to each existing commercial apiary (to increase the average hive number per piary from 14 to 20) this would put hive numbers up by 21,972.

Frankly, I cannot see any point in running less than 20 hives to the apiary, and much to be gained from running more. The savings in time and mileage from running larger apiaries and fewer of them are very considerable. In fact, it is quite common for a beekeeper to plan his work in terms of the number of apiaries he will visit in a day, rather than the number of hives. It doesn't seem to take much longer to work say four apiaries of 20 hives each, than four apiaries of 10 hives each. It is getting from one apiary to another, loading and unloading equipment, dressing up and so on that takes so much time.

There appears to be a lot of psychology connected with this business of apiary size. There seems to be a pre-occupation with getting one apiary finished and moving on to the next, rather than dealing with the maximum number of hives in a day. For example, one beekeeper has told me of a 70 hive apiary which he bought and operated successfully for a few years. But he reduced it because it took him the best part of a day to work the hives. It is this sort of consideration which decides how many hives will be run in an apiary, rather than the amounts of nectar and pollen available.

Another restricting factor is the beekeeper's fear of having apiaries placed in the vicinity of his own by another beekeeper. Some think an apiary a mile away is too close; others think three miles is plenty close enough.

It will always be difficult to decide just how many hives a good beekeeping area will support. However, I believe we have all tended to underestimate the honey production potential of beekeeping areas. I know of no case where there is irrefutable evidence to show that any beekeeper has reduced another's profits by overstocking an area with hives.

It seems to be fairly generally accepted that it is virtually impossible to overstock in a heavy flow. It is often said, however, that spring sources are easily overstocked, and this is sometimes given as a reason for keeping hive numbers down in an area. In fact, some of the best beekeeping areas are of the 'clover to clover' type in which hives require heavy winter stores and spring feeding too.

And in any case, spring sources or not, insufficient feeding, particularly in November is in my opinion, the hive management factor which most restricts production.

But on the question of early sources, these are often not up to expectations because of adverse weather conditions. Take the willow flow; that much awaited beekeepers' salvation. How often do we get that dreamt of box of willow honey; or even half a box. Very rarely in most districts because conditions are often cold or windy when the willows are in flower.

And yet there are those, even in marginal willow areas, who winter their bees down to be "O.K. till the willow flow," and when it doesn't eventuate blame the hive population of the district because their bees are hungry.

Mind you, in those freak years when a willow flow really turns on, hives will gather willow honey in apiaries from which there is scarcely a willow tree in sight. But no-one seems to comment on this.

It is said that the use of weedkillers has resulted in many of the weed sources disappearing. I don't like the term 'weed'; it suggests something rather nasty. I prefer 'wild flowers', which has much nicer connotations, and I see plenty of wild flowers about.

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Speedwell is abundant and widespread and supplies pollen and nectar long before the willow flowers. And storkbill with its brick-red pollen. The dandelion and its many cousins. Thyme and heath, wild flowering currant and even gooseberry growing wild. Vipers bugloss, that beautiful flower of ugly name, is spreading all over the place, as is sweet clover. Thistles vie with white clover in some places, and certainly in some seasons, as the main honey crop source. I really do believe wild flowers are on the increase.

I have been talking mainly about the areas contained in the Gore, Oamaru and Nelson districts. The situation in Canterbury is rather different because honey production there has decreased in recent years. The commonly held view is that a combination of droughts, increased sheep numbers and the growing of crops such as cereals, lucerne for processing, and other process crops are the factors responsible for the reduced production.

I tend to the view that climate has been the main factor, and that given a run of favourable seasons, Canterbury will again produce good honey crops.

Within its bounds Canterbury has a unique product called beech honeydew, which in view of the reduced honey production in the area, may be deserving of more attention than it has previously been afforded.

Beech honeydew is a honey-like substance produced by bees from the sugary excretions of a soft scale insect which infests native mountain beech trees. Trees harbouring honeydew insects have trunks and limbs characteristically blackened by the sooty mould which grows on the sticky honeydew. Hair-like tubes from the insects protrude through the mould, and the honeydew can be seen as clear, glistening globules on the ends of the tubes.

The Ministry's investigations into the possible production and export of beech honeydew have resulted in markets being established in Europe and the East. It would appear there are good markets for this product at favourable prices.

However, because beech honeydew is a new export product, it is too early to say how successful it will be in the long run. A good deal needs to be learnt about the production of honeydew, and its marketing will need to be well organised to ensure the best returns.

Traditionally beech honeydew has been used for feeding to bees, and no doubt it will continue to be used for this purpose. A question which requires study is whether it is more profitable to produce honeydew for export or to substitute it for white honey in clover areas.

How many hives would the honeydew areas carry? It is estimated that 12,000 hives gathered honeydew last season. And the stuff still ran down the trees. In some apiaries containing more than a hundred hives the honeydew dripped onto the lids.

It is impossible to say how much honeydew could be produced, but this situation suggests the potential for production is considerable. Only a co-operative approach by those interested in producing it can result in the potential being fully realised.

It is difficult to estimate the honey production capacity of any given area. It becomes less difficult if we base our estimates on facts. With respect to the South Island it is a fact that for the years 1967/68 to 1971/72 (according to the Ministry's assessments), 1,774 tons more honey was produced than for the previous 5 year period.

Hive numbers have been increased at a steady rate and average honey production per hive has increased in three of the four apiary districts. A potential for increased honey production exists in these districts. In Canterbury (the fourth district) honey production has decreased, but there is a potential for increased beech honeydew production for bee feed, and probably for export.

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It is not possible to accurately estimate, in figures, what the carrying capacity of South Island beekeeping areas is. However, there is an established trend of increasing hive numbers and increasing honey production. There appears to be no reason why this trend should not continue.

Mechanisation: Why, When, What & How

By RUSSELL POOLE

A. WHY MECHANISE?

1. To make the job easier.
2. To do the job faster.
3. To do the job cheaper.

Any one of these reasons on its own could be justification for mechanising an operation, but if mechanisation achieves two or all three objectives, so much the better.

Why make the job easier? To compensate for our own advancing age, or to allow the job to be done by semi-skilled or unskilled labour.

Why do the job faster? To allow more work to be done in the same time, or, if long hours are being worked, to permit a reduction of work hours and a consequent increase of leisure hours.

Why do the job cheaper? To return a greater profit, but this must be balanced against the capital cost, finance charges and running costs of the machine to ascertain if in fact the job is being done cheaper.

B. WHEN TO MECHANISE.

The answer to this question basically is as soon as possible, but some planning is needed before a start is made. Perhaps the main consideration is availability of money with which to mechanise. For many years the motor trade has required cash for motor vehacles, and beekeepers buying trucks have had to pay cash or sign hire purchase agreements. When it comes to other items of plant, you should investigate how you are going to finance the purchase before placing the order. In many cases beekeepers commit themselves to buying something without knowing for sure that they can pay for it. Consultation with your accountant or bank manager should be held to work out a scheme for financing expenditure on plant.

C. WHAT TO MECHANISE.

1. Operations in the field.
2. Operations in the honey house.

It will be a matter of personal choice in which of these two departments mechanisation will be done first. Usually the first place to start is where the chain of work is most congested, so that by mechanisation the flow can be speeded up. When planning for this, it is necessary to keep in mind possible future increase in hipe numbers and what effeuts this will have on work flow. Often speeding up flow in one area creates bottlenecks elsewhere which need to be eliminated fairly quickly. If this cannot be done, the advantages from the first improvement cannot always be obtained until this follow up work is done.

The main mechanisation in the field is some form of loader, either boom type or motorised barrow. Factors to be considered are size of truck, layout and siting of hives, and the number of different jobs you will want the machine to do. e.g. Motorised barrow can be used for wheeling gear between

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HONEY MARKETING AUTHORITY

NEWSLETTER

An Authority meeting was held on October 25th, 26th and 27th to consider the Annual Accounts for the year ended 31st August 1972, to declare a payout to suppliers, and consider a number of other matters.

The election for two producer members held in September resulted in Mr B. Forsyth of Ohaupo and Mr R. Poole of Alexandra being elected to the Authority.

The first business at the meeting was the election of Chairman and Deputy Chairman and these positions were filled by Mr R. Poole as Chairman and Mr B. Forsyth as Deputy Chairman.

PAYOUT: The payout for the 1971/72 season is as follows:—

1) 18.5 cents per pound pro rata.
2) All with-holding payments to be refunded.

Some comparative figures with the previous season may be of some interest:

Honey	grading	100	points	received	14.50	cents	12.5	cents	4.	cents
Honey	grading	90	points	received	11.925	cents	16.65	cents	4.725	cents
Honey	grading	85	points	received	11.05	cents	15.725	cents	4.675	cents
Honey	grading	75	points	received	9.75	cents	13.875	cents	4.125	cents

ADVANCE PAYMENT: 1972/73 season. (Subject to Treasury approval).

12 cents per pound for honey grading 86 to 100 points
11 cents per pound for honey grading 76 to 85 points
10 cents per pound for honey grading 75 points and under.

The above advances will be paid as follows:—

Advance on honey in producers shed 3.5 cents per pound.
On delivery to Depot or Branch 6 cents per pound less any Shed advance.
On grading a further 6, 5 or 4 cents according to above grading points.
No with-holding payments will be deducted from any honey this season.

EARLY DELIVERY BONUS: In order to encourage producers to supply honey earlier in the season, the **Total Payout** on all honey of Export quality received up to 31st March 1973 will be increased by an incentive bonus of an extra ½ cent per pound, to be paid at the same time as the Into Depot or Branch advance. If any honey on which this bonus has been paid proves on grading to be below export quality, the ½ cent will be deducted from the grading payment.

PRIVATE EXPORTS: The Authority reaffirmed its policy of not allowing bulk honey to be exported by private exporters, but the conditions under which packed lines may be exported have been eased, and will be supplied to anyone interested on request.

DEPOTS: The same actual and notional depots as last year will continue, but in order to encourage supply from the southern part of the North Island and from Northland, there will be an actual depot at Palmerston North, and a notional depot at Whangarei.

BRANCHES: South Island — It is hoped to be able to accept honey in 44 gallon drums at these branches this season, and should this prove possible, suppliers will be notified.
Auckland — Discussions with the Auckland City Council have resulted in approval being given for improvements to the gutter and footpath crossing to give better access for trucks to the loading bay.

We are confident that world prices are going to continue at their present level for the next twelve months at least, and, given a larger intake this year, next year's payout could be over the 20 cent mark. If you would like to see this happen then **SEND US ALL YOUR HONEY.**

R. F. POOLE, Chairman

HONEY BEE POLLINATION OF LEGUMES, BRASSICAS AND SUNFLOWERS IN NORTH OTAGO

Paper presented at the North Otago Farmers' Conference at Oamaru in June 1972

By V. A. Cook, Apiary Instructor, Department of Agriculture, Oamaru

Pollination is the transference of pollen grains from the anthers to the stigma of the same or a different flower; it is a vital link in a complex chain of events which leads to the production of seeds in flowering plants.

Economically important plant crops are either self-fertile and set seed with their own pollen (self-pollination), or they are self-fertile and have to get pollen from other flowers of the same species (cross-pollination). Self fertile species may produce more seeds of better quality when crossed than when selfed. A few crops, for example garden peas, are automatically pollinated with pollen from their own flowers. But in most cases wind or insects are needed to effect pollination.

Cereal and grass seed crops are wind pollinated. Most legumes, brassicas and sunflowers benefit from insect pollination. The honey bee is the most important pollinating insect in North Otago.

For the purpose of this paper North Otago is taken to be that triangular area of the Waitaki County which has its angles at Kurow, Waitaki and Shag Point. It is within this area that most of the country's seed crops are grown.

There are 4,000 hives of bees in the area set out in 300 apiaries which are fairly evenly distributed. The bees produce some $80,000 worth of honey and make a major contribution, through pollination, to the production of about $200,000 worth of certified seeds. These figures fluctuate according to production and prices; they are given to indicate the relative importance of bees as honey producers and pollinators.

Honey is produced by honey bees from nectar which they gather from flowers. Nectar is a dilute sugar (mainly sucrose) solution which contains flavour compounds, colouring agents and minerals. It is carried in the honey stomach of the bee where it undergoes enzymatic action which inverts the sucrose into about equal parts of levulose and dextrose. Other sugars may be present in small quantities. In the hive the bees reduce the moisture content to about 17% and the honey is stored in their combs and sealed over with wax.

Maximum honey production per hive requires the management of hives to produce peak populations when major honey sources are in bloom. To achieve this aim four main principles are involved; regular provision of young queen bees (preferably every year), disease control, swarm control, and an adequate food supply of carbohydrates (honey or sugar) and protein (natural pollen or pollen supplements).

Pollen provides the protein requirements of the honey bee colony. It is an essential food for immature-stage bees. Worker bees gather pollen from a wide range of flowers and carry it back to their hives in small hairy baskets on their back legs.

Inside the hive the pollen is stored in the combs until required. Each hive needs about 50 lbs of pollen a year, so honey bees in North Otago, in addition to gathering vast quantities of nectar for honey production, have to collect about 100 tons of pollen each year. It is when bees are gathering nectar and pollen that they incidentally pick up pollen grains on their hairy bodies and transfer them from flower to flower thus effecting pollination.

Honey bees are well suited to their job as pollinators. Firstly, they have a relatively wide foraging range. While they will always take advantage of the nearest attractive nectar and pollen source they comfortably work in a one mile radius of their hives, and have been known to work on flowers five miles away.

Foraging honey bees keep to one flower species only during a single trip. This crop constancy is very important in cross pollination. Because bees working say white clover, do not visit any other types of flowers, only compatible pollen is transferred and cross pollination is facilitated.

Then there is the effect of high population. Well managed hives in late spring and early summer contain about 60,000 bees. Therefore in North Otago there are literally millions of honey bees engaged in pollinating flowers. The populations of other pollinating insects are insignificant by comparison.

Farm seed crops in North Otago which benefit from honey bee visitation are white clover, red clover, lucerne, brassicas and sunflowers.

It is well established that white clover requires insect pollination and that honey bees are by far the most important pollinators. If no bees work a crop virtually no seed is produced; but if on warm, calm days, bees are seen to be working a crop at the rate of one bee per two square yards then almost all the flowers will be pollinated.

It must be stressed however, that while pollination by honey bees is essential, pollination is only one factor involved in the production of seed. Everything else has to be right — the weather, fertiliser, water, pest control, harvesting methods and so on. This means that when a good crop is produced much credit is due to honey bees. But it does not follow that if yields are poor the bees are necessarily to blame for not doing their job.

It is not essential to have hives of bees in the paddock. Honey bees will pollinate crops a mile from their apiary, and in North Otago there are apiaries within a mile of most paddocks.

White clover is usually very attractive to honey bees. It secretes nectar most heavily, and is therefore most attractive to bees, when it is under some moisture stress, when the area starts to dry off in the heat of summer.

Red clover must be cross pollinated by insects to produce commercial seed crops. My problem is to convince you that honey bees can do the job efficiently without any help from bumble bees. Many farmers believe that bumble bees are necessary in the pollination of red clover, and this fallacy is apparently perpetuated through the curricula of our agricultural colleges.

The idea is based on the premise that the corrolla tubes of red clover flowers are too long to allow honey bees to reach the nectar. In fact, when red clover secretes nectar freely, as it does in hot conditions, the nectar rises in the tubes and is keenly sought and easily reached by honey bees. And in addition to this, honey bees are attracted to red clover pollen which is freely available to them on the anthers. Honey bees working at the rate of one per 2 to 3 square yards of crop effectively pollinate red clover.

Individual bumble bees of the long tongued species Bombus ruderatus and B. hortorum are efficient pollinators of red clover. Unfortunately no one has found a way to farm them to produce large populations where and when they are required.

The short tongued bumble bee B. terrestris has the habit of biting holes in the bases of red clover corolla tubes and obtaining nectar without effecting pollination. This behaviour not only reduces its own value as a pollinator but may also reduce the effectiveness of honey bees by presenting them with holes through which to rob nectar. Honey bees are unable to make the holes themselves.

There are problems associated with the pollination of lucerne where it is grown. In New Zealand only about ten per cent of the flowers become pollinated even under ideal conditions when there is a high density of honey bees, the main pollinators.

However, lucerne seed is very much a catch crop. Lucerne stands survive for ten years or more and produce abundant grazing and hay from spring to late autumn. The decision on whether to shut up a crop for seed appears to lie more with the run of the season than with any other factor. In brief, more seed is produced in good seasons when feed is plentiful, but even then it may be a better proposition to take an extra cut of hay than to save seed. A seed crop of say 100 lbs per acre at 40c yields $40 which is similar to the return on hay estimated at 50 bales per acre at 70c which is $35. Apparently crops are shut up for seed almost as a last resort. There is no shortage of seed and the price is relatively low. It is against this background that lucerne pollination must be considered.

The anthers and stigma of a lucerne flower are held in tension within the petals. When the tension is released the staminal column snaps forward against the standard petal causing pollen to be distributed. This process is called tripping; pollination cannot occur unless tripping takes place. Cross pollination results in more and bigger seeds than self pollination.

During sustained hot weather lucerne secretes nectar heavily and it is very attractive to honey bees. Lucerne honey is of high quality. However, honey bees usually collect nectar through the sides of the flowers often without causing them to trip.

Some authors say that bees collect nectar in this way because they learn to avoid the blows in the head they inevitably receive from the staminal columns during tripping when they work flowers from the front.

In fact, honey bees have a very small capacity for learning; rather they react to a variety of stimuli. My view is that honey bees usually work lucerne flowers from the side because the flowers attract them in this way. And further, they rarely work lucerne for pollen because firstly it is a relatively unattractive pollen for them, and secondly, the pollen on the anthers, being enclosed in the untripped flowers, is not readily available and probably not even obvious to bees.

Whatever the correct interpretation is, the fact remains that honey bees usually work the flowers keenly for nectar from the sides but usually gather pollen from other plants which flower concurrently with lucerne such as red clover, white clover, hawkbit, thistles and vipers bugloss.

Nevertheless honey bees are the chief pollinators of our lucerne crops; the tripping occurring, in the main, incidentally as the bees collect nectar from the sides of the flowers, A few bees trip flowers by working them from the front.

Bumble bees are efficient pollinators of lucerne as individuals, but their limited numbers mage them relatively unimportant.

It is not necessary to have hives of bees in a crop to get effective pollination of lucerne. If bees work on reasonably dense crops at the rate of one bee per two square yards, provided everything else is equal an average crop (about 100 lbs of machine dressed seed per acre) can be expected.

Some growers ask beekeepers to move hives from flowering lucerne crops, and in a few instances relations have become a bit strained when beekeepers have been unable to oblige.

It is a risky job moving hives of bees in January. In normal seasons they are then very strong in population and getting heavy with fresh stored honey. Apart from the obvious problems of costs and labour, hives which are moved under these conditions may be adversely affected; the bees are prone to overheating which can lead to distress, queen supersedure, reduced brood production and low honey production — or even annihilation. In short, it is inadvisable for a beekeeper to move strong hives in January unless he really has to.

North Otago is a very important area for brassica seed production, particularly marrow stemmed kale (previously known as chou moellier) and rape. In the absence of published information on the role of honey bees as pollinators of brassicas in New Zealand it is necessary to get an indication of the situation from overseas literature.

The brassica (or cabbage) family is characterised by its wide range of species and varieties. Apparently their pollination requirements vary greatly even among varieties. Some are self-sterile and rely on honey bees for cross pollination. Others are self-fertile and produce quite a lot of seed without bees. Some self-fertile types benefit greatly from cross pollination by bees.

As a broad generalisation all brassica crops appear to benefit from honey bee visitation to some degree. From this it follows that there is an advantage in having bees working on these crops. After all, brassicas are not catch crops. They take up ground for more than a year and require careful management. All the various factors which may influence seed production should be considered, and these include pollination.

There is no problem in attracting honey bees to flowering brassica crops. Blooming as they do in the October/November period, they come at a stage of the season when nectar and pollen sources are in relatively short supply. Honey bees will travel more than a mile to these crops and, on warm days, many thousands of bees per acre work the flowers. Whatever the actual contribution bees make toward brassica seed production through pollination there is obviously not a pollination problem because under favourable conditions seed yields are very high.

Sunflowers are a new crop in North Otago; about 200 acres were grown last season. From overseas literature it is obvious that the presence of honey bees on sunflower crops greatly increases seed yields.

In North America and Russia sunflowers are a valuable source of honey, but in North Otago bees appear to gather little, if any, honey from them. However, the bees do work them and gather pollen; 3,000 bees per acre were observed on crops last season which yielded 10 cwt to 15 cwt of seed. Honey bee activity was high on all crops grown whether apiaries were close by or a mile away.

It is obviously very much in the interests of the growers of the seed crops I have discussed that a viable beekeeping industry operates throughout North Otago. The pollination service which the beekeeping industry provides is incidental to honey production, and although the value of honey bees as pollinators is apparently greater than the value of the honey they produce, the service is given free of charge.

It is preferable for honey production and pollination to have a network of permanent apiaries covering the whole district and therefore all crops, rather than to move hives to specific crops. Some beekeepers consider the district to be well stocked with bees; others are increasing their hive numbers to take advantage of the potential which undoubtedly exists here as in other areas. Any increase in hive numbers will provide more bees to pollinate crops.

Farmers can assist the expansion of the local beekeeping industry by making more sites available for the establishment of permanent apiaries. In this way the natural relationship between honey bees and flowers can be fully exploited to the mutual benefit of seed growers and beekeepers.

Beekeeping in JAVA

Some reminisences of beekeeping in the former Dutch East Indies by R. S. WALSH

Tropical beekeeping is a branch of the craft with which few people are familiar and the hazards and difficulties experienced in these beekeeping areas are little understood by people keeping bees in the more temperate zones. The author has had some experience with bees in subtropical zones and made a close observation of beekeeping in a tropical zone besides extensive experience in the temperate zone. The South Pacific Islands although just within the tropic belt, because of the small land mass and the extensive areas of ocean surrounding them, enjoy an almost sub-tropical climate. Beekeeping in these islands is little different to that in Queensland and few of the hazards encountered in tropical beekeeping are experienced there. In these islands there is not a continuous honey flow as might be supposed. There are dearth periods as in the temperate zones but brood rearing is carried on to some extent throughout the year, although there is no problem created by the excessive raising of queen cells. Before the outbreak of the last war the writer made a visit to Indonesia then known as the Netherlands East Indies and spent some time on the Island of Java which is approximately the same area in extent as New York State but has roughly 3½ times as many inhabitants. It was claimed by one authority that there were 727 people per square mile.

The rich soil of Java is really a great volcanic ash heap which is one of the chief reasons for the islands fertility and prosperity. In 1938 when the writer was there about 480,000 acres was planted in sugar cane which produced ¾ of a million metric tons of sugar annually from some 180 mills.

At one time Java produced more than 100,000,000 lbs of coffee annually but because of the ravages of blight some of the land that was formerly devoted to growing the beans was used for other purposes.

The mean temperature in the low lands is about 26°C (78.8°F). There are great differences in the rain fall. In the East of Java a very dry period of 6 months prevails with rainfalls fluctuating from 0 to 60 MM per month, whereas to the west the dry monsoon becomes gradually shorter. There are also in this area even regions in which the dry monsoon lasts on an average only a month. These even temperatures result in a steady rate of brood production so that much of the honey collected in the wet season is consumed by the bees during the dry period when nectar secretion all but ceases. The native bee of Java is of course the small Indian bee (Apis Indica) and it is this species that is domesticated and kept in local made hives. The surplus gathered per hive would not exceed 20 lbs. The hives although small are constructed on modern principals but their size no doubt contributes further to the tendency of this bee to swarm, particularly in the plains districts. There is another bee species in Java known as the great rock bee (Apis dorsata) but it is not a hive bee and builds its combs in the open.

Attempts have been made from time to time to introduce German and Italian bees but the climate does not appear to suit them as they have very soon died out without giving any satisfaction.

Diseases of the brood were unknown in Java and for this reason the importation of bees or queens was subject to rigorous Government Control. The industry itself was an entirely native one under the supervision of the Indies Dept. of Agriculture.

The large Wax Moth (Gallerie Mellonella) was a problem as were ants whose presence necessitates the hives being kept on platforms. If hives are kept near the sugar plantations the bees gather an obnoxious honey dew produced by a cane aphid. Much of the honey produced is of poor quality and has a tendency to ferment. It was considered that an export industry was out of the question. There was however a limited sale for the honey locally. The honey seemed to appeal to the Javanese and the market could probably be developed further. With modern "know how" and appliances the fermentation problem could also be overcome.

Migratory beekeeping had been considered but even if practicable as would seem natural with Java's varied climate could not be profitably undertaken during the Monsoon period owing to the barriers and distances between the various honey producing districts such as the Kapok and Coffee regions which are situated in the Eastern or low land districts and the Central or mountainous region respectively. The Island's apiaries were located in the Central and Eastern Sectors of the Island, mainly in the lowlands or coconut districts of the Eastern portion and to a lesser extent in the mountainous or central regions.

Temperatures are high in Java and the Island lies on the fringe of the Tropic Zone. Beekeeping was at that time practised quite extensively but principally for the purpose of obtaining beeswax for the batik industry. The wax is used to protect the designs on the cloth with which sarongs are made. These are long straight skirts made of a multi strip of batik about one yard wide with a single fold in front and wound around the waist and hang down to the knees. The design is first sketched on the cloth with a pencil; then all the intricate portions to be protected from the first dye are carefully covered on both sides of the cloth with melted beeswax. This is done by hand with the aid of a tiny spouted cup the size of a thimble. By dyeing, removing the wax, again rewaxing and redyeing several times (usually in yellow, brown and blue) the piece of batik is completed. Many weeks of patient labour go into its making. Numbers of factories with an increased output in view stamp all of the wax onto the cloth with brass blocks, but this results in an article of poorer quality.

To produce the better quality batik cloth by the slower methods entails much tedious hand operation, and a good batik may take several weeks to complete. The time element gives it a value which is beyond the reach of the poorer classes and instead of using their handsome native product for Sarongs and turbans they turn to much cheaper and less attractive imported prints.

Most of the businesses in Java come to a drowsy standstill for a long siesta during the heat of the day. The people are small of stature but well built, are very friendly and given to easy laughter. The girls are nearly all beautiful but incredibly camera shy. They are also accomplished in the performance of the most colourful and intricate dances. Nearly all Javanese are Mohammedans but there are many Hindus in the Eastern part of the Island.

The amount of honey available in Java is influenced by the quantity of nectar available from the flora in the vicinity of the apiaries as it is elsewhere but even when located amidst large coconut plantations which yield heavily the small Indian bee is unable to store a large surplus. The principal honey producing plants found in the lowlands and the kind of honey produced from them is the — Coconut palm (cocos nucifera) a tree with large white or yellow flowers from which the bees produce a reddish brown honey with a light body. No starter honey is mixed with Java honey so they nearly all remain in the liquid state. The flavour of this honey is not unpleasant until a condition of early fermentation appears.

Kapok (Ceiba pentandra Gaertn) is a tree that in Java grows to enormous proportions. A yellowish brown honey of good body is obtained from it. This is one honey that keeps very well.

Durian (Durio Zibethinus Murr) is a very large tree attaining a height of 80ft, the flowers are large and white with a strong offensive odour. The fruit of the Durian tree is much prized for its edible qualities. Copious supplies of nectar

can be obtained from this source. The honey is readily extracted from the combs because of its light body. It is dark amber in colour with a slightly pungent flavour.

Citrus (Citrus Maxima Merr.) yields nectar freely but mainly by the larger members of the family particularly the Shaddock which has small white flowers. The honey is of medium body and amber in colour. The flavour is pleasant but honey from some species leaves a rather bitter after taste.

Honey sources confined to the higher districts come from three main plants which are — Coffee (Copea Spec.). These trees attain a height of from 10 to 15 ft. and bear white star shaped flowers which yield a nectar from which comes one of Java's best honeys. It is quite thin and extracts easily. It does not however readily ferment.

Dadap (Erythrina Spec.) Commonly known as the Coral tree grows to about 12 ft high. It bears large red showy flowers. The honey is dark red in colour, very light bodied with a poor flavour. Semboeng (Vernonia arborea Ham.) This tree is known in the Americas as Iron Weed and in those countries is only a shrub but in Java attains a considerable height. The flowers are quite small either red or violet. The honey from this plant is regarded as Java's best but would not rank very highly in N.Z. It is one honey that is of good body and viscous and is also the only honey that granulates naturally. The grain as one would expect is quite coarse. It is medium amber in colour. This then is my memory of a country its people and its flora its bees and its honey and of a journey made long ago.

TREES FOR BEES

By V. A. COOK, Apiary Instructor,
Department of Agriculture, Oamaru

The nutritional requirements of honeybees are carbohydrates which they get from nectar (the raw material of honey), water and proteins, fats, vitamins and minerals which they obtain from pollen. Worker bees gather pollen from the anthers of flowers, pack it into "baskets" on their hind legs and carry it back to their hives. The pollen is moistened with nectar or honey and stored in the combs.

Adult bees normally include some pollen in their diet but they can, if necessary, live on carbohydrates only. However, proteins and the other constituents of pollen are necessary for the rearing of immature bees. When nurse bees consume pollen, glands in their heads secrete royal jelly which is fed to all larvae for the first three days of life and to the queen throughout her larval and adult life.

It is perhaps not generally realised that pollen is essential for the rearing of young bees. In fact each colony of bees requires about 100lb of pollen for this purpose each year.

Outside honey flow periods, honey bees can be given food to supplement their natural diet. This is given in the form of sugar (sucrose) syrup, and pollen supplements which usually contain protein-rich soya bean flour, dried yeast and dried skim milk. But while sucrose syrup is a satisfactory carbohydrate food for bees, none of the pollen supplements so far developed equals natural pollen. It is preferable, therefore, that bees should have adequate supplies of nectar and pollen at all times throughout the season.

The main source of the honey crop is white clover, but a very wide range of minor nectar and pollen sources provide food for bees during the spring and early summer when the colonies have to breed at a fast rate to produce the thousands of bees needed to gather the main honey crop. Unfortunately weed eradication, bush clearance, higher stocking rates and increased cereal production are all factors contributing to a dwindling of minor nectar and pollen sources in the tree, shrub and pasture weed groups.

The interest now being shown in the establishment of shelter belts and ornamental areas offers a noppartunity for farmers, the various organisations engaged in tree planting, and for beekeepers themselves to include in their planting programmes species which have beauty, give shelter and also provide nectar and pollen for bees.

Complete lists of nectar and pollen sources for particular areas can be obtained from district apiary instructors of the Department of Agriculture. But I would like to suggest in this article just a few of the more useful trees and shrubs for bees which can be grown in most beekeeping areas.

One of the earliest flowering nectar and pollen sources is the prostrate form of rosemary (Rosmarinus officinalis prostratus) which yields some nectar and plentiful grey pollen from July to November. It can be grown on clay banks or trailed down walls. Rosemary is evergreen and a native of the Mediterranean region. The upright variety, Rosmarinus officinalis, which grows to 6ft in height is very attractive to bees from September to December.

Of the huge range of wattles perhaps the most useful source is the one known as Cootamundra (Acacia baileyana). This beautiful tree, with its striking yellow flowers, produces great quantities of dull yellow pollen in July and August.

The native five finger tree (Neopanax arboreum) is early flowering. It supplies bees with abundant pollen and nectar from July to September.

Flowering currant bushes (Ribes sanguineum) produce greenish white pollen and white, delicately flavoured

honey from August to October. While it is basically an ornamental shrub, the flowering current could be established in rocky gullies especially to provide bee forage.

The native kowhai (Sophora microphylla) has a staggered flowering period lasting from July to December. Its golden flowers attract both bees and bellbirds in great numbers. Kowhai pollen is deep orange; the honey is mild flavoured and light amber in colour.

The ubiquitous willows (Salix spp.) are a very important early source of nectar and pollen. The flowers of the most important species S. fragilis appear in late September and early October. Weeping willows and pussy willows are also useful for bees.

Sycamore trees (Acer pseudoplatanus) provide bees with greenish yellow pollen and light amber honey. They reach a height of 100ft and have attractive pale green foliage in the spring. These large, shady, deciduous trees flower in late October and November. The leaves turn gold in the autumn.

Hawthorn (Crataegus oxyacantha) is used as a hedge plant in some areas. However, it is perhaps seen at its best when grown as an individual tree; the great profusion of fragrant, white blossom makes a superb show in late October and November. Hawthorn honey has a delicate nutty flavour and the pollen is creamy-white. The pink flowered variety also produces nectar and pollen.

Horse chestnut trees (Aesculus hippocastanum) with their splendid white flowers make a fine show in October and early November. They provide bees with brick-red pollen and also with nectar. They grow to 100ft — fine trees which are easily grown from seed. The red-flowered variety (A. carnea) is also freely worked by bees.

The native cabbage tree (Cordyline australis) will grow in either swamps or dry, open country. The creamy white flowers, which are in large terminal panicles are on show in November and December. The cabbage tree secretes nectar very copiously about every three years. The pollen is dull orange.

Meet The Commercial Beekeeper

By R. S. Walsh

Beekeeping in New Zealand, and commercial beekeeping in particular, is an enterprise of considerable importance to the national economy. It is, perhaps, not generally recognised that beekeepers apart from the production of several thousands of tons of honey, a first class sweet food, and over 100,000 lbs. of comercial beeswax annually, also provide that essential and invaluable national service of pollination of economic plants so important to the success of our pastures, orchards and market gardens.

While a number of the 190,000 bee hives registered in New Zealand are owned and operated by individuals solely as an interesting and profitable hobby, the great bulk of our hives belong to commercial beekeepers. These men depend entirely upon the production and sales of honey and beeswax for their livelihood.

Because of the intensive management requirements essential to successful commercial beekeeping, operations in this sphere on a scale great enough to provide a decent standard of living and a fair return on capital outlay, cannot be combined with any other form of permanent employment. From early spring to late summer and autumn the day is seldom long enough for the beekeeper to accomplish all that should be done. He must take advantage of every spell of fine weather and such things as the 40 hour five day week do not exist for him. Timing of manuipulations in hive management is all important and delay here can mean not only the loss of the season's honey crop but also the loss of valuable stocks of bees and equipment.

He cannot, like the dairy farmer, market gardener or orchardist, confine his activities to a comparatively few acres of land, but must depend for his success upon his ability to rent or lease apiary sites in suitable honey producing localities. This of course means obtaining the co-operaation of many people over a wide area and often involves travelling up to as much as 40 to 50 miles from his home centre.

The work involved in commercial beekeeping is often heavy and arduous and demands a high degree of physical fitness. The beekeeper too must make a thorough study of the nectar producing plants in his area and have a good understanding of local weather conditions and their relation to the habits of the plants upon which he depends for his crop.

He must be fully conversant with all phases of bee behaviour and have a good working knowledge of the chemistry of honey so that his finished product can measure up to the high standard demanded by the purchasing public today. In all it is an occupation calling for much skill, tenacity, physical fitness and the ability to withstand the worry and strain imposed by the vagaries of New Zealand weather.

WHAT EXCESSIVE HUMIDITY DOES IN THE BEEKEEPING

Humidity is an important factor in honey production and its effects and influence are felt in many aspects apertaining to beekeeping, including plant life, nectar secretion, grade of honey and its keeping quality, activities of bees, disease and deterioration of equipment.

R. S. Walsh, formerly Apicultural Advisory Officer, Department of Agriculture, Auckland, in this article draws attention to a subject that has received scant mention in beekeeping literature considering its important bearing on the welfare of the honey industry.

Plants indigenous to New Zealand are adapted to the climatic conditions and are not seriously affected by humidity, but some valuable introduced honey producing pasture plants have their origins in arid countries where the atmosphere is dry, and so humidity is detrimental to them unless attended by suitable temperatures. Red clover will secrete nectar even though the humidity may be high providing the temperature is low, but a combination of humidity and high temperatures does not suit this plant. Heavy dew at night increases nectar secretion. Red clover was introduced to England from Holland in the 17th century. Lucerne is a plant which grows wild in the Caspian Sea area and was later introduced from Persia to Greece in 5 B.C. It spread through Europe and also reached England in the 17th century. Alfalfa is the Arabic name for this plant. In order to thrive and produce nectar it needs adequate soil moisture, high temperatures and low humidity. White clover is a native of the temperate zone of Europe and is not well suited to hot dry climates. It prefers coolness and moisture and can stand a reasonable amount of humidity but does not secrete freely in high temperatures with high humidity and soon dries up in hot dry weather. It does not thrive on lime deficient soils.

High humidity is one of the most important of a number of reasons for poor seed returns from the clovers and lucerne. Failure to set seed is often blamed entirely on to lack of insects, particularly bumble bees, but poor seed-sets occur when bees are available and the plants are secreting nectar which proves that it is not lack of insects that is completely responsible. Often it is high humidity or an excess of moisture in the soil, reasons not generally associated by beekeepers and farmers with poor seed returns.

Temperature and moisture are important factors in plant growth and in nectar secretion. Plants can endure a wide range of temperature but can secrete nectar only within certain limits. Large quantities of water are used when plants are most active in absorbing plant nutrients and in transpiration, but not a great amount is required for secreting nectar. Thus, adequate but not excessive moisture in the soil is essential to plant life. High humidity is not a desirable source of moisture as it interferes with transpiration, particularly when the atmosphere nears saturation point and the loss of water by plants is almost at a standstill. As humidity increases plants become less active — not as a result of temperatures, but because the leaves are unable to throw off the surplus water. Leaves lose little or no water during rain, and very slowly during the night or on dull foggy mornings.

Beekeepers are frequently at a loss to explain why nectar is plentiful in some localities and poor in others that appear to be similar in all respects. This could be accounted for by one locality being favoured by a correct balance of tempera-

HUMIDITY MEANS TO INDUSTRY By R. S. Walsh

ture and humidity. It has long been considered that cool nights followed by hot days were the ideal conditions for a good honey flow. These conditions are not in themselves the reason, but good days are necessary if nectar secretion is to be expected and fine days usually follow cool nights in the summer. The greater the variation in temperature between day and night the lower the percentage of relative humidity is likely to be and the more certain it is that the correct temperatures for nectar secretion will occur.

Altitude has a bearing on humidity and it decreases the higher one goes.

Inland districts usually experience lower humidity than those near the sea. Not infrequently bees gather no nectar from the coastal pohutukawas until four o'clock in the afternoon when there is usually a decrease in humidity and a rise in sugar concentration. It sometimes happens that districts that have consistently given good crops of honey for some seasons suddenly produce poor crops of lower quality, whilst poor producing areas improve considerably. This is often the result of climatic changes known as cycles and may last for a period of years. There may be a series of wet or dry seasons accompanied by a change in the relative humidity experienced in previous years.

High humidity and low temperatures in the Auckland district in the early part of the season have often resulted in heavy losses from spring dwindling. Conditions such as these affect the flight of bees as moist air is a better conductor and reduces the heat of their bodies much sooner. During the summer when humidity is high bees will cluster in and around the hives. This is no doubt due in part to humidity having cut the secretion of nectar. Warm humid weather encourages swarming, whilst any change to hot dry weather, perhaps as the result of a hot dry wind, will change the mood of the bees. Usually any queen cells started during humid weather will be torn down when the weather changes suddenly to heat with very low humidity.

During periods of very humid weather the bees are cross and difficult to handle and are prone to robbing. No doubt the humidity, having cut off the nectar supply, is again mainly at fault.

A heavy honey flow is responsible for honey of better quality than that produced when the flow is light and spasmodic. Bees work fewer sources and the honey is lighter in colour and of better flavour and density. Good flows occur when humidity is low and the dry atmosphere also ensures less moisture in the nectar and enables the bees to more easily ripen the honey. During extraction the honey takes up little atmospheric moisture and a honey of high specific gravity reaches the market. Unfortunately the whole of New Zealand does not experience such ideal conditions every season and each year some districts suffer from an excess of humidity. High rainfall does not necessarily mean that the quality of the honey crop will be adversely affected unless it is accompanied by excessive humidity. The average rainfall of the West Coast of the South Island is one of the highest in the Country, but the specific gravity of the honey produced is usually higher than that from a number of other districts and is seldom below the export standard. However, honey should not be extracted during wet weather if it can be avoided. The sources from which this honey is obtained, mainly native trees and bush, are partly responsible for its density, and any lines of low specific gravity from this district usually contained some pasture honey. Unless the necessary precautions are taken, the influence of humidity upon the quality and

appearance of honey will be evident even after it has been packed. Honey not stored at the correct temperature of 45°F and relative humidity of under 60 per cent, will eventually begin to deteriorate. Moisture can permeate cartons, and neither can the lids exclude it indefinitely.

Humidity also causes surface moisture in tin containers. In the Auckland Depot when 60 lb tins were used for export, honey left outside the coolers for several months, always showed signs of surface moisture. Even glass jars with screw top lids and liners eventually had sufficient moisture to soften the top layer of the honey in this climate. However the situation has improved considerably in recent years with the introduction of plastic inserts and lids.

Export tins have largely been replaced by drums and these are better able to exclude humidity. However it is as dangerous to allow water to accumulate on top of drums as it was with tins as considerable water can be drawn into the containers by the contraction of the contents — both the honey and air — as the result of cold overnight temperatures.

Low winter temperatures with high humidity are particularly severe on wintering bees, as atmospheric moisture and exhalations by the bees condense in the hive, and lids, supers and combs become saturated with water. Mouldy combs and damp conditions take heavy toll of bees and in some winters in the Auckland district many hives die out. Although colonies may not suffer so severely elsewhere, subjection to these conditions reduces the value of colonies as honey gathering units the following season. Dry air is a poor conductor of heat, whilst moist air is much better and in a damp hive during a cold spell the loss of heat from the colony through conduction is at times very great.

High winter temperatures with high humidity are also detrimental to wintering bees. Under these conditions the bees become active, consume stores, and wear themselves out when they should be resting in semi-hibernation. Hive moisture resulting from low temperatures with high humidity causes considerable expense in replacement of supers and hive parts. It is not unusual in the Auckland district to obtain no more than a year's service from hive equipment. Lids and supers are saturated for months and moisture lies on top bars and fills the rabbets of supers. The position is aggravated by the early spring honey flows that occur in the north. Attempts by the bees, often too weak for the job, to ripen large quantities of honey increase the moisture within the hive. Under such conditions the extraction of low gravity honey is inevitable.

Humidity and warm temperatures are also a factor in diseases control.

American brood disease has never been the disastrous problem in the humid climate of North Auckland that it is in colder districts. It is slower to develop and spread and is more easily kept under control. The disease increases in severity the further south one travels. In the South Island beekeepers must keep more constant vigilance or the disease could easily get out of hand. Experience has shown that to keep American brood disease under control in the colder districts a strict burning policy must be followed. A diseased hive or two left in an apiary over the winter invariably results in the bulk of the apiary being infected the following spring. This does not occur in the Far North, but also does not mean that disease can be tinkered with in that district. It must be destroyed as it should be elsewhere, but it does show that it is slow to spread in the warmer and more humid climates. For years in India and South Africa, American brood disease was unknown, and but little has been found in the Pacific Islands; even before the introduction of drugs, little disease was encountered in the humid southern states of North America, the home of package bees.

Dysentery is a form of diarrhoea that afflicts bees, and a contributory cause is an excess of moisture. Hives with contracted entrances and no special provision for ventilation become damp and moisture falls on the honey stores and increases the water content of the bees' food. An excess of moisture in their diet is said to cause dysentery in bees. High humidity is responsible in a number of districts

for preventing the bees keeping the hives dry and outbreaks of dysentery are a frequent occurrence. As a safeguard against Nosema disease beekeepers are advised to take every precaution against dampness by adjusting winter entrances to allow ample ventilation and for the escape of moisture, and to be certain the bees receive the maximum of sunlight and are not placed under trees and in shady places. Precautions taken to guard against Nosema also protect the bees from dysentery and should an outbreak of Nosema occur hives free from dysentery will be much less likely to spread the disease to healthy bees and to other colonies. In districts where humidity is frequently excessive these precautions are very important indeed and should on no account be treated lightly.

MECHANISATION, WHY, WHEN, WHAT AND HOW

Continued from Page 20

buildings at home where a truck can't go, and can shuttle back and forth between hives and truck in wet conditions when the truck can't be driven up to the hives. A boom loader however can be used to lift honey supers off hives and onto truck, eliminating lifting by the beekeeper.

In the honey house, mechanisation can include handling supers from truck to hot room to uncapping area, an uncapping machine, an elevating platform to bring supers up to operators working height, handling of cappings, extracting pumping and straining honey, handling honey from tank to containers, handling and stacking of bulk honey containers such as 44 gallon drums, handling and stacking of extracted supers, packing honey, handling and stacking cartons of packed honey.

D. HOW TO MECHANISE.

We all know that many of us like to experiment with our own inventions, but I feel that professionally made machinery should be given first consideration and used if at all possible. By looking at other outfits and seeing how their mechanised processes woud fit in with your own methods, it is usullay possible to adapt your own routines to suit the machine. This is preferable to trying to alter or design a machine to suit your working methods. A machine has definite limits in what it can do and how much it can be altered. You are much more versatile and can change your routines fairly easily.

When picturing the machine in your own set up, consider possible limitations such as shape and size of buildings, doorways, allowable floor loadings etc.

Finally one or two observations from my own experience. I bought my present outfit twelve years ago, and the previous owner had 300 hives. He built and equipped the honey house more than adequately for his 300 hives, and by improving the cappings melter only, I was able to handle the honey from 1000 hives. With the further addition of an uncapping machine, a 3 ton capacity fibreglass tank and a drum barrow, we last season handled the honey from 2000 hives. The previous owner worked his 300 hives with a 15 cwt truck. I replaced this with a 3 ton truck when I had increased to 450 hives, and when boom loaders came on the market in N.Z. I was able to buy one as I already had a truck capable of taking it. Two years ago I replaced the truck with a 5 tonner and transferred the loader to it. Whilst we have made some of our equipment ourselves, it has mainly been a copy of something that another beekeeper has found successful over a number of seasons. I remember a well known beekeeper saying once: "We've all got one or two white elephants lying out the back of the shed," and while this is probably true by careful thought and consideration and by perhaps looking at the other fellows white elephants, we can avoid starting a collection of our own.

BEEKEEPING in KENT

By Ken Stevens NDB

Half of the home-produced top fruit in England comes from the county of Kent. Apart from several officers whose sole job is to seek out and either destroy or treat bacillus larvae there is only one official beekeeper. I am that man and one of my jobs is to encourage fruit growers to hire honeybee colonies during blossom time.

Some years ago my predecessor, John Sargeant, opioned that if every hive in the country were moved into Kent we would still suffer from inadequate pollination. On the other hand numbers of learned people who are looked to for advice in the realm of fruit production have little or nothing to say in favour of Apis mellifera. "It is sometimes useful to move hives into the orchard" grudgingly states one official pamphlet. The head of another department replies that "bees do no particular harm."

Although amongst beekeepers we find hundreds who have linked the presence of their bees in orchards with bumper crops, this does not satisfy the scientist. The more he experiments the more variables he finds and to 'prove' anything would seem to need more years, money and labour than we have available. In this country it is fashionable to wear a car sticker inviting road users to pick an English apple or pear, or to say No to the Common Market, but "Use bees in orchards" — never!

In the last decade the number of beekeepers in Kent has dropped from over 2000 to under 1000. At the same time growers who have tried bees invariably come back for more and we are now hundreds of colonies short of the demand, and this will soon become thousands. It is difficult to arouse any official interest. The problem is one for the Ministry of Agriculture but officially there is no requirement for bees and in any case the County Beekeeping Officer is employed by the Ministry of Education.

Pollen Transfer

The successful development of fruit depends on the transfer of compatible pollen grains. Wind, rain, gravity and various insects can effect this but no agency is as controllable and effective as the honeybee. Other insects have little chance, as the trigger-happy spray man, who may be persuaded to hold off once the "pink bud stage" is reached can hardly wait for the first petals to fall before he's at it destroying friend and foe alike. Somehow bumble queens continue to turn up each year, but it would be unwise to rely on them.

Some people must spend a lot of time thinking out arguments against the honeybee. They won't cross pollinate, stay at home when its cold, produce an over-set, spread fireblight, anyway we do quite well without them (although it's difficult to get more than a mile from bees anywhere in the country). Another aspect is the use of hawthorn windbreaks, of adjacent fields of bluebells and carpets of dandelions all demanding the bees attentions and resulting in their neglect of the fruit blossom that often yields but little pollen and perhaps nothing but dilute nectar.

Of course the policy regarding bees is thought out by horticulturalists, botanists and beekeepers. The latter might include anyone who owns a veil and has a box wit hbees in it. That bees have to be bred and managed, specially for the fruit is not so obvious, nor does the need for research and experiment in the realm of getting the best out of honeybees appear to have occurred to anyone but the **odd** bee man.

Whether fruit is self-fertile or self-sterile, a superabundance of honeybees does more than insure against a bad crop. The use of pollinator bouquets to ensure that viable pollen is close to the main variety also helps the honeybee to do its work. The treatment of trees to stimulate nectar secretion and the elimination of competitive sources also helps. But our springs can be cold and colonies for the orchards require vigorous young queens, stimulated by early feeding to produce large numbers of eager foragers to carry out their work in the orchard.

Pollination service

Feeding with honey-water from the previous year's crop, the use of pollen traps, moving bees in when they can set to work forthwith on the blossom, these and a dozen other tricks show us that just dumping a hive or two hives here and there is not quite good enough, but what is this service worth?

The orchardist sometimes asks "Do I get a share of the honey", as if the beekeeper goes off groaning under the weight of his hives. This actually happened in 1970 but it was the first time for many years. A fee of £3.37 is paid whether the hives have come from as far away as Dorset or from locally, whether they cover 10 combs or 2), or stay for one week or four. Most beekeepers being part-timers or hobbyists do not consider the two evenings spent delivering and collecting the bees as overtime, but they would not do well to think too much upon the possibility of their bees contacting disease or swarming, or being sprayed while they are not near enough to help their bees.

ON THE POLLINATION OF THE PURIRI (VITEX LUCENS, T. Kirk)

By D. Petrie, M.A.

Trans. and Proc. N.Z. Inst. XXXVII 409-411, 1904:

This interesting account on pollination of the puriri published in 1904 has been supplied by former Apiculturist R. S. Walsh who points out in his book NECTAR & POLLEN SOURCES OF NEW ZEALAND that whilst bees visit puriri for pollen supplies they are not attracted by the nectar secretion which flows the year round. Apart from the fundamental construction of the flowers making collection difficult for bees, Mr Walsh refers to the fact that the sugar concentration is consistently low and is therefore not attractive. If, however, humidity remains low enough for long enough, efforts by bees to gather nectar may result.

The Puriri is a well-known beautiful and valuable tree that grows throughout the lowland parts of the Auckland Province, and extends as far south as Mahia Peninsula on the east coast and Cape Egmont on the west.

Its chief time of flowering is in the winter, though stray flowers may be found at most seasons of the year, and trees may always be found in full bloom during the months of May, June, July and August. The flowering season of single trees often extends over two months or more, and it is no uncommon thing to see full-grown fruit and young flowers on the same branch, and even on the same panicle.

The flowers grow in spreading flattened auxillary panicles among the upper or younger leaves. Those borne in a panicle vary in number from four to twelve, and are supported on rather slender but fairly rigid flower-stalks. The flowers are of fair size, being about an inch in length and nearly an inch wide in front.

The calyx is short and cup-shaped. The corolla, which is pink or more usually dull-red in colour, is tubular and irregular, with a four-lobed limb. The upper lobe or lip is comparatively short, slightly arched, and entire or bifid. The lower lip is much larger and broader, strongly deflexed, and trifid.

The stamens, four in number, spring from the lower part of the corolla-tube, and have long filaments. The bases of the filaments and the parts of the corolla between their points of insertion are densely clothed with a felted mass of long hairs that completely blocks the tube of the corolla leading down to the ovary.

The pistil consists of a short subconical ovary, situated below the level of the bases of the filaments, and of a long and fairly stout polished style, terminating in two (rarely three) short divergent style-branches, and are not larger than the head of a pin. Where the style joins the ovary there is a shallow constriction, and it is this groove that secrets most, if not all, of the abundant nectar that bathes the ovary, and indeed generally fills the entire space between it and the plug of hairs that block the corolla-tube.

Now, if the development of the flowers be carefully watched, a number of curious and interesting phenomena will be observed. Before the flowerbud opens the corolla has nearly reached its full size, and the flower lies in a slightly drooping position, or with its axis horizontal. The front of the corolla-tube is closed by the infolding of the corolla-lobes. The superior lobe lies outermost, the later lobes of the lower lip lie within this, and the strongly in-curved inferior lobe lies innermost. The stamens are already full-grown. The tips of the filaments are sharply curved downwards, and the anthers, already beginning to dehisee (open spontaneously) and shed their pollen, are held within the concave infolding of the lowermost lobe of the under lip.

The flower opens by the successive bending back of the lobes of the corolla already mentioned, the deflexed filaments are not elastic, and seem to take little, and probably no part in hastening the opening of the floral-box containing them. The anthers are not ripe, and the pollen sacs are gradually everted so that most of the pollen falls, or is blown or is brushed away while the anthers stand in the axis of the corolla-tube. In the course of a day or two the filaments straighten themselves out, and finally lie along the upper internal surface of the corolla-tube, and are closely appressed to it, eventually projecting a little beyond the upper lip. The pollen meanwhile has all been shed, and the anthers are shrivelled and withered.

When the corolla has fully opened the secretion of nectar begins, but is scanty at first. The style at this stage is little more than half-grown, and lies against the upper part of the corolla-tube, between the two pairs of filaments. When the corolla is fully expanded the style begins to elongate, and in two or three days, when the filaments have completed their straightening, it has grown as long as the stamens. When nearly full-grown its tips begin to curve towards the axis of the flower, and ere long the style-branches open back in the axis of the flower and develop their small terminal stigmatic surfaces ready to receive any grains of pollen that may be brought in contact with them. Throughout this development of the styl ethe secretion of nectar continues to be most abundant, and drops of it will gradually fall out of the corolla-tube if the branchers are shaken. The secretion generally continues until the corolla begins to wither.

These are the facts disclosed by careful observation. We see at once that the pollination of the pistil of a flower by pollen from the anthers of the same flower is practically impossible, for the pollen is matured and shed long before the pistil is full-grown or ready for pollinaation. The movements by which the anthers, and after a few days' interval the style-branches, are placed and kept for a considerable time in the axis of the corolla-tube are evidently designed to bring about pollination of the pistil by the pollen of some other flower. That other flower may be on the same tree or may be on another. Whether the pollen from another tree is prepotent over that of other flowers on the same tree I am unable to say, and only an elaborate enquiry could decide. It is, however, obvious that, owing to the prolonged period of flowering of single trees, there are abundant opportunities of pollination with the pollen of other flowers on the same tree.

Let us now consider what may be the agents that effect pollination. There is nothing to suggest that the wind blows the pollen from flower to flower or from tree to tree, for all the structural features that characterize wind-fertilised flowers are absent. **Though the secretion of nectar is both abundant and long-continued, flying insects do not frequent the flowers; and indeed the store of nectar is so carefully protected by the natural plug of matter hairs obstructing the corolla-tube that insects could reach it only by biting through the base of the corolla-tube, and this I have never known to occur. There is no doubt that pollination is effected exclusively by small birds.** These constantly visit the flowers, hang on the rigid leaf-stalks or flower-stalks, and insert their bills into the corolla-tube to suck the nectar. In sucking the sweet juice the tui may be seen grasping a flower in one foot and turning it round into a more convenient position. In passing from flower to flower the birds cannot avoid bringing pollen from young flowers to older ones, and so effecting pollination. That the arrangement answers its purpose is shown by the fairly abundant fruit which the puriri bears even in the neighbourhood of cities, where native birds are now scarce.

The mechanism for securing pollination is such more complete in the puriri than in **Rhabdothamnus solandri**, the store of nectar is much more copious, and is secreted for a longer time, while the provision for preventing insects from plundering it is most complete.

Altogether the arrangements herein described constitute one of the most interesting and remarkable adaptions of floral structure to the habits of honey-sucking birds that have so far been detected in our flora.

WORK OF AGRICULTURAL Detailed by NBA

DIFFERING OPINIONS:

A feature of the issue was the wide difference of opinion expressed by authorities on the subject. I quote from a statement from Dr D. U. O. Becroft, Princess Mary Hospital for Children, Auckland.

(1) "There is no proof or even strong possibility that any human infant has been harmed during the widespread use of 2.4.5.T. over 20 years, or during the massive use in Vietnam.

(2) There is a wide safety margin in the present use of 2.4.5.T. in relation to the known effects on animals. A very obvious accident would be required to give significant human exposure, and there is no possibility of harm from hand spraying, skin contact, drift, a smell of spray in the air, and similar remote exposures."

Beekeepers along with all other citizens are vitally concerned in a matter of such importance. I report it here as an instance of benefit to be derived from a part of the Board's work, though it be far removed from what would normally be regarded as part of a beekeeping representative's task on such a Board.

GROUND APPLICATORS:

The educational programme initiated by the Board for ground spray applicators, is rapidly gaining momentum. It has the full support of the N.Z. Spray Contractors' Federation, and candidates are being enrolled at a satisfactory rate.

The Board has long been of the opinion that a widely distributed reservoir of trained personnel is the best possible way to ensure maximum benefit with minimum likelihood of damage. More rigid enforcement of the Chemical Rating requirements of aerial operators is being sought from the Civil Aviation Department.

INEVITABLE LOSSES:

After being actively engaged in the protection of our interests over a long period, I have reached the conclusion that some loss of bees from time to time is inevitable, so widespread is the use of powerful insecticides.

Regardless of what regulatory measures are taken, sooner or later human eror occurs, despite thorough endeavour to warn and educate users. Whilst these periodic losses are small as a percentage of the whole, they can be serious to the beekeeper concerned.

Apiaries are, however, well spread, and the risk of major loss is therefore minimised; in marked contrast to orchardists, and owners of vineyards and market gardens, whose undertakings are concentrated.

Despite widespread appeals for caution these latter groups are still suffering severe losses from hormone damage. Civil action against the culprits rarely succeeds, as proof is hard to establish to the satisfaction of the Court. This difficulty would also apply to beekeepers should they make a civil claim for loss. The action best calculated to prevent a recurrence of such incidents, is to make the loss widely known locally, and protest vigorously to anyone who could have been remotely associated with your loss. Where applicable, quote the Apiary Protection Regulations which are still a mighty weapon in our defence. The results of such a furore may surprise you. Do not neglect to advise your Apiary Instructor immediately, should you be unfortunate enough to sustain loss from this cause.

CHEMICALS BOARD Member Tom Pearson

It is customary to report each year at Conference time on Agricultural Chemicals Board activities in relation to the beekeeping industry.

Only rarely do matters directly related to our interests come before the Board, but, indirectly, beekeepers, along with other sections of the community, benefit greatly from control over the whole field of chemical application to the land.

SPECIAL INTEREST:

The welfare of the beekeeping industry is my special consideration. In this regard I supply on the spot information in the same manner as other Board members representing specific primary production manufacturing or commercial interests. The Board's field of operation is, however, very wide indeed, and to accept membership involves considerable responsibility for decisions covering such matters as Registration of Chemicals, labelling, recommendataion of specific research and publicity programmes, testing chemicals for suitability, residues in produce, plant damage from hormones, pasture pests, nomenclature, effects on wild life and public health.

In addition, the current problems of chemical manufacturers, Federated Farmers, fruit growers, grain and produce growers, seed merchants, grape growers and beekeepers must all be dealt with as fairly and expeditiously as possible. The Secretariat is under heavy pressure at all times.

I mention these matters because a change in your representative must come sooner or later, and it is desirable that a newly appointed person should appreciate the wide range of subjects in which he would be involved. For instance 'Pollution of the Environment' receives much publicity these days, and the Board is continually reminded of its responsibility in this direction by Societies and individuals, who have adopted this theme as their particular crusade. Due consideration must be given to the evidence presented, and, after full investigation, a decision made on what action, if any, should be taken, having due regard to the benefit versus risk aspect of the case.

2.4.5.T. CONTROVERSY:

A case in point is the chemical generally known as 2.4.5.T which is used extensively for land clearance of gorse, broom and unwanted woody growth. It has been much in the news as a potential threat to human health, on the grounds that it could, under certain circumstances cause foetal damage resulting in birth defects.

The Board recently received a lengthy petition from the Environmental Defence Society asking that the chemical be banned in the first instance for six months, and expressing grave concern at its continued use.

The Board set up a Specialist Committee to investigate the matter. After study of this Committee's report, the following restrictions and requirements were recommended:

(1) Home market packs to be withdrawn,
(2) Use as a pre-harvest fruit drop preventative on apricots to be discontinued,
(3) A label warning that women of child-bearing age should avoid exposure to 2.4.5.T.
(4) Labels to emphasise that contamination of public, domestic and private water supplies must not occur.
(5) That the Dioxin impurity content be progressively reduced by manufacturers, (Dioxin being the suspected danger element).

TWO REPORTS:

Two cases only have come to my notice during the past year. One was caused by the application of Diptrex to a maize crop in daytime, when bees were active. This case rather mystifies me in that maize could not be classified as a flowering crop attractive to bees. In such a case the Apiary Protection Regulations could not be invoked and further, Diptrex has not in the past proved hazardous to bees under nurmal conditions. It has been used extensively over the years on flowering white clover seed crops as a treatment for case-bearer moth, with no noticeable loss of bees.

In the second case a domestic beekeeper killed his own hives by spraying an area of raspberries with an insecticide. He no doubt read the label, and knew all about the precautions others should take, but of course it couldn't happen to him. He is now a sadder but wiser man.

ACKNOWLEDGEMENTS:

My position as your representative carries responsibility, but I must stress the great importance of the work of the Apiary Section of the Dept. of Horticulture to safeguard our interests in this field. Their day to day vigilance and supervision is beyond any contribution I can make.

The Superintendent of the Beekeeping Industry Mr E. Smaellie is well informed on all aspects and happenings in the chemical field.

Specialists and Apiary Instructors are well informed, practical men; observant and alert; quickly on the job should trouble, serious or suspected, be reported.

The field and laboratory work of Mr T. Palmer-Jones and his associates in testing insecticides for their suitability to control pests, yet maintain a delicate balance to safeguard bees, is invaluable to the honey industry.

My sincere thanks to these Officers, and to your Executive and members for the confidence expressed by appointing me as their representative for a further period.

During the past year the joint efforts of all concerned have achieved a result which must be the envy of beekeepers in other lands, where less provision is made for their welfare.

PRESS CLIPPINGS

Queen Bee Trial Wrecked

Vandals who overturned eight hives at the Auckland Beekeepers' Club two weeks ago have upset requeening experiments and have cost the club about $200 that it would have received from the sale of honey.

The president of the club, Mr P. C. Muir, said yesterday that the requeening experiment was aimed at producing a new queen bee without inconveniencing the hive.

"There is quite a technique involved and we would have been successful," he said.

But the vandals ruined the club's chances.

The $200 lost would have gone toward the cost of running the club.

Mr Muir said the eight hives had been reconstructed but many bees had died from exposure. — "N.Z. Herald," Auckland 30/10/72.

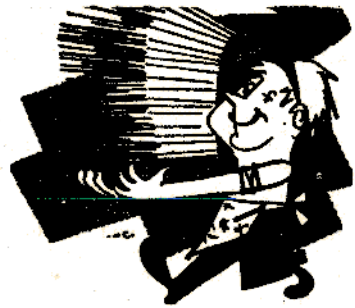
Apiary Equipment Lost In Fire

A beekeeper lost most of his apiary equipment when a fierce blaze, lasting almost a day, gutted a large block shed about one mile from Arrowtown, and near Lake Hayes, during the weekend.

Arrowtown volunteer firemen had difficulty tackling the blaze because of lack of accessible water.

It is believed that the apiary equipment was owned by Mr Ken Tudor who was leasing the building. — Otago Daily Times, Dunedin 17/8/72.

BRANCH NOTES



WAIKATO

I get tired of writing about our terrible spring weather so thought I would share some "Thoughts on a Branch Meeting" for a change.

"Gentlemen, we made some most important, far-reaching decisions . . ." So started the delegate's report on Conference as he tried to tell us all that went on.

Of particular interest was a talk by Mr Allan Bates on early beekeeping existence and some of the highlights of events of those days.

After lunch, in a more relaxed atmosphere, we looked at both the Eckroyd and the Haines proposals.

Then a matter of somebody receiving 18c per pound for dark honey (nett) exported from Tonga. No question that the price was right. Many could be seen working out just what 18c would mean to them. Then one staunch supported of the H.M.A. added: "If you got that I would offer him at 17c". Whereupon another supplier said he would offer at 16c. Don't laugh as both these gentlemen were strongly opposed to a person finding and developing a market for them to undercut.

For my part, if I was getting 18c I would either say the price was 20c to be on the safe side or just keep quiet.

General business included discussions on "Lindane used for grass grub control," "How to stop farmers cutting barberry hedges," "A broadcast in the country session from Invercargill," and "Beekeepers, like sheepfarmers, like total acquisition."

Then back to the wind and the rain . . . make up some extra hives to allow for the extra costs and feel that somehow all will turn out well.

Note to all beekeepers. We want to see you at the next meeting. Who knows, you may have the final solution to industry problems also possibly even a solution to the weather.

Reported by C. Bird

WAIKATO EXTRA

The latest game of Russian roulette as played by Mac and Phil. When sitting in the truck, miles away from home while rain pours down outside, catc ha bee off the window and place it so that as their two legs come together the bee will sting one of them. Try it for excitement. It also passes the time well.

FAR NORTH

For the past month we have been blessed with beautiful "Winterless North" weather. The pity is that we could not have ordered such fine days for Conference in May.

Spring has been earlier than usual and local beekeepers are fighting to get through their spring work. Hives have come through extremely well, plenty if not too much feed and are now good strong colonies, with so far, very few cases of swarming.

Nevertheless, last week we had some good heavy showers of warm rain which brought up some beautiful fields of buttercup and clover.

Members of the Far North Branch wish you all a wonderful season and Season's Greetings to each and every one of you.

Reported by A. van Zwijndregt

BAY OF PLENTY

Bay of Plenty Branch members met recently for their first meeting since Conference. Arthur Ward gave a report on Conference activities. During the evening the opportunity was taken to present Mr Ron Parkes with a Branch Life Membership Certificate.

Ron was the first Secretary of the Branch and has always taken a very keen interest in Branch affairs.

Also on the topic of Life Memberships. It was very pleasing to see four National Life Members of the Association at our last Field Day. The four were the fit and active Jim Barber, the evergreen Allan Bates, Roy Paterson who is well-known among older beekeepers; and Arthur Greig, our newest National Life Member, who is settling in well in his new residence at Omokoroa.

A number of Branch members travelled to the meeting arranged by Doug Briscoe in Rotorua to hear an address by Professor Townsend of Canada. This address was enjoyed by the fifty odd beekeepers present.

The 30 cents Canadian (24c N.Z.) per pound irrespective of colour being paid by packers in Canada certainly made us sit up and take notice.

Our season has progressed very well up to the present. We had a colder than usual winter and this was followed by a spring which provided some good warm fine weather during the willow flow. As a result there is an abundance of pollen noticeable in the hives.

Some months ago rewarewa prospects looked hopeless but a more recent survey shows a fair budding. The prolonged cold frosty winter appears to have delayed the budding of the rewarewa which is normally well advanced by early winter.

Tawari budding is reasonably good and clover is right following the cold frosty winter. Providing we get suitable weather at the right time we should finish up on the sheep's back so to speak.

Reported by Don Barlow

SOUTH CANTERBURY

We have had a favourable spring in South Canterbury with an almost perfect mixture of rain and sunshine. In consequence we have had the best willow flow and the best bush flow in years. If the season continues in this vein, we are hoping for a bumper crop for a change.

The Training Seminar was the most interesting activity in recent weeks, covering a most successful three days with a large number of beekeepers attending.

The meeting with Professor Townsend of Canada, a world authority on honey and honey processing was most informative. Beekeepers were present from many parts of the country and all agreed that their trip had been most worthwhile.

Of special interest was the Professor's comments on the devastating effects of the accidental introduction of African bees into South America. Anyone who still thinks we should be allowed to introduce new breeding stock into the country without stringent safeguards has failed to take the point.

I hear that Canadian beekeepers received about 31c Canadian (N.Z. 24-25c) per pound for their bulk honey this year. I await, with anticipation, word of our final payment and hope that everyone will be satisfied.

Reported by M. R. McKenzie

WEST COAST

The major occupations of the beekeepers here of late have been feeding the bees and praying for a honey flow. The former is hard on the pocket and the latter bad for rheumatics of the knee if it is performed on the wet ground.

There is now ample blossom . . . if only the weather would settle down to a more consistent warmth and dryness. The persistent cold southwest winds on the few fine days have been very harmful.

To compensate we will need a warm bright summer and plenty of rata bloom on the trees that are left. Examination of one tree has indicated some prospect.

Bees in buildings, trees and stumps are best hygienically destroyed by responsible beekeepers. Some of these locations can harbour enough bacillus lavae to wipe out many healthy hives if wax, bees and all are not burnt and buried.

As these are the last notes before Christmas, it is an appropriate time for the beekeepers of the West Coast to wish all other beekeepers a prosperous season and a Happy Christmas.

Reported by Peter Lucas

READERS' RECIPES

LEKACH HONEY CAKE

(Israel)

8 oz. thin honey, 12 oz. self-raising flour, 1 teasp. ground ginger, ½ teasp. mixed spice, ½ teasp. baking soda, 2 eggs, 4 oz. castor suger, 3 tablsp. corn oil, ¼ cup warm water, ½ oz. blanched and shredded almonds. Grease an 8 in. straight sided sandwich tin and line it with greaseproof paper so that the paper stands well above the sides of the tin. Warm the honey. Sift the dry ingredients together. Beat the eggs and sugar together until light and creamy, then beat in the oil and the honey and add the dry ingredients alternately with the water. Pour this batter into the prepared tin, sprinkle with the shredded almonds and bake in the centre of the oven at 350 deg. F. for 40-50 minutes until well risen and firm. This cake should be eaten while fresh, if possible while it is still slightly warm.

★ ★ ★

DATE LUNCH LOAF

Put 4 oz. butter, 1½ cups chopped dates, ½ cup honey, 1 teasp. mixed spice, 1 teasp. cinnamon, 1 teasp. baking soda into bowl and pour ¾ cup boiling water over. Stir until butter is dissolved. Stir in 1½ cups flour and 1½ teasp. baking powder. Bake in moderate oven (350 deg. F.) about one hour. Best left until next day before cutting. Keeps well.

SITUATIONS WANTED

Position as assistant required in N.Z. I have already had three years experience with a master beekeeper of 30 years' standing who works 350 colonies in this State. I hope to acquire and exchange ideas for the furthering of knowledge in beekeeping.

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N.Z. WOOLPACK AND TEXTILES LTD.

P.O. Box 44, Foxton.

TREES FOR BEES

Continued from Page 32

Lime trees (Tilia spp.) which are known as linden in England and basswood in the United States, are important nectar sources in both those countries. The most useful species for honeybees in New Zealand are T. vulgaris, T. platyphyllos and T. americana which, when fully grown, are all majestic trees up to 120ft high. The small, pale yellow flowers appear in mid-December and remain for most of January.

Lime trees are only a minor nectar source in New Zealand because there are so few of them. Lime tree honey is very light amber in colour and it has a delicate peppermint flavour. The lime tree is not a particularly good pollen source but it secretes nectar very heavily in suitable seasons.

Widespread planting of these trees, could, in the very long-term, bring about an increase in the overall honey crop. They could become an important source of the main honey crop in areas where white clover is not plentiful and in seasons when adverse conditions, such as drought, restrict the flowering of white clover.

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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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.

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FRONT PAGE STORY

IMPOSING INDEED is this spectacular edice of Poznan Town Hall in Poland's bee museum which attracts thousands of apiarists annually from many parts of the world. As long ago as before World War II beekeeper Stanislaw Kirka planned to create a national museum of hives as unlike the normal conception of a hive as it would be possible to imagine.

Under the direction and encouragement of Dr Ryszard Kostecki, the museum has grown to include many remarkable miniatures of buildings and figures including Chinese peasants, brown bears, a church, an opera house and a huge wooden figure of a Polish woman in national costume.

Situated on the outskirts of Swarzedze, 15 miles from the city of Poznan, the museum comprises 140 exhibits showing the history of Polish beekeeping since earliest times. The oldest in the collection is in the shape of a log, dating back to the 13th century.

Some of the hives have grotesque faces thought by the creators to frighten away potential honey thieves; at a later period, designs became based on well known buildings in the district. One of the hives was designed by Dr Dzierzon who died in 1906 and was regarded by some as one of the originators of moveable frames. His enterprise was recognised by the award of a Gold Medal by King Edward VII of England.

This museum is one of the world's few not requiring "Do Not Touch" notices, since each exhibit is fully stocked and the occupiers are prepared to fend off interlopers.

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