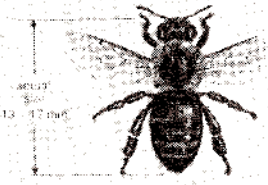
THE NEW ZEALAND

BEEKEEPER

MAY, 1970

QUEEN



WORKER

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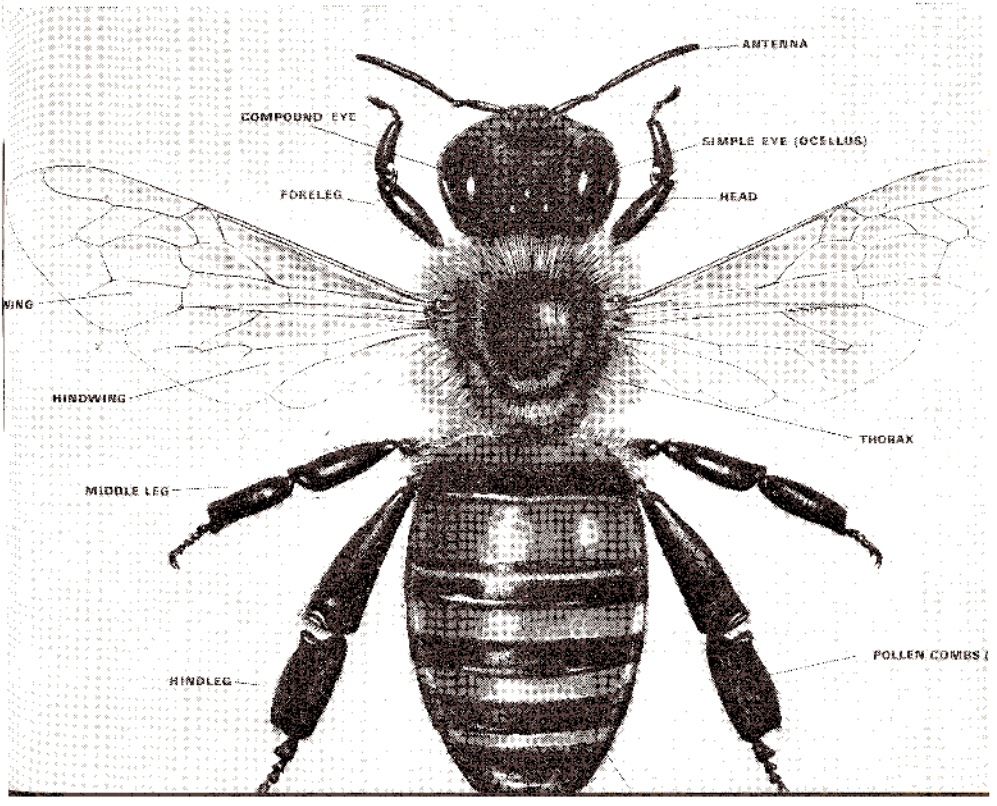

THE NATIONAL BEEKEEPERS' ASSOCIATION of N.Z. Incorporated

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Editor: Leslie W. Goss

MAY, 1970

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TRY THIS

SIMPLE TEST

EVERY NEW ZEALAND beekeeper is invited to hold this page close to their alfactory organ or in proximity to to the mouth to carry out a simple diagnostic test by exhaling air on the surface of this paper.

Should the immediate reaction be for the paper to turn green it would be expedient to call your medical adviser at once. If the colour is brown a dentist should be consulted as soon as possible. Purple would indicate the advisability of visiting a psychiatrist and red a dreaded visit to the bank manager. For a colour change to black the portent could be serious and an appointment with a lawyer is recommended to make your will.

If there is no change in colour of the paper from the original off-white there is every reason to believe that you are in perfect health and fully capable of making arrangements immediately to participate and give support to CONFERENCE proceedings at Auckland next July.

Full details are published in this issue of arrangements made by the host branch for your enjoyment and there is an adequate list of hotels and motels in which to recuperate on completion of the day's business.

As a member of the industry in New Zealand it is your bounden duty to attend Conference if you possibly can. The future of the industry, which includes YOUR future, may well be decided at this year's meeting, and you will have no one to blame but yourself if decisions are taken which are contrary to your views and you have not had your say.

It is regrettable but true that the industry is not united on a number of subjects and there will be lively discussion on crucial topics. It is the industry which has to decide which path it is to take. Ministers of the Crown, heads of Government departments, members of Parliament and others outside the industry cannot make decisions on industry policy neither should they be expected to do so.

We must be the masters of our own fate. Without the support of workers we know what happens and the life of the drone is transitory.

BEEKEEPERS TECHNICAL LIBRARY

DONATIONS RECEIVED

Donated by Mr. A. C. PEARCE of Dunedin—
"Beekeeping" by Kenneth K. Clark 1951 222p
"Story of the Hive" by C. Williams 1928 200p
"ABC and XYZ" 1919
Sundry Pamphlets and Magazines
Donated by Grahame M. Walton of Palmerston North—
"Beekeeping for Beginners" by G. H. Cale 1964 144p
Donated by the Cawthron Institute, Nelson, through the courtesy of The Director:
"The Australasian Bee Manual" by Isaac Hopkins — Third Edition 1886 340p This book, in perfect condition, was presented by the Author to Professor (later Sir) Thomas Easterfield.
Donated by University of California, Berkley.
Assortment of Pamphlets and Leaflets.
Donated by the Superintendent, Beekeeping Section, Department of Agriculture
Proceedings of the Beekeeping Seminar, Ruakura, 1969
From an unknown source—
Arthritis and Folk Medicine, by D. C. Jarvis, M.D. 1966 160p
Copies of the Catalogue of Books as printed in the February issue, now available from all branch secretaries and from the librarian.

Beekeepers Technical Library,
P.O. Box 423, Timaru.
(Chris Dawson, Hon. Librarian).

DOMINION CONFERENCE

AUCKLAND 8, 9, & 10

CONFERENCE ARRANGEMENTS

Conference 1970 will be in the R.S.A. WAR MEMORIAL HALL at The Strand, Takapuna, on Auckland's residential North Shore.

There are ample parking facilities and the sea is a stone's throw from the venue for the especial benefit of the more hardy members who welcome a morning bathe in the warm waters of the Rangitoto Channel.

The adjoining Recreation Hall will be used for the social functions, details of which are listed below.

As with all large metropolitan areas, central city meeting places available for several days are difficult to find, and parking facilities are virtually non existent for lengthy periods. The host branch has wisely decided to finalise arrangements the short distance across the Harbour Bridge, where a variety of accommodation is readily available at prices to suit all pockets, and for motorists, street parking can be found without much difficulty.

A social evening has been arranged for Tuesday July 7 from 8 p.m. —11 p.m. prior to the opening of Conference on the Wednesday morning, and on the evening of the 8th a dinner and dance has been organised at "GREYDENE", Rangitira Avenue, Takapuna at 7 p.m.

Charge for the dinner will be $2.25 or with drinks, $3.25.

Tickets for this function should be obtained from Miss H. Blair at 157 Carlisle Road, Browns Bay, Auckland 10, and it is particularly requested that applications be made as early as possible to assist with catering arrangements.

The host Branch welcomes all visitors to Auckland and every effort will be made to make their stay in the Queen City as happy and enjoyable as possible.

Cars will be provided to take members from air, bus and rail terminals to the North Shore and it is essential to give advance notice of estimated times of arrival to the conference organiser Mr. R. W. Blair at 157 Carlisle Road, Browns Bay, Auckland 10 with the number of passengers in the party. Phone: Browns Bay 1565-D.

For your convenience, the following hotel and motel accommodation is detailed. There are no private hotels on the North Shore.

RATING CODE: ☐ **FULLY LICENSED HOTEL**

● **TOURIST LICENSED HOTEL**
(Liquor available to guests only)

☐ **MON DESIR MOTOR HOTEL**, Corner of The Promenade and Hurstmere Road, Takapuna. 74 beds. Room rate $7.00 - $9.00 single, $9.00 - $12.00 twin. Meals optional and extra.

● **TAKAPUNA LODGE MOTOR INN**, 54 Anzac Street, Takapuna. 54 beds. 19 units. Meals available in the "Coachman Restaurant" on premises. Breakfast served in unit if required. Unit rate from $6.95. single, $8.75 double.

(Both hotels listed above are within 5 minutes walking distance of Conference venue).

☐ **MILFORD MARINA**, Kitchener Road, Milford (Guest's car entrance at 27 Omana Road) 32 beds (16 twin or double units) BB $4.75 single $7.50 twin. Lunch and dinner optional (a la carte) and extra.

☐ **POENAMO MOTOR INN**, Northcote Road, Takapuna North. 46 beds, (23 twin units) Rooms $6.50, $9.00 twin. Meals optional (a la carte) and extra.

☐ **ESPLANADE**, Marine Square, Devonport. 35 bedrooms, $4.50 - $9.00 single. Meals optional and extra.

MOTELS

★★★★ **BEACH 'N TOWN MOTEL**, 24 Milford Road, Milford. $7.00 a night for 2 persons. Minimum unit charges $5.00 per night.

★★★★ **DEEPACRE MOTEL**, 7-9 Killarney Street, Takapuna. $8.00 per night 2 persons.

★★★★ **LOCHABER MOTEL**, 16 The Promenade. $6.00 - $7.00 per night. Min. unit charge $5.00 per night.

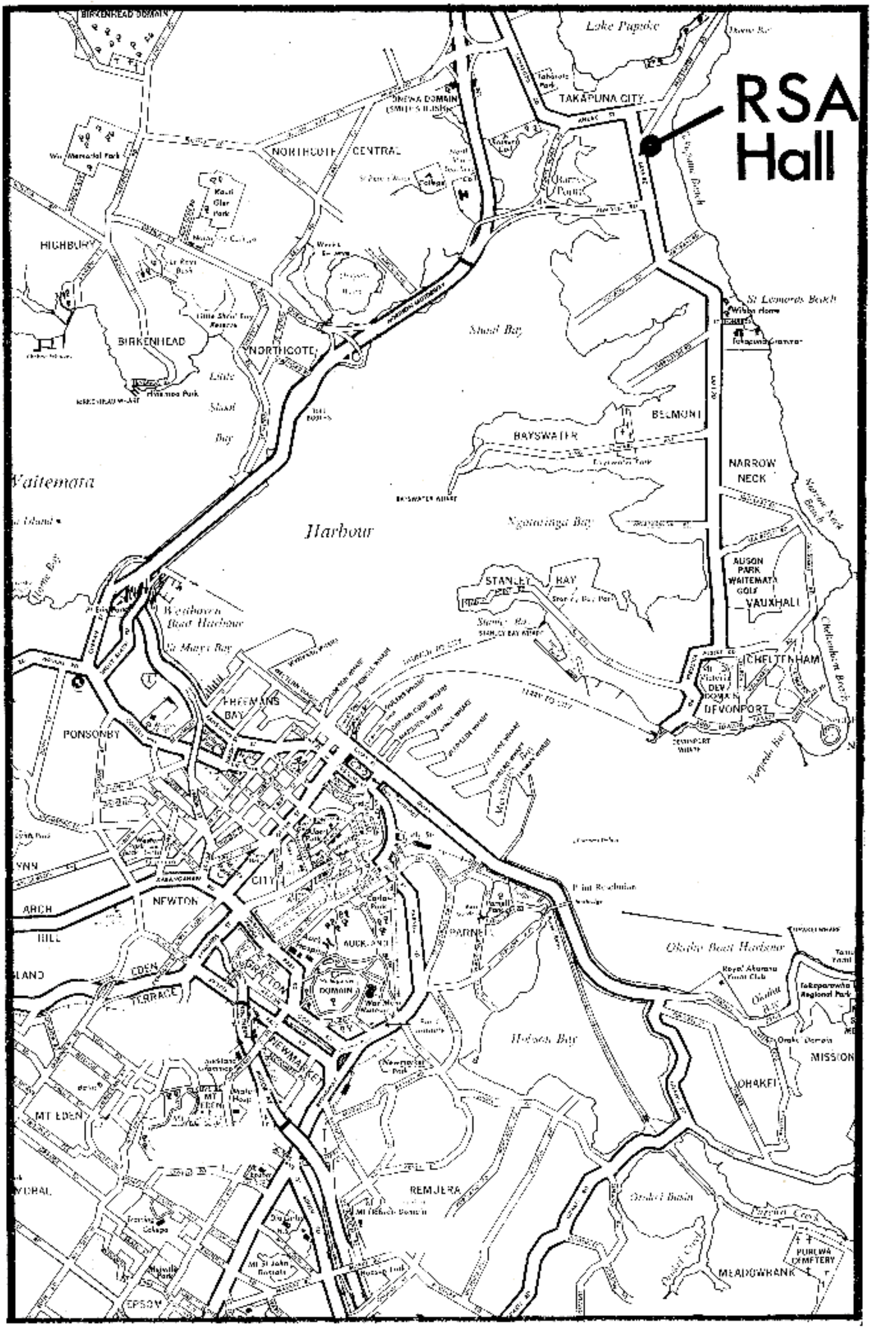
★★★★ **MILFORD TRAVELODGE**, 16 Parr Terrace, Milford. $7.00 per night for 2 persons.

★★★ **ALADDIN MOTEL**, Main North Road (4 minutes by car from Conference Hall) $3.00 a night per person.

★★★ **PARKLANDS MOTEL**, 474 Glenfield Road, Glenfield. $6.00 per night for 2 persons. Minimum charge $5.00

★★★★ **MAIRANGI LODGE**, 8 Sidmouth Street, Mairangi Bay. $7.00 per night for 2 persons; minimum $5.00.

★★★★ **SEASPRAY LODGE**, Manly Esplanade, Browns Bay. $6.00 per night for 2 persons.


RSA
Hall
Lake Pupuke
TAKAPUNA CITY
NORTHCOTE
CENTRAL
HIGHBURY
BIRKENHEAD
NORTHCOTE
Shoal Bay
Little
Shoal
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BELMONT
BAYSWATER
NARROW
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Ngataringa Bay
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PARK
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BAY
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Boat Harbour
St Marys Bay
CHELTENHAM
DEVONPORT
FREEMANS
BAY
PONSONBY
CITY
NEWTON
ARCH
HILL
EDEN
TERRACE
AUCKLAND
DOMAIN
PARNELL
GRAFTON
NEWMARKET
Hobson Bay
Okahu Boat Harbour
OHAKEI
MISSION
MT EDEN
REMUERA
Orakei Basin
Purewa Creek
PUREWA
CEMETERY
MEADOWBANK
EPSOM

★★★★ SUNSHINE MOTEL, 36 Bay View Road, Browns Bay. $4.00 per night per person.

★★★★ PRINCESS TOWERS MOTEL, 67 Princess Street, Northcote. $8.50 per night for 2 persons. Minimum charge $6.00

Members are reminded that hotel and motel managers are entitled to a deposit when a booking is made and that to avoid errors, it is wisest to make reservations in writing for the specific dates required and type of accommodation required. A written request will bring a brochure and full information, and it is in your own interests to book early to obtain the type of accommodation you need most.

Don't blame the organisers or the host Branch if you leave reservations to the last minute and find that all the best pubs or motels are fully booked.

SOCIAL EVENING RESERVATION

I require ..... Tickets at $2.25 for Dinner

or ..... Tickets at $3.25 for Dinner and drinks

for which I enclose $.....

Name .....

Address .....

.....

To be sent to:

Miss H. Blair,

157 Carlisle Road, Browns Bay, Auckland, 10, as soon as possible and not later than July 1st.

Canadian Visit Cancelled

The organiser of the scheduled visit to Canadian beekeeping plants in June next has been compelled to cancel arrangements for this year at least, but there are hopes that a better season next year will enable plans to be put in hand again.

The work entailed for George Winslade will not be entirely in vain if the visit can get off the ground next season; most of the organisational work will be under control and contacts already established will have to be re-enlivened. There is certainly much that can be learnt from our Canadian counterparts and their know-how would benefit the industry here.

EXECUTIVE DECISIONS AT WELLINGTON

Executive of the National Beekeepers' Association had a wide variety of business on the agenda for deliberation at the meeting last March, of which the following is an abridged report. President Don Barrow was supported by members from the north and south islands and in attendance were the General Secretary and the Editor.

Because of weather conditions in the capital city and closure of the airport travelling to the meeting and the return home in particular became an ordeal. Only two members were fortunate to travel on the scheduled day of departure on the Thursday, remaining members for both north and south islands being stranded in the capital for an unwanted stay. Hanging around an airport for hours on end is not the most enjoyable form of recreation and the fact that hundreds of other travellers are in the same difficult situation is little consolation.

EDUCATION. A report by the Education Committe tabled by I. J. Dickinson pointed out that the employer had a disadvantage in that he trained a cadet to a point of usefulness and was then likely to lose him. Federated Farmers set a high standard for employers and wages were based upon their recommended rates. An approach would be made to both Federated Farmers and the Government for inclusion of the industry's Cadetship Scheme.

DROUGHT RELIEF. Support would be given by the S. Canterbury and N.Otago Drought Relief Committee to the Association's efforts to have excise duty removed from sugar used for bee feed purposes during drought conditions and it was suggested that the Government be approached for a 50% subsidy for additional feed and for transport cost of moving hives in abnormal circumstances, as was the present case for transporting stock.

The beekeepers' case for alleviation of hardship was subsequently presented to Mr Dick, Parliamentary Under-Secretary of Agriculture at Parliament House, amongst other matters affecting the industry.

RESTRICTED ZONE. Two meetings had been held by the Advisory Committee. Six beekeepers had placed over 1,500 hives in 33 apiaries and in every case deadlines for removal had been met. Sites had

been allocated for a two year period and the restrictions would be the same for the 1970/71 period. A queen breeder would be welcome in the area on a full time basis subject to the queens raised being available for resale in New Zealand.
Committee members had inspected a new area which was considered to be ideal for spring build-up purposes but which would be classified as Restricted. A recommendation and submission would be made to the Minister.

LINCOLN COLLEGE. Two science graduates are engaged in pollination research and one on landscaping. Approach would be made to the latter to encourage greater use of pollen and nectar bearing trees. It would be suggested to the Head of Lincoln College that consideration be given to the inclusion of a course on beekeeping in the College curiculum, with week-long courses for beekeepers.

LEAF CUTTER BEE. Concern was expressed that importation of this bee might adversely effect the industry from more than one aspect. In later consultation with Mr Trevor Palmer Jones of Wallaceville, assurance was given there was no risk of introduced diseases and that the D.S.I.R. could not import the species without licence from the Superintendent of Horticulture.

FOOD HYGIENE REGULATIONS. The proposed draft Regulations were considered in detail and Executive recommended the following points be conveyed to the officer responsible at the Health Department:

(a) That where honey was sold on the premises a counter should be provided to keep buyers out of the honey house.

(b) Smoking should be prohibited in the packing room and extracting room.

(c) Bee escapes as outlined in the draft were not ideal; — screen doors would be preferable.

The Vice President was deputed to present these views, and on return reported that assurance of careful consideration was given and the Association would be contacted. The Regulations would apply to honey house, creaming room and extracting room. For honey storage, where the honey was held in closed containers, the building need not comply with the requirements set out in the Regulations.

Toilets would be required as for business premises, and the Regulations would be administered by the local Authority. Galvanised extractors would be acceptable, and where solder could make contact with the honey the joint could be coated with paraffin or beeswax. For cleaning purposes cold water would be sufficient, as would the provision of an outside sink. General cleanliness of the entire operation would be of paramount importance.

Executive were of the opinion that the Regulations should apply to all beekeepers with five hives or more.

HONEY MEAD: Resolved that a letter be sent to the Minister of Agriculture and the Secretary of Justice conveying to them the decision of Conference endorsing the production and sale of honey mead. Further enquiries would also be made on the requirements for the issue of a Wine Licence.

INDUSTRY FUND: Replies from Branches and from the NZ Honey Packers' Association and the initial report prepared by the General Secretary were carefully considered and amendments made in the light of general discussion. The report as amended will be presented to Conference for consideration.

TAX INCENTIVES: The effect of a letter dated July 1967 from the HMA to the Inland Revenue and the Department of Industries and Commerce was discussed and its relation to the eligibility of honey to be included for export incentive tax concessions. Resolved that both Departments be reminded of the 1969 Conference decision on this matter, and that the HMA be approached to ascertain their current opinion.

SUGAR IMPORTS: Enquiries were being made for prices and availability of raw sugar from overseas. Refined sugar could not be imported. 125lbs of sugar would be required for feeding to free 100lbs of honey for sale.

DEPARTMENTAL: The Director of Horticulture and Superintendent, Beekeeping, joined Executive and discussed various subjects of joint interest. Mr Vince Cook had been transferred to Christchurch as Apiculture Advisory Officer and his work as compared with an Apiary Instructor's duties were compared by Mr Grieg. Executive requested that an Apiary Instructor based on Whangarei be appointed if practical.

HOPKINS BEQUEST: An invitation from the Director of the Cawthron Institute at Nelson to suggests a suitable bee research project by a graduate was considered, and following consultation with Mr Trevor Palmer-Jones of Wallaceville, it was decided to recommend a study into chemical composition of New Zealand honey with particular reference to enzyme content, packaging etc.

FINANCIAL: A number of members were unfinancial because they had not paid their full 1969/70 subscription. In view of the confusion which existed it was decided to extend the period for full payment of 1969/70 subscriptions to May 31. A reminder would be issued that unfinancial members would not be eligible to vote at Branch meetings or Conference and that they would not be covered by the Public Liability Insurance Policy.

FINANCIAL YEAR: Resolved that the Rules be amended to provide for July 31 to be the end of the Association's financial year.

INDUSTRY PROMOTION: Mr Trevor Palmer-Jones was requested to provide facts and figures on the respective yields of pollinated and unpollinated blossoms to enable beekeepers to have authentic information when discussing pollination services with growers.

SEALS LEVY: Executive decided to seek assurance from the HMA that they would ensure all members of the industry obliged to pay the Seals Levy, pay their dues to the appropriate account of the Authority.

BRANCH CIRCULARS: Large branches would received 12 copies and small branches 6 copies of circulars relating to matters of interest to the industry.

HMA: The Chairman of the Authority Mr J. Fraser and Mr R. Poole attended for consultation and were welcomed. Mr Fraser commented that up to the end of February the Authority had received 600 tons of honey and it was expected that intake would be the same as for the previous year. 700 tons were available for export in October but had been held because of the drought conditions then existing. Prices were expected to be maintained but costs were rising. Meetings were to be convened for producers in Hamilton and Oamaru.

INSURANCE: An officer of the NZ Insurance Company, the Associations' insurers, explained in detail the cover of the Members' Compulsory Insurance and the effect of the Public Liability policies. A report would be prepared for submission to Conference on the cost and availability of more extensive cover.

HONEY MARKETING AUTHORITY

After a variable season, in which a large part of the South Island was affected by the most serious drought on record, it seems likely that the intake to depots and branches will not be far short of that recieved last year.

In view of the possibly disastrous effects of the drought, the export programme of the lighter grades of honey was interrupted from November until February. The normal flow of honey overseas has been resumed, and prices remain at satisfactory levels. The question of saccarase testing has again been raised, and an approach to the D.S.I.R. is being made so that a suitable test method can be carried out in New Zealand.

A new scool project — "The Story of Bees and Honey" — has been prepared and issued in conjunction with the "N.Z. Trades Alphabet". Thanks are due to the Editor for his work in the compilation of this project.

After a thorough examination of all the factors involved in the possible sale of the Auckland building, and a move to another building on another site, it has been decided to withdraw the building from sale, and to accept the Govt's offer of advice and assistance from the Ministry of Works in planning alterations to make it more suitable for our present needs.. Planning of alterations to the plant and layout is also proceeding.

The multiplicity of packs resulting from the development of the trade in retail packs of selected floral sources has been carefully examined; it is felt that at present, at least,none can be well dispensed with. Improvements to the plant and layout of the building, when completed, should eliminate some of the problems now being encountered.

The Authority is convening meetings in Hamilton and Oamaru in May, in order that producers may have the fullest possible information prior to Branch meetings at which remits to conference are normally brought forward. Times and places will be notified by circular to suppliers and seals purchaser. All producers will be welcome.

J. W. Fraser, Chairman.

HARMFUL EFFECTS OF PESTICIDES ON POLLINATORS

by
KEITH M. DOULL
WAITE AGRICULTURAL RESEARCH INSTITUTE
ADELAIDE, SOUTH AUSTRALIA

Presented at A.N.Z.A.A.S. Congress, Adelaide, S.A. — August 1969.

INTRODUCTION

Many of the insects which visit flowers to feed on nectar or pollen are capable to some extent, of transferring pollen from flower to flower. However, bees which visit large numbers of flowers to collect nectar or pollen, and which tend to visit the flowers of only one species of plant at a time, are the most important pollinators of agricultural and horticultural crops.

In this discussion, therefore, the term "insect pollinators" means bees in general and honeybees in particular. Solitary bees appear to be relatively unimportant as pollinators of crop plants in Australia.

Insect pollinators make an important contribution to the economy of many sections of agriculture and horticulture, for the flowers of many plants must be cross-pollinated by bees for the production either of the immediate crop or of the seed from which the crop is grown. The produce of many insect pollinated crops makes an important contribution to our diets and forms the raw material for food processing industries, so that the activities of pollinating insects exert major influences on the economy and on the health and well-being of the whole community.

Any reduction in the numbers and activities of pollinating insects through the excessive and often indiscriminate use of pesticides must therefore, be of concern to everyone.

EFFECTS OF PESTICIDES ON HONEYBEES:

The social habits of honeybees tend to reduce the severity of the immediate effects of pesticides. Collection of food and water is interrupted when the foraging bees of a colony are killed. However, the gathering of nectar, pollen and water normally begins again within a day or two since other bees can take over the work of the foragers which comprise less than half the population of adult bees.

Although they appear to recover relatively quickly from the immediate effects of pesticide poisoning, honeybee colonies usually suffer from important long term effects which also arise from some aspects of their social structure.

In a normal colony there are enough bees of all ages and all physiological conditions to carry out the many activities necessary for the continued existence of the colony. The deaths of the foraging bees removes most of the bees more than 21 days old. Their work as foragers must be taken over by younger bees

which are not physiologically ready for this type of activity. This disturbance of the natural progression of bees through a series of physiologically directed activities proceeds right through the colony and many bees must undertake activities not appropriate to their physiological condition at the time. The stress to which the bees and the colony are consequently subjected is the basic cause of the long term effects of pesticide poisoning.

The immediate effect of pesticide poisoning is the death of the thousands of bees foraging in the fields to which pesticides are applied. With some pesticides this mortality occurs only during or shortly after spraying but others remain toxic for comparatively long periods and bees may continue to die for several days.

Pollen may be contaminated by pesticides — especially by insecticidal dusts. Such pollen, when stored in hives may contaminate the whole store of pollen, and bees will die long after the hives have been moved to new sites. Arsenical dusts and the insecticides Sevin and Lindane are particularly harzardous in this respect.

Strong colonies with good stores of honey and pollen and access to adequate water will usually survive spray poisoning, but continued destruction of bees by persistent pesticides or frequent application of any toxic pesticides will result in the eventual death of the colony.

There is always a sharp decline in brood-rearing following pesticide poisoning. Consequently the colony does not rear enough bees to replace the survivors of the poisoning when these have reached the end of their normal life span. There is usually a second sharp decline in colony strength some six weeks after pesticide poisoning.

Overheating is a regular occurrence in colonies which have suffered pesitcide poisoning in summer. The disturbance which follows poisoning usually results in a reduction in the amount of water the bees are collecting, while at the same time heat production by the disturbed colony increases. In extreme cases the colony will die but this is not common. The usual results are those which follow overheating under any conditions — deaths of eggs and larvae, malformation of pupae and frequently the failure of the queen.

A serious but delayed effect of pesticide poisoning is an increased susceptability to disease. This is probably brought about by the stress to which bees in a disorganised colony are subjected. European brood disease is reported from U.S.A., and in Australia, septicaemia — primarily a disease of old bees — may appear from 3 to 6 weeks after poisoning. Nosema disease is also encouraged by dis-organisation of the colony. This may appear first in the autumn, but the highest incidence of Nosema disease usually occurs in the late winter and spring following pesticide poisoning in summer.

In general, growers of bee-pollinated crops are aware of the need to avoid poisoning bees and plan their spray programmes with this in mind. However, bees may forage more than a mile from their hives, gathering pollen and nectar from the flowers of weeds and of crops which do not benefit from their activities. For example pesticides are not normally applied to orchards while the trees are in bloom but are applied both before and after flowering. Weeds and cover crops in the orchards then become contaminated and many cases of bee poisoning in orchard areas may be traced to this cause.

Aerial spraying and the increased use of misting and fogging machines frequently results in drift of insecticides into neighbouring fields. This is a growing problem, for the application of pesticides to any flowering plants — either deliberately or by accident — always creates a hazard to bees.

The toxicity of pesticides to bees is variable. Most of the common weedicides, fungicides and miticides are of low or negligible toxicity to bees and are not normally hazardous to them. Among the insecticides, the phosphates are in general highly toxic but have a short residual life. On the other hand hydrocarbons of the dieldrinendrin group are both highly toxic and possess long residual toxicity.

Table 1 summarises the toxicity to bees and the persistence of some of the pesticides most widely used in Australia.

The replacement of DDT must unfortunately increase the hazards to bees. When it is applied at the low rates commonly recommended in Australia, DDT has both a low toxicity to bees and a short residual life. The phosphate and carbamate insecticides which are replacing it are in general more toxic and in some cases are more persistent than DDT.

The trend towards Ultra Low Volume application of insecticide concentrates is also increasing the hazards to bees. Malathion — the insecticide most frequently used in U.L.V. application — has a low toxicity to bees and is virtually non-persistent when used as a dilute spray. Yet technical Malathion as a U.L.V. spray possesses a high residual toxicity to bees for at least four days (Johansen et al., 1965).

TABLE 1:

TOXICITY OF SOME PESTICIDES TO HONEY BEES

Pesticide	Laboratory Toxicity	Field Toxicity	Application (Spray) Residual Effect	Class Use (a)
Aldrin	Very High	Very High		I
Azinphos-Ethyl	Very High	Very High	1 day +	I
Chlordane	Very High	High		I
DDT	Moderate	Moderate	1 day +	II(b)
Diazinon	Very High	Very High	1 day	I
Dibrom E.	Very High	Very High	3 hr.	II
Dibrom W. P.	Moderate	Very High	3 hr.+	II
Deildron	Very High	High	2 days +	I(c)
Dimethoate	Very High	Very High	1-2 days	I
Endrin	Very High	Moderate	2 hours	I
Imidan	Very High	Very High	1-4 days	I
Lindane	Very High	High		I
Malathion	Moderate	Moderate	2 hours +	II
Malathion (U.L.V.)	Very High	Very High	2-4 days	I
Metasystox	High	Moderate	None	II
Parathion	Very High	High	1 day +	I
Pyrethrum	Low	Low	None	III
Ryania	Low	Moderate	1-3 hours	II
Sevin	Low-High	Moderate-High	7-12 days +	I
Trichlorphon	Low-High	Low-High	2-5 hours	II

From Johansen (1966).

(a) Classification for use:
- I. Hazardous to bees at any time.
- II. Not hazardous if applied when bees are not foraging.
- III. Not hazardous to bees at any time.

(b) When used at low rates (1-½ — 2ozs. ppi DDT per acre) in summer may be regarded as class III.

(c) Hive materials which have been contaminated with dieldrin should be burned since dieldrin is absorbed in wood.

EFFECTS OF PESTICIDES ON POLLINATION:

Although they may remain on the plant for a week or more, the flowers of most commercial crops will set seed or fruit only if they are pollinated during the first three to four days. In some cases — for instance most fruit trees — plants produce such large numbers of flowers that pollination of only 10% of the flowers will result in near optimum yields. In general, however, optimum pollination, and re-establishment of honeybees in the field is dependent upon the severity

of poisoning, on the residual toxicity of the pesticide, and on the presence of other sources of pollen and nectar.

The foraging pattern of bees from any colony is determined mainly by information brought into the hive by successful foragers, and a high proportion of bees will begin foraging only when they receive information on particular sources of food. When a colony has lost its foragers the bees which take over food collection must accumulate this information for themselves and provide it to the colony before food collection can start. If the pesticide has a short residual toxity, foraging may be re-established fairly quickly and the population of pollinating bees may return to adequate numbers within two or three days. However, if a persistent pesticide has been used, the new foragers may also be killed. Thus the colony does not receive information on the availability of nectar and pollen in the crop until the pesticide has lost its toxicity. In these conditions pollination may remain at a very low level for a long period.

Pollination will be re-established most quickly if the hives are in or close to the crop. However, if they are some distance from the crop and especially if there are other sources of pollen and nectar within flight range, the colony may receive most information about these other sources. Many bees will then be directed to the alternate sources, and full pollination may never be re-established.

The significance of breaks in pollination is not always appreciated by the grower. In orchards it does not always result in noticeable reductions in numbers of fruit set since fruit trees usually produce such large numbers of flowers. It will, however, be apparent in uneven ripening. In some fruits, such as apples and pears, poor pollination results in mis-shapen, poor quality fruit since all the ovaries are not fully fertilised. In lucerne seed crops every day lost in pollination might mean a loss of up to 10 pounds of seed per acre.

It is possible that reduced pollination following pesticide poisoning of honeybees may at times cost the grower more than the potential damage caused by the pests he aims to control.

Wild colonies of honeybees have been relatively abundant in Australia and have always made a considerable contribution to the pollination of many crops. For a variety of reasons these wild colonies are usually smaller than colonies maintained by beekeepers and are less likely to survive spray poisoning. It is probable that the number of wild swarms of honeybees in the main agricultural and horticultural areas is declining with the increased use of pesticides.

There is very little information on the part which our large fauna of native solitary bees play in the pollination of crops in Australia. However, it is certain that the use of pesticides must have reduced the populations of solitary bees in most agricultural and horticultural areas. Solitary bees are more susceptible to pesticides than are honeybees and while the deaths of 100 honeybees would probably have no effect on the subsequent productive rate of their colony, the deaths of 100 female solitary bees might mean a reduction of up to 3000 individuals in the subsequent generation. Contamination of leaves with persistent pesticides increases their effects on leaf-cutter bees — of which Australia has at least 100 species — since the larvae as well as the adults may be poisoned.

Toxic pesticides which reduce the number of wild pollinators thus tend to make growers more dependent upon commercial beekeepers for the bees they need to pollinate their crops.

Wherever insect-pollinated crops are grown and whatever pesticides are used to control pests on these crops, commercial beekeepers face increasing hazards. In some cases the hazard from pesticide poisoning overshadows all other problems, as for instance in California, where 83,000 colonies were destroyed by pesticides in 1968.

Fortunately, the overall situation in Australia has not reached this critical level, since many beekeepers operate in areas where pesticides are not used. Nevertheless, in some states beekeepers must depend more and more upon crop plants and weeds in settled areas for the pollen their bees need, and often for a considerable proportion of their honey crop. Moreover, as agriculture extends

and as native honey and pollen-producing flora is cleared, the longer distances they must move their hives to sources of honey and pollen often become uneconomic, and the flowering plants in agricultural and horticultural areas become even more important as forage for their bees.

Colonies which have been poisoned by pesticide become unproductive for the beekeeper for varying periods of time. Spray poisoning most commonly occurs in summer when most honey should be harvested, but since the damaged colonies are usually slow to recover to full strength, this loss of production usually carried on into the autumn.

A frequent consequence of pesticide poisoning is that the hives must be shifted to new sites where the colonies will have a chance to recover. In many cases this will involve a move over long distances and even then it may be difficult for the beekeeper to find new sites with adequate supplies of nectar and pollen.

Even if the hives are shifted the colonies may not recover fully before winter. As a consequence they may need extra attention and many may die. Those that survive will usually be slow to build up in spring and honey production in spring and early summer will usually be lower than would be expected.

LOSS THROUGH PESTICIDES

Irrespective of whether their colonies survive or die beekeepers always suffer fiancial loss following pesticide poisoning of their bees. The loss of production and the costs involved in moving the hives, replacing colonies which have died, replacing queen bees and the provision of supplementary feed in winter will vary. At a conservative estimate these costs would not be less than $10 per colony and in the years of the major honey-flows might exceed $20 per colony.

Despite the increasing need to provide bees for pollination, and despite the economic advantages which may accrue when they can keep their bees in nearby agricultural and horticultural areas, beekeepers naturally react to the hazards of pesticides by avoiding these areas as much as possible. They are thus effectively excluded from some areas of potential honey and pollen production and from some areas where the pollination activities of their bees might benefit growers. For instance, beekeepers in Queensland, New South Wales and Western Australia might obtain honey and pollen from cotton, safflower and other crops in the irrigation areas in these states, and might contribute to improved yields of these crops. However, the hazards of extensive use of pesticides — particularly on cotton — are far too great.

TABLE 2:

INSECT POLLINATED CROPS IN AUSTRALIA

A. Pollination required for Fruit and Nut Production:

Almond	Cucumber	Pear
Apple	Mango	Plum
Apricot	Marrow	Prune
Avocado	Nectarine	Pumpkin
Berry Fruits (a)	Passion Fruit	Strawberry (b)
Cantaloupe	Peach	Watermelon
Cherry		

B. Pollination required for Seed Production:

	Clovers (c)	Parsnip
Asparagus	Cotton (b)	Radish
Broccoli	Leek	Safflower (b)
Brussels Sprouts	Linseed (b)	Sunflower
Cabbage	Lucerne	Swede Turnip
Carrot	Mustard	Turnip
Cauliflower	Onion	Some Flowers
Celery		

(a) Raspberry, Gooseberry, Current, Blackberry, Boysenberry, etc.
(b) Benefit in yield and quality from cross pollination.
(c) White, Ladino, red, rose, strawberry clovers. NOT subterranean clover or annual medics.

Adapted from Levin (1967).

ECONOMIC IMPORTANCE OF INSECT POLLINATORS:

The main crops which either require bee pollination or which benefit from cross-pollination of normally self-fertile flowers are listed in Table 2.

The exact value of production from all these crops cannot be calculated since detailed statistics of the less important crops are not available. Nor is it possible to assess the value of improved production of the crops which benefit from cross pollination. However, all available data have been provided by the Bureau of Census and Statistics in all States, and these are summarised in Table 3.

TABLE 3:
VALUE OF INSECT POLLINATED CROPS IN AUSTRALIA 1966-67

	Fruit and Nuts	Seed	Total
	$	$	$
New South Wales	28,416,613	510,122	28,926,735
Queensland	10,971,636	490,560	10,971,636
South Australia	13,963,291	1,691,253	15,654,544
Tasmania	16,932,976	40,348	16,973,324
Victoria	30,295,002	44,514	30,339,516
Western Australia	9,353,815	—	9,353,815
Australia	**109,933,333**	**2,776,797**	**112,710,130**

Source: Bureau of Census and Statistics.

In addition, vegetables grown from seed produced by bee pollination, — cabbage, cauliflower, turnips, etc. — were valued at over $10 million in 1966-67.

In the same year the beekeeping industry produced honey and bees-wax to the value of $4 million.

Thus honeybees and other insect pollinators contribute more than $100 million a year to the economy of the country.

It is hardly conceivable of course that pesticides could become so damaging that all production would be lost or even that it would be substantially reduced. We should however, consider the importance of obtaining optimum pollination at all times.

The main costs of production — cultivation, pruning, sowing, irrigation, spraying and general overhead expenses — are virtually fixed and do not vary greatly with variations in yield. Any increase in yield will then increase the profitability of the enterprise, while a lower yield will mean a reduced profit or loss. The margin of profit in most Australian primary industries is declining steadily, and one way in which this decline can be offset is through the increased yields which may be achieved by improved pollination.

There are some crops in which yield or quality — and often both — may be improved by bee pollination. Thus honeybee activity in some varieties of cotton increased yields of raw cotton by up to 33% and improved the quality of the fibre (Kaziev, 1961), while bee pollination of thin-hulled varieties of safflower doubled the yield of seed and increased the percentage of oil in the seeds. (Rubis et al., 1966). By maintaining significant populations of bees in their fields, growers of these crops may obtain increased production and higher returns at relatively little cost.

SIGNIFICANCE OF POLLINATING INSECTS TO THE COMMUNITY:

Australian agriculture is less dependent on insect pollinators than many other countries since subterranean clover — the main pasture legume — does not require bee pollination and since white and red clovers are grown only in restricted areas in the cooler and wetter regions of the country. However, lucerne is becoming more important in the 12-18 inch rainfall areas, and the use of this drought resistant pasture legume is bound to increase.

Table 2 shows that a considerable proportion of the fruit and vegetables which contribute to the health and wellbeing of the community are dependent upon bee pollination either for the production of the immediate crop or for the seed from which the crop is grown.

Citrus fruits and grapes are the only important fruit which do not require bee pollination. Many of the most commonly used vegetables — onions, carrots and cabbages for example — also require bee pollination for the production of seed. The annual production of these crops would not be possible without bee activity in the seed nurseries.

Food preserving industries, especially canneries and jam manufacturers, depend upon these bee pollinated products as the raw material for a large proportion of their production. Any reduction in the amount or quality of this produce or any considerable increase in price would affect the ability of these industries to compete on overseas markets.

Throughout Australia — both in the countries and in the towns and cities — home owners derive pleasure and profit from their gardens. Most Australian gardens contain one or more specimens of the bee-pollinated fruit trees while those gardeners who grow their own vegetables are almost certain to use some seed produced by bee activity.

CONCLUSION

Pollinating insects play an important role in the economy of the country and in the lives of most of its people. Everyone must be concerned about the harmful effects of pesticides on pollinators.

It is unlikely that the quantity of pesticide used in Australia will reach the level at which the production of bee-pollinated crops would be seriously affected by the destruction of bees. Nevertheless it is essential that every effort be made to reduce the hazards to bees so that population of pollinators may be maintained at adequate levels in all crops which require or benefit from bee pollination.

Adequate pollination year after year may only be achieved if commercial beekeepers can be encouraged to bring hives into specific crops during the flowering periods of the plants or at least to maintain sufficient hives in the area at all times.

Indeed beekeepers in Australia must become more dependent upon flowering crop plants and weeds in agricultural and horticultural areas for a considerable proportion of the pollen their bees must have and of the honey from which they obtain their incomes. However, pesticides threaten the industry and present a growing hazard. Some cooperation may be expected from growers of bee-pollinated crops. But when their bees forage on weeds in other crops and pastures or on crops which do not benefit from their activities, such cooperation is non-existent.

Beekeepers must deal with this problem in their own way. The simplest way of avoiding bee poisoning is to keep their bees out of agricultural and horticultural areas even though this too may involve some financial loss. Thus some areas of potential value to beekeepers and in which the activities of their bees might benefit many farmers, are effectively barred to beekeepers through the excessive and often indiscriminate us of pesticides. Nor does the rental they might obtain by providing bees for planned pollination compensate them for the losses they may incur.

Australia needs a strong and stable beekeeping industry capable of providing the pollination requirement of growers of bee pollinated crops. While the position is still reasonably satisfactory any increase in losses due to pesticide poisoning will result in a decline in the number of beekeepers and in the numbers of bees available.

There is an urgent and growing need to ensure that rational use of pesticides should aim at minimising the hazards that these chemicals present to insect pollinators. This must be the concern not only of growers, pesticide manufacturers and spray applicators, but of government authorities, beekeepers and consumers alike.

RETAIN FOR REFERENCE

NEW ZEALAND HONEY MARKETING AUTHORITY

Election of Members 1970

An election of two producer Members of the N.Z. Honey Marketing Authority will be held AUGUST/SEPTEMBER, 1970.

The Members retiring by rotation are:—

J. W. FRASER — Ryal Bush
J. D. LORIMER — Hamilton

Dates in connection with the election which should be noted:—

Rolls available for inspection — 14 days from JULY 22 — AUG. 4.
Rolls close — AUGUST 4.
Nominations close — Noon, AUGUST 12.
Poll closes — Noon, SEPTEMBER 9.

All correspondence in connection with the election should be addressed to:—

The Returning Officer,
Honey Marketing Authority Election,
C/- P.O. Box 1879,
WELLINGTON

NOT THE N.Z. HONEY MARKETING AUTHORITY.

CORPORATE BODIES, PARTNERSHIPS AND SUPPLIERS TO PACKERS
Please note special requirements.

In accordance with the Honey Marketing Authority Regulations 1964, copies of the roll of producers qualified to vote will be deposited at the Department of Agriculture, Head Office, Wellington, and at Auckland, and at the following Post Offices:—

Alexandra
Amberley
Ashburton
Balclutha
Blenheim
Cromwell
Culverden
Dannevirke
Dargaville
Dunedin
Eketahuna
Geraldine
Gisborne
Gore
Greymouth
Hamilton
Hastings
Hokitika
Huntly
Invercargill
Kaikohe
Kaikoura
Kaitaia
Levin
Masterton
Christchurch
Motueka
Napier
Nelson
New Plymouth
Oamaru
Palmerston North
Rotorua
Roxburgh
Tauranga
Te Aroha
Timaru
Waimate
Waipukurau
Wairoa
Wanganui
Warkworth
Whakatane
Whangarei
Westport

The rolls will be open for public inspection during ordinary office hours for 14 days from JULY 22, 1970.

Any person who is remote from an office where a roll is available for inspection may write to the Returning Officer for verification that his name is on the roll. The full name of the person concerned should be supplied and the enquiry should be made during the period the roll is open for inspection.

Provision is made in the Regulations for the issue of special voting papers where a voter's name has been omitted from the roll. Any such voter should make application direct to the Returning Officer.

The number of votes which may be exercised by a voter is based upon the amount of honey supplied and/or the amount of levy paid over the preceding two years. This is provided for in the first schedule of the Regulations.

Suppliers are advised that in order to qualify for votes, consignments of honey must reach one of the Authority's depots by June 30, 1970 or be held by the Producer on behalf of the Authority and on which the Authority has paid the "pro rata" advance payment.

ATTENTION CORPORATE BODIES AND PARTNERSHIPS

The attention of corporate bodies is drawn to Clauses 2 & 3 of the Schedule to the Regulations which reads as follows:—

Sect. 2: If an apiary producing honey for sale is occupied by two or more persons jointly or in common, only one of those persons shall be entitled to vote.

Sect. 2: "Any producer being a corporate body may, by writing under its corporate seal delivered to the Returning Officer, appoint some person whose name shall be entered on the rolls as a voter on behalf of that corporat body."

A FORM OF APPOINTMENT IS ATTACHED AND IT SHOULD BE NOTED THAT A NEW APPOINTMENT IS REQUIRED FOR EACH ELECTION.

ATTENTION SUPPLIERS TO PACKERS

Producers who wish to vote at the forthcoming election on the basis of honey supplied to packers will be required to furnish a declaration showing the amount of honey supplied. A form of declaration is attached and when completed should be mailed direct tothe Returning Officer.

DECLARATION FORM

(This Declaration Form is for the use of producers who are entitled to votes as suppliers to packers. See previous reference.)

IN THE MATTER of the Honey Marketing Authority Regulations 1964.

I, ... (Full name)

of ..... (Address)

..... (Occupation)

do hereby solemnly and sincerely declare as follows:—

1.That during the year ended on June 30, 1969, I supplied to

..... (Full name)

of ..... (Address)

..... (Occupation), who is a packer of honey

..... lbs. of honey (in respect of which I did not purchase any honey seals.)

2. That during the year ended on June 30, 1970, I supplied to

..... (Full name)

of ..... (Address)

..... (Occupation), who is a packer of honey

..... lbs. of honey (in respect of which I did not purchase any honey seals.)

AND I make this solemn declaration conscientiously believing the same to be true and by virtue of the Oaths and Declarations Act, 1957.

DECLARED AT .....

By the said .....

.....
(Declarant to sign here)

.....
(Full name)

this ..... day of .....
1969, before me

.....
A solicitor of the Supreme Court of New Zealand or a Justice of the Peace.

This form to be forwarded to — THE RETURNING OFFICER
P.O. BOX 1879,
WELLINGTON.

Further supplies of these forms may be obtained from The Returning Officer.

NOMINATION OF PRODUCERS' REPRESENTATIVE ON THE N.Z. HONEY MARKETING AUTHORITY

Nominations Close Noon August 12.

I (We), the undersigned voter(s), do hereby nominate

..... (Full name)

of ..... (Address)

..... (Occupation)

with his consent, as a candidate at the election of persons for appointment to the Honey Marketing Authority established by the Honey Marketing Authority Regulations 1964.

Dated at ....., this ..... day of ....., 1970

Signature of voter .....

Full name of voter .....

Address of voter .....

I, ...

do hereby consent to the above nomination.

Signature of Candidate .....

Within seven days of accepting nomination each candidate must deposit $6 with the Returning Officer.

APPOINTMENT OF NOMINEE BY A CORPORATE BODY OR PARTNERSHIP TO BE ENTERED ON ELECTION ROLLS

..... (Name of Body or Partnership)

of ..... (Address)

hereby appoint

..... (Full name)

of ..... (Address)

..... (Occupation)

as nominee, to be entered on the rolls of the Honey Marketing Authority Election

as voter on behalf of said .....
(Registered Name of Body or Partnership)

Dated at ....., this ..... day of ....., 1970

IF COMPANY COMMON SEAL

.....

.....

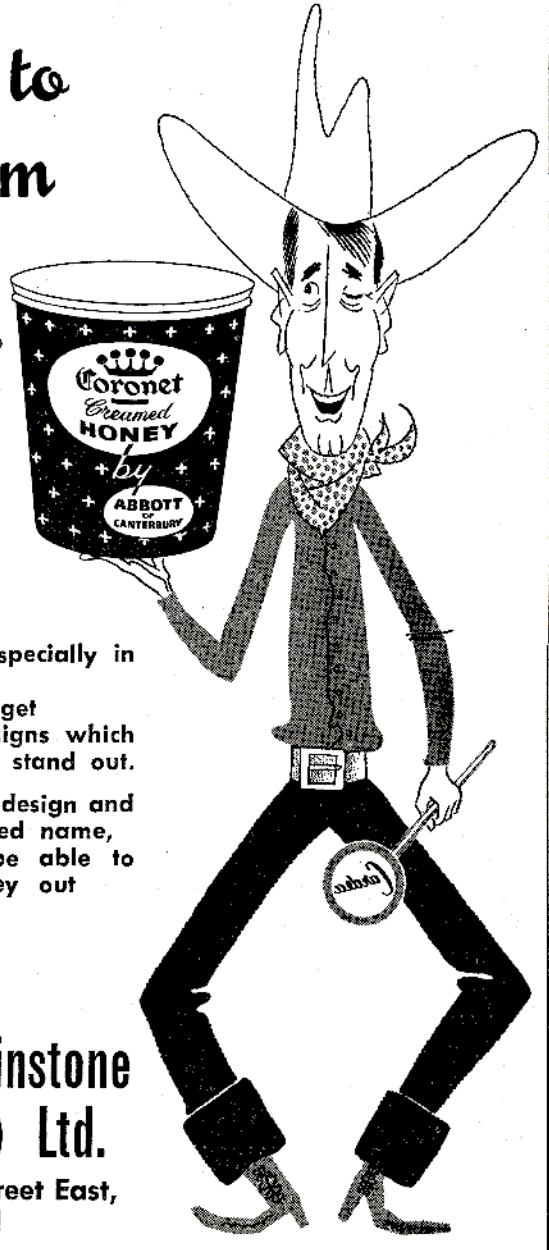
.....

IF PARTNERSHIP
SIGNATURE OF THE MAJORITY OF PARTNERS

THIS FORM TO BE FOWARDED TO THE RETURNING OFFICER
P.O. BOX 1879,
WELLINGTON

It pays to brand 'em

Don't sell your honey blind! If you want people to buy **your honey** — not just any honey — you must mark it with your brand or name.



- **Branding pays, especially in CARDEA cartons because you can get bold striking designs which make your name stand out.**
- **With a distinctive design and a boldly displayed name, customers will be able to pick YOUR honey out AGAIN**

Frank M. Winstone (Merchants) Ltd.

71-79 Customs Street East, Auckland

SOUTH ISLAND REPRESENTATIVE: P. G. COLLINGS

33 Charlcott Street, Christchurch **Phone 516-062**

RESTRICTED ZONE

BAY OF PLENTY

At the end of the first year that beekeepers were allowed into the restricted zone in the Bay Plenty the position has been assessed and examined by the Apiaries Advisory Committee.

During the past season, six beekeepers availed themselves of the use of the zone and established 36 apiaries containing 1335 hives within the area.

The venture proved to be a successful one and it is anticipated that more beekeepers will establish apiaries and hives this year to take advantage of the spring nectar and pollen sources available.

The committee is very appreciative of the spirit of goodwill and co-operation that was evident from those concerned and it is pleasing to note that difficulties from the administrative point of view had not been great.

After considering the matter, the committee was of the opinion that the present dates of opening the zone, between May 1 to 30 November should remain meantime.

The Qualifications for Entry (Section 1) were slightly amended in respect to the date at which hive numbers were registered in relation to determing entitlement. This date has been brought forward from "30 June" to "30 April" of the year preceding the application for a permit.

Section 2 was also amended to read *"Supply a minimum of* 500 *Queen bees to the beekeeping industry."* (The previous requirement was that 1000 Queen bees be available to the industry.)

D. A. Briscoe, Secretary,
Apiaries Advisory Committee

COMMENTARY from the Editor's Desk and Mail

PROFESSOR OF ENTOMOLOGY Ichiji Okada of Tamagawa University Tokyo, Japan, writes that an international symposium on beekeeping will be held at the university for three days from September 7. *Studies on the Honeybee Products* will be the principal theme, and there will be over 100 participants. Professor Okada apologises in advance for the fact that accomodation may be difficult to find because of the currency of EXPO 70. To be able to incorporate the Symposium with a visit to Expo would be well worth overcoming hotel problems.

★ ★ ★

NOSEMA* must be more prevalent in certain areas than some of us have been led to believe. A Northland beekeeper was telling me of his surprise to find that out of 15 hives from which escorts had been taken to accompany queens to Canada, 14 were affected with nosema spores. From another site 12 colonies out of 16 were declared infected. The published work of Auckland apiculturist R. S. WALSH showed that queens could live without escorts for sixty days, and it may be that queens will be sent to Canada for further evaluation without escorts.

** This matter was referred to Mr Trevor Palmer-Jones of the Wallaceville Animal Research Centre for comment, and he has pointed out that because of the much more severe standard in assessing* Nosema *in hives providing escort bees than in the hive from which samples are submitted for routine diagnosis, the situation can be misleading. Limited numbers of bees carrying spores are often found in healthy colonies, where their presence is not significant, and would not lead to the hive being classified as suffering from* Nosema. *However, it is desirable that all bees escorting export queens should be completely free from* Nosema *to prevent queens becoming infected in the conditions of long confinement and stress they experience before introduction in hives overseas. There-*

fore, when examining samples of bees forwarded to Wallaceville from hives set aside to provide escorts, the presence of only a few spores in a single bee necessitates classification of a sample as positive. Queen breeders who are concerned because this rigorous test proves positive have nothing to fear from the viewpoint of honey production.

A further and more detailed statement on the subject is to be issued shortly for publication in THE NEW ZEALAND BEE-KEEPER.

★ ★ ★

FREDDIE BARTRUM'S wife at Pleasant Point in Canterbury carries off the prizes for first class roses, but the secret of her success is simple. Feeding with slum gum residue is the answer and the result is extraordinary due, no doubt, to the pollen content. Suspicious that formulae was fiction and not fact and that green fingers and pruning expertise were the truer answers, four bush roses here in Auckland became the guinea pigs. Three were fed and one used as the 'control'. Looking at the late autumn blooms of the three bushes there can be no doubt that the applied slum gum has an outstanding effect.

★ ★ ★

HMA MEMBER Russel Poole of Southland won himself a cool $14.00 prize money in the last of the series of *"NOTE FOR NOTE"* programs. Like a good many of us, Russell would win no prizes for singing, but ability to remember word for word perfect the first five lines of an old time song made the cash register tinkle a merry tune.

★ ★ ★

IN A REPORT by apiculturist R. S. Walsh the Auckland district comprising the city and Gulf areas is as seen as an area with no great future for commercial development so far as beekeeping is concerned. Whilst domestic beekeepers with access to garden tree and floral sources harvest 100lbs of surplus per hive, commercial men seldom obtain more than 50lbs per hive. Fruit growers are now realising the value of pollination services, and exploitation of such service is a field for development. Interest in pollen trapping is also expanding.

The number of apiarists, apiaries and hives in each county are:-

County	Apiarists	Apriaries	Hives
City and Gulf Islands	199	223	1129
Manukau	170	231	1728
Franklin	61	170	3109
	430	624	5966

In North Auckland there has been little development, though the trend for the larger beekeeper to swallow the smaller is apparent as in most parts of the country. Much of the scrub land covering thousands of acres to supply hives with early sources of nectar and pollen is now pasture land yielding only clover between November and February, and migratory beekeeping is a necessity. Accessible areas in North Auckland may be understocked to the extent of some 8,000 hives, and if markets are available at payable prices for all types of honey, including feed honey, the report states that the figure could easily be doubled. There are 10,752 hives in the eight counties and a further 6,567 nucleus hives for queen breeding kept by 20 commercial fulltime beekeepers 7 part time commercial men and 590 hobbyists.
Average honey production per hive over an 11 year period was just under 41lbs. Comb honey finds a ready market overseas and at home and there is room for one or two queen breeders in Northland.

★ ★ ★

ACCORDING TO AN ARTICLE in *"APIACTA"* there are 10 million bee colonies in the Soviet Union; a lot of bees by any country's standards. Vast areas of honey producing plants are to be found in Siberia and the Urals and in the forest region there are 2 million hectares of lime trees and 50 million hectares of cut trees where willow herb and raspberry abound (One hectare is the equivalent of approximately 2½ acres). Five hundered thousand tons of marketable honey is produced. Whew!
In Czechoslovakia the Beekeepers' Association has organised an intelligence service whereby beekeepers provide an information service to a central point on the beginning of nectar flows. The start of honey-dew flows in the forests is reported by woodmen. This service is to assist migratory beekeepers, and the information is disseminated by radio and press. The report states that great success has resulted from the service but "we have had to overcome many difficulties. The most important of them is the selfishness of the local beekeepers." The difficulties can be well imagined. Human nature does not vary to any great extent in any part of the world and we have a long way to go before the brotherhood of man is a reality.

★ ★ ★

POLYTHENE BEER CRATES have been put to good use by an enterprising officer at the Experimental Station of Beekeeping Economy in Gimte, in the Federal Republic of Germany. Herr Sumpf is making known his findings to beekeepers and the prototype has given promising results, being strong, light in weight and cheap to produce for bee boxes.

★ ★ ★

WE ARE ALWAYS LEARNING new facts and applications of honey. The "South African Bee Journal" reports on the work of two neurosurgeons in Georgia, USSR, who transplanted a whole new vertebra, or segment of the spine, in a baboon to replace one that had been damaged.

"Within two hours of the operation, the surgeons say that a normal range of movement was regained. The baboon being so closely related to man, the results of their operation have aroused great interest in the neurosurgical world.
What is more amazing even than the operation itself, was the way in which the bone to be transplanted was preserved. For it was kept in sterile honey, which the two surgeons said is an excellent substance for storing bone in a living state outside the body over fairly long periods. If this work is confirmed, a whole new range of possible bone grafting procedures in the progressing field of modern orthopaedic surgery will open."

★ ★ ★

A STEAM HEATED roller of simple design which enables honey cells to be pierced and thus expose the honey for extracting, has been devised by two Australiain beekeepers Edward and Joe Lew. The inventors of this simple device claim that the unit saves time, helps the bees by conserving comb and preserves the quality of the honey by obviating the necessity to heat treat the cappings.

★ ★ ★

MANY OF US will have heard of the Mr Colman who made more money out of the mustard left on peoples plates than from the amount they actually ate. The firm of J. & J. Colman of Norwich, England are now in the food business in general and not simply the hot stuff and amongst other numerous items, bottle honey for the home market under the brand name "Gales".
The news agency Reuter gave out a story in January that Colman's are to try out on a full scale production test supplies of Chinese light and extra light amber grades then quoted at £96 per ton; some difference to the premium price paid for New Zealand honey or from other countries supplying the world market. The result will be more than interesting, for hitherto Chinese honey has not been deemed suitable for English table use.

FOLLOWING INTENSIVE RESEARCH into the digestive problems of young babies, the firm of Heinz with their mythical "57 Varieties" have now produced a new range of baby foods in Australia called "FRUIT 'N' HONEY". Mothers will be able to offer their baby a choice of apple and pineapple, mixed fruits and orange and pineapple — all mixed with honey.
Whereas the young stomach has not yet been able to stomach fruit on its own and the resulting colic and wind spasms have produced tears and distress, the addition of honey has worked wonders, to the delight of the parents and contentment to the children.

★ ★ ★

LONG HAIRED POP SINGER *"Tiny Tim"* recently passed through Auckland en route for a singing engagement in Australia and announced to a world waiting with baited breath the incredible news that he is to become a father. It is perhaps encouraging to note that he has credited his "love diet" with his success as a forty-three year old father-to-be, "My diet of honey, fruit and peanut butter must have helped" he said. His 17 year old wife, left at home in England, was not available for comment.

★ ★ ★

A READER writes to tell me that a distressed drone was seen recently hurriedly searching for a B.P. Station. How commercial can we get?

AT A BRANCH meeting, a hobbyist mentioned to a speaker that he produced a straight honey as opposed to a commercial blended brand and asked for a definition of the difference. "Yours" said the speaker, "is nature's blend untouched by man."

★ ★ ★

NEW ZEALAND HONEY COMB PRODUCERS' Association AGM will be held in the Recreational Hall, Takapuna at 10 a.m. on July 7. The meeting has been arranged to coincide with the convergence of beekeepers for Conference, and all comb producers whether members or not will be welcome.

★ ★ ★

THE APIARIES ACT 1969, which was to have been explained in greater detail in this issue, will now be dealt with in the August edition. The Superintendent, Beekeeping considers that publication nearer to commencement of the new season would be more appropriate. Copies of the Act can, of course be obtained from the Secretary's office for 20 cents.

★ ★ ★

LESS PERSISTENT PESTICIDES substituted for DDT to control insect pest in the USA is the subject of an interesting story in the January issue of *GLEANINGS*. Application of the less persistent compounds such as carbaryl, parathion and azodrin in place of DDT to control pests is responsible for the decimation of honey bee colonies in some states. Pointing out that persistence of DDT in the environment poses problems, the alternative chemicals currently used are considerably more toxic to commercial and wild bees and are having disastrous effect on the beekeeping industry and resultant lack of pollination services for clover, citrus and other agricultural crops.

Much of the damage has resulted from aerial spraying, and Government agencies are endeavouring to tighten restrictions to minimise damage. One sphere which would result in improved results would be the simple expedient of considering other peoples problems, and if farmers can be persuaded to co-operate with apiarists by early warning systems of intended spray programs, much damage will be avoided.

★ ★ ★

IN THE SAME ISSUE of *"GLEANINGS"*, Dr. Roger Morse records that a number of chemicals are being tested for addition to baits to destroy wasps. Sugar in the bait must be 'out' because it is an attractant to bees, and the most promising lines of research appear to be based on chemically treated fish flavoured cat foods. The liking by wasps for decaying meat or fish is well known, whereas bees are not interested in putrifying matter. One chemical tested not only killed the wasps, but made the bait more attractive to them. The chemical concerned named mirex has been used in earlier programs for the destruction of fire ants in the southern states, and was added to the proprietry cat food to the extent of one half to one percent. Beekeepers and picnic addicts will welcome this new and apparently successful method of attracting and destroying wasps, but the reaction of cat lovers will probably not be so enthusiastic.

EVERY SYMPATHY is extended to bees in countries where antibiotics are administered as standard treatment for disease prevention and cure. The writer was prescribed a course of anti-biotic for a suspected infection and the cure was far, far worse than the cause. If you have ever seen wall paper stripped from walls with a steam heater and project that image to the imaginary lining of the stomach the analogy will be fairly accurate. Poor old bees. If any of them had the ability to think and compare, they might well wish they had died on the wing in summer instead of surviving through the winter!

★ ★ ★

THE BEE RESEARCH ASSOCIATION have forwarded for review two full-colour Wall Charts measuring 30" x 40" which show in great detail the anatomical structure and life cycle of bees. Chart C1043 titled BEES is divided into three section and shows a solitary bee *Andrena armata,* the common Bumble Bee *Bombus terrestris* and the honey bee *Apis mellifera.* Each specie is arranged for comparative study and information is provided of their habitat and life cycle.

Of greatest interest to beekeepers, Association branches and schools is the wall chart C1044 titled THE HONEYBEE which shows enlarged pictures infull colour of queen, worker and drone, their anatomical differences, life cycles and development from egg to maturity in the three castes.

For instructional purposes, the wall charts are ideal and their authenticity can be assured. Association secretaries, instructors and everyone

anxious to make a closer study of bees are recommended to obtain copies of these two full colour charts from the Hon. Publication Secretary, BRA, 11 Poplar Grove, Maidstone, Kent, England at 15s-0d each plus 2s-0d part postage and packing cost. Remittances may be sent by British postal notes obtainable at any Post Office.

★ ★ ★

CYCLING is not as popular as it was in the days of our youth, and too many people almost forget the purpose for which their feet were intended. Whilst a gentle bike race from here to there is still not considered anything extraordinary, a trip from England to New Zealand via Europe, Africa and across Australia's Nullabor Plain is something to really write home about.

A Mr Robert Jacks, a 44 year old Scot from Northampton recently cycled through New Zealand at a liesurely 80 miles a day, relying for his energy on a diet of honey and cheese; — both products in plentiful supply from this country and known for their food value.

★ ★ ★

AN EDUCATIONAL BOOKLET has been published by the Honey Marketing Authority titled *"THE STORY OF BEES AND HONEY"*. Written and designed specifically for school children, the booklet seeks to teach children something of the wonders of bees and their use to mankind at the same time impressing upon the formative mind the value of honey as a food and as nature's sweetest confection.

Children study the story and then write their own impression as a school project.

★ ★ ★

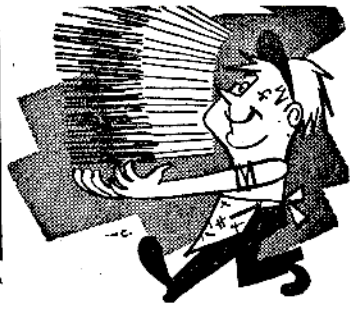
A JUDGEMENT of fifty years ago reported in the October 1919 edition of the *"BRITISH BEE JOURNAL"* makes interesting reading and is well worth repeating if only as food for bar-time argument as to who is the legal owner of the swarm.

His Honour Judge Glwynne James had to decide in the Bath County Court whether a beekeeper was the rightful owner and could succeed in his claim for the value of the bees and for the 40lb of honey he would have had if the defendant had not collected the swarm from his own hedge.

James Batstone a beekeeper and baker sued Albert Rumming, both of Bath for collecting the swarm from a hedge on the property rented by

the beekeeper. To mix a metaphor, here was a pretty kettle of fish. His Honour gave judgement as follows: "He would assume that the swarm from plaintiff's hive flew about 100 yards and lodged in a hedge which was also the property of the plaintiff, and that defendant took that swarm which came from plaintiff's hive. Could plaintiff recover? The law, he thought, was absolutely clear on that point: It had been clear for hundreds of years because in reference to wild animals—and bees—the law was laid down by the Emperor Justinian and he would read the translation of that law: "A swarm of bees which has flown from your sight is still considered yours as long as it is in your sight, and may easily be pursued. Otherwise it becomes the property of the first person who takes it." In this case the swarm had never been in the owner's sight; it was 100 yards from its home; it was never seen by the plaintiff on leaving the hive, on its way, or when it was taken. He turned to the original Latin and found that "the swarm which has flown from your hive is still considered yours—*donec in conspectu tuo est*—as long as it is in your sight," not as Mr. Wiltshire (counsel) asked him to say "as long as it may be in your sight or can be in your sight." If it left the owner's sight his property in it was gone, although he might recover it, but if anybody else found and took it, it belonged to him. That was the law as passed at the time of the Emperor Justinian, and was still the law of England today. He was asked to say that the owner had qualified property in a swarm of bees which left his hive, although he did not see it go. He could find no authority for the suggestion. It appeared to him that the law as it was hundreds and hundreds of years ago, that one lost property in a swarm of bees if he did not immediately go after it and catch it while it was in his sight. If he did not do that, and somebody else got it, it became the property of the person who got it. Whether there was a tresspass committed in that case was an entirely different question. It did not arise in the action before him because there was no claim for trespass but only for the wrongful seizure of the bees. There must, therefore, be judgement for defendant." So the beekeeper was not successful in his action to recover the value of his swarm and the mythical 40lbs of honey. Unfortunately, the report does not detail the respective values as at 1919 or the costs in the action. It was interesting to note, however, that the law has been in effect of the time of the Roman Emperor Justinian and that there is the Latin tag to prove it.

BRANCH NOTES



NORTH OTAGO

The Branch held a farwell afternoon at Mr and Mrs Bill Irvings residence in Kurow to say cheerio to Mr and Mrs Vince Cook. Vince is on transfer with the Dept of Agriculture to Christchurch. We are sorry to loose such an able and willing Apiary Instructor, but this is promotion and promotion well deserved. We wish Vince all the best in his new job.

Stan Wilson branch president, presented Vince with an engraved pewter mug. George Winslade spoke on behalf of the N.B.A. and Ivor Forster for the Department of Agriculture.

A very enjoyable afternoon was spent by all and we thank Bill and Mrs Irving very much for making their home and garden available for this function. Bill officiated with a high degree of efficiency at the barbecue.

The swimmig pool proved very popular with the children. No adults availed themselves of the opportunity, although one of the members' wife thought for a few terrible moments that she was going to make an involuntary splash down in the pool at the hands of her husband. "There would be no joy in that."

The days are getting cooler and winter is not far away so its time for wintering down. At the beginning of the season, owing to drought conditions, the chances of winter stores looked fairly remote. The rain came in time and we all got an average crop and winter stores.

Reported by R. B. Mackie

SOUTHLAND BRANCH

February gave a fair tail-end flow, but with January practically out, the honey crop in the area will work out about average.

There was great growth throughout the season and clover kept flowering well despite the fact that Southland was carrying many thousands of stock brought in from the drought areas further north.

We regret to report that Mr Norman Glass has had a prolonged spell in Hospital; we all wish him a speedy recovery.

The Southland Branch has held a meeting and Field Day during the three month period at which industry funds have been discussed.

Mr Russell Poole of the HMA came down to the meeting in Gore to tell us about HMA affairs and Mr Ivan

Dickinson told us of the efforts the executive were making to institute an industry fund that would be fair to all sections of the beekeeping industry.

A very successful field day was held at Greenvale Apiaries at which there was an attendance of 150 from Southland, Otago and Canterbury. Opening the gathering Mr Waigth of the Fruit Growers' Association stressed the vital necessity of bees to fruit growers as pollinators. Both the Davidson and Penrose uncapping machines were demonstrated but unfortunately, heavy rain precluded hive manipulations. Kevin Ecroyd of Christchurch showed his new pollen trap, and Mr Jack Fraser gave a talk on honey marketing.

Reported by Keith Herron.

NORTHLAND BRANCH

This honey season has been the one we have been looking for for many years. With a dry summer the farmers may have suffered but the beekeeper made up for it with a heavy crop of light nectar.

We have just had our field day at the home yard of Les Ryle of Kauri. Neil Bates, the Auckland instructor, was in attendance to give the commercial and small apiarists some good advice on methods of hive management, besides making a split for two Queen method. After lunch Les Pyle extracted honey and showed how to prepare sections for export markets.

There was a demonstration on fixing the wires in frames with a stapling machine which seems a very easy and quick method instead of fiddling around picking up the small tacks.

Our Annual meeting will be held in the Riverside Hall on May 13.

Reported by A.G. Tucker.

CANTERBURY

The season in Canterbury has been poor. Numerous hives have been shifted to the foot hills and West Coast in an attempt to gather enough stores to tide them over the winter months. The beekeepers at the present moment are returning the bees to the original sites and preparing them for the winter months.

Domestic Group

The Group has had an evening meeting with John Smith, the Apiary Instructor. He went over the new Apiary Act and explained the points as it will effect the domestic bee keeper.

Reported by Bob Furness.

OBITUARY

PENROSE, Thomas Francis a pioneer beekeeper of Canterbury for many years, died at his home at Sumner, Christchurch on April 28.

Elected a life member of the National Beekeepers' Association at the 1968 Conference at Hamilton, Tom was respected and esteemed by all for his warmth of feeling for his fellow men and for his long and unstinting service to the industry

He is survived by his wife and two children Heather and David; the latter continuing the family business at Leeston.

Even in an industry which has produced some outstanding personalities, men of Tom's calibre are hard to find and greatly missed as individuals and participants.

Letter to the Editor

Timaru, April 27, 1970

Sir,

The proceedings of the Seminar held at Ruakura make interesting reading. On three points, I would appreciate some of your valuable space to make comment.

During "Questions and Answers Forum," the question was asked "How can *propolis* be removed from the hands?" There is a more simple method than that given in the answer. Propolis is secretion from the bark of trees and its solvent is turpentine. I have a round tin eight inches in diameter and three inches high. In this I keep a half-inch layer of mineral turpentine and a nail-brush. It is always ready for use and does the job perfectly.

Later during the same Forum, the question asked was "What are the *advantages* of wintering queens in *Baby Nuclei?*" The reply given was not the answer to the question. There are many advantages in wintering queens in baby nucs. and it can be done. Over the coming winter I am hoping my further experiments will prove that it is not difficult, given certain conditions, to over-winter queens in a comparatively small type of baby nuc. I expect to write about this more fully after my experiment is concluded.

During question time after Mr. Tom Pearson's lecture, the cages used for queen banks and queen introduction were described.

The thickness of this cage was stated as three-quarters of an inch, whereas I consider it should be half an inch. The importance of this measurement has not been realised by some who have adopted this cage and its frame for queen banks.

I first introduced this cage and frame to beekeepers at the Canterbury Field Day in 1961. Its value was immediately recognised by Mr. Tom Pearson and Mr. Jasper Bray who were present. Others in New Zealand and Canada also adopted the system after it was described in the N.Z. Beekeeper in February 1962.

Some who are using the cage departed from the basic principle that the cage *must be as small as possible.*

Its thickness is decided by the three-eights inch hole used for inserting the Queen. A good full-bodied queen will not object to going through a hole this size but will often refuse to go through a three-sixteenth inch hole. Half inch wood is the smallest that a three-eight hole can safely be drilled through and still keep the cage rigid, but the cages are less effective if they are thicker. The bees must have maximum access to the queen.

Mr. Bob Walsh confirmed this opinion when he later, at the same Seminar, stated that "the cages *should be as small as possible,*" and gave as his measurements 1½ inches by 1½ inches by three-eights thick.

These comments are offered in a spirit of helpfulness and not in criticism. All of the beekeepers mentioned know more than I, a mere hobbyist, can ever know.

CHRIS DAWSON.

NEW SECRETARY for the NBA

At a special meeting of Executive in Wellington on Tuesday April 21 Mr Eric R. Neal ACA of the firm of Neal & Brydon, Chartered Accountants, Druids' Chambers, Woodward Street, Wellington 1, was appointed General Secretary of the National Beekeepers' Association with effect from May 1st.

Mr Neal is aged 48 years and has been in practice as a public accountant since 1967; formerly he was finance director in charge of market research for a major advertising agency and company secretary.

In community service he has served two terms as a member of the Upper Hutt Borough Council, for the last four years as chairman of the Council's Finance Committee. Earlier, he was on the council of the Canterbury Chamber of Commerce and has been associated with a variety of community activities.

Hobbies are described as gliding, power flying and "very amateurish golf".

Mr Neal can be assured of a warm welcome from beekeepers and he will be enabled to meet a representative cross section of our industry at the Conference proceedings to be held at Takapuna, Auckland in July next. All will wish him well in his new position.

Following appointment as Secretary of the Association, Mr Neal was nominated Returning Officer for the forthcoming elections under the provisions of the Honey Marketing Authority Regulations.

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501	to	600	hives $12.00	1501	to	1600	hives $32.00
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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 L. W. Goss, P.O. Box 3561, 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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Quarter Page	$4.50	Per Inch	$1.25
Half Page	$8.25	Min. Charge	65c.
Full Page	$15.00	for each insertion.	

Front Page Story

The reproduction on the front cover is a poor substitute indeed for the magnificent colour to be seen on the wall chart titled THE HONEY BEE issued by the Bee Research Association. Because of the size of the original, which is 30" x 40", only a small part of the instructional detail can be shown but it is sufficient to portray the clarity and detail which has been included.

In addition to **Apis Mellifera** on chart C1044, the solitary bee **Andrena armata and the common bumble bee Bombus terrestris** are shown on chart C1043. Every student of beekeeping and Association branch would be advised to obtain these excellent wall charts for reference purposes.

Copies may be obtained from the Hon. Publications Secretary of the Bee Research Association, 11 Poplar Grove, Maidstone, Kent, England for 15s-0d each plus 2s-0d part postag and packing.

Beekeepers will recognise that the BRA have rendered the industry an excellent service in making these authentic charts available at so small a cost.

Though most of us know the rudiments of bee anatomy, absorption of detail normally the preserve of scientific study becomes a possibility.

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