THE NEW ZEALAND BEEKEEPER

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OFFICIAL ORGAN of the
NATIONAL BEEKEEPERS' ASSOCIATION
OF NEW ZEALAND
(Incorporated)

(An Organisation for the advancement of the Beekeeping Industry in New Zealand)

Better Beekeeping | Better Marketing

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FROM THE PRESIDENT

The year 1956 has marked a significant milestone in the history of the Association, as this year has seen both Southland and South Auckland Branches celebrate their fiftieth anniversaries. It was fitting that at the functions held to mark the occasion, tribute should have been paid to those who, in the face of discouragement and near-disaster, have, over the years, given freely of their time and energy in pursuit of improved conditions within the industry.

As we enter our second half-century as an organised body of producers, it can be readily seen that we enjoy one immense advantage over those scattered few who inaugurated the National Beekeepers' Association fifty years ago; that is that today we have an organisation which, for all its possible faults, is a going concern. On the one hand, a strong and active Association of beekeepers in all important beekeeping areas, which has won recognition in those quarters where it counts most. On the other, a marketing organisation with broadly-based producer control, and behind it, fifty years experience of the variable fortunes inherent in the industry.

Differences of opinion will continue to exist, and the vigour with which varying views are expounded will be a measure of the enthusiasm and enterprise on which our future will be built. Our present organisation provides an admirable framework within which diverse opinions may be aired, and perhaps reconciled.

If I may quote the words of a well-known beekeeper, we have a good machine — let us get in and drive it. Do not pull the machine apart if the trouble is only that we have poor drivers.

J. W. FRASER.

HONEY PRESENTATION

Himself a beekeeper, Sir Edmund Hillary, as leader of the New Zealand party in the Trans-Antarctic Expedition, accepts honey donated by the National Beekeepers' Association of New Zealand and the New Zealand Honey Marketing Authority jointly. From left to right at the presentation ceremony are Messrs E. D. Williams, of Te Awamutu, Vice-President of the Beekeepers' Association; Mr A. S. Helm, Secretary of the Ross Sea Committee; Sir Edmund; Mr J. W. Fraser, of Invercargill, President of the Association; and Mr R. A. Fraser, of Foxton, Secretary.

HONEY FOR ANTARCTICA

At a pleasant function held in Wellington at the time of its recent meeting the Executive met Sir Edmund Hillary, leader of the New Zealand Expedition, and Mr A. S. Helm, Secretary of the Ross Sea Committee, and formally presented a supply of honey to meet the requirements of the New Zealand party in Antarctica. The ceremony was recorded by a press officer and photographer from the National Publicity Studio.

In making the presentation the Dominion President, Mr J. W. Fraser, said that beekeepers had followed with keen interest the exploits of Sir Edmund, and his present appointment as leader of the Expedition made that venture a matter of personal interest to all beekeepers. They were very glad to be able to make a practicable contribution towards the success of the New Zealand party, and on behalf of the National Beekeepers' Association he wished Sir Edmund and his men every success.

In acknowledging the gift Sir Edmund said he was particularly pleased at the beekeepers' gesture, as on the Everest expedition he had unfortunately neglected to assure himself of an adequate supply of honey, and had to rely on some found in stores left by a previous expedition. He had tried to make this last as long as possible and had in fact partaken of honey prior to the final assault.

In the Antarctic the aim was to provide a diet as close as possible to that to which members were normally accustomed, and honey was therefore important. He thanked the beekeepers of New Zealand very much for their gift of honey, which in the months to come would be very much appreciated by the party.

Originally the expedition had estimated its requirements at 220 pounds but this has now been increased by a further 240 pounds. The honey has been supplied in 5lb. tins for convenient handling by the party.

PRICE CONTROL

Although the 1956 Conference supported the delegates' vote, a remit seeking the retention of Price Control, the matter was later given urgent reconsideration by the Dominion Executive in the light of recent developments.

In the last two applications for price amendments the established increases in production and packing costs have not been fully recognised by the Price Tribunal and the Price Order has consequently imposed an unfair restriction on the industry. The Honey Marketing Authority, in particular, has been hampered by some sections of the Price Order in providing an even distribution of honey, and certain lines can be packed and distributed only at a distinct loss. After considering all the factors involved the Executive decided to press for the release of honey from price control. Accordingly, an application for de-control, lodged by the National Beekeepers' Association in conjunction with the Honey Marketing Authority, is now before the Price Tribunal.

It is anticipated that after honey has been released from control there will still be some restriction on the margins of profit allowed to merchants and retailers. The Honey Marketing Authority intends to issue an official price index, which will be supplied to all interests concerned, setting out the standard selling prices for honey of various grades and in different packs. This will provide an authoritative guide for producers and will be subject to amendment by the Authority from time to time as circumstances dictate.

TOXIC PESTICIDES

Following the intimation given at the July Executive meeting in Invercargill, that legislation controlling the application of toxic pesticides would not be effective before the end of this year, and a further disclosure that the interim system of individual permits had been discontinued, the Executive immediately approached the Minister of Civil Aviation (the Hon. T. P. Shand) and the Minister of Agriculture (the Hon. K. J. Holyoake) in order to obtain at least the same degree of protection for honeybees as was provided last year.

After some negotiation it was finally arranged that aerial applications of toxic pesticides in the South Island crop-growing areas would not be undertaken by any of the air work operators until a permit had been issued by an officer of the Apiary Section of the Department of Agriculture.

This work has been under the control of Mr I. W. Forster, Apiary Instructor at Oamaru, who has a thorough knowledge of the problem as it affects beekeepers. Mr Forster has been assisted by other apiary instructors in their own areas.

BEEKEEPER IN MOTOR TRIAL

Mr Len Thorpe, a Victorian beekeeper, with a Sydney chemist as co-driver, took part in the recent Mobilgas Reliability Trial around Australia. Mr Thorpe had an effective picture of a honeybee painted on the bonnet of his Peugeot car labelled "Aussie Bee, the Flying Doctor." He was greeted enthusiastically by beekeeping interests en route and the entry aroused a lot of comment generally. Mr Thorpe completed the course and although losing a good many points he put up a creditable performance.

EXECUTIVE MEETING

A meeting of the Dominion Executive was held in Wellington on October 24th and 25th. All members were present and the President (Mr J. W. Fraser) was in the chair.

A telegram of sympathy was sent to the Editor (Mr J. McFadzien), wishing him a speedy recovery from his illness.

Conference Remits

Further consideration was given to implementing the remits passed at Conference and a discussion was held with Mr A. M. W. Greig and Mr T. S. Winter on remits in which the Horticulture Division was concerned.

Honey Prices

Advice was received that the Association's application for de-control had been declined. Discussions were held with officers of the Price Control Division on the reasons for this decision, and the matter is being further pursued by the Executive in consultation with the Honey Marketing Authority.

While the Executive was meeting, changes in Price Control administration were announced in the House of Representatives, but it was not clear what effect these would have on the present situation.

Toxic Pesticides

Mr Greig attended the meeting and explained the reasons for the delay in the introduction of the proposed Agricultural Chemicals Bill. He outlined the amendment to the Apiaries Act which was before the House and the draft of Regulations which were to be brought down under this provision.

Appreciation was expressed by the Executive of the work done by officers of the Apiary Section in connection with control measures, and trials which are being conducted in the affected areas.

Part-Time Inspection

The importance of the Part-Time Inspection Scheme was emphasised and it was decided to bring to the attention of all Branches the necessity of beekeepers to make themselves available for this work.

Lincoln College

Advice was received that it is proposed to include a series of lectures in the present courses dealing with various aspects of beekeeping in relation to agriculture generally, to be given by officers of the Apiary Section, assisted by commercial beekeepers.

Membership

The matter of membership subscriptions was discussed with particular reference to the proper representation of partnerships, the uneconomic nature of some classes of direct membership, and the possibility of raising the maximum subscription. It was decided to have a report prepared by the General Secretary and a sub-committee, to be considered at the next meeting with a view to making recommendations at next Conference.

Diploma in Beekeeping

An outline of the required course is being prepared so as to be ready for use when the Diploma in Beekeeping is established.

1957 Conference

An invitation from South Auckland to hold the Dominion Conference in Hamilton next year was accepted. It was mentioned that it would be posposible to arrange for those attending to visit Auckland to inspect the Honey Marketing Authority's new building, which would possibly be completed by that time.

UNION MEMBERSHIP

The requirements of beekeepers' employees as Union members are of some concern to honey producers in view of the varied nature of their work. The correspondence printed below refers to a case which has occurred recently in Hawkes Bay.

* * *

NATIONAL BEEKEEPERS' ASSOCIATION OF N.Z. INC.

18th September, 1956.

Dear Sir,

I have had referred to me, a ruling by your District Officer at Hastings, requiring the employees of a Beekeeper at Havelock North to become members of the "N.Z. Food Preserving, Chemical, etc., Union." At the time the Union official called on the beekeeper concerned his two employees were engaged in packing honey into retail containers.

The decision of your Department in this matter is of considerable concern to my Executive in view of the far-reaching repercussions which may result throughout the industry.

The particular nature of a beekeeper's occupation is such that he and his employees must be engaged in a wide variety of work at different times of the year, but generally speaking a beekeeper is classified as a farmer and his employees registered under the Agricultural Workers' Union. The time spent in packing honey varies considerably from case to case, with some beekeepers not undertaking any packing except into bulk containers for shipment to the Honey Marketing Authority.

Those beekeepers who do pack into retail containers are seldom engaged in this work for more than two or three months of the year, and in the majority of cases the packing is undertaken by permanent staff who are engaged in bee management for the remainder of the year.

During winter months staff is usually engaged in the making of new hive-boxes, stands and lids. If insistence is going to be placed on enrolment with the "Food Preserving and Chemical, etc., Union" for the period that staff is engaged in packing honey, then the same position could conceivably arise with the "Carpenters' Union" for the period that staff was engaged in box-making.

Obviously this would be impractical and intolerable as far as beekeepers are concerned.

Beekeepers in common with farmers generally have difficulty in securing sufficient suitable staff. Unnecessary interference from Industrial Unions could and would seriously aggravate this position and meet with the strongest opposition from beekeepers throughout the Dominion.

I trust that you will look carefully into the position which I have outlined and I look forward to your early assurance that further difficulty will not be encountered with the Union mentioned.—

Yours faithfully,

R. A. FRASER, General Secretary.

DEPARTMENT OF LABOUR

24th September, 1956.

The General Secretary,
National Beekeepers' Association of N.Z. Ltd.,
P.O. Box 19, FOXTON.

Dear Sir,

I have to acknowledge receipt of your letter of 18th September in regard to the two employees of Arataki Apiaries Ltd., Havelock North, having to join a union.

This matter was the subject of inquiry by our Hastings office last month, and from the facts of the case it seemed clear that both workers were engaged for the greater time on processing of honey. As this work is under the provisions of the Grocers' Sundries (General) Award, it is, therefore, necessary that they join the appropriate union.

I think you will agree that there is quite a difference between the processing of honey by a large establishment such as this, where upwards of 5000 hives are kept, and that undertaken by the average beekeeper whose main occupation is farming, beekeeping being merely one of his farming activities and carried out either by members of his family or his farm hand if such is employed. There the honey processing work would clearly be incidental to the main occupation of farming.

Where, however, the principal occupation of the worker is honey processing, then of course the question must be viewed differently, but I do not think that there are any repercusssions which could result from the case under discussion. It is safe to say that by far the greater number of beekeepers are merely farmers who keep a few hives to augment their income but they are entirely different from Arataki Apiaries Ltd., who could not, I suggest, be properly described as farmers.—Yours faithfully,

P. CRAIGHEW, for Secretary of Labour.

* * *

28th September, 1956.

The Secretary of Labour,
Department of Labour,
P.O. Box 6310,
Te Aro, WELLINGTON.

Dear Sir,

UNION MEMBERSHIP

I wish to acknowledge your lettter in reply of 24th instant but from your comments feel that you have misconstrued the points which I raised in my letter of 18th instant.

Firstly, I should point out that my comments were directed to the hundreds of commercial beekeepers who engage in bee-farming as their sole occupation, and although Arataki Apiaries Ltd. may be a larger concern than most, the circumstances of all are similar in the following respects:—

1. The greatest amount of time is spent in attention to apiaries; queen rearing, winter feeding, controlling disease, overhauling equipment, installing comb foundations, etc.
2. The harvesting of the crop, extraction of honey from the combs and packing occupies,

at the most, three months of a beekeepers' time annually.

My earlier mention of the classification of beekeepers as farmers is based on the fact that honey production is a primary industry under the control of the Department of Agriculture. You may also note that under the Transport regulations commercial beekeepers are classified as farmers.

I do not know the significance of the word "Processing" which you use in connection with the packing of honey and the compulsory registration of employees as members of the "N.Z. Food Preserving Chemical, etc., Union," but it does appear to be a misnomer. Honey is a pure food and is not processed in any way.

The point at issue would then appear to be the amount of time spent in the honey-house in relation to other work which a beekeeper's employees are obliged to perform. I have already pointed out that the packing of honey is a very small part of the beekeeper's work, but I would suggest that if you wish to make yourself more familiar with beekeeping practice that you contact Mr T. S. Winter, Superintendent of Beekeeping, Department of Agriculture, Wellington.

I am sure that when you have reviewed this matter you will agree that enrolment of beekeepers' employees in the "N.Z. Food Preserving and Chemical, etc., Union" is quite unwarranted, and I look forward to your confirmation on this point.—Yours faithfully,

R. A. FRASER, General Secretary.

ILLNESS OF EDITOR

Members will be sorry to learn that our Editor, Mr J. McFadzien, has undergone a major operation, and faces a lengthy period of convalescence. It says much for his sense of duty, and interest in industry affairs, that he has prepared this issue of the "Beekeeper" from a hospital bed. It is pleasing to know that Mr McFadzien has good prospects of a complete recovery, and that in the meantime his beekeeping interests are being looked after by some good neighbours.

I know that everyone will join with me in extending sympathy in his illness, and best wishes for a full and speedy return to full health and strength.

J. W. FRASER, President.

* * *

[Note: The Editor wishes to express his thanks for the many kind messages received, and for the helpful attitude of all toward the Editorial work, and in the time given by several beekeepers in attending to the spring work in his apiaries. With the advent of warmer days, the growing activity of the bees, and another honey season well on the way, he is now making a steady recovery.]

SPRAY DANGER

People using hormone-type weedkillers which attack flowers and vegetables in their neighbours' gardens may be liable for damages if legal action is taken.

This warning was issued by Mr J. D. Atkinson, director of fruit research at the Department of Scientific and Industrial Research plant diseases station, Mount Albert.

Some weedkillers, used for spraying gorse and blackberry, violently distort the growth of such things as roses, peas and apple trees.

A Supreme Court Judge and a sergeant of police are two Auckland sufferers. A man whose property adjoins theirs unwittingly did the damage.

Damage had been reported from many parts of New Zealand, Mr Atkinson said. The water in a spray pump which had contained weedkiller was changed ten times and the eleventh time all but killed some tomato plants.

The vapour distorted other plants in a glasshouse eight feet away.—

Press Association, 31/10/56.

HONEY MARKETING AUTHORITY

Final Payment for 1955/56 Season

The Honey Marketing Authority has completed another successful year and the revenue for the 12 months ended 31st August, 1956, was sufficient this time to cover the final payment without drawing upon reserves. Overseas prices were maintained at a high level, although there was a slowing down in white honey sales during the last few months. This has resulted in a heavier carry-over of stocks into the new year.

The final payment for the 1955/56 season has been fixed at 3d per lb. for all honey purchased on a pro rata basis and also for Manuka honey. This compares with 3¼d per lb. and 2⅝d per lb. respectively for the two classes last year. A far greater proportion of the honey received during the last season was supplied under contract and therefore earned the ¾d per lb. contract premium. After taking this premium into account the average pay-out for all honey received during the year was approximately ¼d per lb. more than the previous year.

Cheques for the final payment will be despatched on or before 16th November, 1956.

Contracts, 1956-57 Season

The Authority has decided to call for contracts for the new season, and the annual information circular giving full details should be in the hands of all producers before the end of November. Any beekeeper who does not receive a copy should write to the Manager, Honey Marketing Authority, Box 2615, Auckland. The principal contract conditions are as follows:—

(a) Suppliers may contract for specified quantities or alternatively they may contract for their whole production with the exception of sales direct to consumers at the apiary.

(b) The tolerance for contractors electing to supply specified quantities will be 10 per cent. below the quantity contracted for. The premium will also be allowed on a quantity 10 per cent. in excess of the contract figure.

(c) The contract premium will be ¾d per lb.

(d) The last day for receipt of contracts will be 18th JANUARY, 1957. Special attention is drawn to the date for receipt of contracts. To give beekeepers a better opportunity of assessing their production the date for sending in contracts has been fixed much later than in previous years. It is essential that they be sent in in time and no late contracts will be considered.

The Authority also requires that honey be sent into depots by the specified date, i.e., 30th June, 1957.

(e) The following classes of honey are excluded from contracts:—

(1) Manuka honey.
(2) Honey with a birch flavour grading 85 points or under for flavour.
(3) Honey with specific gravity below 1.410.
(4) Any honey unsuitable for export for reasons other than low specific gravity.

Manuka Honey

Manuka honey suitable for export will be purchased at 7d per lb. plus such further payment as may be decided on at the end of the season.

Honey with Birch Flavour

The Authority has reviewed the question of purchasing honey with a birch flavour. It has decided that any honey with birch flavour grading 85 points or under for flavour and which is suitable for export will be purchased at 7d per lb. plus such further payment as the Authority may decide at the end of the season.

Liquid Honey

Honey received in liquid condition will be charged ½d per lb. to cover the cost of extra handling and storage. Suppliers are to ensure that starter honey is added in all cases.

Honey with Low Specific Gravity

In the past honey with low specific gravity has been the subject of special purchase arrangements in each case. It has been decided that where the specific gravity is not below 1.410 this class of honey will be purchased on the normal pro rata basis subject to a special deduction of ⅝d per lb.

Seals

Packers are advised that 1d seals are now available in continuous rolls. There are 480 seals in each roll, and they may be purchased from the Authority in the normal way.

E. A. FIELD, Chairman.

Honey Baked Apples

Select nice large apples. Take out core, fill cavity loosely with raisins. Pour honey into cavity and a little over the apples. Sprinkle with cinnamon and nutmeg, add water to halfway up the apples, bake.

* * *

Bran Honey Bread

1 egg, ¼ cup brown sugar, ½ cup of honey, 1 tablespoon melted butter, 1 cup bran, 1 cup chopped dates or figs, ½ teaspoon baking soda, 2 teaspoons baking powder, 1 teaspoon salt, 2½ cups flour, ½ cup chopped nuts, 1½ cups milk.

Add the sugar, honey and melted butter to the beaten egg; add the bran. Sift the baking soda, baking powder, and salt with flour and add to this mixture the chopped nuts and fruit. Add the dry ingredients alternately with the milk to the first mixture. Turn into a buttered loaf pan and bake in oven at 375 degrees for about 1¼ hours.

DEPARTMENT OF AGRICULTURE
HORTICULTURE DIVISION

Following the trouble in Canterbury last year, where serious losses of honey bees occurred as a result of aerial applications of lindane on flowering brassica crops, the Horticulture Division has devoted a great deal of time in selecting insecticides which show promise in controlling aphids while at the same time safeguarding honey bees.

In this connection the Division initiated an extensive trial to discover what precautions should be taken in the application of metasystox, which commercial interests were considering launching on the market. The insecticide metasystox belongs to a recently developed class called systemics — these are absorbed into the plant and poison sucking insects feeding on the sap.

The trial was undertaken by Mr T. Palmer-Jones, Research Officer, Wallaceville. assisted by Mr I. W. Forster and Mr L. A. M. Griffin, Apiary Instructors, whilst the application of the insecticide and its effect on the aphid infestation was handled by officers of the Entomological Station, D.S.I.R., Ashburton.

Results obtained indicate that metasystox is highly toxic to honey bees and bumble bees when it is applied to flowering crops.

It is, however, a very good aphicide and methods will be worked out by research officers concerned so that it can be used without harming honey bees and bumble bees.

Control of Bee Diseases

The November (1955) issue of the "New Zealand Beekeeper" contained a warning to all beekeepers not to use any class of drug or chemical for control of American Foulbrood (Bacillus larvae) unless approved by the Department of Agriculture.

At that time inquiries had been received regarding the possible use of Terramycin to eradicate A.F.B., and Mr Palmer-Jones, Research Officer, who was overseas at the time, was asked to look into the matter.

It appears that Terramycin does not kill the causative organism (spores) of American Foulbrood but merely acts as a palliative in that it prevents the growth of the disease in the vegetative stage if continually fed to the bees during the breeding season. This means that spores in the honey and inside the hive would not be affected and would exist as a source of infection to other hives.

New methods of dealing with bee diseases in New Zealand in recent years, including the destruction of diseased bees and sterilisation of remaining hive equipment have been successful in keeping brood troubles down to a minimum in the main honey producing districts, where the incidence has been reduced to less than one-half per cent. of the hives inspected in some areas.

Producers will appreciate the grave danger to the beekeeping industry in New Zealand in feeding any drug or chemical to honey bees (for disease control purposes) that merely acts as a palliative. In the circumstances no useful purpose would be served in carrying out expensive trials with this particular antibiotic, nor would the Department countenance its use for control of American Foulbrood.

Use of Sulfathiazole

A report of the utmost importance and interest to all beekeepers covering the use of sulfathiazole in the State of Florida, U.S.A., appears in the July 1956 issue of "Gleanings in Bee Culture."

A regulation operating in the State of Florida since 1946 permit-

ting optional feeding of this drug for control of American Foulbrood has been rescinded.

This action has been taken in the interests of beekeeping following ten years experience in the use of sulfathiazole for the above-mentioned purpose, and strong recommendations made by Beekeeper Associations in that State.

The report confirms that sulfathiazole in no way affects the resting or spore stage of American Foulbrood, and states that it is an established fact that colonies which were once infected with A.F.B. and treated with sulfathiazole will have buried under the cocoons in the individual cells, fecal matter contaminated with American foulbrood spores. It is only necessary to break or damage the comb in order to liberate these spores and reinfect a colony.

T. S. WINTER,
Superintendent, Beekeeping Industry.

"Can you give my daughter the things to which she's accustomed?"
"Not much longer, sir. That's why I want to get married."

A USEFUL TIP

Tapes on bee veils do not last long. If nylon tape is used the tape will last for years instead of months.

Honey Lemon Cheese

Three eggs, ½lb. sugar, ½lb. honey, ½lb. butter. juice of 3 lemons and grated rind of 2. Beat eggs well. Put all ingredients in double saucepan or basin, and cook in outer saucepan of water until thick, stirring frequently. Must not boil.

AUCKLAND CENTRAL

By the time this contribution is published everyone will have finished discussing the annual Conference, but we enjoyed Mr W. Nelson's report on its during our August meeting.

He started by paying tribute to the way in which Mr W. T. Herron had so ably acted for us as delegate, and then went over the whole of the business point by point.

I am sure that if we had gone to Conference ourselves we should not have got so much out of it as we did seeing it through Mr Nelson's wealth of experience. He brought out so many little details that were by no means obvious on the face of things.

Of course with Mr Nelson on the rostrum it would have been silly to have let him go without a talk on marketing, so we had some very interesting remarks on the economics of the H.M.A.

How the new building is progressing was a good start, and he made a strong point of the value of that building to the N.Z. beekeeper. Its value depends on whether the honey is available, and on whether the service is available to beekeepers. A balance should be maintained between production of home and export markets because we could not place too much reliance on the prices for exported honey remaining as favourable as they are at present. Therefore we should see that a good deal of the honey handled is for home consumption.

For the unit to be economic it must have a minimum of 1000 tons per annum to handle and this could be achieved within the Auckland province. Reminding us of the time when honey could be bought at 2½d and 3d a lb., Mr Nelson gave us at least something to think about.

I think I might be exceeding my space if I attempted to enumerate all the interesting points Mr Nelson brought up. The financing of the H.M.A., the strange case of dark honey fetching almost as much as white, and the possibility of a temporary reassessment of relative values, and all sorts of interesting little tit-bits.

I am never sure whether it is that Scottish accent or the pithy way that Mr Nelson has of puttings things, but I am sure that my fellow-members were as sorry as I was when the President called attention to the time.

R. V. HAPPY.

SOUTHLAND

After fifty years, at last we have had a conference in Invercargill! Everyone agrees that it was all well worth while — our thanks are due to our visitors who co-operated so well in advance notice of accommodation and banquet bookings.

The remainder of our Centennial gift cartons have been distributed by the Southland Hospital Board to patients and staff in all the Board's institutions. From letters received, they have been much appreciated.

Another mild winter and spring—can it be that we are to have another drought?

SOUTH CANTERBURY

Beekeepers were pleased to have the soaking rain of the last few weeks, but the continued dull weather has resulted in most hives being short of stores and feeding has had to be done.

The wet conditions made the willow flow almost a failure and the rearing and mating of queens has so far been next to impossible. However with a change to warmer conditions beekeepers would soon forget the present lean period and would look forward to good crops later.

After a recent meeting of the Branch in Timaru members were shown the most interesting films on Bees, by our Apiary Instructor Mr I. W. Forster. The first film was on artificial insemination of queen bees and was interesting, the second film was called "Bees for Hire," and was really outstanding and all present agreed it was the best ever screened on the subject and would advise all beekeepers not to miss any opportunity of seeing it.

The thanks of the meeting were expressed to Mr Forster for his efforts in making the films available.

J. G. McKENZIE

WEST COAST

The weather through August, September and three weeks of October has been as usual very good. The past week has brought warm foggy rain and many heavy downpours.

In early October many farmers were a wee bit worried — too dry — and though stock have done well it was looking serious, with a fire warning broadcast in the middle of the month.

The native flora in the coastal area has been late and of short duration, but now the drought has broken anything can happen.

Colonies that I have inspected are generally a bit too far forward and unless many folk pay attention they will have swarms galore or a surplus of early bush honey (usually not high grade).

An instance of the danger to beekeepers from the careless dumping of honey occurred recently when a Cobden beekeeper found eight of his ten colonies affected by foul brood. The trouble was traced to the local rubbish dump, where some honey had been deposited by a Greymouth grocer. It is felt that some method of educating those concerned would be helpful in dealing with this problem.

Two Branch meetings have been held recently, the first in Greymouth at the end of August. Twenty-seven were present and a welcome visitor was Mr J. Glynn, of Balfour. Mr I. Ilton gave a short instructive talk on the cleaning up and processing of wax, one of those messy jobs which everyone avoids but eventually has to do.

At the meeting in Hokitika late in September 32 were present and a welcome was extended to our past Instructor, Mr Des Seal, now of Invercargill. A very clear and instructive talk on queen rearing was given by Mr R. Glasson.

The Branch welcomes the recent appointment of Mr R. H. Hobbs as the new Apiary Instructor for the district. We hope that with the cooperation of beekeepers his work here will be both pleasant and profitable.

TOM HOLLAND.

Honey can be used in cakes, puddings, biscuits, fillings, and, of course, on porridge. Just try big blobs of honey on a plate of porridge, letting it melt a bit and then putting the creamy milk on. Cut the breakfast grapefruit in half, separate the segments, and then press honey well in, with the edge of the spoon, and let it stand a few minutes. Delicious! You can use it to sweeten fruit salads, too, adding it some little time before serving, so that it permeates properly. A lemon scraped out into a dessert-dish, or even a grapefruit, pulp as well as juice, and mixed with a big spoonful of honey, is simply grand for a tickly cough, and so healthy for children, too.

NOTES FOR BEGINNERS

By "Skep"

As time at my disposal for preparing this article is somewhat limited, I am taking the liberty of quoting extracts from that valuable and very informative bulletin (No. 267) issued by the Dept. of Agriculture, "Beekeeping in N.Z." by T. S. Winter.

In certain localities and at particular seasons, feeding may still have to be contended with, even in late November, and sometimes well into December.

Artificial Feeding

Where combs of honey are not available, the beekeeper will have to use other means to supply any food deficiency. Although honey is the natural and best food for bees for all purposes, sugar syrup may be used with good results either to stimulate brood rearing in the spring, or to make up for any shortage of winter stores in the autumn. A handy feeder for this purpose is a 5lb friction lid honey tin. Any clean tin with a number of small holes punctured in the lid will do. The tin should be filled with warm syrup (diluted honey or sugar and water) and inverted directly over the cluster with the lid firmly pressed on, enabling the bees to take the syrup through the perforations in the lid of the tin. An empty super would be placed on top to provide the space necessary for this type of feeder. Sack covers placed round the tin and over the top of the frames will prevent the heat of the cluster escaping above, or a neat flap may be cut in the hive mat and folded back, leaving a space over which the tin feeder is placed. Very little syrup need be spilt when placing the feeder in position and care should be taken to avoid robbing in the apiary.

When colonies are short of stores, and are neglected at critical periods, they usually fail to build up in time to take full advantage of the honey flow when it starts; instead they lose much valuable time building up their strength when they should be busy storing up a surplus of honey.

Preparation for Swarming

Bees make special preparations before swarming by building queen cells to ensure that a young queen is left behind to carry on the life of the parent hive after at least one swarm has issued from it. Swarm cells are generally built along the bottom edge or side of brood combs, or where there is some irregularity of the comb surface. But they may also be built directly out from the flat surface of the worker comb. The cells at first are shallow cups resembling an acorn cup but when completed they resemble a peanut shell and usually hang vertically. Eggs which are placed in the queen cups (cells) hatch in approximately 72 to 76 hours, depending on the temperature. For the next five and a half days the grubs or larvae are fed a concentrated food known as royal jelly, which is prepared by the worker bees. At the end of this period the cells are sealed by the workers, and remain sealed for seven and a half days. Although the rapidity of development may be slightly modified by changes in temperature of the hive, the resulting young queens usually emerge on the sixteenth day after the eggs are laid. To guard against emergencies the bees prepare a number of queen cells over a period of a week or more.

About the time the first queen cells are sealed, the first swarm emerges from the colony, usually on a fine day between 10 a.m. and 2 p.m.

Hive Room

If hive conditions become cramped early in the season when there is a honey flow, brood-rearing is curtailed, and there is a sharp decrease in the worker bee population of each colony because of the high death rate during the active working period of the summer season. The necessity for more super accommodation above the brood nest is clearly indicated when the combs in the hives are fairly well filled with brood and stores, and the bees begin to build out the combs

along the top edges with new wax, giving them a fresh white appearance. At this stage an extra super of empty combs or frames of comb foundation should be added to each hive.

Economimcal Use of Supers

The amount of super room to add to a hive at any time depends on the strength of the colony and on the duration and intensity of the honey flow. There is a tendency for beekeepers to pile on the supers long before they are required. Where this happens, and queen excluders are not used, the bees gradually move upward until the bottom box is not used at all for brood-rearing: consequently one box to each hive containing nine or ten good bee combs is standing out in the apiary serving no useful purpose.

Final Supering

When the main honey flow begins, all preparation for swarming usually ceases. Colonies with a large force of field bees at this time collect nectar so rapidly that it is placed in every available cell, even in the brood chamber when there is insufficient room above. The beekeeper should now add one or even two supers, according to the strength of the colonies, to each hive to accommodate the main crop of honey.

As mentioned in the February Journal I promised to deal briefly with three phases of the industry. This, my final topic, The Work, its glorious and free Nature.

In that golden age, the Millenium, the thousand years of peace and security, spoken of in the Bible. and here quoted from Micah 4-4 "They shall sit every man under his vine, and under his fig tree, and none shall make him afraid . . . " Now to a keeper of bees this individual ownership of a garden with vine and fig tree would hardly be complete without a hive or two of bees in a sheltered corner.

In records down the ages considerable emphasis has been given to bees, and the mystery hidden in the centre of activity, the hive, its storing of honey and pollen, the quiet peaceful industry of the little creatures, their sweet noise while on the wing and in the hive. Thrice blessed is the man who has a piece of land, a garden and a few hives of bees; more so when he lets them play a part in his life, engendering deep thought, wonder and experiment. What greater charm can there be than to loiter in the vicinity of 50 or 100 hives on a beautiful summer day, forgetting for the time all care and stress of living, and take in to the full the music, charm and beauty of this all-absorbing hour?

"The cultured and courtly Virgil chose to live a quiet rural existence among his lemon groves and his beehives, when he might have dwelt in the very focus of honour at the Roman capital . . . Virgil goes direct to the very heart of the matter, which is the same today as it was two thousand years ago. The beekeeper must be first of all a bee-lover, or he will never succeed; and Virgil's love for his bees shines through his book from beginning to end. The intrinsic value of his writings lies in their atmosphere of poetry and romance, which ought to be held inseparable, now as ever, from a craft which is probably the most ancient in the world. Almost alone among country occupations today, bee-keeping can retain much of its entrancing old world flavour." (Edwards 'Lore of the Honey Bee.')

This article covers the Christmas Season, and, while every thought and effort has been expended over these vital weeks to secure a good honey crop, shall we not also try to catch something of this spirit of charm and beauty, a closed book to many perhaps, but particularly possible to the Keeper of Bees.

ROAMING ABROAD
WITH BOB CHANDLER

Beekeeping in Norway is a much more organised and efficient industry than one would expect in a country whose weather is so unkind to bees for such a great part of the year.

The information I gained here was given to me by a man who is responsible for a great deal of the successful planning and I must pay a tribute to the unqualified welcome he gave me and to his wonderful generosity in time and Norwegian meals. He is Mr Roseberg the National Secretary of the Norwegian Beekeepers' Association.

The Honey Industry is based on the efforts of about 8000 beekeepers of whom only a handful run hives on a commercial scale by New Zealand standards. The majority have 10 to 20 hives as a part of their farm economy but they are not "hobbyists" as we understand the term, for they must show a great deal of skill under Norway's rugged spring weather to produce their national average of 25lbs per hive and a total production of about 600 tons.

The N.B.A. has about 8000 members owning 6,500 hives. It is divided into 15 countries which are subdivided into 230 local branches. It deals with all those matters which are handled by our own organisation and also with other affairs. It sends out annual quotations for honey and a monthly journal free to all members.

It has its own land on which are two houses: for the Secretary and a beekeeper, who are both permanently employed. The Secretary has a permanent stenographer and the beekeeper two seasonal assistants for raising approx 1,000 queens which are sold to the beekeepers. On the same land a Beekeeping House is in the final stages of erection. It will cost N.Z.£7,500, towards which the Govt. has donated £5,000. The Building is for meetings, guest rooms, exhibitions, Queen Rearing, Honey Storage and so on. It consists of 2 storeys of reinforced concrete with a total area of about 3,000 square feet. The scope of the N.B.A.'s activities is impressively large and reaches from the grading of honey by the Secretary to the procurement of legislation prohibiting the setting down of apiaries near to Queen Breeding stations to ensure the purest possible matings.

We discover a very close similarity to N.Z.'s organisation when we find that apart from the N.B.A. Norway has a Honey Central which corresponds to our H.M.A. But there are important differences within an almost identical administrative framework. The Honey Central has about 3500 members, including most of the larger producers, who derive from their membership the right to send in honey and also the right to one vote per member when electing the H.C. Committee. All the honey is sold wholesale through one merchant who advances the finance in the same way as the N.Z. Govt. but the real foundation of the marketing plan and the key to its successful operation lies in the fact that Norway's annual honey production closely approximates the local demand. The Honey Central handles about 75% of the national product and this high percentage is explained by the fact that the difference between the return to the producer packer and to the supplier is relatively small. This is because both are supplying the same market at the same price and because the Honey Central carries on other operations in its slacker periods such as the making and distributing of beekeeping equipment, the rendering of beeswax and other services. Another important reason is the very high percentage of small beekeepers who naturally are less interested in marketing their own honey, and since it is only part of their livelihood are not as anxious to secure the slightly higher return from packing for themselves.

The Honey Central has been packing honey for so long and in such quantity that its label has become more than a standard of quality. It has almost become the sign of honey itself, and people have actually been

known to ring the Association to report that a tin of something was being sold as honey, but they knew it couldn't be, because it did not have the Honey Central label! Consequently the producer packers are forced to use the Honey Central label in order to sell their honey, and after it is graded by the Secretary of the N.B.C. the packer is issued with labels with his number stamped and hereon Inspectors consistently check on the quality of such honeys in the shops. The price of honey is about three times the N.Z. price. The quality is high—the grading is done only on condition and Specific Gravity and payout is made on a sliding scale according to specific gravity only. All coloured honeys sell and bad flavoured ones just don't exist here!

The manger of the Honey Central has just returned from a trip to the United States where he has inspected the latest plants for the granulation of honey which is becoming more popular there and which is the only type sold in Norway. Next year the Honey Central will build a new depot and have been promised by the Govt. a gift of at least N.Z.£12,000 and possibly £15,000. The Minister of Agriculture has made it clear that this grant, the grant for the Beekeeping House, and the annual grant of £600 are solely justified by the value of the bees as pollinating agents. It is intriguing to wonder what the Norwegian Govt. grant would be if this industry produced ten times the amount of honey and also exported up to 2000 tons annually!

A levy of ¼d per lb. is made on all tins, 75% of which must go for advertising and 25% to the N.B.A. A big effort is made to give the newspapers beekeeping articles of general interest as this is considered the best method of advertising. At least £1,000 a year is spent on advertising; 50,000 four-colour pamphlets are printed every year and beekeeping instructors have become popular as speakers at women's meetings. The population of Norway is 3 millions.

The Department of Agriculture has a school which includes a permanent scientist and two assistants in the beekeeping section; 24 students go through the school every two years and beekeeping is part of the course they take before they go out all over the country to give lectures on all branches of farming to the thousands of small farmers with mixed farms. Research is also carried on at the school and I saw a hive of Caucasian bees which was successfully resisting all attempts to make it swarm! They are believers in the system of giving every hive one frame space in which to build comb at the swarming time and it is said to prevent swarming 100%: If a hive starts building worker comb it will never swarm that season.

The bees used are Caucasian and Black Bees. They were extremely quiet for we looked at many hives without smoker or veil and it was a showery day which had stopped a light flow. Mr Rosebery apologised for having to go slowly on account of the weather!

The hive bodies are insulated with glass wool or soft board and are thus about 1½in wide. Sometimes there are larger wooden super making an outer "hive" as a protection against the winter snow and some have a bag of hay or other insulation on top. Since honey is about nine times the cost of sugar all the honey is extracted and syrup fed throughout the winter.

The main flow is from raspberry in the summer and heather in the autumn, the latter producing about 75% of the national crop. A large amount of the heather honey is gathered by the moving of hives into the heather country and local branches of the N.B.A. organise a truck to pick up hives from the roadside where the beekeepers puts them for collection. 60 miles is the average distance of transfer. The large proportion of thick honey has made automatic honey prickers very popular and they are now being made in Norway of export to other European countries.

Queen Rearing is done on the Miller (of Denmark) system which I will cover in a later article.

The Norwegian Beekeepers are doing a highly successful job of gaining as much from nature as she will allow and of increasing steadily the already highly efficient organisation of their industry.

GADGETS AND IDEAS

Tank of Solid Honey

Taking a blow torch and my old original steam coil I drove over to my friend with the tank of candied honey. I found his tank contained about 20 tins of solid Lucerne honey. He said that it looked as if he would have to spoil 20 or more tins by cutting the tops out for buckets, put in some hard digging, make a horrid mess and perhaps start some robbing, just when he was anxious not to do so. Told him that I had an idea worth trying. Freeing the honey in the tap with the blow torch and letting it drain into a tin, I gradually made small cavity by the same method right up to the top of the honey and placed the steam coil above it which allowed the honey as it melted, to flow down and out of the tap. The coil had a tendency to sink down in one place owing to its diameter being smaller than that of the tank but a little connivering overcame that. The small amount of honey adhering to the sides of the tank was easily dislodged with an old bricklayer's trowel. He then discovered that a 44 gal. drum nearly full was also candied.

We manoeuvred it on to an old motor tyre, threw tarpaulin over it, bored a hole through the tread of the tyre and inserted the steam hose. In about a quarter of an hour we threw off the tarp and ran the liquifying honey into tins. Escaping steam within the tarp had freed the tank sides of adhering honey and allowed the main body of honey to settle down on to the bottom as it melted within the radius of the tyre. Said he, "you can have this lot (the drum) for your trouble." Easy honey.

—Alf. E. Norton, in "The Australasian Beekeeper."

Cure for Robbing

One treatment which is claimed to cure a severe case of robbing is to remove the lids and mats from every hive in the yard, the theory perhaps being that the robbers are called home to defend their own property! Has anyone used this method? We suggest that some enterprising beekeeper should give it a thorough trial at the close of the season and let us know the result.

WORLD NEWS

Ontario

Prominently displayed in the "Canadian Bee Journal" is a schedule of honey prices showing the charges to retailers and to consumers for the different packs. The figures are supplied by the Ontario Beekeepers' Association Price Committee and are the "suggested prices for No. 1 White Honey."

U.S.A.

Mr John W. Holzberlein, Vice-President of the Honey Industry Council of America, in a statement in the United States bee magazines, refers to the improved honey market and urges honey producers to support 'the Check-Off Plan" in order to maintain the present favourable position.

"Realising that a healthy honey price aids the whole industry, most of the better packers and dealers have volunteered to collect 1c per 60lb. can and match it with an equal sum of their own for this purpose. When we sell our crop this summer or fall it is up to us as producers to see that it goes to those buyers who participate in the Check-Off Plan. This will not only show that we are doing our part, but will also insure the payment of an equal amount by the firm who handles the honey. The rate is so low that no one will notice the cost, yet the coverage is so broad that a sum of money will be raised that will be large enough to do a world of good in honey promotion and research."

Florida

According to a report in "Gleanings" of July, 1956, the State of Florida has rescinded a regulation which permitted the optional feeding

of sulfathiazole for the treatment of American foul-brood, and the use of the drug is now banned. The action was taken as a result of requests from the State beekeeper associations which claim that treatment with sufathiazole has proved to be a costly operation and has allowed the incidence of the disease to increase appreciably. Two particular reasons for the move are that the extensive migratory operations within the state might spread foul-brood into disease-free areas, and that queen and package bee producers could give no reliable guarantee of freedom from disease to their customers in northern states.

Britain

Reports from England and Scotland tell of a poor honey crop for 1956. "From every part of the country comes the same sad tale of empty supers," says "The Scottish Beekeeper." "Hope is dwindling fast that the heather flow will be good enough to redeem a hungry summer."

International Congress

The Austrian hosts were almost overwhelmed by over seven hundred beekeepers who attended the XVIth International Congress held in Vienna during August. Some were present from as far away as India, Australia and South America. There was a lengthy programme of lectures by experts in different fields and the visitors were taken for a conducted tour and entertained socially during their stay. The next Congress is to be held in Rome in 1958.

About Candied Honey

Many people have the idea that when honey "candies" this is a sign of adulteration. On the contrary it is a sign that it is real honey. All honey will candy in time, especially if it be kept in a low temperature. It candies most rapidly at about 57 degrees F. Candied honey can easily be re-liquified by setting the container in water a little hotter than you can bear your hand in. Held at that temperature it will gradually melt. But on no account boil it; boiling ruins the flavour of honey. Candied honey to be used as a spread takes on a finer, smoother, more pleasing texture when the crystals are broken down and the candied mass whipped smooth.

Honey Date Cake

Nine ounces flour, ½ lb. honey, 1 breakfast cup chopped walnuts, 1 teaspoon grated nutmeg, 1 teacup boiling water, ½ lb. butter, 1 lb. dates, 3 eggs, ½ small teaspoon salt, 1 teaspoon baking soda. Pour the boiling water on to the stoned dates, with the baking soda, allowing to stand till nearly cold, and mix with a wooden spoon. Beat together butter, honey and eggs. Add sifted flour, dates and walnuts. Bake in a greased tin about 1½ hours, moderate oven.

THE BEE STING

(By D. Roberts, Apiary Instructor, Auckland)

References to honey bees and beekeeping are found throughout the recorded history of mankind. While mostly concerned solely with the commercial value of honey and beeswax, some also propound various nostrums and methods for the alleviation of stings. It would seem from this that our very early forbears were little, if any, hardier in this respect than present day man.

Honey and beeswax have always been substances much sought after by both man and animals and the development of an effective means of defence by the honey bee was essential to the continuation of its existence. Without their potent defensive weapon, the sting, honey bees would be continually attacked by other insects, animals and men; their colonies ravaged and their stores of honey and beeswax pillaged. Had they not been able to evolve efficient means of defence the elaborate communal system by which they survive would have been impossible to develop and maintain and the race would have perished.

With most people, other than beekeepers, the word "bee" brings to mind one of two things, either thoughts of honey, a pleasant and much relished food, or a painful and often embarrassing stinging. Many people regard the honey bee as a kind of shock trooper or commando of the insect world whose one main object is to attack and sting humanity on sight. People who **fear** bees are often unnecessarily nervous in their presence and by their reactions tend to invite stinging. The honey bee does not sting simply for stinging sake. It normally attacks only when it considers the colony or its own personal safety is threatened, or when it has become entangled in the hair or clothing or been stood on. The very act of stinging means death to the bee concerned and like all other living creatures the honey bee does not tend to sacrifice its life without good reason.

The defensive weapon of bees, the sting, is similar in its structure and organism to the egg-laying organ possessed by many other female insects. This egg-laying organism known as an ovipositor is often a piercing organ capable of penetrating the bodies of other insects, plant tissues or even hard wood. The sting of the honey bee is a highly developed organ consisting of three slender closely connected pieces which form the sharp piercing portion. These are known as the stylet and the lancets. Attached to these is a comparatively large basal structure consisting of a series of bony plates and muscles.

The lancets are barbed and fit in grooves in the stylet. When the sting is being used these grooves hold the lancets in place and allow a sliding movement ,at the same time governing the direction of the sting. There are grooves in the lancets which allow the poison to flow from the poison sac in the basal structure to the point of the sting. When the sting penetrates the skin of the victim it is securely held by the barbed points of the lancets and must be torn from the body of the bee before the insect can escape. After inserting its sting the bee struggles violently until the sting, together with its basal structure of muscles and poison sac is torn from its body. It is this separation of the sting which causes the death of the bee, and although this may not occur until some hours after the act of stinging, it is nevertheless inevitable.

The muscles surrounding the basal structure continue to pulsate slowly for periods as long as twenty minutes after being torn from the bee. Each of these pulsations causes a penetrating movement of the lancets so that the sting becomes more deeply embedded the longer it is left in the skin. At the same time an interior muscle operating on the poison sac is continually injecting further poison into the wound.

Because of this continuing action of

the sting it is most important that it be removed the moment it is received. This is best done with a scraping motion, using either the finger nail or the blade of a knife. Care must be taken when removing the sting not to press upon the basal structure containing the poison sac as this will cause the whole contents of the sac to be forced into the wound immediately.

Bee venom is a very complex substance. Colourless and bitter to the taste, it has a distinctive odour which can often be detected when several bees attack. The venom is reported to be free of bacteria and to some degree inhibits their growth. It contains protein, hydrochloric and phosphoric acids, sodium, calcium, magnesium and sulphur. Also present are histamines and some fractions not as yet identified. Because the wound made by the entry of the sting is extremely minute the application of many popular so-called remedies to the actual site of the sting can have but little or no effect upon dilution or removal of the venom. The poison, once injected, spreads rapidly through the bloodstream and local application of remedial agents will be effective only by helping to reduce the local swelling and irritation.

With most people the reaction to stinging is local and alleviation of any swelling or irritation of the affected part is all that is necessary. The reaction of people accustomed to working among bees is usually slight and unless a large number of stings are received, nothing more than temporary discomfort is experienced. Some persons, however, may suffer severe skin reaction with reddening and itching and considerable swelling. Where the symptoms do not extend beyond the area surrounding the wound the application of hot or cold fomentations helps to reduce the swelling and remove the irritation. Local application of one of the anti-histamine ointments often gives quick relief. Some find that bathing the affected parts with a solution of baking soda and water as hot as can be comfortably borne is effective in reducing swelling.

While in the vast majority of cases reaction to stinging is purely local, a few people are particularly sensitive to the venom and exhibit very severe reactions indeed.

Where violent reactions such as a feeling of constriction in the throat and chest, difficulty in breathing, or the development of severe skin conditions, with or without massive local swelling are apparent, competent medical advice should be sought without delay. Because the reaction in highly sensitive persons is usually extremely rapid, the symptoms appearing within a period of a few seconds, to five or six minutes, it is of paramount importance that medical attention is secured immediately.

Persons subject to such reactions should not keep bees or expose themselves to stinging by approaching bee colonies needlessly. Although they may take all precautions to avoid being stung it is advisable in the event of unforseen stinging that members of their family should be aware of methods of treatment to be applied until medical attention is available.

Experienced beekeepers do not invite stinging needlessly and protect themselves by the use of suitable clothing, equipment and the intelligent handling of their colonies. Because through use, they become immune to the more serious effects of casual stinging, they may tend to forget that other people may suffer much more severely. *It is the duty of every beekeeper to be aware of the possible effects of stinging and to be able to advise the affected person of methods to alleviate their suffering. Where bees are kept in closely built-up areas the beekeeper should confine work with the hives to times when the colony is least likely to be upset or enraged and should so place the hives that the bees on their flights to and fro do not fly directly across footpaths, roads, or another person's property at a level where they will encounter people.* A little consideration given to these points will be amply repaid by the goodwill of passers-by and neighbours.

POLLINATION IN CALIFORNIA

By G. F. Townsend in "Canadian Bee Journal"

The week of July 3rd, 1955, was spent in Kern County, California, about 150 miles north of Los Angeles. This valley is possibly one of the richest agricultural areas in the United States. It is 50 miles square, and is operated under irrigation. The main crop has been cotton, but since the cotton acreage is now limited many are turning to alfalfa seed production. The alfalfa acreage has expanded considerably in the last two or three years, now consisting of more than 70,000 acres. Most of the seed is of certified varieties.

Since large quantities of sprays are applied by aeroplane, there are practicaly no wild pollinating insects in this valley, at least, none were observed.

In order to provide for pollination of the alfalfa, Valley Pollination Service, a limited company, has been set up to organise the beekeepers. The manager is Mr Charles B. Reed, a beekeeper operating on his own about 2500 colonies of bees. This organisation contracts for bees among the beekeepers and also contracts for acreages for pollination among the farmers. This year upwards of 80,000 colonies of bees are being placed in approximately 40,000 acres of alfalfa by this organisation alone. The gross turnover for pollination will be upwards of one-half million dollars. This organisation has been built up only over the last two or three years and has proven so satisfactory to both the farmers and the beekeepers that it has expanded beyond anything ever anticipated.

The organisation is set up in the centre of the seed growing area near Bakersfield, and consists of the manager, an office assistant and a supervisor. The supervisor is a college graduate, and carries on a certain amount of individual research to determine the better methods of handling the bees. They also employ two inspectors, whose duties are to examine 10 per cent. of the colonies placed in the fields as a guarantee to the farmer that colonies of suitable strength are being used for the pollination work. If the colonies do not come up to standards the contract permits the organisation to refuse payment for their use. The manager spends a good part of the winter and spring period lining up colonies of bees and fields to be pollinated.

Contracts are signed both with the beekeeper and with the farmer. These contracts stipulate the strength of colonies to be used and the conditions under which they will be delivered. The organisation is empowered to collect the moneys for the pollination service and distribute the same on a pro rata basis as received, any losses being distributed over the whole group. The contract with the farmer stipulates that he must not spray while the bees are in the field, that he must assist in providing locations for the bees, etc. The rental fee is 5.50 dollars per colony plus one cent per lb. of seed produced over 600 pounds per acre, with a maximum of 7.50 dollars per colony. The contract also states the minimum number of colonies which the farmer agrees to accept in his fields. Additions in number of colonies can be made at later dates.

A complete check is kept on all of the farmer's fields by aeroplane, so that the bees may be moved in at the most important time. The bees are moved into the fields progressively, the feeling being that better use of the bees is made in this way and better pollination received. Plans are made from two to four or five days ahead for delivery of bees into each field according to their condition and development of the flowers. The beekeeper is contacted and when he arrives at the station with his load of bees his delivery instructions are given. A temporary office during the height of the season is located at each end of the valley, so that the beekeepers entering either from the north or south can pick up their instructions without covering too much distance. The loads of bees usually arrive about midnight, or later, and a

man is kept on hand all during the night at this season of the year to assist the beekeepers in reaching the proper fields. At the height of the season, thirty or more truck loads a night are entering the valley. The manager has a car telephone so that he may keep in contact with the farmers, his office and the beekeeper at all times.

With an organisation of this type, good public relations are kept between the beekeeper and the farmer, many serious problems are avoided, and each is assured of the best possible use of bees. It avoids serious price cutting which usually reflects in the use of poor colonies, and any losses are shared equally over the whole group.

The bees are placed in the field progressively every seven days until been established. The bees are first two or three colonies per acre have moved into the field when half to three-quarters bloom is noticed, and the bees are placed first in the sections of the field which are in heaviest bloom. They are placed in groups, starting 250 feet in from the edge of the field and every 500 feet throughout the field. Drives are marked across each field 500 feet apart and a group of 10 to 15 colonies is dropped at every 500-foot location.

We are often asked why we cannot obtain satisfactory tripping of alfalfa by honeybees in Ontario. By closely observing the conditions in California for this week period, at the height of the season, I am fairly well convinced that it is a combination of plant physiology plus proper use of bees. Most areas in California are very short of pollen and when the bees are moved into the field they are almost on the verge of pollen starvation and therefore work the alfalfa in order to feed the developing larvae. Under these conditions even when a large quantity of pollen was available in an adjoining field of corn, the bees still worked alfalfa plants for pollen, and in so doing tripped every blossom visited. By placing up to three colonies per acre a large population of bees is obtained in the field. Up to 10 bees to the square yard were recorded. Under most conditions accidental tripping will amount to 1 per cent. of the blossoms visited, thus even the nectar gatherers will trip a large percentage of the blossoms. The cultural practice under which the plants were grown seemed to play a great part in whether or not the plants were tripped by honeybees.

Pollination would be practically impossible without some type of assistance in moving, as at this time of year the colonies are sometimes quite heavy. With rising costs of operation, especially for labour, the beekeepers in California have developed special loaders for moving their bees, and where it formerly required two or three men now one man can load 100 colonies of bees, as well as move and unload them. Without these loaders large scale pollination of this type would be impossible. The loaders are of a boom type, mounted on the frame of a truck floor so that the boom can pass through 360 degrees over the top of the truck. There is a hand-operated hydraulic levelling machine to raise and lower the boom as well as level it in both directions. At the end of the boom is a ramp to take hold of the colonies and push button electric control operated from battery and motor to both raise and lower the colony as well as run it along the track.

The colonies are loaded at dusk, moved during the night, and unloaded after daylight in the morning. The operators sleep beside their load, after arriving at destination, using cots and sleeping bags. The truck loaders have yellow lights at the centre and back in order to see and yet not attract the bees. All of the truck bodies are flat, with hooks every six inches (and the colonies are tied on by ropes. No screens of any type are used, except that a plastic screen is carried with the load in case of breakdown, in which case the screen would be placed over the load and tied down to avoid bees escaping on to the road. This plastic screen is of the fly screen mesh type made of plastic lumite, with heavy type canvas sewn at the edges.

The water supply in this area is practically all by sprinkler irrigation. In many cases the alfalfa does not receive any water after May, although others carry on the practice of giving sufficient water to bring the alfalfa into bloom, allowing it to dry up sufficiently to set a crop of seed, and then bringing on another set of bloom. It seems, however, that those who are operating under the most economical conditions are those who are watering only up until May and then taking one set of seed from the plants.

The alfalfa is planted in rows 32 to 48 inches apart, and is weeded by hand the first year. During the second year in most cases the stands are thinned by removing every other row, and sometimes in the third year a further removal is made of every other row.

They have found that wherever there is rank growth or solid block seeding even though the plants are visited by bees there is very little seed produced and most of the blossoms strip off. Some of the best sets of seed and some of the fields which were yielding the highest crops of seed were those which were very thin.

Temperature and humidity seem to play some part in the tripping of the bloom in that best tripping and least stripping seem to take place at 90 to 95deg. F. with a low humidity.

In observing the pollen-gathering bees it was found that they never gathered pollen on the areas of lush growth or heavy planting; that they always seemed to work the non-succulent areas, the upright plants, and the sparse plantings; and these areas also were the ones which had the greatest amount of tripping and the most seed on the plants.

Experiments

Some beekeepers seem to go all out for experimenting with every new beekeeping gadget they see, also in trying out new strains of bees and new ideas, in handling bees.

Such experimentation is commendable. We should never be satisfied with present attainments. We should always be on the lookout for better ways of handling bees, better bees, and better equipment.

However, we should use moderation in our experimenting. For example, instead of using an entire apiary to try out a gadget, strain of queens, or an idea, why not set aside one quarter or perhaps one half the yard for the experiment and have the remaining colonies as check hives. We should always keep in mind the fact that things are what they are by way of comparison.

If we use moderation in experimental work we are not likely to lose so much honey, in the event that the thing being tried out does not turn out well, as we would if all hives were devoted to the experiment.—"Gleanings."

Reflections

. . . from the Editor's Desk

Bees and Plums

An article by D. Roberts in the September Journal of Agriculture discusses the use of sugar sprays to encourage the pollination of plums by honeybees. The plum depends upon insect pollination and observations in the Auckland district for several years showed that honeybees accounted for 99 per cent. of all insect visits to plum blossoms.

Unfortunately the nectar in plum blossoms is inclined to have a low sugar concentration and the pollen in some varieties is not popular with bees, so where alternative sources of nectar and pollen are available the plums are often neglected.

Trial applications of sugar sprays — 20 to 40 per cent. solutions of sugar and water — were given to the trees in blossom over two seasons with the object of attracting honeybees. The applications were so effective that in one trial visits by bees rose from a previous average of 6 per cent. to 300 and later 500 or more. Further experience showed that it was not necessary to spray every branch, or even every tree, to get satisfactory results.

Naturally many other factors also affect the success of the fruit crop but the trials were encouraging as far as they assisted the process of fertilisation.

Selecting Honey Sources

This brings to mind another method of inducing the bees to work a particular source of nectar; one which has been receiving attention lately in the beekeeping periodicals. The bees are fed a 50 per cent. sugar syrup in which a quantity of flowers from the selected source have been steeped to form a "tea" of the desired flavour. This has been found surprisingly effective in bringing the bees to the chosen source.

Where the bees are reluctant to leave a crop already being worked, perhaps an undesirable one, it has been recommended that the colonies should be fed first with a brew made by steeping flowers from this crop in a 50 per cent. solution of calcium chloride. This apparently has a repellant effect on the bees and after a suitable dose they are ready to welcome something different.

How far this idea would be practicable in commercial beekeeping is a moot question but it may prove to have some value in the case of special crops such as red clover.

Bees Ejecting Water

Foraging bees often eject clear watery drops when flying from a source of food. It has been widely thought that they could remove some of the water from nectar during flight and so begin to concentrate it before reaching the hive. A recent article by G. Mauermayer, published in Germany, quotes evidence to show that this is not the case.

Tests indicate that the ejected liquid comes not from the honey sac but from the digestive system; the feeding bee gets rid of the excess water in this way. The contents of the honey sac actually become less concentrated, and the more so the longer the flight. The dilution is due to the addition of glandular secretions which are themselves important in ripening honey.

An abstract of Mauermayers article is given in "Bee World" by M. D. Bindley.

Insecticides

"Pollinating insects are too important to all farmers to allow the risk of their destruction by wrong or untimely application of insecticides to control pests of pastures and field crops." This statement introduces an article by C. P. Whatman in the

October Journal of Agriculture on the uses of insecticides on the farm.

In similar strain the September issue contains two articles by A. D. Lowe dealing with insecticides. The first gives a survey of the problem of aphides in brassica seed crops and methods of treatment, while the second refers particularly to the danger to honeybees caused by improper applications. The value of bees as pollinating agents is given full emphasis and a few stringent precautions are given for the guidance of growers and operators. The general conclusion is that "insecticides should never be applied in the presence of flowering plants."

Keeping Balance

In a recent issue the N.S.W. Agriculture Gazette steps back and takes a look at the planet in broad perspective. Commenting editorially on the 1956 Congress of the Agriculture Bureau, which took as its topic "The Aim is Balance," the Gazette says that the theme was well chosen because the significance of the commonplace principle of balance is so often missed.

For example (continues the Gazette), living upon a sphere in space our existence, wherever we look, depends upon balance. The sun is about 91,000,000 miles from the earth but if it were twice as far away we would freeze and if only half as far away, we would burn. The moon is about 240,000 miles away and causes an average tide of about thirty feet, but Sir James Jeans informs us that if it were closer, or larger, the continents would be flooded twice a day. The balance between sea and land is also significant. If the land were level it would be from one to two miles under the water, and if its sedimentary formations were unreinforced it would be unstable. But it is balanced, as the late Professor Gregory told us, by seven great coigns or massifs—"cornerstones" as he termed them—at seven strategic land mass points. And at the heart of it all the great balancing cornerstone, the inner core probably composed of nikel-iron.

Scientists also aver that the earth is the only planet with an atmosphere perfectly balanced for comfortable living, its mixture of nitrogen and life-giving oxygen maintained in balance throughout the ages.

Man himself gives remarkable evidence of the importance of balance, using the fulcrum of his mind to maintain himself against his natural enemies and hazards. He could not run as fast as a deer so he harnessed an arrow. Being unable to strike a hard blow with his soft hand he made himself a hammer; unable to lift much more than his own weight he contrived levers and built the Great Pyramid and the bridge across Sydney Harbour. Not as strong as an ox or a horse he harnessed them and used their strength; no match for the best swimmers he fashioned ships, and he harnessed wind and water to cut his timber and grind his grain. Other creatures feared fire; he used it to clear his land, warm his house, light his path, smelt his metals and drive his engines. One of the most helpless of living things he placed his organised inquisitiveness—we call it "science"—and his initiative in the scale and he kept his balance.

The Congress theme reminds us that man, for all his ability, may at times permit himself to become top-heavy and lose much of his advantage. Many thoughtful people will tell us that we are in that danger now, for we seem to be finding it increasingly difficult to feed ourselves, clothe ourselves, house ourselves—and behave ourselves.

Perhaps but for fear of the charge of unctiousness, the theme could have been more cogently expressed—"What shall it profit a man if he gain the whole world and lose . . . his balance?"

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Nom-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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