

THE NEW ZEALAND BEEKEEPER

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NOVEMBER, 1947



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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**JOIN YOUR NEAREST BRANCH
AND DERIVE FULL BENEFITS.**

The New Zealand BEEKEEPER

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NOVEMBER, 1947.

HOPEFUL OUTLOOK.

PRICE INCREASE WOULD SOLVE SUPPLY POSITION.

Beekeepers find little trouble in convincing themselves that they have to meet higher costs since December, 1942—the base line for estimating costs under Stabilisation—as well as substantial increases before that date.

Apart from a fortunate few, near large centres of population, who have managed to sell their honey direct to the public, and a misguided minority who sold to any buyer with the cash, the income of the majority of beekeepers is lessened because of the increased costs that cannot be passed on. Their income has been lessened because they have continued to sell their produce, if not to merchants then to retailers, under a price order that was in force in 1939, without any increase since. That the I.M.D. has received so little honey since 1945 is further evidence of the inadequacy of the price.

It is not enough to convince themselves of their hardship; producers also must convince the authors and agents of Stabilisation policy that their case requires revision. A previous effort by the Executive of the N.B.A. to obtain statements of costs and returns for the Price Tribunal met with a poor response from producers. To that extent the efforts of the Executive to obtain an increase of price have been nullified.

Another attempt has just been made, and there are hopes of better success this time. Each Branch of the National Association has been asked to furnish two statements of costs and returns for the past three years. It is hoped that Branches have responded to this request because no case for an increase in price to offset mounting costs will be considered by the Director of Price Control, unless such returns have been furnished.

As a correspondent points out, these returns are only partly valuable in that beekeepers have been selling at or nearer to retail prices to augment their income. In a few cases, this practice has given beekeepers a better income, but it is a departure from normal trading methods that is not desirable. The chief need is to receive a price for honey that will enable producers to support their Honey Section and to trade through the normal channels of merchant and grocer. Producers have a responsibility to furnish the returns before they are too critical of the efforts of their Executive or of the Government.

There has however been some justification for the feeling of frustration by producers. Commandeer of honey for national needs and Stabilisation came almost together. Prices were fixed but costs were not. Although one official statement said that provision would be made to cover increased costs (1943), a lack of official interest until the present has nullified this. Beekeepers were not quite to blame for feeling that their work was regarded as rather unnecessary. It is little wonder that a policy of individual opportunism has developed. At the same time there has been a definite feeling that the policy was fundamentally unsound in some respects.

Last month, the Executive met senior officials of the I.M.D., members of the Control Board, and the Executive of the Suppliers' Association to consider the whole question of prices and the future of the Control Board in a reorganised form. This meeting was called at the instigation of the Minister of Agriculture and Marketing (Hon. E. Cullen), and there is reason to believe that an early announcement will be made regarding increased prices. This will be a first welcome step in the reorganisation of our industry on sound lines which will ensure its profitable development.

When the increased price order materialises, the beekeeper will have two duties to fulfill. The first is to see that the public gets more honey for table use, and the second is to assure adequate supplies for England. The first will ensure a continued demand for honey in the future and the second will save England the expenditure of valuable dollars. The fulfilment of both these obvious duties will make a sound basis for a balanced economy in our industry.

Bee Woodware.

Our advertisers are finding it increasingly difficult to buy sufficient quantities of good timber, at list prices, that will enable them to sell at prices authorised by the Price Tribunal. Timber millers have more orders than they can cope with, and one can understand their reluctance to grade out quality lines, when they can sell everything as it comes from the saw without much differentiation in price. One can also understand their selling at nearer retail prices—as the beekeepers have done. The effect on our manufacturers of beekeeping woodware is serious. Not only are they short of adequate stocks of seasoned timber, but the cost is greater than the price order allows.

The effect on producers is serious also. Beekeepers will not be able to buy all they want for needed replacements or for increase, and they can look forward to increased prices, because the manufacturers will be compelled to recover their increased costs of timber. Already there are different authorised prices in different parts of N.Z. for the same article, because of variation in the purchase price of timber.

Timber is controlled, and our manufacturers should have access to a reasonable share of softwoods at the prices authorised. Associations would be acting in their own interests by checking up on the position in their own areas and seeing to it that their future requirements can be met at reasonable prices.

ANNUAL CONFERENCE, 1948.

Final preparations are being made and it is fully expected that it will be held in Dunedin about the middle of July. We expect to give full details in our February issue. Members need not be apprehensive regarding accommodation, as the Centennial Committee has an excellent committee at work to organise accommodation. Where hotel accommodation cannot be secured, excellent private board is assured. Some of these homes arrange to run delegates to town by car for their meetings. Members are advised not to book accommodation until the dates of Conference are announced. As our Conference is being held after the main events of the Centennial programme, earlier in the year, and as our Conference is much smaller than those being held by some national organisations, there should be room and to spare.

Recovery of our General Secretary.

There will be general pleasure at the news that Mr. G. V. Fraser is again back at the office directing affairs. By the exercise of care, he is steadily recovering full strength. Fortunately his illness was not as serious as reported previously. Mr. Fraser expresses sincere appreciation of many messages of regret and best wishes which came to him during his illness. If some messages have not been acknowledged personally, it was because they were sent indirectly and the name and address not noted at the time. We are pleased to say that we are glad Mr. Fraser is with us again.

Some Apiary Statistics as at 31st October, 1946.

180 - 299 Hives.			300 Hives and over.		
Beekeepers.	Apiaries.	Hives.	Beekeepers.	Apiaries.	Hives.
85	806	18,925	75	2,030	61,699

Figures from the recent apiary reregistrations may show a different summary, when they are published. It is interesting to note that a year ago there were approximately the same number of beekeepers owning between two and three hundred hives as there were of those owning three hundred hives or over. On the other hand, it is interesting to note that the latter group, although slightly fewer in numbers, owned over three times the number of hives.

It could be said that these 160 beekeepers form the boǎy of full-time producers in the country. It is surprising how difficult it is for this number of producers to find agreement on policy. It is also surprising what a multiplicity of organisations are required by an industry of comparatively small numbers. These figures give food for thought.

HONEY SEASON — 1947-48.

Two Statements.

At our last Annual Conference, held in Wellington, it was generally agreed that we should send as much honey as possible to Britain and thereby at least be in line with the other primary producers of this country who are working on increased production to feed the Mother Country. It was also agreed at this and other Conferences that organised marketing through the I.M.D. on a voluntary basis was essential to our industry.

With these two points in mind your Executive opened negotiations with the Honourable Minister of Marketing on a basis of procuring a minimum of four hundred tons of honey for the I.M.D. during the coming season, providing two hundred tons be exported to Great Britain, one hundred tons be supplied to essential priorities such as Hospitals, etc., and one hundred tons packed and distributed to areas which are not adjacent to sources of production.

Your Executive pointed out to the Minister that an appeal even for four hundred tons could not easily be met unless an assurance could be given that a payment of not less than 7d. per lb. pro rata plus 3½d. would be made, as beekeepers could not afford to supply at the present low price. The Minister replied accepting the suggestions of the Executive and stated that in the event of four hundred tons being exceeded the balance would be distributed on the basis of two-thirds to export and one-third to N.Z. consumers.

From the foregoing it will readily be seen that the Honourable Minister of Marketing has agreed to assist in every way possible to carry out the wishes of Conference, and it now rests with the Beekeepers to give

more than lip service to the proposals. As President of our Association I therefore have no hesitation in asking all beekeepers to send in as large a portion of their crops as possible to help feed the Mother Country, to help supply essential priorities, and to help to retain our packing plant which we have agreed is necessary to our industry.

Your Executive is aware that the price received by supplying the I.M.D. will still not be quite as good as can be obtained at the honey house door, but they are sure that Beekeepers are readily prepared to take a little less when they are assured that three-quarters of the honey they supply is going to places where it is urgently needed.

We had hoped to be in a position to announce increased prices for honey in this issue of the Journal, and also to announce progress concerning the Honey Marketing Council, but unfortunately these matters are not yet finalised. I would however urge producers not to contract for honey at present prices, as we hope to have a new price order operating before extracting is in full swing.

Beekeepers will be interested to hear that the Honourable Minister of Marketing called a special meeting of representatives of our Association, the Honey Control Board, the Suppliers' Association, the Dept. of Agriculture, and the Internal Marketing Division to discuss the marketing problems of our industry. We hope to be able to report more on what took place at that meeting in the next issue of this Journal.

E. A. FIELD,
Dominion President.

Producers who supplied honey to the I.M.D. in the past season will be gratified with the bonus payment of 3½d. per lb., pro rata, which has now been received by them. This result is fully up to what was anticipated earlier in the year when Stabilisation was approached to authorise the payout.

The new season is now approaching, and the Suppliers' Committee are confident that the I.M.D. can again make a satisfactory payment for honey supplied. As advised elsewhere in "The N.Z. Beekeeper," the different sections of the industry are in agreement on the major requirements of the industry and all are agreed that, for a long term policy, the I.M.D. must be supplied with a proportion of production.

In addition, the necessity of making supplies available to Great Britain calls for an effort on the part of all to do something to help supply the need there.

The Suppliers' Committee is making every endeavour, in association with the National Executive and the Control Board, to assure equitable returns to producers, and believes that representations made will meet the requirements of the industry.

F. D. HOLT, President,
N.Z. Honey Suppliers' Committee.

ARE YOU DOING YOUR SHARE

TO HELP FILL THE FOOD SHIPS?

Hungry Britain
depends on YOU!

SCOTLAND LOSES 2,000,000 LBS. OF HONEY.

This heading is from a page of the "Sunday Post," of Scotland, June 15, 1947 issue, sent in to us by Mrs. J. P. Stein, of Fenelon Falls, Ont.

This article goes on to say: "Three out of every four hives wiped out, practically no Scottish honey will be on sale this summer.

Sixty thousand hives have been completely wiped out. The death of the bees represent a loss of over two million pounds of honey.

This is the biggest disaster that has ever hit Scotland's 20,000 beekeepers. Only a quarter of their stocks are left.

The trouble began last autumn with the wet, cold season. Queens began laying early, so stocks of young bees were severely cut. Little surplus honey was gathered.

Then from October to March, the bees were confined to the hives. The blizzards were the last straw. Millions of bees died from cold, starvation and dysentery.

When the good weather returned, beekeepers were confronted with cemeteries instead of thriving communities.

Thousands of dead bees lay in clusters. Many died in the midst of plenty because they were too weak to crawl to food stores left in the hives.

In North-East Scotland—one of the best honey-producing areas of Britain—beekeepers have lost from 50 to 100 per cent. of their stocks.

One man lost 50 out of 74 hives. Another lost 75 out of 100.

At a sale last week an empty hive, which would normally have brought £3, went for 12/6.

The loss has been a blow to many people in the Highlands who depended on their bees to supplement their incomes. A man with eight hives could make over £50 in a season. So the loss means a cut of £1 a week in his income.

Most beekeepers are concentrating this year on restocking. This means almost all the honey will have to be fed back to the bees."

"Canadian Bee Journal."

WHITE CLOVER.

(By V. S. Knight)

Have you ever wondered why we are so freely issued with buying permits for sugar? It is certainly not due to a feeling of bonhomie on the part of the officials of the Ministry of food towards all beekeepers. Jolly good fellows we may be, but this does not make us a privileged class, the envy of our jamless neighbours. The usual reply to this query is "why for pollination of course," but for the pollination of what? At least, as far as the conditions which exist in Devon are concerned, wild insects will take good care of the fruit crops, and in the large fruit growing areas special provision could have been made. In fact, Raymond Bush in "Tree Fruit Growing," Vol. II, tells us that insects are not necessary for orchard pollination, as it can be done with the aid of a box of suitable pollen and a rabbit's tail. Presumably one trips merrily from tree to tree flourishing the rabbit tail wand and humming "Oh for the flowers that bloom in the Spring, tra-la."

No doubt fruit growing was taken into account when assessing the value of the honey bee, but you may be sure that the Minister of Food expects more than that in return for his allocations. He wants more meat, milk, and grain. The production of these most essential foods is in no small measure dependant upon that insignificant little plant known as wild white clover, or to give it its scientific name *Trifolium Repens*, Var. *Sylvestre*. In fact it is doubtful whether there are many other plants which equal its economic importance to British Agriculture.

Seed is necessary for the propagation and indeed the ultimate survival of white clover, and this is where the honey bee enters the field of operations. The bee is the only insect which is able to work the floral mechanism properly so as to effect the cross pollination which is necessary for the development of the ovules. In this light the beekeeper's position appears to be that of Honorary Assistant to the Ministries of Food and Agriculture. So now let us don our

halos and examine the subject in detail.

It is a significant fact that bees and clover appear to be complementary; that wherever white clover has been found as an indigenous plant, there too, has the regions particular variety of honey bee been discovered. In other parts, America for example, it is doubtful whether white clover is a native plant and it is also equally doubtful whether there were native honey bees there. In certain other parts of the globe, New Zealand is a case in point, both bees and clover have been introduced in comparatively recent times.

The principle virtue of white clover lies in its peculiar property of adding to the fertility of the soil. It is a veritable chemical factory, and the farmer who has devoted his attention to it in the past, can to-day well afford to cock a snook at Emmanuel Shinwell and his boys.

The clover plant's unique faculty of nitrogen fixation is made possible by the bacillus *radicicola*, which enters through the root hairs of the young plant, stimulating the cordical cells of the root to increase in size, forming what are known as nodules. These nodules can be seen quite easily with the naked eye. Nitrogen constitutes nearly four-fifths of the atmospheric air, but plants require it in solution in the soil in order to assimilate it. Clover acquires it ad lib. from the air by its vegetative parts, by a process of chemosmosis set up through the infection of the root system. In addition large quantities of starch are manufactured by the process of photosynthesis which first converts the carbon dioxide of the atmosphere to a carbohydrate or sugar and then to starch, in which form it is stored in all parts of the plant. Incidentally, some of the starch, converted to another form of sugar or sucrose, is carried by the plant sap to the nectaries of the flower.

There are other reasons which make it a plant of major importance. A few of the most outstanding reasons are:—(a) The close sward it produces suppresses weeds. (b) It readily absorbs water which would otherwise be lost after a heavy rain-

fall and keeps down soil temperature to a point where active growth of the associated grasses can continue during a hot summer. (c) Its fibrous roots add humus to the soil thereby improving soil structure and fertility. (d) its high protein content and palatability increases the stock carrying capacity of the pasture.

Under ordinary farm management it is a very persistent plant. Hard grazing at all seasons and consolidation of the soil seem to be in its favour. For evidence of this observe how it flourishes in the proximity of paths and gateways. On the other hand neglect will result in its eventual disappearance. Such were the conditions which we found on our return to this area of the South Hams which was occupied by the American Army during 1944. After close grazing however, it soon re-appeared. This was due to the presence of "hard" seeds and to the recovery of some of the surviving plants. These "hard" seeds are characteristic of the wild white plant and retain their viability for many years under certain conditions when the impermeable cuticle remains undamaged. There is a case on record of soil from a larch plantation producing seedlings after a period of 46 years.

There are at least six distinct varieties of true white clover or *trifolium repens*. One of these gives rise to a four-leaved form which was named *Quadrifolium*. But the variety which is of particular interest to Agricultural Departments is *Sylvestre*, and its two races *Hollandicum* and *Gigantium*, imitations of the wild plant which have been selected and cultivated. The vegetative parts of these two races are larger than those of *Sylvestre*, but fortunately for us, the flowers are the same size. The inflorescences are larger but this is because they contain a greater number of flowers. *Gigantium* is the largest of the three, *Hollandicum* or *White Dutch* being intermediate in size. Efforts have been made to produce a strain which would combine the best characteristics of each. As a result to-day we have New Zealand Aberystwyth, S.100, S.184, and other strains, but all lack to a greater or lesser degree the persistence of the

wild white plant.

While Dutch is the most profuse yielder of flower heads and commences blooming three weeks earlier than wild white. It generally produces several inflorescences on the main stem where wild white carries none. The first flowers on the latter appear at about the 7th node of the primary stolons. The average number of flowers which form the inflorescence of the wild white clover is 32, that of White Dutch 40, and Giant 80. The diameter of a typical head of the latter is 3 c.m. as compared with 1.5 c.m. in the case of wild white.

A description of the flower will make the manner in which the floral mechanism functions easier to understand. Like all other flowers of Leguminosae it consists of five petals. The two which form the keel are fused together along their outside edge enclosing between them the embryo seed pod and its associate generative organs. On each side there is a wing petal, each being attached in the rear to the corresponding keel petal. The whole is backed up by the largest petal, the standard. Altogether it looks rather like a very small elongated broad bean flower.

The bee in search of nectar grasps the wing petal, and as it thrusts its head beneath the standard in order to reach the sweet odiferous secretion at the base, the staminal tube depresses the wings, which in turn depresses the keel, causing the stigma and stamens to protrude. The stigma, being longer than the stamens, comes into contact with the bee's body before them. Thus the object of the flower's attraction is achieved. After the visit the parts return to their normal position, through the contraction of the vascular strands of the combined petal attachments.

After full bloom the flower droops and withers irrespective of whether fertilisation has taken place or not, but fertilised flowers do reflex more quickly. The lower flowers of the inflorescence bloom and reflex first, the others following in succession, the whole head taking about a week to complete its blooming. The process takes much longer in wet or cold weather. Perhaps these remarks bear

some relation to the popular supposition that white clover yields nectar better at higher altitudes. Also the period of flow would be further protracted in undulating country on account of the plants on the northern slopes coming into bloom a week or two later than those on the southern aspects. Another point to bear in mind is that in nectar secretion it is not so critical of temperature as so many other flowers are.

Dr. Howes in his excellent book "Plants and Beekeeping" states that it is considered that in Britain clover accounts for 75 per cent of the honey crop. Of course there is no doubt, that to the British beekeeper, the races and varieties of white clover are of greater importance than any other plant. Fortunately, it is dependable, for at least it would always provide over-wintering provisions for a well-founded colony. If you still harbour any doubts about this, then how do the wild bee colonies survive? They seem to manage very well without the prefabs and sugar with which we provide our tame bees!

In the other hand, red clover is rarely of much use to the honey bee as it is not able to reach the nectar which is secreted. When clovers are not in bloom, red can be distinguished from the white plant by the hairyness of the leaves and stems. Dr. Howes says it can be recognised by the horse shoe mark on the upper side of the leaves, but this statement is misleading as the leaves of white clover are often marked in this manner. The characteristic appearance of the plant is different too, and with a little experience you will find no difficulty in recognising it. It has more bunches round the crown, whereas white clover spreads itself out, usually rooting at every node of the stolon.

Provided we are favoured with a summer this year, prospects for a bumper crop of clover honey are certain. But your bees must be covering ten frames of brood in early June, or your hopes may not be realised. This in turn may depend on whether or not you have used the Ministry of Food's allocations wisely. The exceptionally hard winter and the lateness of the spring have resulted in

very hard grazing of the pastures owing to the short supply of fodder for stock. These conditions are favourable to the white clover plant. Many fields which were intended for hay have of necessity been grazed too, adding appreciably to the area of bloom. You may place your order for bottles and tins now.

"Beekeeping" (Eng.).

BOOK REVIEW.

"The Beekeeping Annual,"

(by Herbert Mace).

The 1947 copy of this compact and interesting Annual of beekeeping affairs, at home and abroad, is recently to hand. We mention some points of interest.

Honey Flow Chart.

An interesting chart is shown, being the record of two hives A & B. A was wintered with 50 lbs. and B with 40 lbs. In previous years the chart showed that the heavier hive gathered most surplus. This year reverse was the case, for an interesting reason. A led B by six pounds up to the beginning of the short main flow, when B overhauled A and maintained the lead. Just ten days before B began to overhaul A, it was discovered that A was superseding its queen, indicating that the efforts of A began to slacken when queen cells were commenced. This in turn implied that A failed to raise a satisfactory force of bees for the gathering of the flow. The final result, in spite of the worst bee season for many years, was that A gathered 19 lbs. and B 33 lbs. of surplus honey.

Honours.

"Two well known beemen have been awarded the M.B.E. for war service directly concerned with beekeeping. Mr. J. Bee Mason, the pioneer bee cinematographer, receives it for organising the collection of honey for submarine crews. Mr. R. W. Frew, whose name is perpetuated in the Acarine remedy he discovered, is thus rewarded for his work as a bee pathologist.

Bee Books of the Year.

We mention only those that have had the most favourable review.

"Honey Bees and their Management," by Stanley B. Whitehead. 12/6.

"Plants and Beekeeping," by F. N. Howes, D.Sc. 12/6.

"Queen Rearing," by L. E. Snelgrove. 21/-.

Maximum Retail Prices for Honey.

Imported, 1/9; Home Produced, 2/9; Heather, 3/6 per lb.

Recent Advances in Practise and Science.

Miss A. D. Betts reviews many interesting points. A bad season last year was recorded in the British Isles and particularly in Scotland, where the heather failed. Europe and indeed most of the beekeeping world, recorded a poor season.

Successes and risks are reported in the use of sulphonamides for the control of foul brood. Von Frisch (now Professor of Zoology at Graz, Austria), has occasion to modify slightly his findings on bee behaviour when bringing home nectar and pollen. We hope to publish this at a later date.

NOTICE BOARD.

WILL BRANCH SECRETARIES PLEASE ADVISE THE EDITOR OF THE NAMES OF ANY BEEKEEPERS WHO WERE SUCCESSFUL IN GAINING OFFICE AT THE RECENT LOCAL BODY ELECTIONS?

THE EDITOR WISHES TO PUBLISH THE NAMES AND THE POSITION FILLED, IN THE FEB. ISSUE.

The United States Department says about one and one-third million pounds of bees were shipped this year. At 4500 bees to the pound that's 5,850,000,000, or a lot of bees.

History records only one indispensable man — Adam.

OVERSEAS NEWS.

THE NETHERLANDS

The 24,000 members of the Association for the Promotion of Apiary in the Netherlands will celebrate a half century of organisation this year.

The association, organised in 1897, is out to make real progress after being held back during the last war's devastation.

The celebration will include a Beekeeping Show which is called "Bijen, Bloemen en Honing" (Bees, Flowers and Honey). The show will be held in Assen, and will run from September 23rd to the 29th.

ARGENTINA

Argentina has become prominent in the world honey trade in the last few years. Sizable imports of honey have been received from that country. The country contains about 15 million acres of alfalfa which is cut about six times a year. The land now supporting over 150 million head of cattle, sheep and horses, was once a desert.

Much of Argentina's honey is produced in Mendoza and in the Rio Negro irrigated country where a good crop is often obtained in three months. Close to 500,000 hives gather nectar from such well known sources as buckwheat, sage, rosemary, thyme, mints, lavender, honeysuckle, poplar, willow, basswood, locust, acacia, alfalfa, sanfoin, white dutch clover, sweetclover and sunflower.

SPAIN

While movable hives are on the increase, most of the Spanish hives are log rum or cork gum type obtaining little honey.

The new standard hives are the 10-frame Langstroth and the Dadant-Blatt type. The covers have a cork insulation with a metal top. The bottomboards are a mixture of portland cement and asbestos.

Spain has only 194,800 square miles in the peninsula, yet it can produce nearly 150 million pounds of honey. There are 5,500 species of plants growing in this small country. And the darker honey comes from Rosemary (Romero), thyme (tomillo), and Lavender (espliego).

These plants bloom for about five months in the central part of the country. There are also areas producing sweetclover, alfalfa, almond and orange blossom honey. No tracts are large and the result is delicately blended honey.

HUNGARY

In Hungary beekeepers are taking a keener and more scientific approach to beekeeping. Present interest and growth is favourable. Colonies do not produce very much honey, in fact the bees are encouraged to swarm. The idea is to produce more beeswax, an essential yet very scarce item in that country.

"The Beekeepers' Magazine."

NOTES FOR BEGINNERS.

By "Skep."

An inquirer sends in a question and a statement for the attention of Skep. It reads:

"On April 24th, I was in the queen yard and saw a swarm leave a nucleus and establish themselves in an empty hive. The other colonies were inclined to rob at the least chance, indicating dearth of nectar. Had a look at the parent nuc. and found queen gone but no queen cells. Found queen with swarm in new box with about one frame of bees and just enough honey for one or two days. From April 24th until August, there could not have been any honey gathered, but on examining both colonies on August 4th, found parent nuc. with young laying queen and the new swarm with over 3½ frames sealed honey.

Question in my mind is where did young queen come from, as there was no brood in parent nuc.? No other hive lost a queen and end of April no drones were visible. Where did the swarm get the honey from? None of the other colonies could find any!"

No, and Skep cannot find the answer. This story reads like poor detective fiction with some of the vital facts missing, the rest mixed up and some of these fiction rather than fact.

In southern climes, a beekeeper would be more likely to see pink elephants issuing from a nucleus on April 24th than a swarm. Perhaps an assistant helped the "swarm" along. Perhaps the nucleus had been fed some honey mead!

Can Inquirer answer this one? "Where was Moses when the light went out?"

We leave it to our readers to send in answers that they think would help Inquirer to solve his riddle.

(Notes for Beginners continued on page 20)

DEPARTMENT OF AGRICULTURE HORTICULTURE DIVISION

SULPHATHIAZOLE:

Experiments to test the use of sulphathiazole as a medication for American foul-brood disease of honey bees were begun in U.S.A. in 1945, and so far this work has not advanced beyond the experimental stage.

The publication of these experiments has resulted in a number of enquiries from New Zealand beekeepers wanting to know what is being done in this country to carry out similar tests and whether this drug could now be used effectively for the above purpose. In this connection I would point out that this Department has kept in touch with overseas developments over the past two years. So far the results obtained under controlled experimental conditions have been negative.

A report on this subject by Mr. T. Palmer-Jones, Research Officer, indicates that sulphonamides are mainly bacteriostatic in their action on bacteria invading an organism and interfere with the nutrition and growth of the bacterial enzymes. Consequently they would tend to inhibit increase of the vegetative stage of American foul-brood but would not affect spores in the alimentary tract of the adult bees. Spores in honey and inside the hive would not be affected and would exist as a possible source of infection to other hives.

More recent reports of tests carried out overseas could be interpreted as under:—

- (1) All laboratory tests gave negative results, none of the sulfa drugs used affected the *Bacillus* larvae organism while in the spore stage, in plate cultures.
- (2) When fed in syrup solution the drug seemed to curb the spread of the disease temporarily but it broke out as bad as before when feeding ceased.

It would be disastrous to the bee-

keeping industry in New Zealand if any method of control was applied which tends to cover up rather than eradicate a disease of this description.

In the circumstances this Department would not countenance the use of sulphathiazole in the treatment of American foul-brood by beekeepers until more is known of the matter.

The position generally will be closely watched and any experiments considered desirable will be undertaken by this Department, taking into consideration the work already carried out overseas in this direction. Meantime the present policy in dealing with bee diseases generally in New Zealand is to continue.

WORK OF APIARY SECTION:

The work of the apiary section of this Department has increased considerably of recent years, due to the expansion of the industry. Since 1920 the number of registered hives of bees in New Zealand increased from 69,877 to 154,488 in 1947. It was decided last year, therefore, to reduce the area of several apiary inspection districts and to increase the field staff accordingly.

This has been carried out as far as possible at the present time. Three new appointments have now been made to the field staff as under:—

Mr. K. G. Coles was appointed to the permanent staff on 4th August and finally took up his duties as Apiary Instructor with headquarters at Hawera on 8th September.

Mr. Coles completed three years agricultural course at Wanganui Technical College, passing Junior and Senior Free Place. He has been engaged in general farming, including fifteen years' beekeeping, and for three seasons acted as a part-time Apiary Inspector.

This newly-formed apiary inspection district (formerly part of the Palmerston North district), comprises the following counties—Clif-

ton, Egmont, Eltham, Patea, Inglewood, Whangamomona, Hawera, Waitotara, Taranaki, Stratford and Waimata West. Beekeepers in these areas should now address correspondence to Department of Agriculture, Hawera.

Mr. R. Goddard took up his duties as Assistant Apiary Instructor at Hamilton on 4th August. His appointment will enable a reduction in the area of the Hamilton apiary inspection district in due course, and a new district arranged with headquarters at Tauranga. Meantime beekeepers in the areas should continue to address correspondence to the Apiary Instructor at Hamilton.

Mr. Goddard is a returned ex-serviceman (H.M. Navy). He passed the University Entrance examination, and has worked at commercial beekeeping for long periods, where he gained good practical experience of all phases of apiary work.

This appointment has also enabled a reduction to be made in the Hastings district by four counties, namely, Matakaoa, Waiapu, Wai-kohu and Uawa. Beekeepers in these areas should now address correspondence to Department of Agriculture, Hamilton, until further notice.

Mr. G. W. Manning was appointed to the position of Apiary Instructor at Greymouth, vice Mr. E. J. Perry (resigned).

Mr. Manning has successfully operated a commercial apiary over a long period of years and has also acted as an honorary Apiary Inspector.

It is confidently expected that the services of these men will be of great value to beekeepers in their respective districts and will greatly assist in increased economic production of honey and beeswax.

A reduction in area of the Christchurch and Invercargill apiary inspection districts will also be made as soon as possible.

SEASONAL CONDITIONS TO THE END OF OCTOBER, 1947.

North Auckland: Bees wintered well and opened up in early spring with sufficient stores to maintain broodrearing.

August weather was fine and warm

but reduced temperatures in September closed the early honey flow.

Rainfall during October was above average. A small surplus of honey was stored by the bees from manuka, willows, and Kowhai on warm days during that period. Pastures are more forward than last season.

Auckland: Pastures are well forward and in good condition to withstand the usual drying winds of this district.

Swarming is already in evidence, and may prove difficult to control if the honey flow is late this year.

Queen rearing has not been greatly successful—virgins have taken an undue length of time to mate. Introduction has also been difficult.

If the main honey flow begins early this season large crops should be harvested.

Hamilton and Tauranga: Bees wintered well. Mild temperatures during winter and early spring encouraged excessive brood rearing. Hives are now full of bees, and in several apiaries swarming has begun. Stores are now very low. Pussy and straight willows flowered during unsettled weather. Pastures are looking well with white clover showing up prominently. Barberry is now in full bloom. Prospects are reasonably good with the possibility of an early season.

Hawera-Taranaki: Practically all hives are very strong in bees and brood. There has been a light flow of nectar from willow and barberry. Hives close to bush country collected a light flow during October; but many beekeepers, particularly on coastal areas, will have to feed to maintain colony strength until the main honey flow begins. Most pastures are producing too much grass to allow the clover to show. If weather conditions are favourable prospects for good honey crops should be bright, owing to the strong condition of the hives.

Palmerston North: The majority of colonies are up to normal strength. Barberry and kowhai have been a useful source of spring nectar. Colonies are more advanced now than at this time last season. All indications point to an early season.

Hastings: Bees wintered well, and

in most cases have moderate food supplies.

Fair rainfall during October and many light frosts. Blossom period is now over in orchard districts. White clover is showing up well and blooming about three weeks earlier than usual, but secreting little nectar due to cold nights. Manuka is in bloom and secreting nectar well. Prospects for a good season look bright.

Christchurch: In all districts colonies are building up well. Adequate rainfall has promoted ideal pasture conditions and clover is beginning to bloom in some areas. Rape, Chou moellier, dandelion and wild turnip have yielded well. October was mainly fine and warm.

The present prospect is for a December honey flow.

Dunedin - Invercargill: Colonies opened up in good condition generally with a minimum of winter losses. Brood rearing has advanced rapidly and hives generally are strong in bees.

Fruit bloom and willow were worked a little. Fuchsia, kowhai, rape and turnip have provided considerable nectar. Willow and kowhai are now finished. Thyme and manuka are beginning to bloom. Dandelions are flowering profusely and odd clover heads are showing. Crop prospects are good at present, but where colonies are excessively strong swarming may be troublesome if the main honey flow is late.

W. K. DALLAS,

Director, Horticulture Division.

“THE ACTIVITIES OF HONEY BEES WITHIN THE HIVE.”

(Radio Talk from Station 1YA, Auckland, by R. S. Walsh,
Apiary Instructor, Department of Agriculture, Auckland.)

We frequently hear the honey bee described as one of nature's most intelligent insects. In reality bees are largely creatures of instinct. They respond to the various factors of environment more or less automatically. Honey bees are considered by many to be domesticated insects controlled by man and forced to do his bidding. This is by no means so. The nature and habits of the bees cannot be changed and in order to profit from the labours of this industrious insect the beekeeper's ability to adjust his methods to her ways governs the degree of his success and profit.

The hive is headed by the Queen, whose only function is to lay the eggs that produce the great army of undeveloped females or worker bees and a lesser number of drone or male bees. The drones do not contribute to the welfare of the colony but are maintained for the purpose of mating with a virgin queen should this necessity arrive.

The work performed by colonies of honey bees in the field and within the hive is largely determined by the age of the workers. Thus in the course of its lifetime each worker would

normally perform successively each of the various duties performed by workers in general.

During the busiest period of the year, worker bees live only five or six weeks, and the first half of their lives is occupied by duties within the hive. The first three days of their existence is devoted to cleaning themselves, polishing and cleaning out the cells in readiness for the queen to deposit her eggs, receiving food from the older worker bees, and loitering upon the brood, which is the larvae hatched from the eggs laid by the queen and will eventually develop into bees or drones. These loitering bees are of great assistance in keeping the brood warm. For the next three days they act as nurse bees and feed the older larvae with pollen and honey taken from the cells of the honey comb. From the sixth to thirteenth day when the glands, situated in the head of the bee, which secrete the special brood food, begin to function, they feed principally the younger larvae. Towards the end of this period the bees begin to take short flights to acquaint themselves with their surroundings and remove

debris from the hive. With the decline of the brood nursing glands which begins about the twelfth day, the wax glands begin their functioning and most of the comb building is performed by bees between twelve to eighteen days old. Beeswax, from which comb is made, is produced in the body of the bees. They consume large quantities of honey and from it wax is secreted and extruded in the form of delicate scales from the wax pockets on the under side of their abdomens. When about to produce wax, the bees cluster and hang in festoons and generate a high temperature and the wax scales as secreted are carried singularly by the legs to the mouth. After being chewed until thoroughly pliable, the scale is bitten into the required position and so merged into the comb that no trace of joining can be found. Sometimes scales are produced more rapidly than used, and fall to the floor of the hive where they may be gathered in thousands.

Bees of this age can relieve incoming bees of their loads of pollen and nectar which they store away in the cells. Once this work is begun, nursing is left to the younger bees.

The final duty within the hive occurs between the eighteenth and twentieth day and consists of guarding the hive entrance. The functions described are what occur in a normal hive, but circumstances may bring about a departure from the normal sequence of duties. Hives containing no worker bees more than eight days old are capable of performing all the functions performed by a normal colony if circumstances so demand.

Field bees are divided into searchers and gatherers. The searchers act as scouts and discover the sources of pollen and nectar. When a suitable source is found and additional bees are attracted to it they all become collectors including the searcher. When the honey flow is at its height the searchers go out early in the morning and soon all become gatherers, but during a dearth the searchers work alone throughout the day.

The gatherers have a number of field tasks allotted to them, besides the gathering of nectar. It may be

collecting pollen or propolis or carrying water, and under normal conditions they will not leave their respective duties to undertake any other form of collecting but will continue to bring into the hive either nectar, pollen, or water, as the case may be, until a change in weather or nectar secreting conditions occurs.

Pollen, which is a protein substance, is mixed with honey to form the diet of the older larvae. Adult bees also consume small amounts of pollen. The body of the honey bee is covered with a dense coating of feather-like hairs that easily retains any pollen that may fall from the anthers of the flowers upon the bee. Bees have three sets of legs and on the third pair of legs are what are known as pollen combs, consisting of a number of stiff bristles, and it is by means of these combs that the pollen is gathered together and packed in a compact mass in the pollen baskets, a cavity in the hind legs.

The pollen gatherer first moistens the pollen with a fluid from its mouth which is composed chiefly of nectar or honey. In some flowers the pollen is collected by the mouth parts where it is immediately moistened then taken from the mouth by the first pair of legs, passed to the second pair, the on to the third, where it is accumulated in the pollen baskets. When the pollen-laden worker returns to the hive it places the pollen it has collected, loosely into an empty cell by first thrusting the hind legs into the cell and then by using the middle pair of legs removes the pollen from the baskets. The pollen then receives the attention of younger bees, is moistened with honey and packed tightly into cells situated near the brood. Propolis is also carried in the pollen baskets. This substance is a gum gathered by the bees from a variety of plants and is of so extremely a stick nature, that the gatherers have to be assisted by other bees in the hive to unload it. Propolis is used for closing cracks in the hive, sealing and all similar work. It is not stored like pollen, but is used immediately it is brought into the hive. Water carriers fill their honey sacs with water when engaged

in this work. During the spring period when the queen is laying heavily and the colony contains large areas of young brood, great quantities of water are used. Water is also used during the heat of the summer for cooling down the hive. It is not placed in cells but mostly on the tops of the frames containing the young bees or honey.

When a searcher has discovered a source of nectar or pollen she returns to the hive and conveys the fact to the gatherers by means of a peculiar dance. The dance that follows the discovery of a source of nectar is described as the "round" dance. After she has deposited her load of nectar the bee begins to run around on the comb in very small circles for up to half a minute. She may describe two or three complete circles without reversing or only part of a circle, reversing rapidly. She may move to another part of the comb and repeat the dance once or twice before again leaving for the fields. Pollen gatherers perform a dance similar to the discoverers of nectar, but vibrate the body in a distinctive fashion during its performance, and this movement has led to the dance being called the "wag tail." When either of these dances is taking place, the performer is followed about the hive by a number of interested bees. Every now and then one of the bees leaves the hive, until, before the searcher is herself ready to leave, perhaps a dozen bees have left to avail themselves of the source of supply. The dance does not appear to convey to the gatherers within the hive the origin of the discovery, but only the fact that nectar or pollen has been discovered, although the odour of the booty dispensed by the dancer may sometimes give them an indication of the source.

When a nectar-laden bee returns to the hive she delivers her load to one or more house bees, who meander about the hive until a place is found where she will not be crowded, or interrupted. Here she takes up a characteristic position with the long axis of her body in a perpendicular position with head held uppermost. She retains this attitude for twenty minutes while she manipulates her

load of nectar with her mouth parts exposing it little by little in a thin film to the warm dry atmosphere of the hive in such a manner that it loses moisture rapidly. This is a process of ripening and, when completed, the house bee looks for a suitable cell in which to deposit the honey. If the selected cell is empty she paints the nectar across the rear end of the upper wall of the cell so that it runs down and occupies the rear portion. If the cell already contains honey, she dips her mandibles into the honey already there and adds her drop directly to it.

During a heavy honey flow, the house bees do not always stop to put the nectar through the ripening process but deposit it almost at once. Under such circumstances instead of placing the entire load in a single cell it is distributed by attaching a small hanging drop to the roof of each of several cells. Thus with a maximum surface exposed in the warm and relatively dry atmosphere of the hive evaporation proceeds while the house bee continues to relieve incoming nectar gatherers of their loads. Later these droplets are collected and concentrated into a more compact area. Some nectars have a high water content as high as 80%. In order to obtain 100 lbs. of honey from nectar containing 80% of water which must be reduced to less than 20%, 400 lbs. of such nectar would have to be gathered. This nectar would consist of 80 lbs. of sugar and 320 lb. of water. Of this large quantity of water, 300 lb. must be eliminated before the honey can be considered ripe.

There are two groups of bees in the hive whose duty it is to control the flow of air, one group forcing the air out and the other forcing it into the hive. A section of one group stands at the side of the entrance and fanning with their wings drives the moisture laden air outwards, whilst on the other side another section of bees is fanning fresh air into the hive. At the close of the day nearly all the bees in the hive fill their honey sacs with freshly gathered nectar and spread themselves out over the whole of the available surface. Hanging vertically with

their heads up the bees open their mouths and mandibles and force up a drop of nectar which is made to pulsate by a chewing motion. This continues for about ten minutes and the drop is then re-swallowed to be replaced in a few moments by another drop, and so the process continues until some time approaching midnight when the bees cease work and retire for the rest of the night.

(Mr. Walsh acknowledges his indebtedness to Prof. Dr. Von Frisch, Prof. O. Park, and G. A. Rosch.)

HONEY.

Research conducted by the Soviet Institute of Agriculture and 40 medical institutions justifies the old belief that honey is good for wounds and as an internal medicant. Honey proved to be beneficial in cases of jaundice, chronic dysentery, swellings caused by heart and kidney ailments, and other diseases. Even osteomyelitis of large bones showed some response. Twenty patients who suffered from stomach and duodenum ulcers said they were better four or five days after receiving honey and that they felt no pain after ten days.

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EXCHANGING WEAK WITH STRONG COLONY.

Question.—Would you consider it safe to change locations of a weak and a strong colony in spring, even if there is a honey flow on, such as dandelion? Would the weak colony queen be killed?—Ernest A. Fortin, Quebec.

Answer.—It is considered good practice to exchange the positions of a weak and strong colony in the spring, especially during a honey flow from fruit bloom or dandelion. If the flow is not strong, it would be safer to cage the queen in the weak colony for a day or so at the time the exchange of hives is made. If you would put the queen in a cage with a little candy in the end so that the bees could release the queen in a short time, this would be the thing to do. This exchanging of weak and strong colonies does equalise the strength of colonies. The strong colony can stand losing a few bees, whereas the weak colony needs the additional bees.

—"Gleanings in Bee Culture."

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NOTES FOR BEGINNERS.

By "Skep."

December can be a month when the commercial beekeeper is either highly elated at the prospect of a bumper crop or depressed to the lowest ebb for fear of a drastically poor one. Here, we are not so much concerned with the commercial problems but rather with the instruction and assistance of the hobbyist. (We have known hobbyists both elated and depressed in December!—Ed.)

The bees should now be building up to the danger stage for swarming, and as "prevention is better than cure," we will try to anticipate the intention of a hive, judging by its condition, and take steps to prevent the swarming impulse. This is where a knowledge of the habits of bees is useful.

For instance, a hive that will definitely swarm, if left to its own devices, is one that is crowded with bees on a warm sunny day. On such a day most of the field bees will be out fossicking for nectar and pollen, thereby leaving only house bees in the hive. These are the mischief-makers, and like all young things must be given something useful to do to keep their minds out of trouble. It is of very little use giving them another box to occupy. This will only give them more room to play about. A hive should not be given more room unless it is to work in it. The only work that can be created by adding another box now will fall mostly on the queen, except that there will be more room to store honey in a spasmodic honey flow.

Now what is to be done? One instance occurs annually and may be dealt with simply. The tendency always is for a queen to work upwards and in the case of a two-storey hive the brood will be in the shape of an inverted pear. This has a tendency to crowd the top box while leaving spare room in the bottom one. We will give the bees more room by putting the brood down into the bottom box and lifting empty combs up to the top, but it still does not find useful work for the mischief-makers. Ad-

just the brood in the bottom box by having six frames of brood in all below with two empty combs in the centre, and an empty comb on each side. Place the second box on top. There should be six frames of brood to be used up, but only four of these will be put back while two of the most sealed will be left for other purposes. Place the four combs of brood with three frames of FOUNDATION in the centre of the top box and fill out the space left with combs of honey and pollen. The three frames of foundation should be placed alternatively with the four combs of brood. This means that the foundation has brood on each side of it.

After making sure that the queen is not on the combs removed from the hive, they can be used to strengthen a weak hive—given with adhering bees—or used to form a nucleus.

This method serves to give room for the queen and work for the young bees without demoralising the hive just before the honey flow.

January and February can be grouped, as the honey flow should be on. Supering is the job to be done. As soon as the bees start to cap honey in the brood nest, a third box should be added. Take any combs with new honey out of the brood nest and replace with combs from the super. Put the combs of honey in the centre of the super and place it in position. Care should be taken to see that no brood is in the combs of the super, as this will entice the queen up. The new honey in the centre will bait the bees to store honey there instead of in the brood nest. For the best results, remove the super as soon as it is full and replace with a new one with the same procedure as the first.

Section honey production calls for a slightly different procedure. To procure good full sections, the bees should be crowded as much as is safe. When sealed honey is observed in the brood nest, place an excluder in position with one super of sections above. This should be allowed to remain until almost full when another empty super is placed under it. When the first super of sections is fully capped, the second super should be taken

from underneath and placed on top and a new one placed under the two. When the second super, which is now on top, is fully capped, the first super (the middle one) should be removed. A new one is placed over the excluder, the sealed one above it, and the partly filled one on the top. This procedure should be followed as long as the flow lasts.

All this seems complicated, but it may briefly be summed up by giving the proper positions when three supers are on the hive. The nearest empty should be over the excluder, the full one in the middle and the nearly full one on the top. This arrangement serves to split the forces of the house bees and thereby lessens the danger of swarming in the middle of the honey flow as well as working in with the natural tendency of the bees to store honey.

These notes may not have the detail necessary to satisfy fully the beginner who is just feeling his way. Here again it is necessary to stress the point that before one can understand the most minute detail he must have some knowledge of the habits of bees. When this knowledge is gained, there need be no more complications in hive manipulations.

There is only one rule to be observed and that is: "Always super a single-storey hive down." That is to say, always put the second box on a single-storey hive underneath. Just to test yourself out, see if you can figure out the reason for that and you will get the answer in the next issue.

Wishing you successful management of your hives,

SKEP.

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"CONTROL OF FERMENTATION IN HONEY BY INDIRECT HEATING AND DRYING."

By W. J. Fix (Apiary Instructor and Honey Grader, Auckland), and T. Palmer-Jones (Research Officer, Animal Research Station, Wallaceville).

This is an eight-page Bulletin issued by the Department of Agriculture, and is a reprint from "The N.Z. Journal of Agriculture" (June, 1947).

It is profusely illustrated by photographs and drawings, and is complete with charts.

This Bulletin deals fully with the Control of Fermentation. Tests were first made with a miniature plant, and the success of these experiments were later confirmed when large-scale operations were conducted for a season in the North Auckland district. Installation of such plants can be recommended. This authoritative booklet can be obtained on request from the Dept. of Agriculture.

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N.Z. HONEY CONTROL BOARD

The question that has caused most discussion at beekeepers' conferences and district meetings, is the existing net return to beekeepers for their produce, which is considered to be inadequate to meet present-day cost of production. In this connection the Board has been glad to assist in the preparation of the case which was recently put forward by the I.M.D. Suppliers' Committee for the consideration of a conference consisting of representatives of the Executive of the National Beekeepers' Association, the I.M.D. Suppliers' Committee, the Honey Board, and Senior Government Officers. The case put forward was accorded unanimous support by those present, and it is confidently expected that a favourable decision by the Stabilisation Committee will be granted. If Stabilisation authorises a general increase in the retail price in line with the case put forward, then those who elect to sell direct to the retailer will obtain a return equal to the proposed higher assured pay-out to I.M.D. suppliers.

To draft out a detailed analysis of a honey producer's cost of production and the increase of costs that have occurred over a period of time, represents a heavy task that calls for considerable painstaking effort on the part of those who accept the responsibility. In this connection, senior officers of the I.M.D. provided every assistance and have agreed to apply for authority to make a payout on this season's honey in accordance with the case prepared by the producers' representatives.

At the annual conference of the National Beekeepers' Association, the President, Mr. Field, made an appeal to the Industry to do its part by sending a substantial portion of our bulk honey to Great Britain. Enough is surely known to everyone concerning the plight of Great Britain for the President's appeal to merit a generous response.

The I.M.D. has agreed to extend every possible co-operation in this direction, and granted the President's request that half of the first 400 tons received by the Division shall be shipped to Great Britain, and no doubt the Manager will be glad to make further shipments of a proportion of increased supplies, which it is anticipated will follow a favourable decision of Stabilisation for a higher assured I.M.D. pay-out.

The Board has been informed that a number of beekeepers of limited marketing experience have entered into business arrangements with proprietary concerns for the disposal of their honey. It is well known that certain outside concerns are making what might appear to be attractive offers for almost any grade of honey.

Whilst beekeepers are quite free to dispose of their honey to whom they choose, provided the price order and seals obligation is observed, they should in their own interest, at least consult recognised leaders or officials of their own organisations before signing any agreement to dispose of their honey to merchants.

WALLACE NELSON,

Chairman Honey Control Board.

NOTICE TO BEEKEEPERS.

Headquarters of the Apiary Instructor for the following counties is now: Department of Agriculture,

HAWERA:—

Clifton	Inglewood	Taranaki
Eltham	Whangamomona	
Egmont	Hawera	Stratford
Patea	Waitotara	Waimate West

Beekeeping correspondence should be sent to above address.

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Bred on standard frames under natural conditions from disease-free hives. The development of these Queens extends over a period of years, resulting in the creation of a hard working, high producing and non-swarving strain of gentle temperament.

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Untested	9/-	17/6	25/6	33/-	40/-	77/6	150/- per 20
Select Untested	—1/- extra per queen.							
Tested	13/-	25/-	36/-	47/-	58/-	110/-	
Select Tested	16/-	30/-					
Breeders	—£3/3/- each.							
								Nuclei (4 frame)—£2/2/-.

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BUSINESS, SELL TO A SERVICEMAN.

BRANCH NOTES

SOUTH AUCKLAND.

There was a good attendance of members at a meeting in Hamilton on the 11th September.

Members were anxious to devise a scheme whereby the I.M.D. could be assured of supplies of honey, provided a satisfactory payment could be guaranteed, and it was recommended that signed contracts for supply be made.

Prospects for a good yield of honey are bright. Hives are in good condition owing to a spell of warm sunny weather, and provided we have no protracted periods of changeable and cold conditions, all should be well. Swarming has been prevalent in some localities despite the fact that the bees were not overcrowded and had been requeened the previous autumn.

One report states that 18 of 20 hives in one yard have swarmed, which goes to prove that, even in a small flow, willow honey has the tendency to make hives swarm. There is a definite pollen shortage in certain areas, particularly noticeable in single-storey hives.

—D. Lorimer.

(Refer you to "Skep," who solves all these problems.—Ed.)

KING COUNTRY.

A meeting of the King Country branch of the above Association was held at the apiary of Mr. E. Shoebridge, on Saturday, the 16th inst. Mr. Wedde, of Raurimu, who was the branch delegate to the Conference, recently held in Wellington, presented his report to the large number of apiarists present concerning the beekeepers' problems then dealt with, after which matters of local interest to beekeepers were discussed while refreshments were served.

Mr. C. Paterson, the apiary instructor of the Hamilton district, was present, bringing with him a variety of honey house equipment loaned from the Waikato beekeepers for the occasion. This included a thermostatically controlled electrical cappings reducer, a device for heating up a warming room prior to extracting the combs, and another for heating and straining the honey before it is delivered by pump to the storage tanks, all of which were electrically heated and thermostatically controlled.

At the conclusion of the meeting a hearty vote of thanks was accorded the ladies present responsible for the refreshments, and another to Mr. Paterson and his assistant, Mr. R. Goddard, who had gone to so much trouble in bringing a car load of equipment from Hamilton in order that local beekeepers might see for themselves the manner in which honey is dealt with by the most modern equipment. The apiary instructor was then asked to convey the thanks of the meeting to those beekeepers in the Hamilton area who had been good enough to loan the equipment, and thus demonstrate how one of nature's perfect foods may be handled with the minimum of trouble, the maximum of cleanliness, and passed on to the consumer in

exactly as good a condition as nature intended.

—H. S. Shoebridge.

MANAWATU.

Obituary.

The death of Miss Constance Barrett occurred at KIWITEA on August 9th. Miss Barrett was a keen beekeeper of a kindly and lovable nature. She was appointed secretary of the Fielding Branch in 1931, which position she filled till 1937, when the Branch headquarters were shifted to Palmerston North. During this period she was absent from only two meetings. She was a regular attendee at meetings in Palmerston North and at Conference until prevented by illness. Only a few hours before her death she was enquiring about Branch meetings.

Miss Barrett won several prizes for drawing and for wax displays, as well as being successful in honey exhibits at local shows. She also won the Branch competition for the best kept apiary. Like her mother, she gathered the children of the district about her and conducted a Sunday School. She was organist at the Anglican Church in KIWITEA for 20 years. Miss Barrett was a lover of the bush, and the pretty little cemetery in which she was laid is a fitting setting for her quiet and kindly nature. "In quietness and confidence shall be your strength." Miss Barrett leaves two sisters, Mesdames P. Guy, Feilding, and C. Mackay, Auckland, to mourn her passing.

HAWKES BAY.

More than 100 apiarists from Tutira to Dannevirke assembled at Mr. P. Berry's Arataki Apiary, Havelock North, on Saturday for the annual field day of the Hawkes Bay branch of the National Beekeepers' Association. The gloriously sunny weather made the day ideal for such an outing which included an alfresco lunch beneath the trees near the residence. Honey prices, diseases, apiary management, and a variety of other subjects concerning bees and those associated with them came in for discussion during the social periods.

The president of the branch, Mr. G. F. R. Gordon, presided over the gathering. The Minister of Agriculture, Mr. E. L. Cullen, was present throughout the morning, and Mr. C. G. E. Harker, M.P. for Hawke's Bay, attended during the afternoon.

In welcoming Mr. Cullen, Mr. Gordon recalled that at the last national conference of beekeepers delegates were pleased with the grasp Mr. Cullen seemed to have of their problems, and he expressed the hope that as a result of that understanding the Minister would be able to help beekeepers in their application for an increase in the price of their product, there having been no increase since the beginning of the war. An advance in price would be an encouragement to beekeepers to produce a good quality article.

Mr. Cullen said he realised the importance of the industry to the country in producing a health-giving food. As a highly-specialised industry the total investment in equipment now reached £1½-million. There were 7,280 apiarists operating a total of 154,488 hives in 11,386 apiaries. Of this total 938 of the operators were in Hawkes Bay, these people having 16,389 hives which, the Minister contended, once more illustrated the fertility of the province. In his official capacity he was endeavouring to make available as much money as possible, and he would do everything possible to aid maximum production. Mr. Cullen mentioned that of the 3,700 tons produced last season only a small amount went through the I.M.D.

An hour for the beginner was conducted by Mr. D. S. Robinson, Apiary Inspector at Hastings, who told of the help available from the Department of Agriculture, and gave reasons for the various regulations, such as registration, in order to check any spread of disease among bees. Mr. Robinson also gave a practical demonstration in opening up and examining a hive, and touched on such diseases as foul-brood and nosema.

After lunch Mr. P. Berry gave an instructive talk on queen raising, dealing with various methods from the requirements of the amateur right up to the larger methods employed by the commercial man.

The importance of the trained apiarists in the Department of Agriculture in checking the spread of bee diseases was emphasised by Mr. Harker, who commented on the way legislation affecting spray problems had brought the fruit and honey industries closer together.

In commenting on the importance of the honey industry, Mr. T. Winter, senior apiary instructor, Department of Agriculture, said that containers alone for last season's yield of 3,700 tons cost the beekeepers £29,592. Quoting New Zealand's population at 1,800,000, Mr. Winter said the consumption of honey worked out at 4.6lbs. a head each year. This, he claimed, was the highest in any part of the world. The importance of the bees as pollinators was illustrated by the fact that in England and Wales the Department of Agriculture had placed the annual value of pollination by bees at £4-million.

Mr. Winter also touched on questions of disease, and said that last year officers of the department inspected 83,332 colonies of bees. They found only 485 hives affected by disease and which had to be destroyed.

A successful day concluded with an interesting demonstration by Messrs. Gordon and I. Berry on hive and apiary appliance manufacturing equipment.

M. F. Leete.

(Thank you for the the programme sent earlier. It was attractive and shows signs of good planning. Congratulations H.B. It takes a lot to keep good men down!—Ed.)

WANGANUI.

A meeting of Wanganui beekeepers was held on 17th September, at the Royal Willows tearooms, to listen to a lecture by Mr. Johnson, Apiary Instructor. His subject was "Queen Rearing" and "Increase." There was a gratifying attendance of 25. The lecture was listened to with great interest and the speaker afterwards asked for questions, which were forthcoming and answered.

Mr. Fowler moved that the local Branch

be resuscitated and this was agreed to unanimously. (Good on you, Wanganui. Stick it the Welsh!—Ed.) A Field Day will be held at the end of November, when Mr. Johnson will again officiate.

—R. Garrett.

OTAGO.

Convention — June — 1948.

Plans are in hand for a comprehensive display of honey and allied products. Each Branch in the Otago and Southland area has been allocated the preparation of a special section. The Convention is held at the same time as the A. & P. Winter Show, which is part of the Centennial programme of Otago. Extra space for display is to be secured.

The Otago Branch of the N.B.A. has decided to become a member of the A. & P. Assn. (There is a 10% rebate to members when purchasing stall space. More Scottish than Scotland!—Ed.) It is also hoped to have some moving exhibit, such as a honey extractor, in operation, or to show a motion picture.

Preliminary plans are made for the entertainment of delegates to the Annual Conference in July, 1948. More details will be given next year.

—A. J. Simon.

PICTURES.

Films on Beekeeping.

From Southland, we have news of a very successful evening when about 70 people attended. A talkie film on bees was the main attraction. A supporting film depicting the history of the advance of Agriculture in Britain was also shown.

Although the bee film took only ten minutes to screen, it was most interesting as the photography was outstanding. Cross-sections of cells were shown and the growth of the bee exhibited from egg to full maturity. Equally good photography showed the pollen-laden bee packing the pellet of pollen into the cell.

The Army provided the projector and operator finally after the Branch had sought for equipment for a whole year. Mr. Griffin suggests that any Branches putting on a picture evening should endeavour to secure a travel picture from the Tourist Dept., or educational films from the Dept. of Agriculture or Education Boards. Invitations should be sent to all registered beekeepers in the area.

Mr. I. Forster, Apiary Instructor, and Mr. J. McPadzian, a member of the National Executive, were in attendance and addressed the meeting.

Wellington reports increased attendance at Branch meetings since their film evening. Their intention is to raise funds to cover the cost of having a coloured talking picture made of the progress in beekeeping. Such a picture would have to be done in serial and some of the cost would be recouped by renting it out.

Otago has plans to show a bee film at the Convention in June. A keen member of this Branch hopes to attend several field days and to reel off a hundred feet at each place, and to show the results at the evening meeting of the Convention.

There is a growing need for good films, film strips and slides of beekeeping activity and we are pleased to note the interest and enthusiasm in this method of visual education.

USE OF POLLEN SUPPLEMENTS IN NEW ZEALAND

To Improve Hive Strength Under Certain Conditions.

By T. Palmer-Jones, Research Officer, Animal Research Station, Wallaceville.

Adequate supplies of pollen are essential for the production of strong colonies of bees, and pollen shortages are often reflected in marked decreases in the amount of honey produced. There are areas in New Zealand where bountiful supplies of nectar are offset by pollen deficiencies or where climatic conditions hinder the bees in their collection of pollen. The use of a satisfactory pollen supplement in such areas improves colony (hive) strength and increases the honey crop. The following article describes the method of feeding the supplement made from soya bean flour and dried pasteurised yeast.

Commercial beekeepers realise that adequate supplies of pollen are essential for the production of strong colonies of bees. Pollen supplies almost the entire protein requirements of the bee. It is necessary for the growth of the body, and becomes especially important in the food of larvae. Brood cannot be reared in the absence of pollen. Protein is not only used as food by the larva, but great quantities are stored in its so-called fat-body to be used during the changes to the adult condition. The larva has been shown to contain 11.25 per cent. of protein at the time of sealing. Larval or young bees cannot be fed on honey or sugar syrup alone without harm, but adult bees can live on it for long periods without apparent adverse effect. The adult bees can do without protein for some time, as they are fully grown and their bodies contain protein reserves. In the autumn bees store up these reserves in their fat-bodies, where they serve as a source of brood food in the early spring. If a colony is fed solely on honey or sugar syrup, these reserves are depleted. Worker bees doubtless modify protein material before preparation of larval food by secretion, but it is unknown how much they use for repair of their own bodies during adult life.

It has been estimated that a strong colony requires 40 to 50 lb. or more of pollen to maintain optimum brood rearing for a year. American workers have shown that for maximum efficiency hives should have ample pollen reserves.

For many years beekeepers in other countries have attempted to supply a satisfactory substitute to bees in times of pollen shortage. Finely-ground pea, rye, corn, or oatmeal flours and other substances have been supplied in convenient places to bees, which in times of pollen dearth will readily carry them into the hives. It is only in recent times that Haydak, an American, scientifically compared the worth of these substances with natural pollen. The method used was to feed the substitutes to young bees which had never eaten pollen. They were used to form small colonies into each of which a young fertile queen was introduced. Records were kept of the growth of these bees (the changes in

weight and protein content), mortality, and the quality and quantity of the reared brood. Among other substances tested were dried yeast, dry skim-milk, whole eggs, whole wheat, oats, rye, corn, and pea flours, commercial casein, and soya bean flour.

Many of the substances tested were unsuitable, but it was discovered that soya bean flour, mixed with dried skim-milk in the proportion of four parts to one by weight, was a satisfactory pollen substitute for bees. Results obtained with this mixture were comparable with those secured using natural pollen. Soya bean flour of a low fat content (0.5 to 7 per cent.), produced by the expeller method, gives the most satisfactory results. The flour should contain about 50 per cent. of protein. In 1945 Haydak advised feeding nine parts by weight soya bean flour and one part dried yeast if feeding was necessary for long periods. Medicinal yeast of the type used for human consumption was recommended. Such substitutes were mixed with sugar syrup to a porridge-like consistency, and fed inside the hives, being pressed down between the combs over the brood nest.

Although the soya bean flour and dried yeast mixture has been claimed to approach natural pollen in results, such mixtures should not be regarded as a complete substitute for natural pollen, the term "pollen supplement" being preferable to "pollen substitute."

The feeding of pollen supplements has become a commonplace procedure in many parts of America, the expense and labour involved being considered economically justified by results.

The use of pollen supplements in New Zealand has not been developed, as it was generally considered that bees could obtain natural pollen in sufficient quantities throughout the year. Central Otago and Oira are exceptions, and beekeepers in those districts have realised that the unusual local climatic conditions cause a pollen shortage in the spring. In parts of Central Otago the severe winters prevent the growth of many of the spring plants which elsewhere provide an early source of pollen. Although such plants are present in sufficient numbers at Oira, rain and cold in the spring prevent bees flying enough to benefit. There is reason to suspect that these two factors, acting separately or in combination, may cause a spring pollen shortage in other parts of New Zealand.

Symptoms of Pollen Deficiency.

In pollen-deficient areas colonies rapidly use up pollen reserves in the spring, and brood rearing then becomes restricted, resulting in backward hives with insufficient bees to collect a large honey crop.

Apart from causing a reduction in hive strength, lack of pollen may affect the

well-being of a colony in a different fashion. Careful observations made by Mr. W. A. Coombes, Otira, have shown that pollen-deficient hives may discard their queens. The occasions on which this occurred were always immediately after a period of bad spring weather had precipitated a pollen shortage at Otira. The queens, which were first-season ones, were laying at the time they were discarded. The phenomenon invariably occurred in hives destitute of pollen; hives with pollen reserves retained their queens. On one occasion eighteen hives of nineteen under observation discarded their queens. The sole hive which retained its queen had a store of pollen, while the others were bare.

Attempted superseding of vigorous queens, resulting in a rapid dwindling of hive strength, and even complete loss, may thus be caused by pollen deficiency. Hives broken down in the spring to form nuclei may suffer from pollen deficiency if unprovided with sufficient combs of pollen. Unseasonable weather would increase the likelihood of this occurrence. Cases have been reported of such nuclei balling their queens or rejecting them.

Pollen Supplement Trials.

Pollen supplement trials were commenced with the following aims:—

1. It was first necessary to find to what extent pollen supplements would benefit apiaries under New Zealand conditions in regions suspected of being pollen deficient.
2. Assuming the supplements successful, the factors of cost and time and labour involved in feeding them would require assessing to determine if their use was economic.

In 1944 preliminary trials in Central Otago proved that for local conditions a dried yeast and soya bean flour mixture was superior to mixtures of soya bean flour and dried skim-milk, soya bean flour and dried blood, soya bean flour, dried skim-milk, and dried yeast, and dried blood, dried yeast, and dried skim-milk. The mixture of nine parts soya bean flour plus one part dried pasteurised yeast by weight not only gave better results than the others, but its keeping qualities were much superior.

Method of Conducting Trials.

A group of hives of equal strength was chosen in an apiary suspected of suffering from a seasonal pollen deficiency. Pollen-containing combs, if present in these hives, were evenly distributed throughout the group. Weighed amounts of the supplement, mixed in sugar syrup, were then fed in the late winter and early spring to half the hives, the remainder being used as controls. General conditions of individual hives, total weight of supplement fed in 1 lb. lots, weather, area of brood, and other relevant details were noted on special record sheets. The "area of brood" was measured by a convenient artificial unit taken as a comb of brood, with both sides completely filled with brood, every stage of development from eggs to capped brood being included. Although this system of measurement had limitations, unsuitable weather conditions for frequent opening of hives prevented the adoption of a more accurate one. The area of brood was estimated at the start of the experiment and on two later occasions, first when enough natural pollen was coming in to render the bees independent of the supplement, and again some weeks later.

Result of Pollen Supplement Trials.

The dried pasteurised yeast and soya bean flour supplement was used in the following trials.

In 1945 a preliminary experiment was conducted at Otira, the supplement being fed to 15 hives with a similar number of controls. When the experiment concluded on December 12, 1945, the area of brood, measured as described, was 4.56 full combs for the hives fed supplement and 2.41 for the controls. Approximately 5 lb. of supplement was fed each hive.

In 1946 an experiment at Otira showed the value of the supplement (see table I below).

This table shows that the average yield of honey for hives fed the supplement exceeded that of the controls by 57 lb. The weight of supplement fed was approximately 10 lb. a hive at a cost of 3/3d. The use of the supplement was therefore amply justified on an economic basis, an expenditure of 3/3d. in cash plus the small amount of labour involved resulting in an extra 57 lb. of honey.

The area of brood produced by the hives fed supplement was comparable with that of those fed natural pollen and was more than twice that of the controls. Three control hives were lost during the course of the experiment through lack of pollen, reducing controls from ten to seven. In 1945 and 1946 hives fed the supplement entered the summer with much greater strength than the controls.

It will be noted that hives fed natural pollen in combs gave a higher average yield of honey than those fed supplement. These hives were only three in number and their average yield is probably not very representative. This is borne out by the figures for brood area at the end of the experiment, which are almost the same for both groups. Experiments with the supplement in 1945 at Aurora (South Taranaki) and in the Paparangi area showed that it materially aided the building up of colonies in the early spring, particularly in colder areas where the bees had very few flying hours each day at that time of the year.

In an experiment conducted at Kokonga, Central Otago, in 1946 the difference between the control hives and those fed the supplement was outstanding as the season advanced. Hives fed the supplement were the only ones fit to divide at the beginning of December.

Pollen supplement trials were conducted near Gore, 400 hives being fed the supplement during the 1946-1947 season. Unusually severe weather conditions in the late spring and early summer caused these hives to use up all reserves of natural pollen. The apiarist conducting the trials reported that what honey crop was gathered by the hives could be credited to the effect of the pollen supplement. Two apiaries not fed the supplement which were situated among those fed lapsed entirely for lack of pollen.

Where to Use Supplement.

Trials have shown that the supplement may be fed with great advantage to hives suffering from a spring pollen deficiency in parts of Central Otago and at Otira. Although acute symptoms of pollen shortage may be lacking, it appears probable that in many districts the feeding of a supplement would result in a larger field force of bees and a greater honey crop. Benefit may be derived from the supplement in districts where the spring is often cold, as in South

Taranaki. In many areas the supplement should be of assistance when raising nuclei in the spring and autumn.

It must be stressed that results obtained from the supplement should be considered in relation to its cost and the labour involved in mixing and feeding it. Although the value of the supplement has been proved in Central Otago, Oтира, South Taranaki, and the Paparangi area, its use in many parts of New Zealand is unlikely to be an economic proposition.

Beekeepers with apiaries in districts suspected of providing insufficient pollen, particularly in the spring, should give the supplement a trial on a small scale, with control hives, before deciding to use it in large quantities.

with each pound of the supplement. It is important to use these proportions in mixing the supplement, as otherwise it may be either too sloppy or too dry for satisfactory use. Honey can be used in place of sugar for feeding the supplement.

The supplement is usually fed in cakes of about 1 lb. per hive. The cakes are spread out over the cluster and pressed down between the top bars of the frames. It is advisable to place a sheet of grease paper over the supplement to prevent it drying out. This may be omitted if the supplement is being rapidly consumed. A convenient method of feeding the supplement in an apiary is to place the correct quantity for each hive on a square of grease paper, which is then unpeeled over

TABLE 1—RESULTS OBTAINED AT OTIRA FROM A POLLEN SUPPLEMENT.

Allocation of Hives in experiment.	Average area of brood per hive at start of experiment	Average area of brood per hive at end of experiment	Average yield of honey per hive during season.
	8/9/46 combs	17/12/46. combs.	lb.
Hives fed supplement (10) ..	1.2	6.15	170
Control hives (7) ..	2	2	122
Hives fed natural pollen in combs (3) ..	2.25	6.25	266

Details of the methods employed in using the supplement are as follows:—

Mixing and Storing Supplement:—

The supplement recommended is one consisting of nine parts by weight of soya bean flour thoroughly mixed with one part by weight of dried pasteurised yeast. The soya bean flour should have a fat content of from 0.5 to 7 per cent., and the yeast should be of the dried, pasteurised medicinal type.

It is essential to obtain thorough mixing of the constituents in a finely-divided form. Soya bean flour consists of fine grains and will mix well, but the yeast is usually supplied in flakes, which must be passed through a grinder before mixing. At the Wallaceville Research Station it was found that a grinder with mesh openings of 1/32 in. was satisfactory.

The most convenient method of preparing large quantities of the dry supplement is with a concrete mixer, which will effect thorough mixing in a few minutes. An alternative method is to mix the constituents thoroughly by turning them over and over with a spade on a flat concrete floor.

Exposure of the supplement to damp air after mixing is liable to cause spoilage by moulds and weevils, and it should be kept in airtight tins until required for feeding to the hives. Thirty-five-pound grease tins with 6 in. lever lids are ideal for storage, and the supplement has been kept in these at Wallaceville for over a year without any deterioration. Ordinary 10 lb. honey tins are also perfectly satisfactory.

Feeding the Supplement.

The supplement is mixed with sugar syrup for feeding to the hives, thorough stirring and breaking up of lumps being necessary to bring the finished product to the required consistency of thick porridge.

The sugar syrup is prepared by dissolving two parts by volume of sugar in one part by volume of hot water. One and a-half pints of this sugar syrup are mixed

the brood chamber and the supplement pressed down between the frames by pressure applied to the upper surface of the paper.

One pound of the dry supplement gives about 3½ lb. of the mixture ready for feeding.

The supplement should not be kept made up with sugar syrup, but should be mixed only as required. It should be fed according to the requirements of the hives, in the late winter or early spring, and feeding should be continued until the bees will not accept it.

The largest quantity of supplement mixed with sugar syrup fed per hive in pollen-deficient areas has been 10 lb. in a season. Feeding at fortnightly intervals is satisfactory, but by feeding two or three pounds at a time this period could be extended.

In Central Otago the dry supplement spread out on boards in the apiary has been avidly collected by the bees. However, this method is not recommended for general use, as it depends on fine weather, and weak hives with a small field force of bees would not benefit to any extent.

Both soya bean flour and dried yeast of the right composition for use as pollen supplements are on sale in New Zealand. Details of sources of supply are obtainable from local branches of the National Beekeepers' Association.

Cost of the Supplement.

On present-day prices soya bean flour costs 75/- a 100lb. bag, and dried pasteurised yeast 45/- a 10 lb. tin. Buying on this basis, soya bean flour costs 9d. a lb., and dried yeast 4/6d. a lb., while 1 lb. of the dry supplement costs 1/1½d. As 1 lb. of the dry supplement becomes 3½ lb. when mixed with sugar syrup or honey, the cost of feeding a hive 10 lb. of supplement in sugar syrup, which is more than the usual weight required in a season, is about 3/3d. This calculation omits the cost of

the honey or sugar used, but as this may be regarded as part of the regular spring feeding, its value may be omitted for practical purposes.

If the supplement is mixed in the dry condition during the winter and stored in tins, the labour involved in feeding it is small, and its use can be worked into the scheme of normal seasonal operations.

American workers have found that when natural pollen is abundant it may be trapped from bees in large amounts and used in pollen-deficient areas. Here it may be fed to hives in cakes containing 25 per cent. or 50 per cent. pollen, the remainder being soya bean flour. The use of such a supple-

ment involving the use of pollen traps, is much more complicated than the method described in this article. However, work has been carried out on the use of pollen traps in New Zealand and will be published later.

Acknowledgments.

The successful carrying out of the pollen supplement trials were rendered possible by the co-operation of the following apiarists:—Messrs. L. Box, Heriot, Otago; W. A. Coombes, Otira; F. J. Glass, Waikaka, Gore; J. S. Horn, Kokonga, Central Otago; E. J. Kirk, Wanganui; W. J. Lennon, Omaskau, Central Otago; and A. Myers, Oturehua, Central Otago.

CORRESPONDENCE.

INCREASED PRICE OF HONEY.

(Copy of letter to the Chairman of the Price Tribunal.)

The Editor,

Dear Sir,

In response to a request from Mr. Field, President of The National Beekeepers' Association, for Balance Sheets, etc., I am forwarding the papers asked for, for the last two years, and a copy of my Income Tax Returns for 1945, which was prepared by my accountant, from a state from A. Simmonds & Co., who previously handled my books.

While complying with your request, I must point out that I share with the majority of beekeepers the belief that these papers are of little use in arriving at a satisfactory price for honey, as they cover a period where beekeepers were forced, by inadequate prices, to forsake the normal channels of marketing their produce and have been retailers in order to make a living. The inevitable result of this is that the cities and all towns away from the honey producing areas are being starved of honey and even hospitals and chemists have had to go short. Apiarists resent this, as we are engaged in useful and productive work, and consider that it is quite unreasonable that we should be losing the goodwill of the public, merchants, shops, etc., through not being able to afford to supply through normal channels.

In addition to the above facts, there are many other reasons why

balance sheets alone give an entirely false picture of the situation. The wages shown in my balance sheet are for my two sons, one 21 years and the other 18 years of age. These boys could earn much more working for someone else, but they have worked for me for less in order to help me to get established, on the understanding that they get an interest in the business at a later date, which means that I will be sacrificing a considerable capital interest in order to compensate them. I myself could earn a better income for many less hours, in the trade I followed previously. Another reason is that no doubt many beekeepers, like myself, have retained gear that should long ago have been on the rubbish heap, because of the terrific price of replacements, and I know of no other section of the community who have not received some increase to offset these ever mounting costs.

What crime have beekeepers committed that they should be singled out for such unjust treatment? We produce a valuable food, in a time of desperate food shortages, and also render the whole country inestimable services in pollinating thousands of acres of country, the value of which might astound the Minister of Finance, if he cared to work it out. The work of the bee on fruit trees alone must run to a tremendous amount annually, to say nothing of small fruits, vegetables, clover, etc.

In spite of this free service, how have we been treated? First let us make a few comparisons. Factory-made jam, which contains a large

proportion of cheap vegetable matter, and which in food values are worth less than half the food value of honey, are retailed up to 3/7 for 28 oz. Glucose, which at best is a poor substitute for honey, sells at 1/9 per lb. In comparison, honey in a two-pound carton costing over 3d., plus 1d. seal, is sold at 2/3 retail. To sell to merchants the beekeeper nets about 7½d., less the labour of packing and delivering, and the loss entailed in packing in small containers. Is it any wonder that he sells at the gate, where he can get 1/- per lb., by selling in 5 lb. or 10 lb. tins.

When Stabilisation was first introduced, were the beekeepers consulted in any way as to the fairness or otherwise of the price of honey? Was any attempt made to collect evidence from our organisation? No Sir, the price was simply fixed at the prices ruling at that time in shops and the price paid by the I.M.D. No attempt was made to find out what proportion of the honey produced was sold through these channels. It is contended that the only fair basis to fix honey prices at was the average price producers received "in the tank," and on this basis a case was prepared by the H.B. Branch of the N.B.A., showing that the price the producer would receive under the fixed price was about 2d. too low. This case was sent by our Branch, per delegate, to Mr. Field, and that was the last that was heard of it.

(1942-Ed.)

To still further penalise beekeepers, a commander of 70% of their crop was brought in by regulation, compelling them to send that amount to the I.M.D., at a price less than half obtainable at the gate. To still further penalise the law-abiding section of the industry, the Department concerned shirked the responsibility of enforcing those regulations, with the result that those who obeyed the law were heavily penalised for doing so. When this was brought to the notice of the Minister of Marketing, we were met with the astounding answer that he was sure that no beekeeper would want to "profit unduly" (ye gods), because shortage of labour prevented the enforcement of

the regulations.

Since that time the position has steadily deteriorated. Though authorising, time and again, increases in materials we have to purchase, and though we, like all others, have had to face a steadily rising cost of living, the Tribunal has steadily refused to give us any relief at all. Here we are now, with meat, tea sugar and innumerable other necessities just leaping skywards, still nailed down to 1938 prices. Do you think we are going to put up with this injustice any longer? We will open a campaign from one end of the country to the other, until we do get a little fair play.

With conditions as outlined above, and an abnormal demand at the gate, a beekeeper in a good producing area, with a well established business can do very well, and perhaps this explains why our case has not been pressed as it should have been in some quarters. But where many of our young returned men are trying to get established and paying through the nose for everything they buy, and in districts like H.B., where we have had successions of dry seasons, spray poisoning, etc., to contend with, the position is very different. Even with the crop sold almost entirely at the gate, our returns are far too low to allow any normal development of our business. And even if beekeeping were entirely uneconomic in H.B., in the production of honey alone, it would still be a vital industry in the district, because of the large acreage of orchards and other types of farming that need the services of bees for pollinisation. In the poor class of light pumice country, the farmers are becoming increasingly conscious of the need of bees to establish their clover pastures. It is our contention that it is high time that all these factors are given the notice they warrant, and that in considering prices it should be recognised that beekeepers must be kept in operation in these areas. This has been done in other countries, and N.Z. has given a lead to the world in many other spheres. Let it not lag behind in this vital factor in its national economy.

I hope, Sir, that other beekeepers

will bring other factors to your notice, and that your Tribunal will realise that we have just cause for complaint.

As I see the situation, Sir, our price was fixed without any attempt to find out if the price was fair and equitable to all beekeepers. Our costs have definitely NOT been fixed, but have risen steadily; we have had to face the same steadily rising cost of living, but unlike other sections of the community, have had absolutely no consideration in any way to meet these costs. We have had to abandon our normal channels of marketing and sell entirely at the gate, an avenue that we all recognise cannot last in its present form. As previously stated, we are losing the goodwill of the shopkeepers. This was evidenced at the last conference of grocers, when resentment was expressed at the impossibility of obtaining honey and urging that the shops be allowed to import honey.

The majority of beekeepers have only sufficient hives to give them a congenial occupation and a modest living, and can only be placed in the category of wage earners. Surely they are as entitled to increases as other sections of the community?

The only thing in the way of increase that the industry has been allowed by your Tribunal is an increase of "up to 3d., dependent upon the amount of seals fund collected." This was granted to the suppliers of the I.M.D. How does your Tribunal justify an increase of this amount to one section of our industry, while denying any increase at all to the remainder, when all are subject to the same increased costs, etc.

We can only regard this as a bait to try and recover the goodwill lost by the I.M.D. when they failed to enforce the Honey Emergency Regulations and so penalised heavily all who supplied under those Regulations. At the same time, if the Tribunal admits that an increase of 3d. is just to one section, surely it should apply to all.

The fact that apiarists in some districts, who have large and well-established businesses, can show good re-

turns under the present false marketing conditions, should not prejudice the small beekeeper from making a worthwhile living under normal conditions.

Yours faithfully,
G. F. R. GORDON.

Dear Sir,—

It is a singular fact that the great majority of beekeepers in Canterbury breed their own queens in preference to purchasing them from outside sources. I am the exception. There are some beekeepers who just can't rear queens. They have studied the text books and watched experts at work and although they have followed faithfully the lessons they have learnt, they continue to meet with poor success.

I am sure that not everyone can rear their own queens, not at any rate sufficiently well to supply the requirements of a large commercial apiary. Yet it is still true that few in Canterbury seem to find it necessary to buy queens. Are there no others in my unfortunate position? Are there none with poor eyesight or shaking hands? Apparently not, for they all tell me I am throwing away my money buying queens and that I should breed my own as others do.

Now I am the last man to argue on such a matter. Who am I to argue who has had but a mere five years' beekeeping experience, and most of what I know gleaned by the trial and error method? But I just can't rear queens, so I had to buy them.

Being conscious of the fact that I should have been producing my own queens like most of my fellow beekeepers in this district, I have been doing a little thinking and figuring lately, just to see what it is costing me to buy instead. Now would you believe it, I have arrived at the conclusion that it is not costing me anything, and I feel so pleased that I do not give a rap if I never learnt to rear the blighters. This is the way I reason it out:—

My queens cost me 7/6d. each, and I purchase 350 of them for approximately £130. If I did not buy queens I could only run 300 hives, but as I am not obliged to devote any of my

time to queen rearing, I am able to run an additional 50 hives. This is also made possible by the release of equipment that would otherwise be engaged in the rearing of queens. Returns from the 50 hives on a very conservative estimate average 1 1-3 tons of honey, which is sold at 10½d. lb., or £130, the price I pay for the 350 queens.

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Leeston. L. T. McEWEN.

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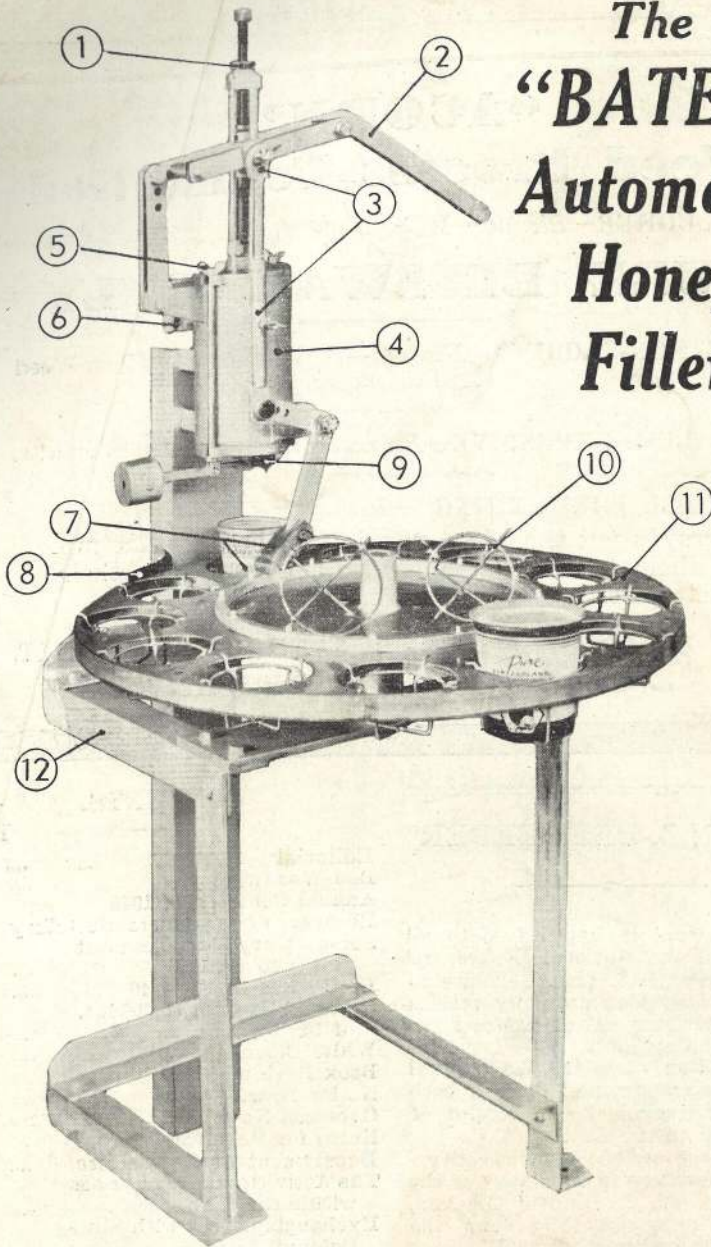
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