Jan 1940

THE NEW ZEALAND BEEKEEPER

OFFICIAL ORGAN of the

NATIONAL BEEKEEPERS' ASSOCIATION OF NEW ZEALAND

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

Better Beekeeping | Better Marketing

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The New Zealand BEEKEEPER

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EDITORIAL.

Centennial Year

We are writing on New Year's Eve, always an interesting date, but, this year, of especial interest to New Zealand because to-morrow begins the centennial year of organised settlement and colonisation of the Dominion.

While beekeeping has been practised in New Zealand for more than half a century, it is only for little more than a quarter of a century that it has been of importance commercially as a primary industry. In the past twenty-five years there have been many changes and, nothwithstanding the state of war in which the Dominion finds herself, prospects for both local and export markets are at the present time really good.

With continued co-operation and improved organisation, there seems to be no reason why the industry should even look back. More remains to be done in both directions: we need more co-operation and better organisation yet; but these are coming into view. There are difficulties in the way, of course, but these are man-made and will eventually be overcome.

Meanwhile, crop prospects throughout the Dominion appear to be satisfactory and to indicate normal returns in most districts this season, while the Marketing Division is equipped to care for the disposal of the whole of the Dominion's saleable production. In addition, the beekeeper is assured of a return higher than that obtainable in any other honey-producing country in the world.

With these facts in mind we have heart in wishing our readers generally and Dominion producers in particular happiness and prosperity throughout 1940 which we believe to be the beginning of a new era, especially within our own industry. To those who have sent us seasonal greetings, we extend thanks indeed.

Market Prospects

Perusal of the Control Board's statement on the current marketing position makes encouraging reading. Removal of the export limitation of 240 tons of honey to the United Kingdom is gratifying and, inasmuch as honey occupies considerably less space for weight than fruit and packs more easily and compactly (requiring less care as to atmospheric conditions in ships' holds), we are more fortunately situated than the fruit industry as, in the circumstances, there is more likelihood of shipping space being available for honey than fruit.

The Marketing Division's established business, domestic and overseas, has increased and the demand for honey is expected to improve further, due to war conditions. It is therefore the obvious duty of producers to see that the Marketing Division does not lack supplies.

Producers' own organized efforts have built up the valuable overseas market and it will be within the province of the National Association and the Control Board to recommend any new measures considered necessary to conserve this valuable asset in the interests of the entire Dominion beekeeping industry. It seems, however, that, apart from duty, it is more or less commonsense to support the Division, as a very payable return is assured to suppliers.

While, at the moment, it appears that negotiations have successfully resulted in this country being the only one having the privilege of delivering

honey to London, it must not be overlooked that Canada and Australia were faced with a **total** embargo on their honey exports to Britain on the outbreak of war. These countries also are negotiating for the resumption of their exports to England and it must not be assumed that we shall be the only Dominion to have a valuable overseas market re-opened.

It is, however, definitely to our advantage to ensure that the present opportunity is not wasted, and every possible pound of honey should be sent in to the Marketing Division, which has unique facilities for disposing of our honey so as to conserve the overseas and domestic businesses in such a way as will result in excellent returns to producers.

It is imperative that the markets be fed exactly in accordance with their requirements and the unorganized individual producer-seller's activities on the local market can do nothing but tend to break this system down, which would, in the long run, only react to his own and his fellows' disadvantage.

Marketing System

In our last number, we published a correspondent's criticism of the present marketing system. That at least part of this criticism was sound is now confirmed by the comments of Mr. A. H. Honeyfield, Manager of the Auckland Branch of the Internal Marketing Division, in his statement at the meeting of the Honey Control Board in Auckland on December 15. Mr. Honeyfield is a man of wide commercial experience and is responsible for the disposal of New Zealand honey on the domestic and export markets. Any opinion expressed by Mr. Honeyfield on the subject of marketing must be given careful consideration by all producers.

Referring to the local market, Mr. Honeyfield mentions the price-cutting, which is at present being allowed to continue, in unmistakable terms:—

"The present marketing system, even if a seal levy is made, still gives a high degree of producer freedom in the selling of honey to a point where considerable cutting still exists and producers use the market level fixed by the Department as a point from which concessions can be given. Such a state of marketing renders the maintenance of a market level most difficult. This position would naturally be accentuated in a year of plenty."

There is nothing new in Mr. Honeyfield's remarks on price-cutting, as precisely this situation was forseen by some when proposals covering the present marketing system were submitted to the industry by the Honey Control Board at Timaru in 1938. At that time, it seemed, however, that the proposals represented the limit of what the Government would concede and they also appeared to be almost the maximum upon which unanimity among the beekeepers themselves could be achieved.

Now that experience has proved the existence of defects forseen earlier, it is necessary that steps be taken to bring about a correction of the position.

It is not the policy of the Government or the Marketing Division to thrust amendments to the marketing system on the industry, but the official pointing-out of an obvious fault to the Honey Control Board, which functions as an Advisory Committee to the Minister of Marketing, may be construed as a definite hint that the industry should itself take stock of the position and formulate plans to overcome the defect.

No doubt the Honey Control Board will consider the position and it will be interesting to see what suggestions it has to bring forward for endorsement by beekeepers at the next Annual Conference of the Association.

It is quite apparent that steps must be taken to curtail price-cutting, or the organisation which is being built up at the expense of those producers who pin their faith to co-operative effort will be broken down.

One solution would be to introduce a scheme of minimum price-fixation (according to grade) throughout the Dominion. This has been objected to on more than one occasion. We referred to it in these columns last April and the Chairman of the Honey Control Board covered the point in his remarks at the Conference of 1938. Mr. Nelson is also reported on page 39

of our April number as saying, "I should perhaps mention that the Internal Marketing Division now handles the bulk of the commercially produced honey, and this Department has made no representations to the Board in favour of price fixation regulations. This, together with the verdict of your own Association, would seem to indicate a desire of most producers to follow a 'wait and see' policy, meantime."

While the Internal Marketing Division has not actually asked for or recommended price fixation regulations, it has drawn attention to the need for action of some sort to combat an evil. Having waited and seen, has not the time now come for the beekeepers also to reconsider their earlier verdict?

The chief argument advanced against minimum price fixation has been that New Zealand produces a vast variety of honeys, some of which are saleable only in the districts in which they are produced (where an acquired taste for them has been developed)—at a price which makes production just worth-while to the producer. In such circumstances, it is not practicable for the Marketing Division to undertake the marketing of these distinctly flavoured, unblendable honeys, as the return to the producers concerned would not be payable.

The fear has been expressed that the imposition of restrictions as to price on the individual packer might involve the Division in the responsibility of being obliged to accept from producers honey which the producers themselves were unable to sell at the price fixed.

A year or so ago, this reasoning seemed to be sound, but let us examine it in the light of further experience. In the first place, there is no obligation on the Marketing Division to accept any honey which does not measure up to a given minimum grade standard and the Division's Circular No. 11, dated last October, indicated that there would be no slackening up in the standard of honey which would be accepted, even although early supplies were urgently required this summer.

So we are at the position where the Division refuses to accept unsuitable honey. From the point of view of the Division, therefore, such honey must be of a very low value indeed, but that does not mean that it could not be graded and a pro rata value attached to it, however low the value compared with the type of honey the Division will accept.

Therefore, it would seem that it should not be impossible work out a practicable scheme. Obviously, the honey which is accepted by the Division is graded for the purpose of arriving at a payout figure, so why not insist on all honey, however and wherever offered for sale, being graded?

Such a regulation could be made applicable to the same persons, with the same conditions and penalties, as the present seal levy regulations. In such case, there would be no interference with private sales of unadvertised honey direct from an apiary to the consumer.

If it were illegal to sell ungraded honey, producer-sellers would be compelled to have their honey graded by an official grader and they could then be obliged to mark their product with the official grade rating and compelled to adhere to the price-for-grade standard as fixed from time to time by the Marketing Division.

This would afford protection to the consumer as regards getting just what was paid for (and the consumer is entitled to such a provision whether the producer desires to allow of it or not), while the price-cutter would be protected from himself and his fellow beekeepers would also be protected from the effects of price-cutting. Further, the Division's activities and the asset within the Division (which is the property of all honey producers who have and are contributing towards its cost) would be safeguarded as should be.

If price-fixation tended to increase the profit of the individual sellers to such an extent that there was a swing away from co-operative marketing through the Division, there should be no hesitation in increasing the amount of the seal levy from ½d. to 1d. per pound, or even more, and there should of course be a reasonable charge made

for grading samples of producers' crops intended for individual sale.

We are aware that these proposals, if made operative, would tend to hinder individual selling by increasing costs, but contend that this is justified if the livings of the co-operative minded majority among producers are not to be injured. The individualist minority must continually be reminded that, as honey producers and sellers, they are enabled to make satisfactory livings solely through the co-operative actions of the majority of their fellow beekeepers and they must expect to bear their just share of the cost of this co-operative effort. In any case, these proposals would only tend further to increase the profits of individual sellers by removing all price-cutting.

In conclusion, there should be no more difficulty in ensuring that honey is being sold true to grade than there is in making certain that milk vended to consumers is up to a given standard. Organisation is already in being to care for such matters.

First Advance Payment

One third of a loaf is better than none; we asked for three half-pence and received one !

The announcement of the Internal Marketing Division that the first advance payment for the present season will be 5d. pro rata, according to grade, is welcome. We suggested last July and again in October that something along these lines was due and the Division has seen the desirability of meeting the situation at least part way. There is little doubt that it is a step decidedly in the right direction and it may be expected that the Division will receive more honey from producers as a result, for, while producers have a duty to support the Division, they are not philanthropists with unlimited depth of pocket who can afford to ignore other markets for their produce which might yield better returns than the Division has paid in the past.

Producers are again reminded to co-operate with the Division by sending in returns advising the amounts or estimated amounts of their crops which will be forwarded by them to the Division.

New Packing Depot

The building of this is now in progress and reports indicate that it is a very fine outfit indeed. Provision has been made for the most up-to-date layout, plant and machinery and quite adequate storage space. The new premises will be entirely capable of handling the packing and blending in New Zealand of all the honey sold overseas as well as all of that sold on the local market by the Internal Marketing Division. It is estimated that the plant will operate at the greatest point of efficiency if about 1,000 tons of honey are handled annually.

Obviously, if the turnover drops unduly, the plant will become uneconomic and it is in the interests of producers that it should be kept working throughout the year. The only way in which this can be achieved is by producers marketing their honey through the Division. The time must come when it will not pay to engage in individual selling. The question is —how soon? The answer is in the hands of the producers themselves. Proposals will doubtless be submitted to producers in the near future which will have some bearing on this aspect and they will be wise to give the matter some thought in anticipation.

As Mr. Honeyfield, in his statement to the Honey Control Board, remarked, it is up to producers to protect their London assets by providing honey required. If the London market fails, the local market will be flooded with honey with disastrous results. The new packing depot must therefore be kept going on the most economic basis, as all these factors bear one on the other.

Control Board Election

A year ago, we referred in these columns to the peculiar situation which had arisen in that, although nearly a year had elapsed since the reconstitution of the Honey Control Board which now functions as being representative of all the suppliers of honey to the Internal Marketing Division (suppliers having no knowledge as to whether their honey is sold within New Zealand or overseas and, furthermore, having no say as to which market it should be applied),

only those producers who had had honey exported were entitled to exercise a vote.

Although a further year has elapsed, the anomalous position still exists and, had an election been necessary last November, it would be interesting to know just how it would have been decided just who was entitled to vote and who was not.

It is high time that the regulations were amended to provide that all suppliers to the Internal Marketing Division should be given the right of voting.

We have to repeat our suggestion also that, when circulars are sent out by the Returning Officer from the Department of Agriculture, it is desirable that it should be clearly stated which member of the Board is retiring by rotation. A good deal of confusion and misunderstanding on the part of suppliers would thereby be eliminated.

Part-time Inspection

The very limited amount of inspection work which was made possible by the recent allocation of funds has undoubtedly been effective as far as it went. Of course, the sums allocated to the various appointees were hopelessly inadequate, but most of the part-time inspectors did rather more than the bare minimum which was required of them and a certain amount of disease, which would otherwise have been undetected, was uncovered.

Actually, it is astonishing what a mess some so-called beekeepers allow their hives to get into. According to some reports received, hives were discovered which had not been looked at for nearly a year. Disease in such cases was far advanced, while dead hives, riddled with wax-moth, were also abundant. One inspector remarked that what he had seen made him realise what a good beekeeper he was himself!

Although hopelessly inadequate to permit of a good job being done, the money allocated for the purpose has been well-spent and it is to be hoped that the Department of Agriculture will take steps to see that further funds are made available next season so that ground gained this spring will not be lost and that further progress may be made.

CORRESPONDENCE.

To the General Secretary,
National Beekeepers' Assn.

Dear Sir,—In reply to your representation to the Honey Control Board on the subject of the £100 subsidy to your Association I have to advise you that this matter was discussed at the recent Board meeting and it was decided that the Board cannot see its way clear to accede to your request in the meantime.

Should your Executive desire to discuss the matter further with the Board, an opportunity will be available at the next annual meeting of your Association, which I understand will be held in Wellington.

In accordance with the practice in the past the Board is prepared to accept spaee to the value of £5, in the January issue of your Journal. Matter for publication will reach you within a day or two.

Yours faithfully,

WALLACE NELSON,
Chairman, New Zealand Honey Control Board.

Otewa Road,
Otorohanga.
January 1, 1940.

[Readers and Association members will regret the Board's decision not to renew the subsidy to the Association this year and, doubtless, will share our surprise that, although there is no reason to believe that the Board is financially unable to continue its valuable assistance to the Association, no reasons are advanced to account for the above decision.

As a result of unexpectedly reduced finance, it is necessary to curtain drastically the scope of the Association's Official Organ and a number of interesting features have had to be omitted from this and the previous number.

It has, however, been decided to continue publication in the meantime and the Editor is foregoing that portion of his remuneration which had been allocated by the General Executive to cover the Editorial part of his duties.

We desire to express very sincere thanks for two independent and separate offers (which have been received without tags or conditions of any kind) from individual members to pay the entire cost of printing and distribution of this number.

We feel that beekeepers will agree that these offers confirm the opinion that the Journal is serving a useful purpose and should not be allowed to lapse. With such material encouragement, supplemented by messages of appreciation from Branches and individuals (within the Dominion and overseas) we feel impelled to carry on and shall endeavour to do so.—Editor.]

ARSENATE SPRAYS AND BEES.

At recent Beekeepers' Conferences, the use of arsenate sprays on fruit blossoms in the Hawke's Bay district has been the subject of discussion. The Association has enlisted the help of the Horticulture Division of the Department of Agriculture and the Fruitgrowers' Association. The Hawke's Bay Branch of the National Beekeepers' Association has been active in taking the matter up also.

Just what damage may be done by the inconsiderate and unnecessary spraying of trees while in full bloom is outlined in the following articles from the pen of Miss D. M. Dalgleish, Hawke's Bay Branch Secretary, which appeared in the columns of the daily newspaper of which she is a member of the staff:—

MORTALITY AMONG BEES

APIARISTS' LOSS

Orchardists' Co-operation Desired

In order to help prevent the disastrous bee mortality experienced in other years, orchard instructors and the National Beekeepers' Association have requested orchardists to apply the petal fall spray of arsenate of lead at petal fall, and not when the trees are in full bloom.

As most varieties of apples are now in full bloom, orchardists who have already sprayed or who contemplate applying arsenate of lead within the next few days might do well to consider the fact that such action on their part may cause apiarists to lose the whole of their season's honey crop.

Leading orchardists have stated that there is nothing to be gained through applying the spray while the blossom is on the trees, and have even admitted that such spraying is detrimental in view of the fact that the arsenical spray when thus applied injures the delicate pollinating system and prevents a fair percentage of the fruit from setting.

Orchardists' Friend

The honey-bee has been called the orchardists' best friend, and in America where some orchards are miles in extent, orchardists recognise the importance of bees as pollinating agents and pay beekeepers to place hives of honey bees at regular intervals between the fruit trees. Sometimes packages of bees are sent hundreds of miles to the fruit growing areas and always the beekeepers receive a handsome cheque for the services rendered by their bees.

In Hawke's Bay there are so many apiaries scattered about the district that fruitgrowers do not require to go to much expense to ensure that their trees should be pollinated; but if beekeepers continued to suffer from mortality among bees through arsenical spray, all commercial apiarists would be obliged to remove their bees from the fruit growing districts and orchardists would then have to keep bees themselves or pay for the use of bees.

As bees have to be kept in regulation hives, orchardists would have to go to considerable trouble and expense. Fortunately the honey is not affected by the spray as the main honey flow does not commence until the end of November. However, the spray not only kills any field bees which happen to be on the trees, but also, through coming in contact with the pollen which is afterwards gathered and fed to the larvae bees, it causes the death of thousands of worker bees which would have gathered in the main honey crop.

The extent of the loss to apiarists can be better appreciated by anyone who has visited an apiary in the early hours of the morning and seen as much as a bucketful of dead bees in front of each hive.

ARSENATE SPRAYS AND BEES

DANGER STRESSED

Late Applications

In a reminder to orchardists of the value of bees as fertilising agents in the production of fruit, the Hawke's Bay Branch of the National Beekeepers' Association stresses the grave

danger of destroying large numbers of bees, and the consequent heavy financial loss to beekeepers as a result of indiscriminate use of arsenic sprays.

The danger lies in applying arsenate of lead when blossom is still on the trees, a procedure which is regarded as entirely unnecessary. Two years ago the loss to beekeepers in this district was very considerable, one honey producer, the owner of eleven apiaries, losing almost his entire honey crop through bee mortality in the spring as a result of arsenate of lead spray being applied to fruit trees before petal fall.

Last year many orchardists, realising the value of bees in fruit production, co-operated with beekeepers and delayed the application of "petal-fall" spray, with the result that bee mortality was appreciably reduced. Though on the whole the mortality was not as great as during the previous season, one Twyford apiarist lost so heavily in the spring that the colony strength of his bees was not great enough for a normal honey crop to be gathered, with the result that the honey produced was worth £100 less than had been expected.

The Beekeepers' Association is not asking orchardists to run undue risks with their crops, but it does ask, in the interests of all concerned, that care should be taken in arranging spray programmes so that the experience of former years will not be repeated.

The appeal met with a ready response from the fruit men, and the following extract indicates their reaction as reported in a newspaper:—

FRUITGROWERS CONFER

SPRAYS AND BEES

Matters vitally affecting the interests of orchardists were discussed at a meeting of the general committee of the Hawke's Bay Fruitgrowers' Association at Hastings.

Spraying Dangers

It was decided to support the beekeepers' request that fruitgrowers refrain from spraying with lead arsenate until the majority of the blossom has fallen from the trees. Some growers apply their lead spray right through the orchard as soon as the earliest blooming varieties are ready. This is uneconomical, as well as being disastrous to the bees, and growers are urged to group their varieties and spray them when ready, but not before.

BEEKEEPING IN AUSTRALIA.

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ASSOCIATION MATTERS

ANNUAL CONFERENCE.

Although a final decision has not yet been made, it has been proposed that the next Annual Conference of the Association should be held in Wellington before the closing of the Centennial Exhibition. Branches will be advised in due course, but in the event it is decided to do this, it will be necessary to advance the usual date of Conference by rather more than a month and have it, say, during the last week of April. In this case, it will be necessary to close off books, etc., at the end of March instead of at the end of May as usual.

Branches will require to hold their Annual Meetings as soon as possible after the end of March and to forward their remits, Delegates' Certificates, etc., to the General Secretary not later than the 15th April.

It will not be possible, even then, to publish remits in the April number of the Journal, but it is suggested that publication should be held over for one month so as to include a report of Conference proceedings in an issue which could be brought out about 20th May.

In the case of the Conference being held in Wellington, no doubt many beekeepers will take the opportunity to visit the Capital at that time and visit the Exhibition during their stay. The Wellington Branch is very keen on acting as host to the Conference on this occasion and delegates and visitors are assured of an enjoyable time.

NOTICE OF AMENDMENT TO CONSTITUTION.

Notice is hereby given that at the next Annual Conference of the National Beekeepers' Association of N.Z., the following resolution will be moved for adoption:—

"That the resolution adopted at the last Annual Conference providing that there shall be an excess of £2 on each and every claim against the Iusurance Fund be confirmed; and that the resultant alterations to Clauses 22 (c) and 24 (d) as now printed also be confirmed."

In explanation of the above, the original proposal was that the first £10 of any claim was to be paid out of the No. 2 Trust Fund and the wording of the amended Constitution as circulated to members last year was in accordance with this. When the adoption of the Constitution was being considered at Hastings last year, however, it was considered desirable that there should be a provision which involved any claimant paying the first £2 of any claim in order to reduce the likelihood of there being a number of small claims received and an amendment was adopted providing for this. In order to put the matter strictly in order it is necessary that the amendment, as adopted, be confirmed after due notice has been given to all members of the Association.

G. S. KIRKER,
1/1/40. General Secretary.

CONFERENCE DELEGATES.

Branch Secretaries' attention is drawn to Clause 18 (3) of the Constitution. Delegates' Certificates are required to be in the hands of the General Secretary before the commencement of the Annual Conference, or delegates will not have any standing.

The certificates are required to be signed by the Branch President and the Branch Secretary and to contain the following information:—

(a) Number of financial members of the Branch.
(b) Total amount of subscriptions paid by the Branch to the General Secretary during the year.
(c) The number of votes to which the delegate is entitled.

It is provided in the Constitution that in the event no delegate can travel from a branch, the branch may appoint any other member of the Association who is attending the Con-

ference to act as its delegate. In such case, if a branch is much out of touch with neighbouring branches owing to distance, and in order to save correspondence in an endeavour to locate a delegate, the simplest thing would be to appoint the General Secretary, who will have received all branches' remits by mail, or else the Dominion President, both of whom are certain to be present, as its delegate.

DELEGATES' VOTES.

The attention of delegates is drawn to Clause 18 (5) of the Constitution which reads:—

"At all general meetings of the Association all matters shall be decided on the popular vote of financial members attending the conference or meeting as determined by Clause 6, provided that any delegate at any time may demand that the matter be decided upon the delegates' votes only."

This is an important clause and contains a wise provision which serves to combat the possibility of a resolution which may not be favoured by delegates (who might be outvoted by a greater number of individual members being present at a conference) being adopted, when that resolution is not necessarily in the best interests of all the producers represented at the conference. In other words, it prevents the possibility of a meeting being packed with a number of voters who, on the voices, might easily outnumber the branches' representatives.

Sub Clause (5) of Clause 18 is not often invoked, but one delegate did make use of its provisions at the last conference and his action was subsequently applauded by the majority of the beekeepers attending.

PERSONAL.

Members will regret to learn of the death on November 4 of Mr. Hamilton, Snr., who died at the age of 79 after a very short illness. Mr. Hamilton was well known and a highly respected farmer in the Windsor (Otago) district and his son, Mr. Douglas G. Hamilton, has been a member of the Association for many years, being at the present time President of the North Otago Branch.

Mr. Douglas G. Hamilton recently returned from a trip to the United Kingdom and the Continent, having been back in New Zealand only a few days when war broke out. He made contact with a number of beekeepers at Home, among whom was Dr. Harry Anderson, Editor of the "Scottish Beekeeper," who motored Mr. Hamilton out to one of his apiaries.

Mr. Hamilton also visited another beekeeper about 100 miles from London who controls about 1,100 colonies. A day was spent running round this producer's out-apiaries. Five assistants were employed, their remuneration being from 9d. to 1/- per hour, the employees "finding" themselves. From 1,100 colonies the previous season, the return was 26 tons, the average return per hive being stated to be in the vicinity of 60lb.

A jar of honey bearing this beekeeper's name was purchased from a nearby shop; the price was 1/7 per pound! The apiarist expressed the opinion that sentiment only accounted for the difference between the price of his own honey and that of "Imperial Bee" which was on sale in the same shop at 1/4 per lb. "In fact," he said, "if New Zealand honey was sold according to food value, I should have to go out of business!"

NEW USE FOR BEESWAX.

The next time you discover a leak in a water tank or any bucket or tin used for cold water or syrup, try mending it with beeswax. Even enamel jugs or pots which develop small holes can be mended successfully with it. Obviously it is useless where hot water is used.

BRANCH ACTIVITIES

EAST COAST BRANCH.

Ideal Bee Country.

COAST'S POSSIBILITIES.

VISIT OF INSTRUCTOR.

Room for 1000 Hives.

The possibilities available to those on the East Coast interested in bee-keeping were the subject of an address in Ruatoria on Friday evening by Mr. G. V. Westbrooke, apiary instructor for the district. His talk was given to a meeting of the members of the Association. The president, Mr. E. Morice, was chairman.

On his previous visit, Mr. Westbrooke said he had expressed the opinion that the district around Ruatoria would be ideal for bee-keeping, and he felt now that he could reaffirm that opinion because he had seen what could be done with a few well-kept colonies of bees.

He had also made a tour in the district and up some of the fertile valleys, and thought that the country was capable of carrying over 1000 hives. White clover was in abundance and the bees now under regulation were storing honey in large quantities.

On Saturday morning, Mr. Westbrooke visited some of the bee-keepers and gave them advice as to the best methods. In the afternoon the showery weather did little to detract from the success of the Association's field day at the apiary of Mrs. O. T. Williams at Titiraukena station, where the hives were opened and manipulations explained by Mr. Westbrooke. A part in the demonstration was taken by Mr. P. Richards, Waipiro Bay, and he was kept busy answering questions relating to bee culture.

The large number of amateur bee-keepers expressed their appreciation of the instructor's assistance, and Mr. Westbrooke said it was pleasing to note that practically all the "box hives" had been changed for modern, legal hives.

(A report from an independent source mentions that the East Coast Branch is making good progress, the members being very keen. The President and Secretary spend a great deal of time helping others and showing the many Maori box-hive owners how to adopt modern methods.—General Secretary.)

AUCKLAND CENTRAL.

The last monthly meeting for 1939 was held on October 27, there being a very large attendance of members and friends. Among the forty present were Mr. W. Marsden, a past President of the Branch, who was the recipient of a presentation as a token of members' esteem following his recent marriage. After the disposal of formal business, Mr. H. Page exhibited a motion picture film depicting bee lore in natural colours. This evoked considerable pleasure and admiration and as Mr. Page had collaborated in the taking of the film, he was able to enumerate a number of the difficulties which had to be surmounted.

The Branch President, Mr. J. R. Barber, remarked afterwards that beemen were too apt to overlook the wonderful colours in the hive. Mr. Page was heartily applauded and thanked for the unique entertainment he had provided and an interesting discussion followed.

Supper consisted of savories and whole-wheat biscuits, the latter being buttered and surmounted with a liberal piece of comb honey.

MARLBOROUGH BRANCH.

Members foregathered on October 21 for their Field Day at the apiary of the Branch Secretary, Mr. L. W. Gee. On this occasion the weather did not run true to label. The day dawned cool and cloudy, but did not deter members who turned out in full force, well augmented by non-member bee-keepers who received a hearty welcome. Recruiting for membership car-

ried on during the day resulted in a net gain of two new members.

Mr. C. R. Paterson, Apiary Instructor for the district, demonstrated various phases of beekeeping, especially dealing with the Demaree system of swarm control, the making of a division and the introduction of an Italian queen to a black hive.

There was an adjournment for afternoon tea provided by Mrs. L. W. Gee, and then came demonstration of frame wiring and electrically embedding foundation. In the evening, Mr. Paterson gave a lantern lecture on queen rearing, which was much appreciated by those present and the opportunity was also taken to transact the business of a general meeting. Supper brought to a conclusion a very enjoyable day and hearty votes of thanks were passed to the host and hostess for their hospitality and to those who had contributed to the success of the gathering.

CENTRAL/SOUTHERN HAWKE'S BAY.

Members of this Branch are co-operating in the matter of purchasing honey cases by clubbing together and placing one joint order for the whole of their requirements through the Branch Secretary.

HONEY PRICES.

Package.	Seal Grade.	Per Dozen Price to Wholesalers.	Per Dozen Price to Retailers.	Per Each Price by Retailers.
1lb. Glass Jars	(Red)	12/–	13/6	1/3
	(Blue)	10/–	11/3	1/1
	(Green)	9/–	10/1	1/–
1lb. Cartons	(Red)	9/9	11/–	1/1
	(Blue)	7/9	8/9	11d.
	(Green)	6/9	7/7	9d.
2lb. Cartons and Tins	(Red)	19/3	21/8	2/–
	(Blue)	15/3	17/1	1/9
	(Green)	13/3	14/11	1/6
5lb. Pails	(Red)	47/6	53/5	5/–
	(Blue)	37/6	42/2	4/6
	(Green)	32/6	36/7	4/–
10lb. Pails	(Red)	95/–	106/10	10/–
	(Blue)	75/–	84/4	9/–
	(Green)	65/–	73/1	8/–
		(Each)	(Each)	(Each)
60lb. Tins	(Red)	35/–	40/–	45/–
	(Blue)	27/6	30/–	35/–
	(Green)	22/6	25/–	30/–

We have received numerous enquiries regarding prices at which honey should be sold by producers and the above scale is based on the prices at which the Internal Marketing Division is selling.

It is emphasized that prices have not been fixed by the Marketing Division, but if producers are unable to secure the above prices they should send their honey in to the Division.

The last column is to serve simply as a guide to producers when deciding the prices at which they intend selling to consumers ex their own apiaries. The figures in this column indicate the prices at which it is considered retailers could sell and make a reasonable profit, based on their purchasing from wholesalers or producers at the prices shown in the "Price to Retailers" column.

DEPARTMENT OF AGRICULTURE
HORTICULTURE DIVISION

HONEY CROP PROSPECTS.

The Director of the Horticulture Division has received the following reports from Apiary Instructors covering crop prospects in their various districts as at the end of December, 1939:—

NORTH AUCKLAND AND AUCKLAND.

Changeable weather, with several wet days, has been experienced in Auckland and North Auckland during December, and this has interfered with the continuity of the main flow of nectar. The season may be expected to extend later than usual, resulting in the production of honey being less than an average crop. L. Riesterer.

HAMILTON.

Weather. Heavy rain fell during the early part of the month, and according to records taken at Hamilton this brings the total fall for the year to 49.75 inches which is approximately 3 inches above the average. The day temperatures ranged from 65 to 77 degrees and night from 53 to 62 degrees.

Condition of Bees. Heavy feeding during the late spring has maintained the colony strength and the condition under this heading is good.

Crop Prospects. Reports from various districts indicate that a normal crop will be taken, but it is yet too early to estimate the season's output.

W. J. Fix.

HASTINGS.

Since last report, good rains have been experienced in most of this district, making the prospects of a good honey crop much brighter.

In the Hawke's Bay District most beekeepers are expecting a crop slightly below last season, but above the average. In the Wairarapa, however, the season has been fairly dry up to a week or two ago, and it is doubtful if the crops will show an average one.

In Poverty Bay there is an abundance of clover blooming and the present fine weather should insure at least an average yield.

Generally speaking, a fair season should be experienced over the district as a whole. G. V. Westbrooke.

PALMERSTON NORTH.

Reports from various centres of this district indicate that a good flow should be experienced.

Clover is exceptionally abundant, and, wherever climatic conditions are suitable, is yielding fast.

Given the right weather, the approaching season will probably be above the average both for quantity and quality. H. F. Dodson.

GREYMOUTH.

West Coast. A decided improvement in weather conditions during December has started the bees off in full swing. Rata commenced to flower earlier this season and at present promises well. Considerable nectar has been stored and in a few cases where bees were well forward, honey has been extracted. With fine weather during January, good crops should be harvested.

Marlborough. From reports to hand I understand that prospects are favourable for good crops to be secured.

Nelson. Beekeepers are experiencing the best season for some considerable time. Not a great amount of honey is extracted in this district, as most of the beekeepers go in for section honey. C. R. Paterson.

CHRISTCHURCH.

Weather Conditions. December has proved an exceptionally dry month, north-westerly winds prevailing throughout the period, and offsetting the beneficial rains experienced during November, and resulting in a drying off of the clover on the Plains.

Condition of Bees. The north westerly winds have caused a loss of field

bees in some areas on the Plains and a shortage of stores is evident in some districts, necessitating the removal of apiaries to the heavier land where the bees are able to secure sufficient honey for immediate requirements.

Crop Prospects. In view of prevailing weather conditions, which appear settled, with no immediate prospect of a good rainfall, exceedingly light crops are likely. Should weather conditions improve, however, and sufficient rain fall within the next week, followed by another fall a fortnight later, there will still be prospects of a normal crop.

R. S. Walsh.

DUNEDIN.

There has been a marked improvement in conditions since my previous report. Bees are building up rapidly and, although about a fortnight late in most parts, should be ready for the main honey flow.

White clover is blooming well throughout Otago and Southland.

Prospects of a fair honey crop are favourable, given continued suitable climatic conditions; the main exception being North Otago which is suffering from want of rain. Prospects there at present are most unfavourable. D. S. Robinson.

SOUTH AUCKLAND.

Although strong winds somewhat offset good beneficial rains during December, pastures are in great heart at the time of writing and the bees took full advantage of fine quiet days during the month.

The season is fully two weeks later than usual owing to weather conditions, but prospects at present are for good crops of honey throughout the Manukau and Franklin Counties.

Extracting operations commenced during the third week in December in some localities. T. S. Winter.

Made in New Zealand! Most of the honey produced in New Zealand is consumed in New Zealand. Help sell more honey by buying N.Z.-made goods. Specify "Made in New Zealand!"

INTERNAL MARKETING DIVISION
(HONEY SECTION)

STATEMENT BY MR. A. H. HONEYFIELD, MANAGER, INTERNAL MARKETING DIVISION, AUCKLAND, AT MEETING OF HONEY CONTROL BOARD, HELD ON DECEMBER 15, 1939.

Since your last meeting, the trend of world events has, to an extent, complicated the marketing of honey. First of all, by a rapid increase in costs of packing material, freights, insurances; secondly, by the possibility of export restrictions of 240 tons per year imposed by the Imperial Government; lastly, by the difficulty of obtaining regular shipping space.

Fortunately, the restriction imposed at the outset of the War by the Imperial Government has been overcome and we are now able to ship our full production, provided space is available. In general, the policy discussed and approved by the Board has been carried out.

We have maintained the local market prices and have increased export prices to cover added costs, thereby maintaining both an internal and external market level at a payable price to the producer, and enabling the payment of a substantial advance and a final bonus. By carrying out this policy a good payable market level has been maintained for producer-packers, and in addition, wherever possible, the Department has assisted in the development and betterment of the industry.

It has also been the aim of the Department to serve the consuming public everywhere by making available honey uniform in quality and safeguarded as to purity.

Manufacture and Handling of Honey.

I am glad to report that the building of a new honey store is in progress and provision has been made for the most up-to-date layout, plant and machinery to be installed, while storage space has been reserved for 1,000 tons of honey under proper temperature control. In an off season, the storage area can be utilised for the storage of other goods, if necessary.

By centralising the blending and packing of honey in one plant, considerable savings per pound of honey can be achieved in packing costs, handling and administration, also in the saving of storage in London and New Zealand out-ports, and by blending honeys in New Zealand uniformity will be obtained for both the local and export markets.

Price Cutting.

The present marketing system, even if a seal levy is made, still gives a high degree of producer freedom in the selling of honey to a point where considerable cutting still exists, and producers use the market level fixed by the Department from time to time as a point from which concessions can be given. Such a state of marketing renders the maintenance of a market level most difficult. This position would naturally be accentuated in a year of plenty.

In addition to this difficulty, there is a tendency on the part of some producers to market as much honey as possible, themselves, and forward any surplus to the Department. This naturally tends to complicate the marketing procedure, and may at some later date, when the crop is heavy, react to the disadvantage of producers generally.

Marketing System.

Up until to-day, the Department has been able to render assistance to the producers by steadying the markets to a payable level, and to this extent the producer is able to enjoy some security as to the future.

In order to stabilise this position

still further, the Department must, from time to time, be guaranteed of an adequate supply, particularly in view of the new plant which is in the course of erection. This plant will become economic and of great use to the producers only so long as turnover is being maintained.

The aim of the industry should be, not only to do the whole of its export and storage for export through the new plant, but to pack a minimum of 700 to 800 tons of honey for the New Zealand trade. Under such conditions, the lowest operating costs and the maximum efficiency would be enjoyed by the Honey Industry.

I am of the opinion that every endeavour should be made to bring this state of affairs into existence, thereby enabling future supplies to be handled efficiently and an organisation developed which will provide that stability which has been absent in the past.

Export.

At the present moment, owing to increased demand from London, this Department has increased selling prices and has restricted the sale of bulk honey overseas, thereby increasing the sale of the packed lines. We have now reached the point where our London Branch will have an acute shortage of honey by the end of January, a position which we are anxious to avoid as the ground which has been won in the United Kingdom must be maintained.

It is now up to producers to do their part in protecting their London assets by providing the honey required.

INCREASE IN FIRST ADVANCE PAYMENT.

Producers are advised that the first advance payment for this season will be 5d. per lb. pro rata, according to grade. The honey will be graded as soon as possible after its receipt and payment made forthwith. The deduction of 1-16th pence per lb, does not now apply to liquid honey, but suppliers are requested to see that it is in sound cases, well nailed, and marked "Liquid Honey—Handle Carefully." Tins with double closures must be used. We can take all your honey that will pass the grading standards. Send in as much as you can in January.

HONEY TINS FOR SALE.

To help economise in the use of tin we are offering for sale, for re-use by suppliers, the best of the emptied tins.

Prices: 1/- each for tins with ordinary closure.

1/2 each for Liquid Honey tins, freight forward.

These tins will have a small hole in the bottom, the size of a 3-inch nail, and will not be washed.

Orders will be filled as received. If orders are in excess of quantity available they will be proportioned.

If we can get the holes soldered before sending out the price will be 1d. extra.

SEAL PRINTED LIDS.

Please note that the manufacturers supply stamped lids only in lots of 50. Broken 50's are not supplied.

RECEIPT OF HONEY.

Producers are reminded that the closing date for the receipt of honey is June 30th. No honey will be received after that date unless special arrangements are made before June 30th.

N.Z. HONEY CONTROL BOARD

The Honey Control Board, together with the Internal Marketing Division, have experienced considerable anxiety concerning the position of our export business since the declaration of war. Import restrictions to 240 tons a year were applied to New Zealand honey by the Imperial Government on the outbreak of hostilities. This amount represented less than a third of the volume of honey required to meet our established overseas' business.

Subsequent negotiation between the N.Z. Government and that of the United Kingdom resulted in the restrictions being entirely removed and we are now free to export any quantity to Great Britain. As imports of foreign honey into Great Britain have been stopped, New Zealand has a unique opportunity of consolidating its position on the British market and beekeepers may be assured that the Marketing Division has a market at a payable price for every ounce of honey they can send forward, provided of course that the grade measures up to the required standard.

As intimated in a recent circular from the Division, the first advance on honey received will be raised this season to 5d. per pound, pro rata. Honey will be received in either liquid or granulated condition and advances will be made immediately after grading. In accordance with the practice in the past, further advances will be made from the pool as the honey is sold.

As beekeepers are aware, last season was one of the worst on record and the Marketing Division has practically no "carry over" honey. The problem now is to obtain adequate supplies quickly enough to meet overseas commitments, especially in regard to "Imperial Bee" requirements in England.

Those beekeepers who parted with their honey at well under the market price last season, by allowing themselves to become involved in one-sided arrangements with speculative interests, should take heed and recognize that such action not only lowers their own final returns, but seriously disturbs the stability of the market.

Under existing conditions, no responsible authority could be indifferent to a situation that permits speculative interests to acquire and "sit" on large stocks of honey, while a remunerative overseas business (operated entirely in the interests of the beekeepers) suffers from short supply.

The Honey Control Board is satisfied that the Marketing Division has played its part to the full in the interests of the beekeepers. It now rests with the producers themselves to put forward their best endeavour to ensure that the Division is not "let down" because of short supplies of good grade honey.

WALLACE NELSON,
Chairman,
N.Z. Honey Control Board.

CONTROL BOARD ELECTION.

Mr. H. R. Penny, producers' representative on the Board, has been re-elected unopposed. Mr. Penny retired by statutory rotation and it is a tribute to his ability and popularity that there were no other nominations for the vacancy thereby brought about. In addition to being a member of the Board, Mr. Penny has filled the office of President of the South Taranaki Branch of the National Beekeepers' Association for a number of years, and he was also on the directorate of N.Z. Honey Ltd., from the date of formation of that company until the time it was taken over by the Internal Marketing Division.

THE HONEY BEE.

(From Cawthron Institute Bulletin No. 17)

By C. H. Fraser, Department of Entomology, Cawthron Institute.

The first record of the introduction of the honey bee into New Zealand dates back 100 years, when on 13th March, 1839, two colonies of common black bees were landed at Mangunga, Hokianga. These were brought from England in the ship James by Miss Bumby, sister of the Rev. J. H. Bumby, one of a party of missionaries. Subsequent early introductions of the common bee were made in 1840 by Lady Hobson, who brought them from New South Wales, and in 1842 Mrs Allum arrived at Nelson in the Clifford with bees from England. Italian bees were first introduced in 1879 and were followed by several importations about that time.

Before the introduction of the honey bee the only bees occurring in New Zealand were a few native species which are solitary in their habits, and not possessing the important long "tongue" characteristics of the honey bee.

The honey bee belongs to the order of insects known as Hymenoptera, which includes the social and solitary wasps, the entire group of bees, ants and many parasitic insects such as the Ichneumonids. The honey bee, technically known as Apis mellifica, has several varieties, the most commonly domesticated ones being the Italian, Carniolan, Caucasian, and Syprian.

A normal honey bee colony at the height of its activity during the summer season contains one queen, tens of thousands of worker bees, and several hundred drones. The queen has the function of reproduction, and upon her fecundity depends the prosperity of the colony. After mating she lays fertilised and unfertilised eggs, the former producing worker or queen bees, and the latter producing drone bees. This ability of a queen to lay unfertilised eggs which produce drones has its analogy in many other insects and is known as parthenogenesis. The number of eggs laid by a queen varies with the season, and by the requirements of the colony. During the period of maximum activity in the early summer the queen exhibits a marvellous reproductive energy by producing between 1500 and 2000 eggs a day, which is equal to more than her body weight. The average life of a queen is about three years, and she usually reaches the peak of her egg-laying capacity in the first season, after which she deteriorates to a stage where she is superseded by a young queen.

The worker bees are females whose reproductive organs are undeveloped and whose body and appendages are modified in other ways. They perform all the work required in maintaining the colony, their duties being assigned according to their age. The newly emerged bees clean and polish the cells which are to be occupied by the next generation, and they also assist in maintaining the temperature of the hive. After the second day, feeding of the older larvae with pollen and honey is commenced and is continued until the sixth day. From the sixth until about the fifteenth day the brood food glands are functionally active, and the bees of this age consequently devote themselves to feeding the very young larvae. After about a fortnight these glands atrophy and the bees by this time have completed their career as nurses and will then begin to venture outside. The first flights are usually taken during the middle of the day and do not extend to more than a few feet in front of the hive. During these so-called orientation or play flights, they may be seen flying in ever-widening circles around their hive and each day the distance is extended until they have observed the landmarks over a considerable area. Bees at this age have their wax glands in a functional state and if necessary wax is secreted for comb building. Other duties at this period are to receive and store nectar from the foraging bees, attend to the pollen in the cells,

and act as guards for the defence of the colony. The duties in the field are performed according to age, the young bees collect water and propolis (bee glue) while the older ones gather pollen and nectar. The life span is measured largely by the amount of work performed, and in mid-summer when a month has been spent in the field, the wings of the workers become tattered and torn and they are no longer able to sustain themselves in flight. The bees which are reared in late autumn when there is very little work to be done, will live all the winter, and become useful again in the early spring.

The drones are the male members of the colony. They normally appear in the spring in preparation for the mating season and for this purpose they are supported in considerable numbers by prosperous colonies during the summer months, but at the end of the season when activity ceases they are mercilessly driven from the hive by the worker bees. They may be readily distinguished from the workers by their greater size, large eyes, and the absence of a sting. From their structure they are unfit to take part in the routine tasks of the hive, but Nature has modelled them for sustained and powerful flight and it is their purpose to be on the wing every fine day during the sunny hours when young queens are likely to come forth for their nuptial ceremony, which is invariably performed during flight. In an apiary during the breeding season the drones enjoy privileges not accorded the workers or queens. They can safely enter neighbouring hives without fear of being molested.

In a wild state the bee colony lives in a hollow tree or crevice in a rock, although they thrive in an artificial home when provided by a beekeeper. An examination of a natural nest will reveal an arrangement of waxen combs suspended from the roof of the abode in an approximately vertical and parallel formation. In each comb there is a central midrib with hexagonal cells arranged on both sides. The cells are not quite horizontal, having a slight upward tilt in order to retain thin, unripened honey. The worker cells measure about one-fifth of an inch, and the drone cells about a quarter of an inch between the parallel sides. In the cells of these combs are reared the workers and drones, honey and pollen also being stored in such cells. In addition to the horizontally placed hexagonal cells there are the queen cells which are found only in the swarming season. These hang vertically on the combs and are usually attached to the outer edges; in section they are circular in shape, are larger than the other cells and their exterior is rough and pitted, somewhat resembling a peanut.

The eggs, larvae, pupae, and the young bees before they emerge from the cells are called the brood. The eggs are minute banana-shaped objects, which are attached by one end to the base of the cell. In the cells they look like bits of bluish white thread, and are clearly visible to a close observer. Under normal conditions the eggs hatch in about three days, and produce tiny white grubs which lie curled up in the bottom of their cells. For the first three days these little worker and drone larvae are fed "royal jelly" which is a milky secretion from glands, situated in the heads of young worker bees, and if queens are being reared they will receive "royal jelly" exclusively throughout the larval stage, which lasts five and a half days. This process of feeding the larvae continues for five days for the workers, and six and a half days for the drones, during which time the larvae will increase in weight as much as 1500 times. The cells are capped with a mixture of wax and pollen, which forms a suitable covering and is sufficiently porous to admit the air necessary for the larvae and pupae or nymphs during the period of metamorphosis. The bee grub, like many other insects, spins a silken cocoon in the cell and passes into the third or pupal stage which corresponds with the chrysalis of a butterfly. This pupa or nymph period lasts altogether thirteen days for workers and fourteen and a half for drones. On the twenty-first day from the laying of the worker egg, or the twenty-fifth day in the case of a drone the fully formed bee cuts through the capping of the cell with its mandibles and emerges complete in every respect and ready to fulfil its functions. A queen bee re-

quires only fifteen or sixteen days for its complete development from the egg.

The temperature of the brood nest is an important matter, and during the breeding season it is maintained at about 93 degrees F., and even with a range of 50 degrees outside the hive it can be kept within two or three degrees of normal.

A swarm is a division of a colony for the purpose of reproduction. Bees about to swarm make preparations inside and outside the hive. At this time there is usually an abundance of bees, brood, honey, and pollen in the hive, and if queen cells are seen with larvae nearly ready to be sealed over, a swarm may be expected within one or two days after the first cell is sealed, or as soon after as the weather will permit. The outside preparation for swarming consists in searching for a new home, and the scouts may be observed around hollow trees, going into cracks in roofs, down chimneys, or carefully examining empty hives. The actual swarming occurs near the middle of a fine day. Bees pour out of the hive in a continuous stream until tens of thousands are darting back and forth about the hive. This flying entanglement will shortly move towards some tree or fence post probably a short distance away and begin to settle. When they have fully clustered there is a mass of bees clinging closely together. If they congregate on a small branch it sometimes bends to the ground with their weight. Shortly after the swarm settles, the scouts go off once more to see whether the new home is still available; and in due course they will return to lead away the swarm. If the scouts fail to find a hollow tree or a cosy nook in someone's attic, the bees will remain clustered at their first stopping place for several hours, or perhaps days. Occasionally the scouts apparently fail to find habitable quarters, and the bees may decide to build their nest in the open air. When a swarm departs from a hive, it leaves behind combs stocked with honey, pollen, and brood of all ages, and also queen cells in different stages of development.

If the colony which cast the first swarm was populous, there may be left in the parent colony enough bees to cause the issuance of other swarms, which are commonly called secondary or after swarms. Good beekeepers make every effort to prevent after swarms as they are usually too weak to be of value and they deplete the parent colony, making the gathering of surplus honey impossible.

Bees possess a faculty for remembering the location of their home, and the behaviour of a stock of bees liberated in a new situation is very characteristic. They issue cautiously from the hive, fly in front of it with their heads facing the entrance, and gradually increase the range until they are high in the air describing large circles and evidently observing the landmarks. Although they usually forage within a mile or two of the hive, they have been known to fly over eight miles in search of food and to return unerringly to their homes.

The gathering of nectar and the storage of honey is performed instinctively. When suitable plants are in blossom and the meteorological conditions are favourable the bees will commence work at daylight and continue until nightfall. In favoured localities strong colonies have brought in as much as 25lb of nectar in a day. When first gathered, nectar is usually a thin, watery liquid, and its transformation into honey represents a great deal of industry within the hive. Recent observations and experiments in the United States of America have revealed more clearly the process of evaporation. The nectar carrying bee, upon her return from the field, delivers her load to one or more house-bees, who then put the nectar through a process of "kneading" with their mouth parts which apparently reduces its water content and probably permits the addition of enzymes such as invertase, which are produced by the salivary glands. It was also observed that instead of depositing the entire load in a single cell, the house-bee often distributes it by forming a small hanging drop to the roof of each of several cells; these small drops present relatively large surfaces from which moisture can evaporate rapidly. Later the droplets are collected and it is assumed that they are again put through the process of manipulation by the mouth parts. Another import-

ant part in the system of evaporation is brought about by the ability of the bees to drive currents of air into and out of the hive and over the comb surfaces. This is done by a number of bees who take up positions in parts of the hive and set up a continual buzzing of their wings.

When finally this process is completed, the finished product is stored in cells above and around the brood nest and is sealed with waxen caps. The sealing of the cells indicates to the beekeeper that the honey is ripe and ready for extraction.

The addition of enzymes by the bees serves to convert the complex sugars of the raw nectar into simple sugars known as dextrose and levulose, which when eaten as honey, are absorbed without preliminary digestion.

The worker bee is peculiarly adapted to gather pollen. When a bee alights on a flower that has abundant pollen, the grains become entangled in its numerous hairs and in visiting flower after flower it inadvertently transfers the pollen from the anthers to the stigmata, thereby effecting polination. In doing this they take a toll for their service and carry some of the surplus pollen away to their hives to make food for their young larvae. Specialised brushes on the legs are used to remove the pollen grains from the body and transfer them to the pollen baskets on the hind legs. The pollen grains are slightly moistened with honey to make them cohesive, and after the load has been carried to the hive it is deposited in one of the cells of the comb. The pollen furnishes the fat and protein in the diet of the honey bee, while the nectar supplies the carbohydrates. The adult bee can sustain itself on a pure carbohydrate diet, but the developing bees must have the other two ingredients. Pollen stored in the comb is often referred to as "bee bread." An average colony will consume from 30 to 50lb of honey during the winter and early spring, the quantity depending upon its strength, the condition of the hive, and prevailing temperatures. For the protection of the hive in high latitudes a beekeeper packs his colonies in sawdust or other insulating material, or places the bees in a properly constructed cellar during winter.

Honey production on a commercial scale is possible only where there are large areas of a plant from which the bees can obtain more nectar than is needed for their maintenance. Although hundreds of plants secrete nectar, comparatively few species furnish honey in market quantity. A prospective beekeeper should have an inherent love for bees and be prepared to give attention to a number of details. Heavy losses are sometimes sustained through diseases of bees, of which the bacterial types cause the heaviest mortality. In favourable localities honey production is as remunerative as any other branch of agriculture; it is estimated that there are 112,350 colonies of bees in artificial hives in New Zealand located in 4,672 apiaries and the average total annual production of honey for human consumption has been placed at between 2,000 and 2,500 tons, while the average production per hive is between 40 and 50lb. These figures serve to indicate the great service honey bees render to our agriculture.

CO-OPERATIVE EFFORT.

To-day every grape-growing neighbourhood in Germany has its co-operative society. Of course, in each district, some men remain independent. Under this scheme the members take their harvest directly from the vineyard directly to the society's cellar. Here a machine picks the fruit from the branches and grinds it through a crusher. Then the pulp is weighed with an invention which measures the sugar content.

The result is written in an open book, into which any member can look whenever he likes. Each family has a credit according to what it has brought in. The wine is made altogether and the vats are under the care of the best winemakers. The selling is done by those who are best at business. By co-operation a neighbour lives better than when every man is handling his own affairs.

—Nora Waln in "Reaching for the Stars."

HONEY SPREADINGS.

(Mrs. Benjamin Nielsen, in "Gleanings")

Grandmother Never Dreamed of Varieties Such as These.

Ere long the kitchen will be the most fascinating spot in the house. Spicy, tantalising odours, glasses of sparkling jellies, thick bubbling butters, conserves "simmering until thick and clear," are irresistible magnets to those who have a weakness for spreadings. When mapping out your campaign for utilising the parade of delicious summer fruits, do plan to include a few glasses of these choice honey spreadings.

It will not be at all surprising if you are so well pleased with the delicious flavour and nutritive value of your old favourite recipes, substituting honey for all or part of the sugar content. Honey is sweeter than the granulated sugar ordinarily used in making jellies and preserves. For purposes of comparison, authorities place granulated sugar at 100; invert sugar, to which classification honey belongs, is 123. Ordinary invert sugar contains about 25 per cent. water; honey about 17 per cent.; so the ratio may vary, depending upon water content of the honey used. From these figures, it is evident that it will not be necessary to substitute a cup of honey for a cup of sugar. With time the honey flavour is intensified. Too large a portion of honey will result in a gummy jelly which cannot be moulded. Too small a proportion of honey will result in a tough, dark jelly with an inferior flavour.

In grandmother's day little was known about pectin, the jelly-making quality, which must be present in sufficient quantity if our jellies are to be a success every time. Grandmother usually depended upon unripe grapes and apples for jelly; even then her "luck" was not invariably good. To-day it is not a matter of luck. We know that during the ripening process this jelly-making quality changes. Now we take the juice from fully ripened fruits, at the very peak of fine flavour, add pectin artificially and stock our shelves with a variety grandmother never dreamed of.

In making honey spreadings, a large kettle should be used to prevent boiling over, as honey has a tendency to foam; it probably will be necessary to skim the liquid several times. For best results, small quantities should be made at one time; do not double recipes. The shorter cooking period produces a product of superior flavour and texture. Use the same standard measuring cup, holding one-half pint, for measuring both juice and honey. Wash, scald, and drain glasses and jars; also the tin lids, if this type is used.

One-half inch space should be left at the top of each glass or jar. Use only new paraffin; old paraffin may cause spoilage. Melt the paraffin in a small container over hot water. A small coffee or tea pot, kept for this purpose alone, is ideal. Cover the jam or jelly at once, with one-eighth inch of paraffin. When cool, cover the glasses with tin covers or tightly pasted paper covers and store in a cool, dry place.

If the days are so full there is no time for jelly-making, the juice may be sealed and stored until the main canning rush is over.

PEACH JELLY.

Three cups of peach juice, 2½ cups of honey, and 1 box of powdered pectin, Penjel or Sure-Jell.

Crush about 3½ pounds of peaches, removing the pits but not the skins. Add ½ cup water and bring to the boiling point, cover and simmer about five minutes. Squeeze through a jelly bag and measure. Place the measured juice in a large saucepan, add the pectin slowly, stirring constantly. Bring to a full boil and stir in the honey. Continue cooking until the liquid sheets and two drops hang together from the side of the spoon. Remove from the fire at once, skim and pour into freshly sterilised

glasses. Cover at once with hot paraffin. Makes eight 6-ounce glasses.

CRAB-APPLE JELLY.

Four cups of juice, 4 cups of honey, juice of 1 lemon, and 1 box of powdered pectin, Penjel or Sure-Jell.

Remove the stem and blossom ends from about 3½ pounds of washed crab apples. Cut in pieces but do not peel or core. Add three cups of water; simmer until tetnder enough to crush easily. Mash thoroughly and simmer five minutes longer. Let the juice drip through a jelly bag. Add the lemon juice and measure. Place in a large saucepan, add the pectin slowly stirring constantly. Bring to a full boil, stir in the honey and continue to boil until the liquid sheets and two drops hang together from the side of the spoon. Remove from the heat, skim and pour at once into freshly sterilised glasses. Paraffin while hot. When cold, cover with tight lids or pasted paper covers.

SPICED CRAB-APPLE JELLY.

Four cups of juice, 4 cups of honey, 1 cup of vinegar, 2 cups of water, 2 teaspoons of whole cloves, and 1 box of powdered pectin, Penjel or Sure-Jell.

Wash and remove the stem and blossom ends from about 3½ pounds of crab apples. Cut in small pieces but do not peel or core. Add vinegar, water and cloves. Cook until tender enough to mash easily. Mash and simmer 5 minutes longer. Let the juice drip through a jelly bag. Measure and place the juice in a large saucepan. Add the pectin slowly, stirring constantly. Bring to a full boil, stir in the honey and continue to boil until the liquid sheets and two drops hang together from the side of the spoon. Remove from the fire, skim and pour at once into freshly sterilised glasses. Paraffin while hot. When cold, cover with tight lids or pasted paper covers.

HONEY GRAPE JELLY.

Four cups of strained grape juice, ½ cup water, juice of two lemons, 1 box of powdered pectin, Penjel or Sure-Jell and 4 cups of honey.

Wash, stem and crush about 3 pounds of fully-ripened grapes. Add water and boil 5 minutes. Let juice drip through a jelly bag. Add the lemon juice. Then measure the juice into a large saucepan. Add the pectin slowly, stirring constantly. Place over heat and bring to a full boil, stir in the honey and continue to boil until the liquid sheets and two drops hang together from the side of the spoon. Remove from heat, skim and pour at once into freshly sterilised glasses. Paraffin while hot. When cold, cover with tight lids or pasted paper covers.

HONEY PLUM JELLY.

Three cups of juice, ½ cup of lemon juice, if the plums are of the sweet variety, 1 box of powdered pectin, and 3 cups of honey.

Measure about 4 cups of plums, after cutting in pieces. Crush without peeling or pitting. Add 1 cup of water, cover and cook over a moderate heat for about 10 minutes. Let juice drip through a jelly bag. Measure the juice into a large saucepan, add the lemon juice, which has been strained, and the pectin, stirring constantly. Bring to a full boil, stir in the honey. Continue to boil until the liquid sheets and two drops hang together from the side of the spoon. Remove from the heat, skim and pour, at once, into freshly sterilised glasses. Cover with paraffin while hot. When cold, cover with tight lids or pastetd paper covers.

SPICED PLUM JAM.

Four cups of plums, measure after pitting and cutting into pieces, ½ teaspoon whole cloves, stick of cinnamon bark, broken into small pieces, 1 box of powdered pectin, Penjel or Sure-Jell, and 4 cups of honey.

Crush the pitted plums well, add ¼ cup water and simmer, covered, for 5 minutes. Add pectin slowly, stirring constantly. Add the honey when the mixture comes to a full boil, and the spices which have been tied in a cheesecloth bag. Cook to jelly consistency. Remove spices and pour jam at once into freshly sterilised glasses. Cover with hot paraffin. When cold cover with tight lids or pasted paper covers.

PEACH MARMALADE DELUXE.

Four cups of mashed peaches, 1 box of powdered pectin, Penjel or Sure-Jell, 3 tablespoons of grated orange peel, 2½ cups of honey and ¼ cup maraschino cherries, cut into small pieces.

Mash the peaches, and measure, tightly packed. Add the powdered pectin, mixing thoroughly. Bring to full boil, add the grated orange peel and honey. Cook to jelly consistency, adding maraschino cherries just before removing from the fire. Pour at once into freshly sterilised glasses. Cover with hot paraffin. When cold cover with tin lids or tightly pasted paper covers.

HONEY PLUM BUTTER.

Wash plums, cover with cold water, Cook over low fire until soft. Run through a sieve, then measure the pulp and for each cup of pulp add ½ cup of honey. Place in large saucepan and cook slowly until thick and clear. Pour at once into freshly sterilised jars, seal.

GRAPE CONSERVE.

Three pounds of grapes, ¼ cup water, 2 lemons, 3½ cups of honey, ½ pound of raisins, 1 cup finely chopped nut meats, and 1 box powdered pectin, Penjel or Sure-Jell.

Stem and crush grapes, after washing. Add the water, bring to a boil, cover and simmer for half an hour. Run through a sieve. Measure pulp. This should measure 4 cups. Add the powdered pectin, stirring constantly. Then add the juice and grated rind of the two lemons, add raisins. Place in large saucepan and bring to full boil. Add honey and continue to cook until of jelly consistency. Add nutmeats about 3 minutes before removing from heat. Seal in freshly sterilised jars.

RHUBARB MARMALADE.

Five cups of thinly sliced rhubarb, 3 cups of honey, 2 oranges, 1 lemon and ½ cup of nutmeats, coarsely chopped, optional.

Place the rhubarb in a large kettle, add the honey and fruit juices. Run the rinds through a food-grinder and add to mixture. Cook slowly, stirring occasionally until sufficiently thickened. Add the nutmeats about 5 minutes before the cooking is completed. Pour into freshly sterilised jars and seal at once. Makes about 3 pints.

QUEEN-OF-ALL CONSERVE.

Twenty peaches, 1 pound green, seedless grapes, 12 red plums, 1 can of crushed pineapple, 1 orange, 1 lemon, honey, and ¼ pound of nut meats, broken.

Wash all fruit and drain well. Pare and cut into small pieces the peaches and plums; chop grapes slightly. Slice orange and lemon very thinly but do not peel, then cut into small pieces. Add the pineapple. Mix well and cook until tender and well blended. Measure and allow ½ cup of honey for each cup of the mixture. Cook slowly for about 20 minutes, then add the nut meats and continue cooking until thick and clear. Seal in freshly sterilised jars.

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