THE NEW ZEALAND BEEKEEPER

November 1973

Papua-New Guinea Beekeeping Project

THE NATIONAL BEEKEEPERS' ASSOCIATION of N.Z. Incorporated

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Editor: Norman S. Stanton

NOVEMBER, 1973

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The Levy Scheme

In a long business career I doubt if I have ever heard such universal disappointment on any proposal as has been expressed about the impasse which has now been reached on the Levy Scheme. Solomon, the wise one, had it right when he said, "Hope deferred maketh the heart sick."

If the people I have heard expressing their feelings are representative of the industry as a whole (and I have no evidence otherwise) then there are a lot of honey producers who are heartily sick of the deferment for another year of the scheme which was democratically passed by the delegates at the Nelson Conference.

At a joint meeting between the N.B.A. and the H.M.A. in October all points which would make the Nelson Scheme difficult for the H.M.A. office staff to administer were altered to their satisfaction. To now say that the N.B.A. should still be implementing the 1972 Conference Remit is pedantic to say the least.

Yet the tone of H.M.A. speakers in debate at Nelson Conference and the

report of their October meeting repeat the point, "We don't like the 1973 Remit but we will co-operate." But the move to ask the H.M.A. solicitors to prepare a draft of an extended 1972 Remit will not be seen as co-operation by the Under-Secretary when he already knows that this Remit has been removed from the N.B.A. Minute Book by unanimous resolution at Nelson.

Could this be what is meant by "Flogging a dead horse"?

One can almost read into this turn of events a feeling that, "We will accept and administer any scheme, provided we thought it up."

Finally, if it were my prerogative, I would like to say, "If the present members of the Honey Marketing Authority are so sure that they have been consistent all along the way and that they still have the confidence of the majority of producers, they should now resign and have a new election with the Levy Schemes (1972 or 1973) as the main basis of policy. Or, failing that, a referendum be held between the two schemes. In either case I think I could forecast the result with some degree of accuracy, and it would be more likely to vindicate the 1973 Remit than the 1972 one." But I cannot say this because I am not a supplier of honey to the H.M.A., can I?

Authorised Level of H.M.A. Payout

Despite representations from every section of the industry the Government has remained immovable in its decision to restrict drastically the allowable level of payout from sales of honey through the Honey Marketing Authority for last season. Not only is this bordering on dishonesty but it will also add to the present chaotic state of the industry rather than producing the stability the Under-Secretary hoped it would from the tone of his address to the Nelson Conference.

One cannot blame the producers who have sought other outlets for trying to realise a fair return for their labours. The packers also cannot be blamed if they have started new brands and new packs which are not completely covered by the Government Price Regulations. And in doing this they have been able to offer the producers a higher price than the H.M.A. for their honey.

At the risk of being proved wrong, I predict a reduced intake of honey for the H.M.A. in the present season, for the above reasons, unless the Government authorises a substantial increase in the allowable level of payout. The only other factors which could influence this prediction would be a sharp fall in the overseas price of honey and a substantial drop in the consumption of honey on the local market. For the present, nobody is forecasting a fall in the overseas price of honey and there is evidence that the local market could absorb more than at present. The present price cutting of all groceries on the Auckland market may also help increase local sales.

And there is always the precedent for the Government to back off if it is kept under pressure long enough. Perhaps the meat producers could help here.

In all this the H.M.A. have kept up a consistent opposition to the Government's directive. However, their representations in this area could scarcely be described as inspired.

Beekeepers Payout Question In House

(Quoted from "Straight Furrow", Nov. 15, 1973)

"Mr Talbot (South Canterbury) asked the Minister of Agriculture and Fisheries, Why has he decided to limit the payout to beekeepers to an average of 20c a pound, and does he have evidence that this price will cover the increases in the cost of production of honey?

"Hon. C. J. Moyle (Minister of Agriculture and Fisheries) replied, The decision to limit the payout by the New Zealand Honey Marketing Authority for honey supplied to it for the 1972-73 season to an average price not exceeding 20c per pound was made for what Government believes to be very sound reasons and with the interest of beekeepers in mind.

"The limitation was in part a measure to assist towards stabilising local market prices and also to take the opportunity to build up the Authority's reserves to enable it to maintain a stable payout at a higher level than in previous years, in the interests of the honey producing industry as a whole. If the industry has a financially strong Authority with reserves to guarantee stability of payout for future seasons, this should encourage efficient and progressive beekeepers to plan their production with confidence.

"There has been no available information over the past years on the operat-

ing costs of beekeepers. It would have been of assistance in resolving the present issue if soundly based cost of production figures, fully representative of the industry, had been available.

"In the absence of this information it is impossible to assess with any accuracy the adequacy of the average payout of 20c a pound which has been decided upon; but the increased operating costs over the past three years should be well covered by the proposed payout, which is an increase in average payout of 6.82c per pound, over 50 per cent on the 1969-70 average payout of 13.18c a pound."

The argument about "no available information on beekeepers' costs of production" is specious to say the least. Any set of figures, however carefully compiled and however accurate, can only be a basis for argument just as a "consumer survey" is.

Quoting increased payout percentages is even more suspect. It is meaningless, even ridiculous, like the advertising blurb which says "our product will get your work done in half the time."

A set of figures could be quickly produced by beekeepers which could be a reasonable basis for argument. Specialised knowledge would not be needed to interpret the following: Capital investment, Depreciation (including losses from disease), Replacement cost, Running Costs and all Overhead, Total Sales Returns, Final Net Returns.

Three even simpler guides are available: (1) How many beekeepers are sporting high-priced late-model cars and other obvious signs of affluence? (2) Has there been a dramatic increase in the price of beekeeping businesses sold as "going concerns" during the period of price increases quoted by the Minister? (3) Is there a surfeit of willing buyers trying to get into the business. Or, does the businesses for sale exceed those wanted to buy? (Over the past twelve months we have published advertisements for several businesses for sale, but nobody has advertised wanting to buy a beekeeping business.)

The argument about building up H.M.A. reserves has now been demolished by the forced retention of more than a quarter of a million dollars in the past season. Surely this is more than adequate as a reserve and the payout for the current season can now be expected to more nearly relate to the overseas realisation by the H.M.A. with only administration and selling expenses deducted.

(2) What the H.M.A. now want as a Levy Scheme, in layman's language, with no need to wait until it is in legal language because it cannot be implemented until Conference 1974 because all schemes, remits, motions excepting the one passed in Nelson have now been rescinded.

I would be remiss in my duty if I did not try to present the whole matter objectively from both points of view, if for no other reason than to try and prevent the misunderstanding which has been rife in the industry in the past.

Could you now, with as much urgency as needed, yet with time to make the matter understood, please comment on (1) and (2) above.

On another matter I cannot help but comment on the choice of 900 grams as one of the sizes chosen for honey packs after metrication. This does not appear to tie in with the report given to me by the Department of Weights and Measures when I was last in Wellington. Their view is that because honey is one of the foods which have had legislation restricting the size of packs (i.e., 15 oz is not allowed now) the only allowable size in this area would be 1000 grams (1 kilo). Refer to Minutes of August Executive Meeting.

Yours sincerely,

NORMAN S. STANTON, Editor, "N.Z. Beekeeper".

LETTER FROM M.A.F. UNDER-SECRETARY TO PRESIDENT N.B.A.

Office of the Minister of Agriculture and Fisheries
Wellington, N.Z.
1 November, 1973

Mr I. J. Dickinson,
President
National Beekeepers' Association of New Zealand (Inc.)
P.O. Box 55,
Milton
OTAGO.

Dear Mr Dickinson,

I refer to our earlier correspondence and discussions concerning the proposal to vary the present seals levy procedure.

I understand that when you discussed this issue at a recent meeting of the New Zealand Honey Marketing Authority, the Authority raised certain objections to the proposal discussed at the Association's Annual Conference, and indicated that it would arrange for the preparation of an alternative proposal to retain the present seals levy and extend it to those classes of honey now exempt; and that it would arrange also for a suggested re-drafting of some of the provisions of the Honey Marketing Authority Regulations relating to the collection of the levy to make the present system more enforceable.

When I addressed your Annual Conference in July I referred to the levy proposal, and to the Authority's objections to it. I said that I would prefer your Association and the Authority to discuss this matter and reach some compromise; and that while I should be reluctant to see the present system continued, I should also be reluctant to impose arbitrarily a new system which was strongly opposed by a section of the industry.

I am accordingly asking the Authority to place its alternative proposal before your Association and the New Zealand Honey Packers' Association in a further effort to reach agreement amongst all sections of the industry.

Yours sincerely,

BRUCE BARCLAY,

Parliamentary Under-Secretary to the
Minister of Agriculture and Fisheries.

Editor's Comment: The above letters are largely self-explanatory, but the following comments may be helpful. The figures refer to the numbered paragraphs in the Chairman of the H.M.A.'s letter of November 2.

5. It is clear that the H.M.A. at this meeting failed to take note of the fact that after the passage of the 1973 Remit on Seals at the Nelson Conference a unanimous vote on a motion, "That this meeting of Conference **rescind** all those resolutions carried by previous Conferences relating to Seals Levy" actually wiped all previous remits and minutes on this topic from the Minute Book. And there was no comment from the members of the H.M.A. at that time. (See page 50, "N.Z. Beekeeper", August, 1973.)

6. It is futile to say that details of the scheme were not available. The debate reported in the August "Beekeeper" was as nearly complete as the writer could get it and **nobody has disputed its accuracy.** There are published four pages of debate on the Levy Scheme and associated matters such as the Members' Subscriptions. Even Mr Lee specifically said that the Levy Scheme could be put into operation by 1st January, 1974. Surely, this was a clear indication of the intentions of the H.M.A. at that time.

7. From my observation of the tone of the President of the N.B.A. this statement refers to the members of the H.M.A. and does not include Mr Dickinson. I cannot imagine him now reneging on a scheme which he hailed as one of the most significant moves forward in the history of the N.B.A. after it was passed at Nelson. Nor can I impute that Mr Poole would be deliberately misleading.

On the final paragraphs I agree that the H.M.A. may have been consistent up to the time the vote was taken at Nelson but the least they could have done then was to say openly, "You may have passed a new scheme but we still retain a right to veto." To say that despite the fact that they are not in favour of the scheme they will not fight tooth and nail against it, is as bad as being neither for nor against. The plain fact is that the scheme will not now go ahead and it is their reticence which has brought about this position. And so the industry has been set back a whole year by trivialities such as the sort of egg-chicken-egg type of debate which is suggested in the argument that one scheme is a producer levy and the other is a consumer levy. Does this really matter so much that the industry must now grope for another year? And I am sure that the matter of a few more members for the N.B.A. is not crucial. What is crucial, in my view, is that the industry be united to help each other in a give-and-take sort of way and stop looking for spanners to throw at each other's workings.

Mr Poole has come near this point of view in his final paragraph by asking a sort of rhetorical question. Surely the answer to his question must be: "None of the points in this paragraph really matter." What matters is the implementation of the wishes of the majority of beekeepers who depend on honey for their livelihood.

N.B.A. PRESIDENT'S REPORT OF OCTOBER MEETING WITH H.M.A.

AT A RECENT MEETING between the Honey Marketing Authority and the National Beekeepers' Association to finalise the levy scheme as presented to Conference no agreement or conclusion was arrived at.

Summing up the position is that the Honey Marketing Authority and the National Beekeepers' Association cannot come to any agreement on the proposals for a levy scheme based on the Minister's criteria for a levy scheme.

The Honey Marketing Authority have actually endorsed their stand which they took prior to Conference and that is that the redrafting of the present regulations being extended to cover all honey would be a better proposal than that based on the Minister's letter of direction to the industry for a levy scheme.

The Honey Marketing Authority is to instruct their solicitor to draw a further set of proposals based on the extension of the present scheme having in mind:

(a) A percentage of the levy to be legislated to the National Beekeepers' Association.

(b) The provision for power or teeth to enforce the regulations.

(c) The stopping up of any loopholes in the present regulations.

They do this, having in mind how the solicitor has had considerable difficulty in the many shortcomings of the present regulations. At present the Honey Marketing Authority's solicitor is overseas and is not due back for at least two weeks but preliminary work may be able to be done within the solicitor's firm.

The executive is now in the position where they have no mandate to even come to any agreement on such a proposal and this was pointed out to the Authority. I remind you all that Conference rescinded all other resolutions on a levy scheme at Nelson. As I see it executive can have a look at the proposals that will be brought down and then make a recommendation to the next Conference.

I am very concerned that we could well be in the position where the Minister will not agree to the scheme based on an extension of the present one and as he indicated at Conference bring down a scheme himself and that could well be something that we would be worse off with.

I have asked the Authority to have the proposals before us before our meeting which will be in December.

It is disappointing now to realise that this levy scheme is now to be returned to point A again and no doubt many hours of work to go into it yet.

I am somewhat disappointed in the outcome of the meeting and this is more with the frustration of nothing being achieved rather than an actual levy scheme. As soon as executive have seen the new proposals branches will be advised.

Payout on 100 point honey is 21.25 cents.

In response to our last representations to the Minister he has written to the Authority saying that he did not see anything in our representation to alter his decision on the level of payout.

The Authority and the National Beekeepers' Association are to have discussions with him as to the level of payout for next season in the near future.

I. J. DICKINSON, President.

HONEY MARKETING AUTHORITY

NEWSLETTER

30 October, 1973

The Authority met on 15th, 16th and 17th October, being the first meeting since the election held in September for two producer representatives. The result of the election was.

A. K. ECROYD	1,666	votes	(Elected)
F. A. BARTRUM	1,146	votes	(Elected)
P. BERRY	982	votes	
J. W. FRASER	826	votes	
D. CAREY	614	votes	
E. ROBERTS	478	votes	

The first business of the meeting was the election of Chairman and Deputy-Chairman, the result being:

Chairman — R. F. Poole.
Deputy-Chairman — A. K. Ecroyd.

ANNUAL ACCOUNTS

The draft accounts were presented to the meeting and were considered with a view to setting the final payout to suppliers, and transfers to reserves, etc.

Despite many representations to the Minister of Agriculture and his Parliamentary Under-Secretary both in person, by letter and by telegram, all the attempts by this Authority and the National Beekeepers' Association to have the restriction on the payout lifted or amended failed. In order therefore, to make a payout giving an average over all grades of 20 cents per lb, the payout will be:

21.25 cents pro rata for honey grading 100 to 86 points.
22.25 cents pro rata for honey grading 85 points and less

provided that no honey in the first category receives less than the highest grade in the second category. The result of this proviso is that the grades 88, 87, 86 and 85 will all receive 18.7 cents per lb. All honey which received the early delivery bonus of ½ cent per lb will receive the pro rata payout as above, the ½ cent being in addition to to the payout and not part of it in determining the 20 cent average dictated by the Minister.

Because of the large amount of money we have not been allowed to pay out, we have asked for Government approval to make short term (3-5 years) development loans available to beekeepers at a modest rate of interest (about 5½%). Should Government approval be given, these will be available to all beekeepers, but if the applications exceed the funds available preference will be given to suppliers to the Authority based on the quantity supplied over the last three seasons.

The loans will be secured over such assets of the borrower as are considered adequate, and the borrower will be required to make annual reductions of the capital, and to supply all his honey crop (except for reasonable honey house sales) to the Authority. There will also be provision for deferrment of repayments due to hardship caused by crop failures.

We feel that as practical experienced beekeepers, we will assess a loan application and a borrower's subsequent performance in a much more sympathetic manner than the normal lending institutions.

CONDITIONS OF SUPPLY FOR 1973-74 SEASON

These have been revised and will be sent to all existing suppliers. Prospective suppliers can write to Box 2615 Auckland and request a copy. The main points are:

1. All notional depots are now discontinued.
2. N.Z. Express Co. Timaru, and Guthreys Freightways, Christchurch are now replaced by H.M.A. Branch at Pleasant Point, and H.M.A. Branch at Buchanan's Road, Hornby, respectively.
3. The Authority will pay the inwards freight on all honey supplied where the distance exceeds 50 miles, the calculation to be based on Railways freight rates, using the distance travelled whether it be by Road or Rail.
4. All honey supplied to the Authority in future will be accounted for in metric weights.
5. The payout points have been amended to give more emphasis to colour as this is the main factor influencing overseas buyers when purchasing our honey. The maximum points are now:

Colour 40, Flavour 30, Condition 30, Total 100.

6. Advance payments for honey supplied will be:
   (a) Shed advance 8c per kg.
   (b) Store advance 15c per kg.
   (c) Grading advance for honey grading 86-100 points 30c per kg.
   for honey grading 76-85 points 27c per kg.
   for honey grading 75 points or less 24c per kg.

   Payments indicated under (b) and (c) are inclusive of any earlier advances already paid.

BONUS PAYMENTS

As the early delivery bonus paid last year proved popular with suppliers, it is being continued this year, and extended as follows:

Honey received up to 31/3/73 1c per kg.

Honey received during April, 1974 ½c per kg.

It is hoped that the greater emphasis on colour in the payout points will encourage beekeepers to be more careful in their extraction procedures, and as further encouragement to beekeepers who produce honey in the "water white" class, we are offering to them the premium we are receiving from buyers for this class of honey. The bonus will be 1½c per kg. for all honey grading 0 to 9 mm on the Pfund scale. It is worth mentioning that last year over 250,000 lbs of honey came into this category.

NOTE RE METRICS

If your scales have not been converted to metrics, then read the conditions of supply carefully as they will tell you the exact amount in pounds and ounces to put in each sized container in order to have the correct metric weight of honey in the container. Don't use any rough and ready conversion table or "rule of thumb" you may have picked up somewhere.

As many of the four-gallon tins in use in the South Island are approaching the end of their useful life, we are proceeding with the installation of a hot room capable of melting 44-gallon drums at Pleasant Point, and suppliers who would prefer to fill drums rather than four-gallon tins may do so. Suppliers who prefer the small containers will still be able to use four-gallon tins or five-gallon cans, although we hope to do away with the four-gallon tins eventually.

In preparation for this conversion, the Authority sent the South Island manager, Mr Bill Merritt, to Australia where he visited four large plants all handling, melting and packing large tonnages of honey in 44-gallon drums. The knowledge he gained will be used in developing a facility at Pleasant Point which will give the South Island suppliers and the Authority the flexibility and convenience which have been enjoyed by North Island suppliers for many years.

METRIC RETAIL PACKS

The Authority has had correspondence with the N.B.A. and the Secretary of the Honey Packers' Assn. on this subject.

In order to give a lead to the industry on metrication of retail packs we have decided to use 250 grams, 500 grams, 900 grams as the weights for the waxed cardboard container and 2kg. for the metal container. The above sizes

Letter to the Editor

69 Cluny Road, Plimmerton

Dear Sir,

I wondered if it would be worth your while to try and find out from various local bodies such as city councils, borough council, and county councils what regulations they have regarding keeping of bees in respective areas. I think that apart from being interesting reading the publication of this information in the "Beekeeper" could be of help to many readers. I understand there are some of these councils who have very strong views on beekeeping, while others have no control at all. Again others have minor regulations such as bees must not constitute a public hazard, etc.

I am sure a bit of research into this matter would be useful to all beekeepers mainly because many beekeepers are not aware of controls in their area, until they are told by the council ranger to shift them smartly or face a penalty. To give an idea I believe Palmerston North, Lower Hutt, Christchurch, Wellington are all different in their regulations. A bit confusing, don't you think?

JIM GYTON.

[I agree that this information should be (a) tabulated for reference purposes and (b) some uniformity attempted. The former is a big job considering our large numbers of local bodies in New Zealand. The latter, I think, should be done by the Ministry of Agriculture and Fisheries, Apicultural Section. Perhaps a remit to 1974 Conference would set the wheels in motion.—Editor.]

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will replace the ½lb, 1 lb 2 lb and 5 lb containers as used at present. We do not propose replacing the 10 lb tin with a metric size as our sales of 10 lb tins are nil.

PROPOSED LEVY SCHEME

Mr Ivan Dickinson, President of the N.B.A. met the Authority for discussions on the levy proposal. The Authority was not happy with some aspects of the scheme, and further talks on proposed alterations are to be held with the Minister of Agriculture in the near future.

FINAL PAYOUT FOR 1974

The Parliamentary Under-Secretary to the Minister of Agriculture indicated to the N.B.A. Conference in Nelson that he wanted to see the payout for 1974 set early in the season. To this end the President of the N.B.A. and I are to meet with Mr Barclay for discussions, and a report on the outcome will be issued as soon as possible.

MR J. W. FRASER

A minute of appreciation was recorded of Mr Fraser's services to the Authority over the period he spent on the Authority. His services to the industry both on the N.B.A. as executive member and National President, and on the Authority as member and chairman span two decades. This length of service in the highest levels of our industry must be a record which will probably never be equalled.

In conclusion may I again urge you to support the Authority by supplying us with honey. A strong Authority gives strength to the industry and security to the beekeeper.

R. F. POOLE,
Chairman.

Executive Meeting at

WELLINGTON, 10-12 September, 1973

Minutes of a meeting held at 10.50 a.m. on Monday, 10th September, 1973, in the Druids' club rooms, 4th floor, Druids' Chambers, cnr. Woodward Street and Lambton Quay, Wellington, 1, and continuing through Tuesday, 10th July, 1973, and Wednesday, 12th July, 1973.

PRESENT:

Mr I. J. Dickinson, President (in the chair); Messrs M. D. Cloake, J. De Wit, M. D. Haines, J. D. Lorimer, D. F. Penrose.

In attendance: E. R. Neal, Association Secretary, N. S. Stanton, Editor of "N.Z. Beekeeper".

WELCOME:

The President welcomed members of the executive and said that this would be an important meeting. He hoped members would keep discussion to the point so that matters could be dealt with expeditiously.

MEETING WITH THE UNDER-SECRETARY FOR AGRICULTURE: RE LIMITED PAY OUT FROM THE H.M.A.

The President explained that Messrs R. F. Poole and B. W. Forsyth were arriving in Wellington on Wednesday the 12th. These gentlemen from the H.M.A. plus representatives of the executive would be waiting on Mr B. Barclay.

"BEEKEEPING IN NEW ZEALAND":

A letter from the Ministry of Agriculture and Fisheries regarding Bulletin No. 267 **Beekeeping in New Zealand** was tabled. On the motion of Mr Penrose seconded Mr Dickinson it was **resolved** that the Secretary write thanking Mr Donovan for his letter of 6th August 1973 and requesting him to advise when he estimated that the printing and publication of Bulletin 267 "Beekeeping in New Zealand" would take place.

FOOD HYGIENE REGULATIONS:

A letter dated the 1st August 1973 had been received from the Department of Health regarding Draft Food Hygiene Regulations. On the motion of Mr Penrose, seconded Mr Cloake it was **resolved** that two members of the executive visit the Health Department as suggested in this letter. Mr Penrose nominated Mr De Wit, seconded Mr Lorimer, as a representative and Mr De Wit nominated and Mr Lorimer seconded, Mr Cloake as a second representative.

HONEY MEAD:

A letter had been received from the Minister of Justice Dr Martin Findlay, suggesting that the whole question of Honey Mead may be re-opened when a licensing commission was sitting. It was agreed that the commission presently sitting was the one Dr Findlay must have been referring to. On the motion of Mr Penrose, seconded Mr Lorimer, it was **resolved** that an approach be made by Mr De Wit and Mr Haines to the Justice Department to ascertain the present position with reference to the Minister's letter of 3rd April 1973.

REPRESENTATIONS BY MR J. DALE OF SAWYERS BAY, OTAGO ON BEHALF OF THE OTAGO BRANCH OF THE N.B.A.:

A letter had been received from the Ministry of Agriculture and Fisheries dated 8th August 1973 advising that representations from Mr Dale had been made on behalf of the Otago Branch of the N.B.A. Mr Dale apparently, in his letter to the Ministry, expressed concern that the rules were based on undemocratic principles in that the number of votes exercisable were determined according to

the size of hive holdings rather than one vote per person. The Association's comments were requested. After consultation with the President, the Secretary had written to the Ministry accordingly pointing out that the hive holdings basis and the delegates' voting procedure had issued from the wishes of conferences in 1972 as well as 1973. Mr Dickinson spoke to the matter in hand and said that Otago Branch had disassociated themselves from Mr Dale's representations and had advised the Ministry accordingly.

On the motion of Mr Lorimer, seconded Mr Haines it was resolved that a circular be sent to all Branch Presidents and Secretaries drawing attention again to the fact that all policy matters relating to the Beekeeping Industry be referred through agreed channels, i.e. first to the Branch and secondly, to the Executive and that the Executive be allowed to function properly as the mouthpiece of the Industry.

NOTIONAL DEPOTS OF THE H.M.A.:

Representations had been received from both Waikato Branch and Bay of Plenty Branch regarding the setting up of a Depot in the Waikato. The Bay of Plenty Branch had specifically mentioned Matamata.

On the motion of Mr Lorimer, seconded Mr Penrose, it was **resolved** that Executive request the H.M.A. to consider firstly, the establishment of a National Depot to service producers in the Waikato and Bay of Plenty regions. Or two, that the H.M.A. pay all freight charges over 25 miles from a producers' extractors premises.

STATE ADVANCES LOANS:

The Secretary reported that while he had drafted a letter in terms of the item on page 3 of the minutes of the 9th and 10th July 1973, he had not had an opportunity of taking the letter to the State Advances. It was agreed that the Secretary make an appointment as early as possible. The Secretary read the letter to the meeting.

SURVEY OF WAGES FOR BEEKEEPERS:

The Secretary referred to page 3 of the minutes of the 9th and 10th July 1973 and said that he had not as yet undertaken the survey and asked for assistance in determining the size of the sample. It was agreed that a sample of 100 be taken, taking the largest subscriptions received by the Association.

The Secretary was to explain to members what the purpose of the questionnaire was, that it would be kept confidential to the Secretary and that it would be a guide to any member upon request. Specific items required would be: hourly rate paid, overtime rate paid, provision for bonuses, length of working week, i.e., 5-day, 6-day or 7-day, fringe benefits conferred, accommodation provided or not with the cost thereof, and then a base would be prepared from the results of the initial survey.

The Secretary was also to determine the incidence of the overtime tax incentive.

TAX INCENTIVE:

The Secretary reported that he had received a draft letter from Mr Bray, but had not yet written to the Minister of Finance. It was agreed that the Secretary attend to this as soon as possible.

PROCEDURE AT CONFERENCE 1973:

Mr Dickinson said that he thought it would be worthwhile reviewing the procedure at Conference. Points covered were:

(1) Mr Cloake wondered about the layout of Delegates and mentioned the advantage of having the Delegates grouped. A draft plan was handed to the President for collation with other notes on the conduct and procedure of conferences.
(2) Mr Penrose made up a check list and a list of guide lines for Branches holding conferences.
(3) It was agreed that it was essential for a member of the Executive to visit the Conference Branch well in advance of the event.
(4) It was agreed that it was very necessary to have a Publicity Officer who could feed information from the President to the news media.
(5) Waikato had thought that votes polled should be recorded on a blackboard.

(6) Mr Haines thought that there could be more than one blackboard to save reversing a single board.
(7) It was essential that the Conference Branch have duplicating and typing services alerted that worked would be needed as soon as the Executive arrived.

INTERRUPTION AT THIS STAGE:

Mr Stanton reported after having visited Mr Brown of the Metrication Board. Nothing could be done until the Weights and Measures Division have given an authority to change.

On the motion of Mr Lorimer, seconded Mr Penrose it was **resolved** that the Secretary write to Messrs Winstone Limited asking:

(1) The practicability of changing carton sizes, or any alternatives they might have in mind.
(2) What the estimated cost would be to the Beekeeping Industry.

PRODUCER LEVY:

Copies of the proposed draft new regulations had been issued to the extent of only three copies. One for Mr Dickinson as President and one for Mr Penrose is Vice-President and one for the Secretary. Mr Dickinson read the provisions to the Executive and commented as he went. It appeared that there were three points at issue:

(1) The inclusion or exclusion of the Comb Honey Association.
(2) The right of entry of H.M.A. inspectors to inspect books and;
(3) What was covered by the H.M.A. administration costs for the Honey Levy account.

It was agreed that these points be taken up with Mr E. W. Lee of the Department of Agriculture and Fisheries.

FEDERATED FARMERS:

Mr Dickinson said that he had, in company with Mr Penrose met Mr Dunlop, Chairman of Federated Farmers the previous evening. Mr Dunlop had said that the Federated Farmers needed the N.B.A. to exercise their seat on committee.

NATIVE BUSH:

Mr Lorimer said he wanted to acquaint Executive regarding a Bay of Plenty Branch problem where there was desecration of native bush and planting of pine. In the Bay of Plenty there was an action committee who had talked with Mr Moyle the Minister of Agriculture. The action committee were concerned as well about the consequent erosion. There seemed to be some parallel with the South Island beech problem and more specifically it could affect the livelihood of the Bay of Plenty members.

On the motion of Mr Lorimer, seconded Mr Haines, it was **resolved** that a letter be sent to the Minister of Forestry, plus the Forest Service plus Mr Barclay, Parliamentary Under-Secretary to the Minister of Agriculture, expressing concern at the felling of native bush in the Bay of Plenty area which would seriously affect the livelihood of members. This felling being of the species, Tawari, Kamahi, Rewarewa and Five Finger, since there were no alternative nectar sources in the immediate area, and with a copy of a letter to the Bay of Plenty Branch asking them to keep Mr Lorimer informed.

PROPOSED NEW REGULATIONS:

At 11.45 a.m. Mr Lee from the Ministry attended. After a long discussion on the proposed regulations, it was agreed that two members of the N.B.A. go to the October H.M.A. meeting.

RULES:

On the motion of Mr Dickinson, seconded Mr Penrose, it was **resolved** that it be an Executive Remit for the 1974 Conference that Rule 23 (e) be altered by adding "or by proxy" after the word "present" and by altering Rule 18 (b) by adding after "Annual Meeting" the words "by financial members present at the Annual General Meeting".

NORTH ISLAND SEMINAR:

Mr Haines said that a North Island Seminar should be coming up shortly.

On the motion of Mr Haines, seconded Mr Cloake, it was **resolved** that the Secretary write to the Ministry of Agriculture and Fisheries saying that the Association would like the Ministry to mount a North Island Seminar in May

or August 1974 and asking if the Ministry has any plans in mind and offering the assistance of the N.B.A.

DEPARTMENTAL:

At 3.00 p.m. Mr T. Palmer-Jones attended the Executive meeting and spoke to his paper which had been circulated at Conference. It was recorded that Mr Palmer-Jones, because of pressure of business at Conference had not been allowed time to speak.

"N.Z. BEEKEEPER":

The Secretary tabled a letter from "Gleanings in Beekeeping" saying how much they appreciated the scientific articles in the "N.Z. Beekeeper".

Mr Stanton said he would do everything possible to carry out a canvass for advertising.

CONFERENCE 1973 REMITS:

Remit No. 1: To be actioned by the Secretary.

Remit No. 2: To be actioned by the Secretary. On the motion of Mr Dickinson, seconded Mr Haines, it was **resolved** that the Secretary implements Remits 1 and 2 and register the rules with the Registrar.

Remit No. 6: Carried forward to 1974.

Remit No. 12: On the motion of Mr Cloake, seconded Mr Penrose, it was **resolved** that the contents of the remit be communicated to Mr Barclay.

Remit No. 15: On the motion of Mr Haines, seconded Mr Cloake it was **resolved** that the contents of the remit be referred to the H.M.A.

Remits 24 and 26: On the motion of Mr Dickinson, seconded Mr Haines, it was **resolved** that the contents of these remits be referred to the H.M.A.

Remits 14, 16, 17, 20, 24, 27, 29: On the motion of Mr Haines, seconded Mr Penrose it was **resolved** that the Secretary's action in writing to the appropriate people be confirmed.

Remits 36, 38, 39: On the motion of Mr Penrose, seconded Mr De Wit, it was **resolved** that the contents of these remits be communicated to the Ministry of Agriculture and Fisheries.

Remit 37: On the motion of Mr Lorimer, seconded Mr Penrose, it was **resolved** that the Secretary write to the D.S.I.R. referring them to a cutting ex the "New Zealand Herald" re fish bait and asking what the latest developments were.

Remit 40: On the motion of Mr Cloake, seconded Mr Lorimer, it was **resolved** that the contents of the remit be communicated to the Wallaceville Department of the Ministry.

Remit 41: On the motion of Mr De Wit, seconded Mr Cloake, it was **resolved** that the contents of the remit be communicated to Mr Barclay.

Remit 43: On the motion of Mr Dickinson, seconded Mr Lorimer, it was **resolved** that the contents of the remit be communicated to the Department of Forestry, the Ministry of Works, the Ministry of Environment and the Lands and Survey Department, together with the booklet on trees.

Remit 44: This was under action.

Remit 45: This was under action.

Remit 46: This was under action.

Remit 47: On the motion of Mr Penrose, seconded Mr Lorimer, it was **resolved** that the manufacturer be written to saying that there had been a remit at Conference and a lot of dissatisfaction at Conference with manufacturers in some specific instances where the manufacturers were not holding adequate stock and there had been specific instances with Mr Heinneman of Milburn, South Otago, Mr Haines of Kaitaia and Mr Marsh of Central Otago, having up to six weeks' delay in delivery from date of the order being fulfilled. There was also the question of acid holes due perhaps to the flux from solder and also the N.B.A. would like an assurance that the manufacturers were using lead-free solder. In addition, the producers would prefer lids on tins.

CONFERENCE 1974:

On the motion of Mr Dickinson, seconded Mr Cloake, it was **resolved** that the provisional dates for Conference 1974 be the 17th, 18th and 19th July and failing these dates, if they were inconvenient, that the 24th, 25th and 26th July be fixed and that the South Western Branch be advised accordingly.

FINANCE:

The Secretary spoke to the financial situation of the Association and gave a forecast of how the Association would fare in the current financial year. It was agreed that the new rule stipulating dates for the payment of subscriptions be reiterated to members and that the 31st January 1974 be an absolute deadline ebfore action was taken by the Executive.

H.M.A. MEMBERS:

At 10.35 a.m. the chairman of the Honey Marketing Authority, Mr R. F. Poole and Mr Forsyth were welcomed by Mr Dickinson. Discussion took place regarding payout.

WITHDRAWAL OF SECRETARY:

At 11.30 a.m. the Secretary was excused as he had to take up his duties as Returning Officer for the H.M.A. elections.

LETTER FROM SOUTH WESTERN BRANCH:

On the motion of Mr Penrose, seconded Mr Lorimer, it was **resolved** that because of the results of Remit 21 at Nelson Conference that no further action be taken on the letter from South Western Districts in view of th similar principles expressed in their letter in Remit 21.

FEDERATED FARMERS:

On the motion of Mr Penrose, seconded Mr Haines, it was **resolved** the seat on the Federated Farmers Committee be filled immediately by the N.B.A. National President or his deputy. Also, on the motion of Mr Dickinson, seconded Mr De Wit, it was resolved that a letter be written to the Federated Farmers acknowledging their letter of 25th July 1973 re prices thanking them for their support and telling them that a member will be present at their next meeting.

RESUMPTION:

In the afternoon, Messrs Poole and Forsyth and Messrs Dickinson and Penrose went to see the Minister re the restricted H.M.A. payout.

Mr Lorimer and Mr Cloake went to see the Health Departmnt about food hygine regulations.

Mr De Wit and Mr Haines went to see the Licensing Commission re honey mead.

Mr Haines reported that submissions could be made to the Liquor Licensing Commission.

On the motion of Mr Penrose, seconded Mr Dickinson, it was **resolved** that the Secretary acquaint the firms and persons who had made representations with with respect to Honey Mead of the Royal Commission on liquor and that the N.B.A. will offer all assistance possible. Names were Havill, Rangiora, Hughes & Cossar Auckland, Noslen Wines of Nelson.

HEALTH DEPARTMENT:

Mr Cloake reported that he and Mr Lorimer were happy with the draft Health Department regulations. The regulations in respect of packing, plants had been clarified on minor points. The Health Department had been very cooprative and Mr Cloake said the Association should generally feel satisfied.

COST OF PRODUCTION SURVEY:

Mr Dickinson said this was not discussed with Mr Barclay due to division bells ringing on several occasions. On the motion of Mr Dickinson, seconded Mr Cloake, it was **resolved** that the Secretary write to Mr Barclay acknowledging receipt of his letters regarding cost of production surveys and asking what first steps were in mounting cost of production surveys and thanking Mr Barclay for his offer.

CRUSHED HONEY:

On the motion of Mr Dickinson, seconded Mr Lorimer, it was **resolved** that Mr Whalley's letter of 10th September 1973 be received and referred to the H.M.A. for comments.

AGRICULTURAL CHEMICAL BOARD REPRESENTATIVE:

Some discussion took place on a successor to Mr Pearson. On the motion of Mr Penrose, seconded Mr Lorimer, it was **resolved** that the Secretary approach three members to see if they would act.

Beekeeping Project for Papua — New Guinea

By Chris Dawson

(See also insert sheet)

Donations given and promised for the Papua-New Guinea Beekeeping Project are enabling the first consignment of equipment to be shipped in December, 1973.

Sufficient funds are now on hand to purchase half of the total hives and equipment needed. The support received from beekeepers so far, has been most encouraging.

Beekeeper and assistant at Mount Hagan, Papua, with some equipment they had made after seeing illustrations in a Danish bee book. Everything they used was home-made.

How did it happen?

Many have asked how I became involved with bees as briefly mentioned in the May issue of "N.Z. Beekeeper."

Shortly after I arrived in the Baiyer Valley, it was discovered that I could handle bees. "Could you remove some bees from the walls of the Nurses' dining room at the Hospital? There is constant danger from flying bees and part of the building cannot be used."

My quick reply was that removing the bees was probably not difficult, but I had made no allowance for lack of essential equipment. No smoker, veil, hat, gloves or overalls!

From an old mosquito net I made a veil; all attempts at making a smoker were failures and nowhere could I find a hat large enough. (I take 7¼).

Next day found me at the building with a 24-inch jungle knife; a bee veil cum mosquito net which hung over a lady's hat several sizes too small, a bottle of ether to knock out the bees and a pair of old gardening gloves.

I soon realised that the danger from

the ether was greater for me than for the bees, so had to discard that part of the scheme.

With the jungle knife I removed the inside boards from one wall and laid bare a lovely colony with ample stores of honey. It was such a shame to destroy it.

By careful use of the jungle knife I was able to cut large slabs of comb honey and transfer them to a bucket. The rest of the comb and bees was destroyed—that hurt more than stings.

I gave some comb to the natives but they would not eat it until they saw me taste it and then there was a vastly different reaction.

By the end of the day, with my clothes soaked through with perspiration and a thorough stinging at bare part and through the wet clothing, I was able to take home the "loot" and the welcome at the Guest House was worth it all.

For the next four days, the procedure was repeated on other parts of the building. After the honey had been strained and bottled it was a popular addition to the diet in the homes of both expatriates and nationals for several weeks.

The colour was medium to dark and the flavour similar to some bush honeys.

Italian Swarm Stock

These bees were from Italian colonies that had been introduced to this area a decade or more ago.

It was my observations of these swarms and my discussions with beekeepers in other parts of the country that I concluded that it could be a good place to keep bees. In this area of over one hundred square miles, there was no beekeeper.

The indigenous people of the Highlands live mainly on what they grow in their own gardens. Some can earn a small income. Anything that can help them to increase their food or give them a method of earning an income is welcome. It is estimated that at present there are less than 20 beekeepers in the whole territory (population over two million).

The nectar sources are unlimited and, with some instruction, a native beekeeper should be able to earn an income and add to the food of his family and village after a short period of study and practice.

Aim of Project

The aim of the Project is to start an apiary where native people can learn beekeeping. The Christian Leaders Training College at Banz in the Western Highlands is situated almost at the centre of the main land mass of Papua-New Guinea. It is ideally placed to give access to a useful number of students. This college has a model village where students are taught methods of horticulture and animal husbandry that are useful when they return to their village life.

The executives of the college have welcomed the opportunity to secure an instructional apiary which it is hoped will be established early in 1974.

Mr Harry Cloake has agreed to serve on a committee to administer the funds contributed for the Project.

Mr Kevin Ecroyd is giving the Project enthusiastic support and is not charging for packing and handling, besides giving valuable assistance in moving the equipment through the shipping channels.

Beekeepers who would like to share in this scheme are invited to send an order direct to Ecroyds for goods to be charged to the beekeeper and supplied to the Project or by writing to your Librarian, Chris Dawson, P.O. Box 423, Timaru.

May I offer my hearty thanks for contributions and words of encouragement received.

Apiculture Section —

Wallaceville Animal Research Centre

ANNUAL REPORT TO 1973 CONFERENCE

The Section is headed by Mr T. Palmer-Jones and the staff consists of Messrs P. G. Clinch, Scientist, I. W. Forster, Senior Technical Officer, and J. Faulke, Technician.

EXPORT OF QUEEN BEES TO CANADA, AUSTRALIA, THE UNITED KINGDOM AN DTHAILAND

The Apiculture Section examined 100 samples of bees from a range of hives in the apiaries of suppliers before queen cages were loaded with escort bees. This enabled the provision of escorts from hives unaffected with **Nosema**, so complying with requirements for import permits.

Queen bees were exported to a wider range of countries than before. As previously the incidence of **Nosema** in samples submitted was often high, and preventive feeding of fumagillin to hives selected to supply escorts should be considered by queen breeders. See the article by Palmer-Jones in the "N.Z. Beekeeper" for August 1970.

PROJECT WA/1 AGRICULTURAL CHEMICALS

We investigated the toxicity to honey bees of BTS 27419, a recently developed compound likely to be used in the control of mites on apple trees in orchards. Sprays would be applied to flowering trees attractive to bees. No information was available concerning the toxicity of the material to bees. We judged it essential to test the compound in the field while bees were actually visiting the flowers of fruit trees in which the nectaries are exposed. The effect on bees of the compound was studied after it had been applied to a block of apple trees at the Levin Horticultural Research Station. The trees were in flower and attracting honey bees when sprayed. The compound caused no bee mortality and there was no evidence of repellency to bees.

Various compounds were also tested for toxicity to bees by laboratory methods.

Chinese gooseberries (Kiwi Fruit) are becoming an important export crop. They depend on honey bees for pollination, and 250 hives were hired by growers and distributed through orchards in 1972-73. Azinphosmethyl (Gusathion) is applied, at a high rate, to the gooseberries at least ten days before flowering to control leaf-roller caterpillars, scale, and other pests. Such applications have been suspected of causing mortality of bees in hives rented for pollination. But it is possible that for a plant such as the Chinese gooseberry with a large, fleshy root, some systemic action may occur, allowing the pre-blossom spray to persist until flowering. Honey bee mortality will be studied in four orchards after pre-blossom application of azinphosmethyl, and results compared with those in an untreated control one.

PROJECT WA/2 POLLINATION

Sunflowers: Last season the pollination requirements of this crop were investigated in the North Otago district in four widely separated areas. The density of field bees was estimated, bee behaviour on the crops studied, and cages used to saturate and exclude bees from areas of a crop. Seeded sunflower heads were

collected from crops and cages. Seeds per head, their average weight, the area of head from which they came, and germination rates, are being estimated for the samples. These will be correlated with bee and hive density per acre. The work will be completed next season when these methods will be applied to a wider range of crops.

Then it should be possible to define the pollination requirements of sunflowers in terms of hives per acre.

Chinese Gooseberries (Actinidia Chinensis) (Also known as Kiwi Fruit)

Plantings of Chinese gooseberries are increasing rapidly following successful development of an expanding market in the U.S. In the Bay of Plenty area, where 90% of the crop is grown, about 1,300 tons of the 1971-72 crop of 3,500 tons was exported.

No literature is available on the pollination of Chinese gooseberries. However, practical experience of growers, and officers of the Advisory Services Division, Ministry of Agriculture and Fisheries, Tauranga, has shown that the crop is very dependent on cross-pollination between male and female flowers. Pollination requirements appeared to have been met by the hiring of hives, some 250 being distributed through gooseberry orchards in 1972-73. But in spite of this bee coverage, lack of adequate pollination was apparent last season even in orchards where hives had been introduced. The Plant Diseases Division of the D.S.I.R. had currently been studying special aspects of pollination such as time of flower receptivity, pollen viability under varying conditions, and effectiveness of different male plants as pollinators. However, both the Plant Diseases Division and officers of the Advisory Services Division, Tauranga, consider that gooseberry pollination should be investigated intensively from the angle of honey bee pollination. Accordingly the Apiculture Section will undertake such an investigation, using the methods it has developed and applied to white clover, sunflowers, and apple trees. A study of results for two seasons should enable the determination of hive concentration for optimum fruit set.

Chou Moellier (Brassica Oleracea L.)

The role of the honey bee and bumble bee as pollinators of chou moellier was studied in North Otago over four seasons. Honey bees and bumble bees appeared to be the only insects of importance as pollinators, although some self-pollination did occur. Honey bees were much more important than bumble bees which were few or absent during spring flowering.

Compared with plants in the surrounding crop, those caged to exclude honey bees and bumble bees had approximately one-fith few flowers, one-third fewer seeds per pod, and half the weight of seed pr plant.

PROJECT WA/3 TOXIC HONEY

This permanent project continues with some increase in sampling.

PROJECT WA/57 HONEY PRODUCTION COMPARED FOR QUEENS FROM THREE QUEEN BREEDERS

The project will terminate in August this year. Results are already being analysed by the Biometrics Division.

PROJECT WA/80 EFFECT ON HONEY BEES OF EXTERNAL ACARINE MITES

This project is proceeding.

PROJECT WA/81 DIAGNOSIS OF PARALYSIS AND ITS EFFECT ON HONEY BEES

This project is proceeding.

PROJECT WA/99 DESIGN OF AN EFFICIENT HIVE ENTRANCE

Hive entrances should exclude mice in winter, provide adequate but not excessive ventilation, and enable bees to defend themselves against robbers which they can do more effectively if entrances are small. The aim of this project is to test the efficiency of a hive entrance of simple design and operation which

can be used satisfactorily both summer and winter under New Zealand conditions.

Two types of hive entrance will be tested for efficiency. Type one will combine the two features of an entrance ⅜ inch high and a 4 inch board, fitted flush with the top of the bottom board, to provide a tunnel. Type two will consist of the present conservative full width entrance ⅞ inch high during summer reduced to ⅜ inch by mouse guards in winter.

Sixty hives, headed by first year queens from the same breeder, will be used for the project, being located in five apiaries in the North Otago district. Hives in each apiary will be allotted, at random, to the two treatments. Food consumption, area and placement of brood, incidence of swarming, queen supersedure, degree of **Nosema** infection, honey production and comb deterioration in the bottom storeys, will be noted on six occasions per hive.

PROJECT WA/X COMPARISON BETWEEN THE PERFORMANCE OF BEE HIVES FED SUGAR AS A SYRUP AND DRY

Sixty hives, requeened with sister queens, will be assembled on one site near Oamaru. Thirty will be fed dry sugar, and 30 sugar syrup (62%), from early September 1973 until sufficient nectar is available to support the colonies. The weight of sugar fed and stored will be recorded, and the area of brood reared will be calculated, at fortnightly intervals, throughout the build-up period which should end in late December. The incidence of swarming, level of **Nosema** infection, total honey stored, and rate of queen supersedure will also be noted.

If it proves possible to feed sugar dry for fairly long periods the beekeeper will be spared much unnecessary labour.

BEEKEEPERS' TECHNICAL LIBRARY

Hon. Librarian: Chris Dawson, P.O. Box 423, Timaru

CONTRIBUTIONS RECEIVED

To the donors of the following, the library expresses its thanks:

Presented by Mr Kevin Ecroyd — Sundry old photographs from the estate of Mr A. Ecroyd.

Presented by the British Isles Bee Breeders' Association (formerly the Village Bee Breeders' Association) the following booklets:

VILLAGE BEES — The native and near-native bees of Britain and Ireland by *Beowulf A. Cooper.*

MAKE YOUR OWN SKEP by *Rev. E. Nobbs.*

RAISE YOUR OWN QUEENS by *Richard Smailes.*

PURE HONEY — Variations, Chemistry and use by *Harold Inglesent* and *Paul Wix.*

MAKE YOUR OWN GLASS QUILT by *John K. Mobley.*

BETTER BEES by *Beowulf A. Cooper.*

WHAT MAKES BEES BAD TEMPERED by *Beowulf A. Cooper.*

DOWN BY THE SALLY GARDEN by *Beowulf A. Cooper.*

BEES, HONEY AND WEATHER by *G. W. Hurst* and *Beowulf A. Cooper.*

NATURAL HONEY — A new class for honey shows by *Beowulf A. Cooper.*

Presented by Wallaceville Animal Research Centre:

OBSERVATIONS ON THE POLLINATION OF CHOU MOELLUR by *I. W. Forster, P. G. Clinch* and *T. Palmer-Jones.*

EFFECTS ON HONEY BEES OF DICROTOPHOS AND METHOMYL APPLIED AS SPRAYS TO WHITE CLOVER by *P. G. Clinch, T. Palmer-Jones* and *I. W. Forster.*

Presented by Grahame M. Walton, Apicultural Advisory Officer, Palmerston North:

BACKGROUND TO METRICATION OF BEEKEEPING EQUIPMENT by *G. M. Walton.*

Presented by Fred Bartrum, Pleasant Point:

BEE CULTURE, Bulletin No. 18, 1909, by *Isaac Hopkins.*

NOTE.—Library books are available to members of Branches of National Beekeepers' Association. Local Secretaries have copies of Catalogue and Rules.

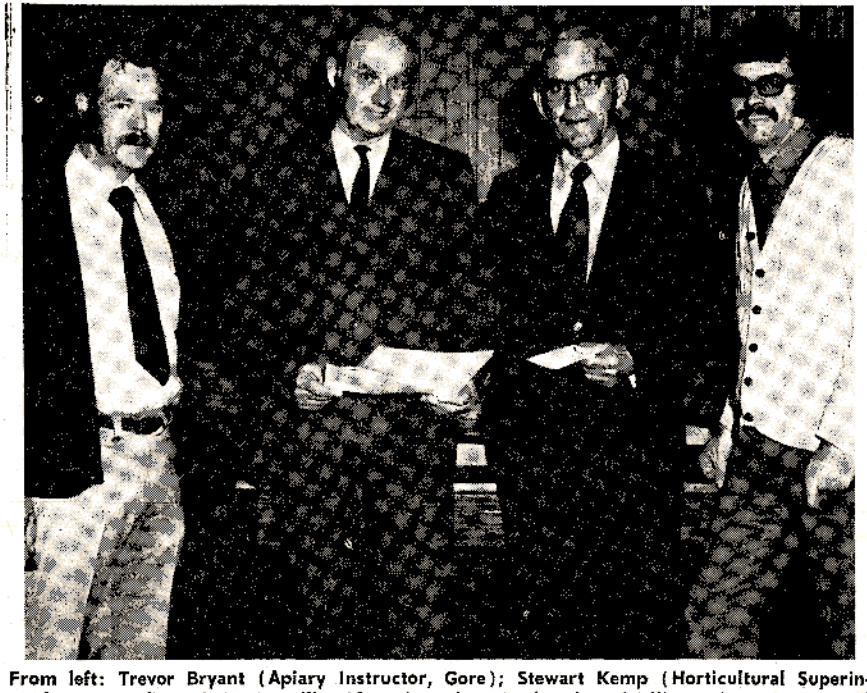
Books may be borrowed by writing to the Librarian, P.O. Box 423, Timaru. Send 20 cents and advise subject you wish to sutdy.

SOUTHLAND SEMINAR

Gore ● September 7, 1973

Forty beekeepers attended from districts contained within the Gore Instructorate. The Seminar was organised by Mr T. Bryant, Apiary Instructor, Gore, and was opened by Mr E. Smaellie, Superintendent Beekeeping, Wellington.

A series of five lectures was given. Mr E. Delahunty, Farm Advisory Officer, Invercargill, gave a lecture on *Budgeting and Beekeeping.* Mr K. Ecroyd of Alliance Bee Supplies, Christchurch, spoke on *Metrics in Relation to the Beekeeping Industry.* Mr P. J. Hook, Farm Advisory Officer, Gore, spoke on *Trends in Modern Farming.* Mr G. L. Ramsey, New ealand Forestry Service, Invercargill, spoke on *Trees and Their Use as an Alternative Source of Pollen to Gorse and Other Plants which are Being Eradicated by Farmers.* Mr M. Reid, Apiculture Advisory Officer, Christchurch, gave a lecture on *Pollen Supplements and Their Uses.* The Seminar was concluded with a Canadian production on the Leaf Cutter Bee.



From left: Trevor Bryant (Apiary Instructor, Gore); Stewart Kemp (Horticultural Superintendent, Dunedin); Eric Smaellie (Superintendent Beekeeping, Wellington); Murray Reid (Apicultural Advisory Officer, Christchurch).

Mr Smaellie in his opening address spoke of the Ministry and its functions and differentiated between an Apiary Advisory Officer and an Apiary Instructor and an Apiary Inspector. Lively discussion was forthcoming after the lectures and it is regretted that the tape recording taken has proved to be worthless. Consequently questions and answers will not be tabulated.

The following are some of the papers presented:

BUDGETING AND BOOKKEEPING

Paper presented by Mr E. Delahunty

BUDGETS:

A method of worrying before you spend, instead of afterwards.

Mr Delahunty is experienced in farm accounting and although claims to have no knowledge of beekeeping, with the help of Mr T. G. Bryant, a realistic budget and cash flow was arrived at. The figures are completely fictitious and have no bearing to any beekeeping enterprise in Southland, but are figures which we believe are somewhere near those which any beekeeper would produce through his books.

Expenses are going on month by month but the greater part of the income is received in only four months. A Budget assesses the likely income and expenses for the year ahead. These estimates are based on:

1. Past production and expenditure history:
   (a) Modified by plans for coming year.
   (b) Modified by price changes.

In the budget prepared (Figure 1) the income and expenriture have been estimated from what we believe are averages to be expected in Southland. The budget is in no way related to any given honey producer and can only be taken as a guide.

Also included are non-cash expenses such as depreciation:

1. It gives a better appreciation of the figures that your Accountant prepares.
2. They are needed for working out tax.
3. They are expenses that will ultimately have to be met when the time comes to replace mobile equipment.

The sum available, $7,960, is the cash generated from the enterprise. This cash is available for living expenses and payment for any indebtedness (i.e. current account, hire purchase, etc.) and to spend on capital items such as new vehicles.

The Cash Flow Chart (Figure 2) shows when the income is received and when cash is paid out in metting expenses. Living expenses allowed of $300 per month is the main reason the cash from the budget has shrunk to a surplus of $4,560. There is always a certain amount of guess-work for the timing of expenditure items such as repairs and maintenance. Insurance should be known from past receipts but we are guessing again for the phone.

The figures labelled mainly show net result of the month either in a loss of cash or a surplus of cash. The moving total shows an estimated overdraft assuming that at 1 April the account stood at $0.00. The Budget and Cash Flow give you advance warning of the changes in net income thus enabling you to adjust your expenditure to:

1. Keep within overdraft limit.
2. Increase expenditure to reduce tax.

A Cash Flow gives the bank manager greater confidence in agreeing to an extra overdraft. It shows him that you are in control rather than panting along trying to keep up.

Along with these you must keep an accurate account of income and expenditure month by month, analysing all items into the same headings as in the Cash Flow.

Fig. 1.

BUDGET FOR 1,100 COLONY BEEKEEPER

			$
Income			
4 Tons of Honey x 1,100 Colonies x 21c			20,700
1,760 lbs Beeswax at 50c/lb			880
			21,580
Expenses			
Wages (One Assistant)			4,000
Truck running 1,100 x 10 x 15c			1,600
Repairs and Maintenance			
Plant	200		
Hives (at $1.00)	1,100		
Buildings	300		
		1,600	
Sugar at $2.00 per hive			2,200
Insurances			180
Power			120
Postage, Telephone			120
Rates			150
Freight			660
Travelling			120
General Expenses (Subs, Accountancy)			90
Mortgage (Interest and Repayments)			500
Current Account Interest			280
CASH EXPENSES			11,620
Non-Cash Expenses			
Depreciation: Buildings	3,000 at 2½% CP		200
Plant	2,200 at 10% DV		220
Truck and Loader	5,000 at 20% DV		1,000
TOTAL EXPENSES			13,040
This leaves	$8,540		
for Tax (est)	2,000		
	6,540 (plus Depreciation 1,420)		£7,960

aavilable for living expenses, repayment of indebtedness and capital expenditure.

Fig. 2

CASH FLOW

	Total	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Income													
Honey	20,700								8,700		4,000	4,000	4,000
Beeswax	880	600					280						
Totals	21,580	600					280		8,700		4,000	4,000	4,000
Expenses													
Wages	4,000	330	330	330	330	330	330	330	330	370	330	330	330
Truck	1,600	140	140	140	100	100	140	140	140	140	140	140	140
Repairs & Maintenance	1,600			400	400	400	400						
Sugar	2,200							1,100	1,100				
Insurance	180	80			60								40
Power	120	10		10		10					30	30	30
Postage, Phone	120			30			30			30			30
Rates	150												150
Freight	660			60							200	200	200
General Expenses	90		15		15		15		15		15		15
Travelling	120					120							
Mortgage	480	40	40	40	40	40	40	40	40	40	40	40	40
Tax	2,100						700						1,400
Living	3,600	300	300	300	300	300	300	300	300	300	300	300	300
Totals	17,020	810	915	1,300	1,195	1,350	3,085	1,910	825	880	1,055	1,040	2,675
Monthly		–210	–915	–1,300	–1,195	–1,350	–2,785	–1,910	7,875	–880	2,945	2,960	1,325
Moving Total		**–210**	–1,125	–2,425	–3,620	–4,970	–7,755	–9,665	–1,790	–2,670	275	3,235	4,560

It pays to brand 'em

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

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

Frank M. Winstone (Merchants) Ltd.

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SOUTH ISLAND REPRESENTATIVE: P. G. COLLINGS

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

Nectar for Novices: A Section for Hobbyists, Amateurs and Others

By Paul Marshall, Hastings

Swarming

If it wasn't for swarming, beekeeping would be a push over. Then again, for many who indulge in this hobby the interest in bees would no longer be there. For it is in the management of your bee colony to increase population numbers, to coincide at its peak with the start of the honey flow, that is the basis of beekeeping. And to do this without having lost any bees by swarming can be quite an achievement for the beginner.

A bee colony works on outside stimuli to motivate its way of life. For example, the coming of spring and the warmer weather stimulates the breeding cycle so that bee numbers are available for nectar collection when required. Just why swarming takes place is not fully understood, although congestion of the brood nest is the most popular theory. Another strong theory is the loss of queen bee substance which is necessary for the welfare of the colony. Work on this interesting aspect of apiculture was carried out by Dr J. B. Free of Rothamsted and could well play an important part in swarm control management.

The actual condition of swarming is very obvious even to the beginner as a cluster of bees are usually seen attached to a branch of a tree or shrub within the vicinity of the hive. Here the bees rest until the scout bees return with the location for their new abode. The departure of a swarm from the hive usually occurs during suitable weather between the hours of 10 o'clock and 2 p.m. As to how long they remain in a cluster can never be known accurately. It can be as short as 30 minutes or as long as several days. I have even

Whangarei and District Bee Club

President: W. McNabb. P.O. Box Onerahi; Secretary: R. Pearce, 8 Lopatta Cres., Whangarei; Correspondent: A. E. Tucker, 35 King St., Whangarei.

Club's Apiary: Jock Garden's farm, Glenberie, Whangarei.

On 27th October, on a perfect day, over 30 members attended our second field day the the club apiary which is only five miles from Whangarei.

Mr Brian Milnes, Apiary Instructor, was in attendance to help explain ways of spring management to us. He demonstrated ways to prepare the hives to gather nectar.

We have three hives at present but expect to increase this number to five by the end of the season.

Several members demonstrated ways of nailing and wiring frames, also embedding foundation with a battery set using car battery for power source.

Plans are in hand for film and slide evenings for later in the season.

Wellington Beekeepers' Association Inc.

President: J. M. Bodmin, 39 Hobart St, Miramar; Secretary: E. J. Guyton, 69 Cluny Road, Plimmerton; Hon. Treasurer: Mrs J. J. Wilkin, 27 Awarua Street, Ngaio; Newsleter Editor: J. Sweeney, 10 Norfolk Grove, Porirua.

This Association meets on the second Monday of every

seen a swarm caught by bad weather construct comb and set up home from the cluster. However, this is not common and they should be housed as soon as possible after being spotted.

A hive having swarmed is in most cases regarded as a loss to honey production. With the first swarm the old queen leaves the hive in what we know as the prime swarm, leaving behind queen cells for her replacement. On hatching, these too, can leave in smaller swarms, until the original colony is sadly depleted in numbers and headed by a young virgin. If swarming took place early in the season she might have a chance to build up, but in most cases swarming occurs during late October through to New Year and therefore lacks the time factor to build up bee strength.

It is therefore in the beginner's interest to recognise the symptoms that cause the event so that at least steps can be taken in the hope of controlling his errant bees. The tell-tale sign is the production of queen cells which can be found along the top and bottom bars of the frames in brood nest. Protruding as they do it is not easy to mistake them, but should not be confused with supersedure cells which are produced on the face of brood combs when an aged or failing queen is being replaced.

During the preparation for swarming many more queen cells are produced than when a queen is being superseded. Other signs to be noted are the falling off in egg production; until a day or two before a swarm leaves the hives the queen has stopped laying. Although the beginner may not have observed a swarm leaving his hive he will know that all is not as it should be on his next visit, for loss of bee strength will be evident with the tell-tale queen cells present.

The action taken to avoid swarming can be either to use the Demarce method of swarm control or destroy queen cells when they appear, or requeen. To Demarce your hive mean simply to expand the brood

month ((except January) in the Y.W.C.A. Rooms, Willis St, Wellington. Membership is about 85 at present and is rising.

A monthly newsletter is published which is sent to members a few days before each meeting. It contains notes of interest, for sale and wanted to buy sections, also minutes of the previous meeting. It is also a valuable reference piece with the names of office-bearer and their telephone numbers.

As a community service we publish a full list of members once a year and send it to various police stations, county rankers, the Department of Agriculture. In this way members are able to collect swarms for nothing.

The Association has now voted to become an Incorporated Society, and will be registered as such in a few days time, therefore any correspondence will have to be referred accordingly. It appears this is a legal requirement.

Hamilton Amateur Beekeepers' Assn

President: Mr D. A. Plowright; Secretary: Mrs Pam McAdam, 9 Manning Street, Hamilton.

Meetings will be held on the second Tuesday in each month at 7.30 p.m. in the Conference Room, 3rd Floor, Charles Heaphy Building, Anglesea Street, Hamilton.

In addition to evening meetings, practical sessions will be held in our Club Apiary on Saturdays. Mr Phil Reed, one of Waikato's progressive beekeepers has loaned the club two beehives with which to start our own apiary.

Further information may be had from the Secretary or president, who lives at 32 Southsea Crescent. Ph. 66-967.

nest. In carrying out this operation place an empty super on the floor board having first set the hive to one side. Each of the outside frames put in place contain pollen and honey, while the remainder are empty combs on to which the queen is placed when she is found. Over this a queen excluder is placed to separate the brood. Check for queen cells and destroy any found. The whole idea being to relieve hive congestion and give the queen and bees more room to raise the young as well as to store honey.

Some beekeepers prefer to destroy the queen cells when they appear and to deal only with those hives that show these swarming tendencies. This has a lot to recommend it but in such a management programme the hive must be inspected at least every ten days to ensure queen cells are not present.

However, I think the best method of swarm control is a regular requeening programme.

The introduction of a spring queen is the best but they are hard to obtain. Autumn queens don't entirely control the situation but do help keep some semblance of order. As long as you can keep your hive together over this spring period the swarming problem usually disappears with the commencement of the main honey flow.

One important aspect is that, being beekeepers, we are responsible for the collection of stray swarms in our neighbourhood. Every beekeeper should have a ventilated box designed for the speedy collection of swarms. The general public often gets into a state of panic with the arrival of a swarm in their garden. It is good public relations to be able to remove the problem when advised of it.

Now this is one beekeeper who must lay down his pen and visit an out apiary or two in the hope he doesn't find too many swarms hanging on fence posts or other difficult places.

The Auckland Beekeepers' Club Incorporated

President: Phil Muir, 25 Glenatkinson Street, St Heliers, Auckland, 5. Secretary: Reg Sanderson, 72 St Heliers Bay Road, Auckland, 5.

This club of about 160 members has its own apiary at Western Spring where demonstrations and lectures are held at regular intervals during the season. In the winter lectures and films are held indoors from time to time.

Canterbury Domestic Group

Since this group is composed of hobbyist beekeepers who also belong to the Canterbury Branch, the officers are the same as for the Branch.

President: N. Johnston; Secretary-Treasurer: J. R. Burness, 6 The Rise, Christchurch, 8.

The group's apiary site is at 681 Cashmere Road, where meetings are held at 1 p.m. on the last Saturday in each month from August to April inclusive. If wet, the meeting is automatically postponed until the following Saturday.

There are six hives on the site which are used for demonstration and honey extraction.

BOOK REVIEW

"How to Keep Bees and Sell Honey", Walter T. Kelly, Clarkson, Kentucky. Paperback, 141 pp; $1US post paid.

We knew that when our old friend, Walter Kelly of Clarkson and former Editor of "Modern Beekeeping" got round to writing a book about bees it would be a good one.

The title itself is enough to make one reach for the book, but the contents will make him (or her) reach for a

pen to send for a copy of his own.

First of all the book is profusely illustrated. It is, very obviously a collection of articles written over a long life of practical beekeeping and it, therefore, is first and foremost a book about practical apiary management and the business of effective honey production. There are sixteen chapters in the book each one dealing with a specific aspect of beekeeping. The British beekeeper need not think that the book is for American beekeepers only — it contains so much beekeeping that can be applied to our conditions.

We have no hesitation in stating that this is one of the most useful bee books to makes its appearance for a long time.

"Practically anyone from 18 to 80 years can and are keeping bees successfully. Beekeeping is a profitable and intriguing hobby . . . Beekeeping is not confined to men." (From the above book).

WELCOME SWARM

From Scottish Bee Journal

I had a very strange experience while taking my bees to the heather last month.

I had prepared four good strong stock and three weak ones — the latter more to get some winter feed than with any expectation of surplus.

I arrived at the heather site at about 10 a.m. and, so far as I could see there were no other hives anywhere in the vicinity.

All the hives were p down on the selected sites and the "snap-down" entrance blocks were quietly folded down, releasing the bees. There was no mad rush of bees from the hives because I had given them time to setle before opening them and my entrance blocks can

Seasonal Work

To increase and hold bee strength should be your aim over the spring months for bee colony management. The queen must be young and a vigorous layer, while those who show any weakness under the pressure of spring build up, should be marked for replacing next autumn.

There is inevitably a difference to be found in your colonies at this time of the year. If you have only one hive you may with luck be able to purchase a young queen to replace the old. However, where possible, I prefer two colonies should be kept. With such a number corrections to the state of a colony showing some weakness can be made.

Such scope can be made in the strgenthening of weak colonies. If found early enough in the season, the situation may simply be remedied by adding brood from a strong colony. Some beekeepers not only do this, but also swap its location with a stronger colony. The returning field bees give the hive an added boost. But if the colony is too weak and has gone queenlees it is adviseable at this time of the year to cut your losses and unite with another colony.

To carry out such a programme spread two or three thicknesses of newspaper on to the top of the chosen hive and place on top of this the weak colony. Within a short period of time the bees chew their way through the paper by which time they are slowly absorbed as one complete colony.

Swarm control is vital if bee strength

is to be maintained. A check on the state of the colony should be made every 10-14 days. One course of action can be to relieve hive congestion by the Demarce method as mentioned in an earlier article. Excess brood from this type of operation canbe usefully employed in strengthening weak hives.

A word of caution in regard to swarming. With the production of queen cells from a colony many a beginner is tempted, as are some commercial men, to use them to replace a lost queen or to make a quick division of a hive. However, such moves must be regarded as an emergency operation only as persistent use as a requeening method could well produce a strain of bee more prone to swarming in contrast to the commercially bred queen which is not raised under such an impulse.

As population numbers grow and it can be seen that room is needed the time comes to put on the honey super. If they contain nothing but frames of foundation bring up a frame either of honey or brood. This gives encouragement to the bees and with the small amount of honey coming ing they can commence building fresh comb. Should you be using a queen excluder this method is ideal to bring the bees up through the barrier created and may well have to be repeated if the honey flow is delayed.

As the flow continues additional supers can be added, or removed, extracted and returned to the hive for refilling. But for all this, don't count your crop until it's in the honey tank.

I will take this opportunity to wish you all the compliments of the season, and a real bumper of a honey crop.

be opened with the minimum of noise.

Suddenly my attention was caught by an approaching cloud of insects. They came swooping along the course of the stream — there was no doubt about it, it was a fine swarm of bees. We jumped to our feet. They swooped towards my hives and without even the hint of hesitation, made straight for my weakest stock. They clustered up the front of the hive and poured into the entrance. In a matter of five minutes they had taken possession. There was absolutely no resistance by the bees of the colony, no fighting. We waited about half an hour but the bees had settled down.

A visit ten days later revealed that my weak colony was now a very strong one and badly needing supered—which I did after checking the brood nest. There I found my own marked queen in full lay and on the piece of corrugated iron projecting in front of the hive lay a dead queen which was none of mine.

Now the puzzling improbables: (a) the swarm arrived within half an hour of my bees being put down on an otherwise empty piece of hillside, (b) the bees made straight for one particular hive with no apparent inspection, (c) they chose the weakest of the colonies, (d) they accepted the reigning young queen, and (e) I was unable to find bees in the immediate vicinity, although, of course, there may have been.

I must confess that had I not witnessed this strange happening myself, I would not have believed it possible. But it did happen just as I have described it and the bees seemed to know exactly where they were going.

Can any reader shed any light on the occurrence?

HONEY

From

Rothamsted Report 1972

Flavour of honey. When necessary, beekeepers feed their colonies with sucrose solution, which the bees store in cells in the same way as honey produced from nectar. Recent use of dyed sucrose for feeding bees resulted in the production of coloured honey, thus upsetting a beekeeping tradition that with god management adulteration of honey with sugar that is fed to bees can easily be kept negligible. What effect dilution with the products of sugar feeding has on the flavour of honey is, therefore, of interest. When pure sugar-syrup honey was mixed with genuine honey in different proportions, nearly all of the 14 people who took part in taste tests readily distinguished between either of the pure material and a mixture containing 50 per cent of each of them. Most detected a 25 per cent addition of real honey to sugar-syrup honey, and half also detected a 25 per cent addition of sugar-syrup honey to real honey. The fact that most tasters made some mistakes even when comparing the pure materials and their comments on the flavour of the sugar-syrup honey, suggested that part of the

The Editor Joins The Swarm

I don't know where the old saying, "If you can't beat them, join them" comes into the picture but I have joined the chase for swarms and am now trying to join two of them together before they beat me. So you can work out your own application of the analogy.

When I became editor of the "N.Z. Beekeeper" last year, I confess to having only a vague reading knowledge of bees, hives, apiaries and their associates. Very early I decided to rectify my lack of practical working knowledge so I bought several lots of precut boxes and frames and spent spare time putting it all together during the winter.

Friends helped with advice and lent me bits and pieces to wire the frames and imbed the foundation until all was ready for the bees.

After a long wait the day came when I had a phone call, "There's a swarm in Gillies Avenue, will you be able to pick it up?" So I enlisted the help of the Apiary Instructor and off we went. With his experience and his gear we soon had the swarm 95% in the box and on their way to their new home. They have settled well and now, about three weeks later are busily drawing out their foundation and the queen has started laying, much to my delight.

The next call to remove a swarm was not so easy. It had been on the lower trunk of a plum tree for several weeks and was well established with both comb and brood and a very cosy set-up. They resented my intrusion and were not at all co-operative. After a lot of sweat and many stings in my gloves I was only able to persuade little more than half these to

Branch Notes

Waikato

"The prospects look good for a bumper crop in the Waikato this year" — a remark made by Mr A. L. Pearson, one of the oldest members of this Branch.

Mr A. Pearson has just celebrated his 50th wedding anniversary. The Branch members extend their congratulations to Mr Pearson and his wife on this occasion.

Mr Pearson was one of the old horse and cart beekeepers. I'm sure that he must have had the horse bolting a few times when the bees took to it.

We're all hoping Mr Pearson's correct in his predictions. A point of interest is that Mr A. Bennett has also made this prediction. Even though the hives in the district appear to be very strong there are very few hives with any surplus of stores.

For the first year ever, according to some of the older beekeepers, the willow catkins were still hanging on the rbanches after flowering was over, but the bees never seemed to collect any quantity.

The rewarewa is flowering well in the Waikato district and the kamahi also looks good, but it will be a week or two before this flow really gets under way.

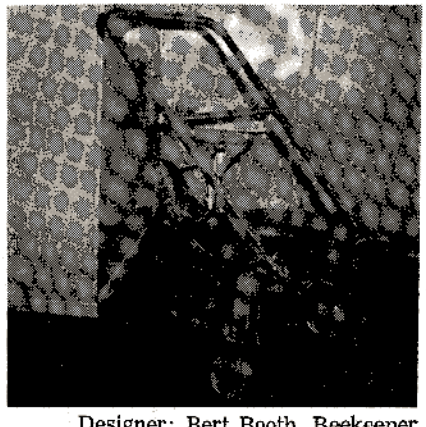
Mr Bennett also mentions that some of the apiary sites are difficult to get into at the moment — well, if he does get stuck in the soft Waikato paddocks, I hope he doesn't have too far to go for a pull out.

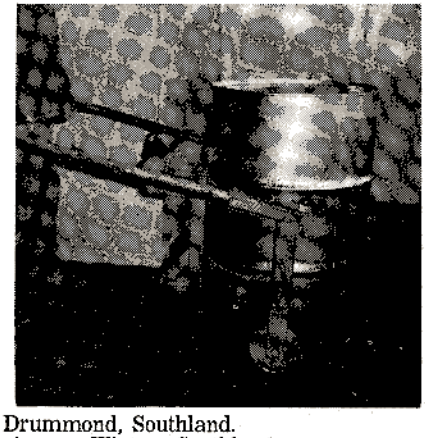
In July this year the Hamilton Amateur Beekeepers' Association held its first meeting to form their club. Attendance was 20 and now membership is 35. Their meetings are informal in the hope that they have a more practical meeting, dealing with beekeeping. Their plan is to hold a meeting every month ((second Tuesday).

Last meeting Mr B. Forthsyth gave them a talk on the two-queen hives and swarm control.

It would appear that all the amateur beekeepers in Hamilton will be running two-queen hives this year and will have no swarming either, judging from the searching questions fired at Mr Forthsyth after his address

DRUM BARROW





Designer: Bert Booth, Beekeeper, Drummond, Southland.
Manufacturers: Doherty Bros., Engineers, Winton, Southland.

Developed from wooden prototype. Makes for easy wheeling—even up a ramp —also if scales are set in floor drums can be easily weighd.

Accident-free and very manoeuvrable. No strength needed to lift and push barrow — elimination of back strain (beekeepers' disease).

Being used by some commercial beekeepers and H.M.A.

TO BE AN AUTUMN BEAUTY

It's time to remove those freckles which were so fashionable and replace them instead with a simply beautiful, smooth skin!

Here is a beauty preparation to remove and prevent freckles as well as other skin blemishes.

The ingredients may be obtained from your chemist:

1 oz. glycerine
1 oz. pure alcohol
4 oz. honey
3 drams citric acid
7 drops ambergris

Combine all the ingredients, mix well and bottle carefully. Apply night and morning.

COMPARISONS OF PRICES

As reliable information becomes available, we intend to publish surveys of representative prices for honey, wax etc., on the New Zealand market. The following appear to be current:

Retal price at honey producer's door (tins extra): 30c per lb for most grades.

Packers' price to producers: 20-24c per pound according to grade.

AUSTRALIAN PRICES

(Source: Department of Primary Industries, Brisbane).

Since the Australian dollar is now very close to parity with the New Zealand dollar, these prices have been taken without conversion. Wholesale prices, ex store Brisbane: (all clear honey): Bulk (60 lb) $19.40 per tin; 2lb jars, $8.96 per dozen; 1 lb jars, $5.04 per dozen.

Packers prices to beekeepers: Extra white amber, 28c per lb; white amber, 27c per lb; down to dark amber, 22c per lb.

Sales direct from beekeeper's premises: 28c to 30c per lb, in containers supplied by purchaser.

Minimum export prices $A per metric tonne F.O.B. for all markets: Light amber, $660 per tonne (33c per lb); down to dark amber and manufacturing grade both quoted at $630 per tonne (31½c per lb).

These latter prices would be recovered in full by the largest exporters but the small producers might have to pay a commission agent to handle their crop.

BRANCH NOTES (continued from page 67)

Members of the Waikato Branch extend their sincere sympathy to Mrs Mackisack and family. Mr Mackisack was a well-known beekeeper in the Waikato before he went to Niue.

—Tony Lorimer.

Hawkes Bay

Our congratulations to Maurie Gordon, on his inclusion in the Empire Games rifle team. Good shooting, Maurie, and the best wishes of all your fellow beekeepers be with you.

—Mrs L. H. Maultsaid.

West Coast

Another successful field day was held at the Kumara racecourse, where shelter facilities are ideal, if the weather turn contrary, as it did, on this occasion.

John Glasson, president, opened proceedings and Murry Reid, advisory officer, spoke to the gathering and very ably answered many questions.

Kevin Ecroyd gave an interesting discourse on the commendable efforts being made to procure a fair payout to beekeepers which didn't achieve the success it should have.

It was also revealed that the intake of honey by H.M.A. last season was the second highest of any season on record.

A suggestion at a previous field day that 44-gal drums should have the filling bungs on the side near the end to facilitate filling and handling was confirmed as a good one. A visit to Australia by some of our beekeepers saw them in use.

All seemed in favour of having the beekeepers' money that wasn't allowed to be paid out, made available for short-term loans to beekeepers for expansion and upgrading.

The possible adoption of the three-quarter super would, it appeared, be very favourably accepted.

Levy Correspondence

The following correspondence is published to illustrate the efforts being made to resolve the Levy impasse.

FROM THE CHAIRMAN OF H.M.A. TO THE EDITOR

237 Waimairi Road,
Christchurch, 4.
2nd November, 1973

The Editor,
"N.Z. Beekeeper"

Dear Sir,

I acknowledge receipt of your letter to me asking for a statement on the Authority's view of the proposed New Seals Levy. I wish to state:—

1. The 1972 Conference approved a remit that the seals levy be retained and extended to cover all other honey.
2. The President of the N.B.A. wrote to me on 18/1/73 (this letter was published in full in the February 1973 "N.Z. Beekeeper") outlining a scheme he had discussed with the Minister of Agriculture. Arising from this discussion the present levy proposal was drafted.
3. The draft proposal was discussed by the Authority at its meeting in March 1973, and Mr Ecroyd and myself were deputed to meet the N.B.A. Executive in Wellington. The Authority favoured the 1972 Conference remit rather than the new proposals.
4. Mr Ecroyd and I met the Executive and told them the Authority's view. We went through the draft regulations clause by clause and suggested alterations to make them more workable from the standpoint of the Authority's office staff, who would be physically putting the proposals into operation. At the end of the meeting we said that the draft as amended was now more workable and practical, but we re-iterated the view that the N.B.A. should be implementing the 1972 Conference remit.
5. At the Authority's meeting in Auckland in June 1973, the following resolution was passed:
   "1. We record the fact we have considered the draft amendments to the Honey Marketing Authority regulations.
   2. We are of the opinion that the National Beekeepers' Association should reconsider the whole levy, and that they should implement the extension of the levy approved at the 1972 Conference."
6. At the 1973 N.B.A. Conference in Nelson, the new proposal was approved although there was considerable comment from those present that full details of the proposal was not made available, and that they were unsure of what they were voting for.
7. The President of the N.B.A. attended the Authority's October meeting

and after a long discussion, it was agreed to ask the Authority's solicitor to draft amendments to the present Seals Levy along the lines of the 1972 Conference remit. The solicitor's draft should also eliminate the faults in the regulations which have come to light over the years and which have impeded the smooth working of the day-to-day office procedures.

8. When the draft is completed it will be discussed with the N.B.A. and the Minister of Agriculture.

It can be seen from the above that the Authority has been consistent over the whole period in its view of the proposals, and as the people concerned with the practicalities of making the scheme work, we wanted something which had the best hope of acceptance by the Industry and the consequent reduced possibility of attempted evasion.

In further support of the consistency in the Authority's stand on this matter I would refer you to the debate at the Nelson Conference as reported in the August "N.Z. Beekeeper"' wherein I am quoted at the foot of page 30 and near the top of page 31.

I will reiterate — the Authority is not opposed to the scheme to the point that it will fight tooth and nail to stop it being implemented. If the bbeekeepers and the Government want this scheme, the Authority will put it into effect and do all it can to make it work; but until this happens, every time we are asked to approve the scheme we will again say that an extension of the present levy scheme would be better from the practical viewpoint of collecting the money and giving the appearance of the consumer paying the levy rather than the beekeepers. I will agree that the proposal is more acceptable from the N.B.A. viewpoint of helping to gain members and removing the stigma (largely imaginery) that the present grant is a charitable handout from the H.M.A. to the N.B.A.

I am sure that the actual contribution by the industry under either scheme will be about the same in total. The main point to be decided is:—Is it easier to have most of the money paid at the point at which the honey is put into a retail container and sold, or to have each beekeeper prepare a declaration at the end of each quarter and write out a cheque related to the honey he produced in that period, much of which may have gone into bulk containers to be subsequently repacked into a retail container by someone else.

Yours faithfully,

R. F. POOLE, Chairman, N.Z.H.M.A.

FROM THE EDITOR TO THE CHAIRMAN, H.M.A.

Mr R. F. Poole,
Honey Marketing Authority,
C/o P.O. Box 5056,
CHRISTCHURCH.

Dear Mr Poole,

Thank you for your letter of 2nd November in which you have set out very clearly the background of the present situation of the levy scheme or schemes.

However, apart from saying that the N.B.A. proposal was not ideal from the H.M.A. administrative point of view and that there were those at Nelson Conference who did not fully understand what they were voting for, there is nothing new in your letter.

I feel that I should further hold up the publication of the November "Beekeeper" until someone explains carefully

(1) The basic differences in the two schemes which I now understand to be (a) What has been dubbed the Ecroyd Scheme and (b) The N.B.A. Scheme.

come into my box. And they did not like the new box and new foundation I gave them to work with so they left on the second day. In retrospect I think I took this hiving of a swarm too lightly and gave them too much freedom before they had settled in. I might still have had them if I had taken my instructor's advice to block the entrance with grass for a few days.

Very soon again I had another call from the same people. They had another swarm which had settled in some comb which had recently been abandoned by yet another swarm. Again this was hard work and I did not get all the swarm by a long way and they did not stay long when I got them home.

But my next swarm (same place again) was picked up only three days ago and it was a "honey" in that it behaved in the textbook fashion and I was able to get almost every bee into the box with just two good shakes and without the use of a smoker which I am still trying to master. From my little experience I describe this lot as "large" and they have settled in beautifully having gone to work on three or four frames with commendable resolution. I've given them plenty of raw sugar so that they will not need to waste time looking for nectar until they get comb ready for egg-laying and brood-rearing.

Another call, only yesterday, brought in another smaller swarm with equally facility until now I am ready to tackle almost anything! This lot are being prepared to be joined on to the first swarm, some time in the future.

I have suddenly become aware of flowers in a way I was never conscious of before. Take the pohutukawa, for example. They have started breaking out into their beautiful red blossoms in a dozen places in our area and my only prayer is that my colonies will be strong enough at least to fill a few frames for my first season's surplus.

characteristic flavour of honey comes from the bees that prepare it rather than from the nectar from which it is prepared. When sugar-syrup honey was diluted with water to the same consistency as the sugar-syrup that had been fed to the bees originally, the tasters easily distinguished between the diluted sugar-syrup, and even distinguished between the latter and a mixture containing 75 per cent sugar-syrup and 25 per cent sugar-syrup honey.

To obtain some idea of the magnitude of the bee component of honey flavour, colonies of bees were fed sugar syrups containing strong artificial flavours, to find out whether the bee-produced component was detectable by man against a strongly flavoured background. These experiments were unsuccessful, because most of the flavour disappeared while the bees were preparing the sugar-syrup honeys from the flavoured syrups. Furthermore, when flavoured syrups were exposed at colony temperature in a well-ventilated incubator, the flavours were lost, presumably by evaporation, within a few hours. This was true even of syrup strongly flavoured with clove oil. It seems likely that the few strongly flavoured honeys that occur naturally must contain relatively involatile flavouring substances, and that any deterioration in the taste of honey during its extraction from the comb and subsequent handling is probably because of decomposition of the flavouring substances it contains, or contamination. rather than because of loss of flavour. (Simpson, Moxley and Greenwood.)

New Honey Recipe Book Available

THE AUSTRALIAN HONEY BOARD'S completely revised and re-designed book of recipes using honey will be available in March/April from its offices at 647 George Street, Sydney, N.S.W., 2000 — 30 cents a copy post free.

"The Australian Honey Recipe Book" covers beverages, biscuits and loaves, cakes, desserts, main courses and vegetables, sauces and dressings, sweets and toffees. It is in colour, and illustrated, and will make an attractive and useful addition to any kitchen.

The recipe book also contains valuable hints for cooking with honey; measurements and oven temperatures (present-day and metric); information about Australian honey types and varieties: and the well-known 7-day honey slimming diet.

It also contains a cut-out coupon with which extra copies can be ordered—and copies of other Board leaflets, and the Board's special drip-cut honey dispenser.

MEAD

Is one of the oldest known drinks. It has kept men and women in various civilisations invigorated, satisfied and, above all, contented.

In Britain, in centuries past, St Findian, for example, ate bread and water all week but treated himself to salmon and mead on Sundays. Queen Elizabeth I had her own special recipe for mead, though hardly suited to modern tastes, as it was far sweeter than our modern drinks.

Mead today has changed only slightly in character from its thousands of years' old recipes. Advanced mead-makers, such as Brother Adam of Buckfast Abbey, England, have extended the range by the introduction of melomels (fermented honey and fruit juices).

Once the delicate and unusual flavour of mead is appreciated it can be used in many delightful forms — from a lightly chilled drink on hot summer days to a hot toddy for chilly winter nights! But best of all is to sip it as a liqueur after a rich meal. If this has inspired you to personal effort, try this!

Old English Mead Recipe:

4 lbs. honey	1 gallon water
1 orange	1 lemon
mead yeast	

Method: Boil water and honey together; pour into a bowl and leave to cool. Add yeast and juice of lemon and orange, and stir slowly till mixed. Pour into fermentation jar until all bubbles are gone. Siphon off and leave in sealed bottles — the longer it is left, the more potent it becomes!

POST-HOLIDAY ENERGY RESTORER

Almost anyone engaged in the strenuous activities holidays seem to incur, as well as athletes, deep-sea divers and mountain climbers, are familiar with honey as a quick restorative of energy. This is attributed to its well balanced components which integrate their action both to restore and maintain blood sugar levels. Dextrose absorbs immediately into the blood, and levulose much more slowly; consequently honey not only quickly restores blood sugar level but maintains it for some time.

The bacteriocide properties of honey are quite extraordinary, due to several factors, one being the acids present, and another a hygroscopic capacity which forms an unfavourable environment for bacterial life. The bacterial killing substance, inhibin, has also been recently isolated and this combination of high acid, hygroscopic and germicidal factors accounts for the unique purity of honey and its remarkable preservability. When eaten, it is very probable that honey also acts as an internal cleanser.

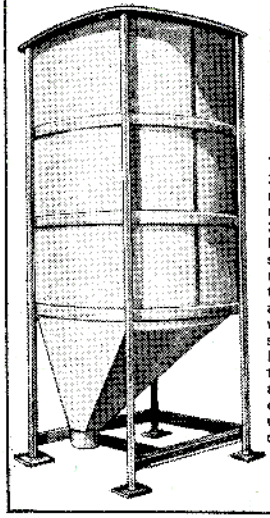
"HONEY — NATURE'S LIQUID GOLD" . . . FLOWS ON!

Promotional efforts of a new group—Sunraysia Apiarists Association — for their honey and products from Mildura recently included showings of the Australian Honey Board's 16 mm colour film "Honey — Nature's Liquid Gold" to groups of Mildura tourists.

(Continued on page 68)

George and Ashton fibreglass storage and supply tanks

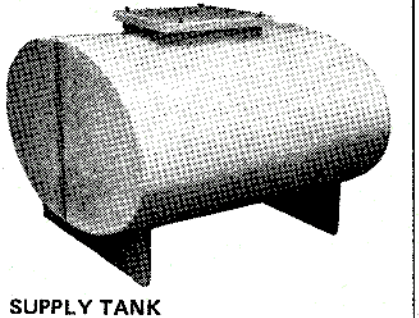
strong, light, easily cleaned, jointless, hygenic



SILO STORAGE TANK

for bulk supply honey

This tank can hold 3 tons of honey, measures approximately 8' deep x 3' x 3', and can have a built in sight gauge or be made completely **translucent.** It can also be supplied with or without a stand in a high or low position, so that if necessary a 44 gallon drum can be placed underneath the outlet.



SUPPLY TANK

This of 200 gallons capacity and is suitable for the water/sugar mixture used for bee feeding. It is also ideal for crop spraying etc. This tank can also have a built in sight gauge or be completely **translucent.** It has a detachable hatch and can be supplied with or without a stand.

Fibreglass containers are stain and acid resistant and can be used for all types of chemical or food storage. Cast-in colours make for easy visual identification and promote safety. Fibreglass containers can also be adapted to any installation or designed as both storage tanks and dispensers. These containers are available in standard shapes and sizes, but can also be custom made to suit your particular requirements. These fibreglass units meet with Dept. of Agriculture approval.

AHI George and Ashton Limited

P.O. Box 2056, South Dunedin, Phone 54-108 or 54-109.
P.O. Box 12.069, Penrose, Auckland, Phone 596.617.

SOUTHLAND SEMINAR — Continued from page 29

METRICATION OF BEEKEEPERS' EQUIPMENT AND ITS PROBLEMS

A. K. Ecroyd

I DO NOT INTEND to give the answers or any concrete recommendations with regard to the forthcoming changeover by the Beekeeping Industry to metric sizes. However, I do want to point out that it will not be as easy as many may think. I want to draw your attention to the problems involved so that you may personally, or at Branch level, give thought in depth to the problems involved.

For some reason, I am not on the official mailing list but I do have in my possession two separate reports, published by different authors employed by the Ministry of Agriculture and Fisheries. The authors have gone to a lot of trouble to prepare these reports and I think that one in particular is very well done and has substantial merit. However, the other report seems to be aimed at the beekeeper who wishes to make all his own woodware, presumably with the help of a hammer and chisel and completely ignores the methods convenient to manufacturers using automatic or semi-automatic machinery.

The question then is, what will be the basic sizes of timber available from a sawmill? On no account should we assume that sawmills will cut special sizes to suit the beekeeper. In some cases they may, but today in the timber industry we have a sellers' market. In this situation most sawmillers can sell every stick of timber they can produce in standard sizes. It would therefore be unwise on a New Zealand-wide scale to rely on sawmills cutting special sizes for the beekeeping industry.

This sellers' market in the timber industry is likely to continue for some years so we must start our thinking based on the standard sizes already laid down by the Metric Advisory Board.

Timber mills are to cease cutting present sizes in December 1974, and commence the new metric sizes in January, 1975. This will mean that from our companys' point of view, after allowing an average of 12 months drying for our timber, we would be forced to convert beekeepers' woodware to metric sizes about January 1976. Let met now discuss the standard full depth box of which I would estimate there are in excess of one million in use in New Zealand beekeepers.

Inside and or outside length and width are of no problem—just a question of a decision. However, depth and thickness of timber, particularly depth produce the problems to be discussed and thought about.

The present standard thickness is ⅞ inch or 22.225 mm. The Metric Advisory Board recommend a finished thickness of 19 mm is almost exactly ¾ inch and 20 mm between ¾ inch and 13/16 inch. In any case the thickness will be less than at present so we must decide whether to maintain our present outside dimensions of the metric equivalent of 16 inches by 20 inches or thereabouts and so provide a box with a greater inside dimension or to retain our present inside dimension of the metric

equivalent of 14¼ inches by 18¼ inches with the result that the outside dimensions will be smaller than our present boxes. No great problem here, but an irrevocable decision must be made.

The depth of this full depth super is the sticky one. The standard depth is 9½ inches or 241.13 mm. We make our boxes 9 9/16 inches or 1.5875 mm deeper to allow a little movement to ensure a finished width of 9½ inches. At present from 10 inches timber (254 mm) after allowing some inaccuracy by the sawmill in its cutting, shrinkage in drying and machining, one cannot with confidence count on more than 9 9/16 inches or preferably 9½ inches or 241.30 mm indicating a margin required of 12.7 mm being the difference between 10 inches and 9½ inches.

The metric equivalent of 10 x 1 will be 250 x 25 mm — 4 mm narrow than at present which conservatively could produce a box of only 237 to 238 mm deep. This is 4 mm shallower than at present or approximately 9⅜ inches.

This is one alternative and as a manufacturer it seems the most practical. If this standard were accepted then during the transition stage — which could last up to 20 years — full depth frames of the required new nepth — 9 inches instead of 9⅛ inches would fit old boxes. They would probably produce more burr comb on the top and bottom bars, but old frames could cause some problems in new sized boxes unless top and bottom bars were continually kept scraped clean. Any warping of top and bottom bars could cause further problems.

As and if frames are culled to a greater extent than boxes then these surplus boxes could be reduced in depth to the new standards. This could accelerate the transition period a little.

The other is based on the new equivalent of 12 x 1 — i.e., 300 x 25 mm. One should allow 15 mm for shrinkage and machining resulting in a finished size of 285 mm or about 11 3/16 inches. One writer recommends that our full depth supers be machined from this 300 mm timbeer, that they be 242 mm deep (not 238 mm as I have suggested) and that the offcut of about 40 mm — just over 1½ inches after allowing for a sawcut, could be utilized for frame parts or other hive components.

From a manufacturer's point of view this does not appear to be at all practical as the labour costs to salvage such pieces of timber would obviously reflect adversely in the selling price of woodware. A further important problem would be the availability of such wide timber in the quantities required. It is hard enough to purchase sufficient 10 x 1 let alone increasing the stock size to the equivalent of 12 x 1.

Let us now discuss the ¾ depth box which is very popular south of the Waitaki River but in little use in other parts of New Zealand. In the last year or so, particularly since the first Australian Bee Congress held at Broadbeach last year, there has been an increasing interest in this type of super for honey production. The present depth for the ¾ depth box is 7¼ inches or 184.15 mm.

This box would be produced from the metric equivalent of 8 x 1 i.e., 200 mm. Shrinkage and machining would require about 10 to 11 mm making it possible to produce a box, without undue wastage, of up to say 189 mm deep or almost 7½ inches deep. One Ministry of Agriculture and Fisheries writer suggests a depth of 190 mm being a litle shallower than the present box and in my opinion would provide an excessive amount of timber wastage.

However the other writer suggests possibly 186 mm and this would seem to be most desirable, being almost the same as present standards. In this event wastage would be kept to a minimum and the old and the new should be completely interchangeable, there being only a millimetre or so difference, about 1/16 of an inch.

Current interest in the ¾ depth super by beekeepers in other parts of N.Z. mostly centres around the use of the Manley type frame which is specifically designed for honey production — not brood rearing — and in various forms

has proved to be extremely popular in some parts of the world. I believe that the largest beekeeper in the U.S.A. uss this type of frame extensively and the alrgest beekeepers in the world, in Mexico, use this type of frame almost exclusively for honey production.

It will be of interest to note that at least one make of automatic uncapper on the N.Z. market can be readily adjusted to take the standard full depth Hoffman frames as we now know them and the Manley type intermixed without problems. The main feature of the Manley type frame is that it has parallel sided end bars, like a section frame, but with end bars 1 11/16 inch wide again 1 13/16 inch for a section frame, it allows 8 frames per super giving a natural spacing for honey combs. Eight frames per box provides the same spacing as many beekeepers provide by using 8 standard Hoffman frames and spacing by hand.

From my personal contact with users of this type of frame overseas, I believer that N.Z. beekeepers should give serious consideration to the use of the Manley type frame for honey production.

If a decision is made in favour of the Manley frame for honey production

If a decision is made in favour of the Manley frame for honey production then we must decide on its dimensions, particularly its depth. Do we make it the same depth as our new metric ¾ depth frame to fit into the 186 mm super that has been suggested — say 176 mm for the frame allowing a 10 mm bee space, or do we decide to follow the original Manley size of about 160 mm.

To establish a ¾ depth and Manley type depth of frame of 176 mm would mean that all present ¾ depth equipment would be fairly readily interchangeable with the ¾ depth equipment in current use, but to follow the actual Manley size would make all present ¾ depth equipment obsolete and further, would bring us back to a super depth of about 169 mm or approximately 6⅝ inches, leaving a substantial wastage from 200 mm stock.

I must now mention the economics involved in the manufacture of beekeepers' woodware by my own company. For some years now, we have manufactured our end bars, using a fully automatic machine, from short clears gained from the selective crosscutting from inch timber dressed to ⅞ of an inch. Most of this timber comes from 10 inch timber, but a significant quantity from 6 inch and 8 inch timber used for top and bottom bars. The effect of this has been that because of this fuller utilisation of our stock we have been able to maintain a higher standard of quality in our supers in particular and also because of lower wastage have kept prices to a lower level than would have otherwise been the case. As you know our prices for woodware are the lowest in the world, and this optimum use of timber is a major contributing factor.

When this metric conversion takes place and we are faced with 19 or 20 mm dressed timber, after allowing the splitting saw thickness of about 3 mm an end bar of only say 8 mm thick will be possible — if we are to continue to recover two from each 19 or 20 mm slug. Eight mm is about 5/16 of an inch thick against ⅜ inch thick end bar currently manufactured. The Ministry of Agriculture and Fisheries recommendation is 10 mm. This is near enough to but slightly thicker than our present ⅜ inch end bar. If we go to 10 mm then from 19-20 mm dressed timber we will only recover one instead of two end bars — for the same labour and timber cost as now. This will reduce our ability to utilise what used to be waste and will mean that a further cost factor must be introduced to the costings of both frames and supers.

Already I have used too many figures in both inches and millimeters and that you are probably as already confused as I was when first giving thought to metrication of beekeepers' equipment. I have therefore decided to stop my prepared address at this point. Before doing so however let me plead that the powers that be will convene a number of joint meetings between the representatives of the National Beekeepers' Association, the Ministry of Agriculture and Fisheries and representatives of manufacturers of beekeepers' woodware to establish a set of metric specifications that will be practical, sensible, and economic to the N.Z. beekeeping industry without putting us out of line with basic standards in other countries.

USE OF POLLEN SUPPLEMENTS FOR FEEDING BEES

By Murray Reid, Apicultural Advisory Officer, Christchurch

AT THE OUTSET we should define some terms.

The words "supplements" and "substitutes" have been used to mean the same thing, yet they are quite different. A supplement is a protein food source that contains natural protein. A substitute, on the other hand, is an artificial mixture of protein with no natural pollen and may consist of such things as soya been flour, various kinds of non-viable yeasts, egg proteins, meat scraps and so on. Some authorities maintain that supplements and substitutes should really be called pollen extenders because no perfect artificial diet has yet been developed that will support brood rearing indefinitely. Natural pollen has to be supplied somewhere and in quantity.

What do we know about pollen? We possess a lot of research information about pollen but still a lot is not known at the beekeeper level. What amount is required in the brood nest? How important is a spring pollen reserve? Are those pollen combs that you have stored away for a season or two any good for your bees? And so on.

Composition and Properties of Pollen

There are big differences between fresh pollen and bee bread. Bee bread is the pollen that the bees have actually stored in their combs. During the storage in the comb, lactic acid is produced and this actually increases digestibility. The acid breaks down the very tough protective layer covering the pollen grains.

Nutritive values also vary very greatly. In some samples that have been analyzed there is as much variation in samples from the same plant species as there is between different plant species. This nutritive value can also vary with the time of year. For example, poplar and birch pollen are very poor innutritive value. Corn, dendelion, and maple are moderate, while clover, willow and fruit trees are very good. A general composition of pollen is as follows:

Protein	8 -40%
Fat/oils	1.5-23.6%
Minerals	2.8-10.6% (highly variable)
Sugars	0.8-11.1%
Water	5 -20%
Vitamins	B1 (thiamine)
	B2 (riboflavin)
	B6 (pyridozine)
	Nicotinic acid
	Biotin
	Ascorbic acid
	D
	E
	K
	Pantothenic acid (also found in Royal Jelly)
Carotenes	
Xanthophylls	

Also, a mixture of pollens is always more nutritionally balanced than any single species.

We don't really know what makes one pollen source more attractive to bees than another, but some of the factors responsible are what are called phagostimulants. One of these chemicals has been recently identified and "enjoys" the name of Octadeca — trans -2, cis 9, cis 12, trienoic acid. These chemicals stimulate the bees to eat the pollen, and their addition to artificial substitutes will make them much more attractive to bees. We are just waiting for the scientists to tell us how to synthesize these chemicals economically.

Why do bees need pollen?

Like all animals, bees need pollen to build their body tissue and organ systems. They store fat and protein reserves in special organs, particularly the fat body. At certain times of the year great demand is placed on these reserves; for example, when developing hypopharyngeal glands to feed

young larvae and queens, or to supply enzymes to invert the sugars in nectar into honey. This demand places a great strain on the bees and this is why summer bees live only a short time compared to winter bees which are not feeding brood.

Adult honey bees which do not have any pollen to eat can draw on body reserves for only a short period and may even rear one cycle of brood but that is about all. There is also evidence that pollen may lessen some of the harmful effects of Nosema disease which as you know, is most severe in the spring months when we also face a pollen shortage.

How much pollen is needed to feed bees?

Various calculations and measurements made suggest one pound of pollen (454 grams) is needed to produce ¾ lb (331 grams) of bees. This would represent about 3,000 or so bees. However, a useful rule of thumb is 1 lb pollen to 1 lb bees. Now a medium strength colony in the spring time would contain between 30 and 40 thousand bees. About 10-12 lb of pollen (4.5 kg to 5.5 kg) would be needed to rear these. Over a full season some 50-70 lbs (roughly 23-32 kg) of pollen would be needed for each colony. In looking ahead to the autumn you can now see why we recommend that hives should have at least 500 square inches of pollen in them as they go into the winter. This would be at least 2-3 full combs or their equivalent.

How to store pollen

There are various methods of storing pollen but the ideal method is one which preserves all the vitamins and proteins.

(a) Drying

Natural bee collected pollen contains approximately 18% water and this has to be reduced to about 10-12%. At this stage it won't clump when pressed together. The first stage is to heat your cabinet or drying room to around 50° C. for about one hour to kill all the moulds and bacteria. The temperature should then be reduced to 37-38° C. for a further 24 hours or until the pollen has dried sufficiently. This time will depend on the relative humidity of the year. Drying cabinets can be made from insulated boxes heated by electric light bulbs or an ordinary clothes drying cabinet or even a hot room. The dried pollen should be stored in air-tight containers such as plastic bags or wide-mouthed honey tins and will keep satisfactorily for up to one year. It is advisable to lpace them in a deep-freeze for one to two days after drying to kill all the wax moth eggs and any pollen mites still present.

(b) Sugar Method

Fresh pollen should be mixed with half its weight of sugar and packed tightly into saleable containers. The surface should be covered with a ½-1 inch layer of sugar. Pollen can be stored for up to two years this way and is easily formed into cakes for feeding.

(c) Deep Freeze

Best stored in plastic bags and will keep for up to two years. It should be used immediately after thawing or else it will go mouldy and may even ferment. The disadvantage with this method is that pollen is relatively bulky to store.

(d) In the Comb

Probably the best place to store pollen is in the hive. One author has suggested a way to fill combs with pollen. This involves simply placing an empty super under the bottom brood box with a queen excluder on top. This is supposed to induce the bees to place their pollen loads in the bottom combs. Pollen combs can be stored in a deep freeze or coll room or, alternatively, castor sugar can be sprinkled thickly over the frames to prevent mould from growing on the pollen.

Feeding Substitutes or Supplements

The most common non-pollen protein fed to bees is soya bean flour produced by the expeller process. This is a mechanical process that removes excess fats, acids, and fat soluble vitamins by a heat and pressure technique. The fat content should be no more than 5-7%. An alternative method of defatting soya bean flour is a chemical one using ethyl alcohol or ether. Unfortunately, this method may affect the protein content and produces a flour harmful to the bees.

How to feed the Bees

(a) Patties can be made using the recipe given and placed directly on

the frames above the brood. Bees need to be able to warm the patty. A large number of these can be made up at a time and deep frozen. Each patty should be separated from its neighbour by a sheet of wax-proof luncheon paper.

(b) Dry pollen can be ground up in a coffee grinder or something similar and fed under cover outside the hive when the bees forage for the pollen. A suitable cover can be made from a single storey hive on a stand, by removing all the frames and dumping the pollen on to the floor board. The bees enter and leave through the entrance as usual. Wet pollen that has been frozen can also be fed in this feed-lot style if it is first crumbled.

When to Feed Protein to Bees

Obviously supplements or substitutes should be fed any time natural pollen supplies are short. However, an important point to remember is not to leave the feeding until the hive has exhausted its own supply. Always try and keep ahead of the demand and feed when there is still some pollen in the hive. This would also apply to sugar feeding, particularly dry sugar. You will have most success by putting on the feeders when there is still a quantity of honey in the hive.

Questions and Answers

Q.—How much pollen could you take from a trap?

A.—I don't have any figures for Southland, but test hives from the Hawkes Bay area have produced up to 4-5 lb per week.

Q.—Does a pollen trap affect the pollen supply to bees?

A.—To a certain extent, although the bees always seem to get enough through the wire grid. Presumably more opllen foragers are recruited to keep the supply up and also the bees seem to bring home smaller loads that are not scraped off by the wires. They also learn to tuck their hind legs under their bodies somewhat. In this way they get their loads through the wire mesh.

Q.—Does a pollen trap affect the nectar yield?

A.—I have no evidence of this but French workers have suggested that a pollen trap can reduce yields up to about 20 lbs per colony.

Q.—How long can you store pollen?

A.—This depends on the method. We are trying to preserve the vitamins and proteins which are very sensitive to heat and are easily destroyed. Dry pollen can remain nutritious for up to a year; deep frozen pollen for about two years and pollen stored with sugar also for about two years.

Q.—I have some dry pollen that I have kept in an air-tight tin for over two years and the bees seem to eat it. Is it still good for them?

A.—I would expect that the bees will eat almost anything when pollen is really in short supply. I have seen them eat pig meal and pine pollen and I've heard of them even collecting coal dust. However, just because they eat it doesn't mean it's very good for them. At least it isn't as healthful as fresh pollen. However, this type of pollen is better than no pollen at all.

Q.—I stored some pollen in a deep freeze and when I took it out it went mouldy.

A.—How long did you leave it out of the deep freeze? A month or so? Pollen should be used as soon as possible after coming out of the freezer or else it will ferment and then go mouldy.

Q.—What is the best substance to mix with soya bean flour—honey or sugar syrup?

A.—I would suggest that honey is the best as it is hygroscopic and will keep the patty moist. However, honey is expensive and there is always the risk of spreading disease. So, for that reason, I would suggest you use a thick sugar syrup.

Recipe for Feeding Pollen and Soya Bean Flour

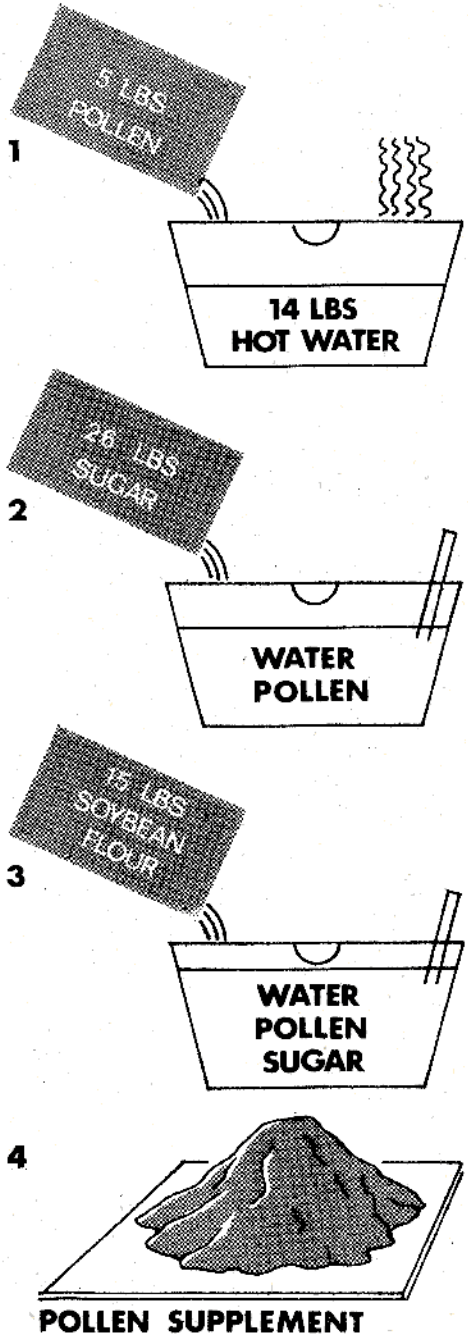
The formula for soybean flour cakes consists of 1 part dry matter (1 part pollen and 3 parts soybean flour) and 2 parts sugar syrup (2 parts sugar and 1 part water).

Dry pollen softens readily in water. but not in sugar syrup. Pollen should be added to the water before dissolving the sugar.

Pollen supplement for a one-time feeding of 45 colonies can be mixed in a medium-size tub by adding 5 pounds of pollen to 14 pounds of hot water. Then stir in 26 pounds of sugar until it is dissolved or in suspension. Finally, add 15 pounds of soybean flour and mix thoroughly.

For each colony place approximately 1½ pounds of supplement on a piece of wax paper. Remove the hive cover and smoke the bees down from the top frames. Place the cake directly over the centre of the cluster, leaving the paper on top. Replace the inner cover in an inverted position to provide space for the cake. The 1½ pounds of supplement should last for 10 to 14 days. Add a new supply before the previous cake is completely consumed.

If a colony does not consume the supplement, it may be "weak" and not raising brood or it may be queenless.



POLLEN SUPPLEMENT

TREES FOR BEES AND SHELTER IN OTAGO AND SOUTHLAND

By Gil Ramsay, N.Z. Forest Service

THE SUBJECTS of shelter and food must be discussed separately although it is possible to combine the two occasionally.

SHELTER

Reduced wind velocity will affect temperature, plant transpiration, soil moisture, mechanical damage and insect activity.

The largest, cheapest and most efficient wind barrier is lines of trees or shrubs.

The size and permeability can be controlled by species or a combination of species, spacing or trimming.

As a general rule the more open (or permeable) the barrier the greater the distance influenced but to a lesser degree.

The most effective general purpose shelterbelt should be narrow, straight sided and 30-50% permeable over most of its height. This will reduce the wind to half its original speed from 5-15 heights from the belt and to a lesser degree to 20-25 heights. On the other hand a very dense shelterbelt can reduce the wind to almost calm from 0-5 heights and the affect is generally lost from 10-15 heights.

Permeability can be varied by spacing and trimming but as a general rule I would list the following species in this order.

Flax
Lawsons
Arizonica
Hawthorn—trimmed
Macrocarpa
Thuya
Douglas Fir
Radiata
Eucalypts
Poplars—leaves on or off
Oak—leaves on or off
Ash—leaves on or off.

The effect that shelter will have directly on bees is:

1. Increases the temperature around the hives and foraging areas.
2. Reduces the strength of the wind against which bees have to fly to and from the hives and between flowers.
3. Reduces mechanical damage to hives and flowers.

FOOD

As flower plants are generally sparse in a farming area and most of the crops do not commence flowering until the late spring and summer much of the nectar and pollen that is essential for building up hives in the late winter and spring has to be obtained from trees and shrubs.

Many of our native and exotic trees and shrubs provide quite good food sources and it is possible to find one or other of these species flowering at almost any time of the year.

A list of trees and shrubs is available which although far from complete will give an idea of those available at different times of the year.

The trees best suited to growing or manipulating for shelter belts are generally conifers or poplars which have no value as a bee food source. Although Eucalypts are being used more for shelter the earliest flowering one (E. globulus) is losing popularity because of damage by frosts and insects.

Therefore, the most likely food source will be from trees used for amenity planting, weed species and natives.

Of these the earliest are willows, wattles, prunus, kowhai and five finger.

Shrubs and hedge plants could be used much more for low shelter. Three which would be most valuable are flowering currant, gorse and broom.

TRENDS IN MODERN FARMING & THEIR AFFECT ON BEEKEEPING

By P. J. Hook, Farm Advisory Officer, Gore

THE MAJOR TREND in the Southland-West Otago area over the past 10 years has been towards increased stocking with sheep and cattle. Although the country varies in contour and altitude from high tussock to low level flats the climate in all cases is specifically suited for livestock production.

Over the past three years there has been a marked swing into beef cattle due largely to the improving beef schedule and the poor returns from sheep meat and wool. New breeds, particularly the Charolais, have made their appearance and will influence meat production in this area. These will mostly be used as a terminal sire over a cross-breed beef cow.

The present situation is that the district is relatively highly stocked. Pastures are being topdressed and improved species of plant are being sown. Examples of these are: Ariki Ryegrass, Tama Ryegrass and Grasslands 4700 White Clover.

Higher stocking means that feed grown must be more efficiently used, grown, conserved and fed out. Land is limited and feed is too valuable to waste. Brassica crops must be efficiently grown and this involves balanced fertilizer usage plus better weed control. A recent trend is towards direct drilling where the ground is sprayed and the crop drilled in with a special drill. This technique gives reliable yields where rainfall is assured. It could be used to renervate and improve pasture.

Fodder conservation has also been improved. One example of this has been in the field of vacuum silage making. Another example would be the the increasing use of nitrogen on the hay crop.

Grain feeding of stock has become more economic and is widely carried uot. Oats and more recently barley are the main feed grains, but wheat has also been used successfully. Roughages —commonly waste—are now being used to maintain stock. Cattle and sheep are being fed cocksfoot, timothy, barley and oat straws supplemented in some cases by concentrates.

With improved pastures and reduced crop acreages another trend has been to get stock off the paddock in the winter. Sheep and cattle pads have become commonplace and stock are to be on here when soil is very moist as at this time pastures can be made markedly damaged by hooves.

The most recent trend of all has been to increase the use of grass throughout the winter. This trend was started in Western Southland and is now widely spread. In early May sheep are mobbed up and rotated around the property, ideally 30 paddocks are required, and stock spend on average three days per paddock. The use of this system can reduce wintering costs to one bale of hay per ewe. In really wet conditions stock are to be on a pad or stubble paddock. Any cattle should also be wintered in this manner.

Pasture improvement has gone through the stage of clover dominance to the sward and most pastures are now grass dominant. This plus less wasteful grazing and better weed control has meant that there is less flower available for bees. Agricultural improvement on ploughed country has therefore been of little benefit to the beekeeper.

There are two promising developments that will help the beekeepers in the future. The first of these are flowering crops. Although sunflower has been grown successfully in some years, yield is too unreliable to expect a great future. Rape seed for oil production looks very hopeful. This crop grows well in this district and yields appear to be economic. One commercial firm requires contracts for 1,000 acres (44ha) for this growing season. Although the crop will net as much as a good crop of wheat, present returns from stock are so good that it is doubtful where the 400 ha will actually be grown.

(Continued on page 72)

First Austraian Bee Congress, Broadbeach, Queensland. Some further papers

Honey from the Hive to the Honeyhouse

Prof. G. F. Townsend, Canada

Chairman of the Beekeeping Technology and Equipment Standing Commission of "Apimondia"

Honey is our only natural sweetener that goes directly to market with little or no alteration from the time of its prdouction by the bees. The naturalness of honey is its main selling point and every effort must be made to maintain the delicate flavour and aroma found in newly extracted honey.

Many of the problems encountered by the honey packer, whether beekeeper or commercial packer, may be overcome if the honey is handled properly up to and including the extracting. The main problems encountered in the packing of honey are excessive moisture, air, pollen, or wax. All of these problems may be overcome by the beekeeper if the honey is properly handled. The most practical time to remove moisture from honey is before it is extracted. Excessive pollen may be avoided by keeping brood combs out of the honey supers as much as possible. Even the colour of the honey may tend to be darkened by using brood combs in the supers. Air bubbles, which are almost impossible to remove, and small wax particles may be avoided by proper use of extracting equipment.

In recent years the honey market has demanded that much greater attention be paid to the preparation of the product.

HONEY EXTRACTING

Production. Preparation of a quality product starts in the bee yard. Too often, in the hurry to facilitate the colony operation, the effect on the end product is neglected. Honey should, if at all possible, be produced in honey supers and not in brood combs. The use of brood combs for honey will increase pollen content of the honey, thus leading to problems when the honey is filtered. Honey stored in combs darkened by old pupa cases will tend to pick up some of the pigment and become darkened. This darkening takes place very rapidly when the moisture content of the honey is quite high. This occurs with nectar which often has a moisture content of 60% or more when it is freshly brought in.

A series of tests were carried out at Guelph in which honey at various moisture content was stored over comb of different colours for a period of three days at 22° C. In all cases, the dark comb conveyed considerable colour to honey of 25% moisture or higher. In the range of the sugar content of fresh nectar, a heavy flocculent was even found in the honey which required centrifuging at 2000 r.p.m. before the colour reading could be taken.

Removal of Moisture. The honey bee gathers nectar with an average water content of 60% and within a few days may reduce this to 20% or less. To do this, warm air within the hive is forced over the comb surfaces by fanning bees. The beekeeper may profitably use this same principle to reduce the moisture content of his honey before it is extracted.

To accomplish this, warm dry air (not over 35° C.) is driven through stacked supers of honey. The rate of moisture removal depends upon the dryness of the air and the volume passed through the supers. Air dryness depends, to a large extent, upon the number of degrees the air temperature has been increased just prior to passing over the combs. In general, cool air which has had its temperature increased considerably will be able to remove more moisture from the honeycombs than air at room temperature which has been warmed through a narrower temperature range. The efficiency of this system may be increased by permitting the warm, moist air to escape, and by providing a separate intake for fresh air. A unit which is operating efficiently will remove from 1% to 3% moisture in 24 hours.

Moisture removal may be more necessary in some seasons than in others, but at any time it is added insurance for the production of a quality product. In addition, warm combs from a heating room will extract much more readily than will cold combs. Moisture removal is a factor the beekeeper should not overlook.

In some areas, particularly in desert regions, it may be necessary to reverse the process to add some moisture to the honey in order to ease the extracting. In this case water sprinkled on a heated floor is very satisfactory.

Uncapping. There are many types of uncapping equipment available for the commercial operator, from steam and electrically heated to mechanically operated units. All are suitable, and the type to be used must be decided by the individual conditions. There are on the market uncapping units which chop the cappings into small particles. These particles become incorporated in the honey. This type of unit should be avoided unless provision is made to remove these small wax particles.

Handling Cappings. Many types of equipment are available and used for the handling of cappings during the extracting process, including whirldrys, draining boxes, etc. One of the most popular, however, is the Brand-type wax melter in which all of the cappings are melted into wax and separated from honey as the extracting proceeds. Most of the Brand-type melters consist of a steam-heated grid on the surface, usually made of copper. It is almost impossible to operate this unit satisfactorily without injuring both the honey and the beeswax. In the first place, steam heat should never come into direct contact with honey at any time. In the second place, copper should never come into contact with liquid beeswax at any time since it adds colour to the beeswax which is difficult to remove by bleaching. Thirdly, the overheating of the honey and the beeswax together near the surface will, in all cases, darken the honey. This darkened

honey could lower the whole grade if it is mixed with the other honey as it goes through the line. Surveys have been carried out on the operation of these units and in all cases the honey was darkened. In recent years we have developed and have been using at the University of Guelph an all-electric-type Brand melter. The complete bottom of the unit is jacketed with water thermostatically controlled to approximately 52° C. A hood is placed over the top in which radiant electric heat is used so that it will melt only the wax on the surface. If this hood is adjusted to the right height according to the wattage of the radiant heat units used, the wax will run off in liquid form overheating. Tests carried out on this unit show that it does the least damage possible to either the wax or the honey when compared to any other type of Brand melters.

Straining. All extracted honey must be strained. The best and most convenient time to strain is immediately following the extracting process, while the honey is still liquid. If the honey is to be packed by the beekeeper in consumer containers, then it must be strained in a manner which will meet at least the minimum grade standards. If the honey is to be shipped to a packer, it is necessary to keep in mind that in many cases the honey will be granulated before it is used for repacking. When granulated honey is repacked, it may be heated above the melting point of wax. Unless most or all of the wax has been removed at extracting time, the flavour of the honey may be impaired during the repacking process.

Difficulty in straining may be caused by one or more factors. The viscosity of honey increases very rapidly as the temperature drops below 38° C., thus cool honey is very difficult to strain. The strainer cloth clogs very rapidly if the honey contains granules or a large volume of wax refuse. It also clogs rapidly if the honey comes into immediate contact with the straining cloth without permitting the bulk of the refuse material to float to the surface.

For efficient straining of honey in volume, a sump tank, a suitable means of warming the honey, and a satisfactory strainer must be used.

The Sump Tank. As the honey leaves the extractor it is usually convenient to have it flow into a sump tank. In this tank the coarse material may be removed quite readily by a series of baffles running across the tank. The baffle openings are alternately at the bottom and top, causing the honey to first flow under, then over, a one-inch opening across the tank. It is advisable to use five or six baffle plates, thus giving two or three skimming areas. In a large-scale operation a series of baffle tanks at various levels in a heated room is very satisfactory. This arrangement is usually sufficient for bulk shipping without further straining.

Warming the Honey. For a quantity of honey to pass through a suitable strainer without too much difficulty, it should be at a temperature of between 38 and 43° C. Warming the honey in the comb before extracting is not sufficient. The main purpose of a warming room is to remove excess moisture and assist in the extracting procedure. Much of the heat picked up in the warming room is lost as the honey is extracted from the combs. It is therefore necessary to warm the honey somewhere between the extractor and the strainer. There are many approaches to this problem.

The honey may be partially warmed by a hot water coil on the sides or bottom of the extractor.

Heat may be applied to the sump tank by doublejacketing it, the water

heated by either steam or electric immersion heaters. The honey may pass over a corrugated pan which is heated. Or the pipe through which the honey passes to the strainer may be doublejacketed and the honey heated by hot water. In both of these last two methods the honey must flow continually, and thermostatic controls on the water are advisable.

Strainers. When the bulk of the refuse material has been removed by a sump tank and the honey has been warmed to 43° C., several types of strainers may be used, or the honey may be settled. The choice of the method to use for suitable straining depends upon the size of operation and the facilities available.

Settling of honey may prove satisfactory under some conditions. It is advisable to first pass it through a sump and then allow it to settle for a reasonable length of time at a temperature of at least 38° C. The surface should be skimmed and the tank never completely emptied until the packing has been completed. Even when the best care is taken with a settling method, it is not possible to be sure that all of the honey is satisfactory for packing. Only by using a strainer of suitable mesh can the operator be satisfied that all of the honey packed will meet the grade requirements.

There are several types of cloth or wire suitable as strainers. It is advisable to use only those which will not stretch and which have the proper size opening. Strainer cloths should not be bought by mesh alone. Canada No. 1 requires straining through standard bolting cloth of 86 meshes to the inch. Standard bolting cloth of this mesh has openings of approximately .007-inch. Some types of strainer cloth would require 100 meshes to the inch and others 60 meshes to meet these requirements because the diameter of the strands varies considerably. Sheer nylon 112-mesh (a minimum of 30-denier, 100-end, 86-pick nylon), Swiss silk 66-mesh, or Monel metal screen with .007-inch openings are all satisfactory. It is necessary to select a metal which will stand up under the action of honey, such as Monel metal. Choose also a mesh of proper opening size with sufficient diameter of wire to stand up under wear, and at the same time with sufficient open area to handle a volume of honey. The 66-mesh Swiss silk will not be of proper size opening until it has been soaked in water or has been used for some time.

For best results, straining should be done below the surface of the honey, and the straining area should be as large as possible.

The O.A.C. strainer, which has been widely adopted, consists of a series of four circular screens of different mesh, one inside the other. The honey enters the centre screen, passes through to the outer and fine screen, and is drawn off by a baffle near the top of the tank. If a sump tank is used first, and if there is no granulation in the honey, the O.A.C. strainer will handle honey very satisfactorily at room temperature, provided the straining area is large enough. If the temperature of the honey is raised to 40° C., it will handle very large volumes.

The modified O.A.C. strainer, employing one sheet of either nylon or silk, will work just as satisfactorily as the O.A.C. strainer if the temperature of the honey is raised to 43° C. The cloth is placed in a round screen support inside a tank in such a manner that the cloth lies against the walls and bottom of the supporting screen. Since the screen is raised from the bottom of the tank by

about one inch and the honey is taken off near the top of the tank, the straining takes place below the surface.

If the surface of any cloth strainer has a few folds in it, the draining is facilitated considerably when the cloth becomes clogged by just pulling out the folds and making available a clean straining area.

Perhaps the greatest moves forward in recent years have been made in the extracting of honey. With hive loaders for lifting colonies and supers, automatic uncapping machines and large automatic extractors, and by taking full advantage of the use of heat to reduce viscosity, large quantities of honey can be extracted daily with a minimum of labour.

Our future equipment must be adaptable to producing a high quality honey and extracting it with speed and a minimum of labour. It must be adaptable to a minimum of management if it is to suit all conditions.

I believe that the present style hives are completely suitable for future developments. I do, however, think that the brood chamber and super of the future will have to be of different sizes and not necessarily interchangeable.

The best quality honey is produced in white super combs and should not be produced in brood chambers. The jumbo and Langstroth supers are too large for honey production. We need something which is lighter to lift and transport with less breakage. We need a super which is shallower than the present Langstroth and more adaptable to the use of chemicals for removing the honey in one trip to the apiary. One of the main problems with all of the repellents used for driving bees is that they work well at a depth of 6-7 inches, but beyond that the bees tend to cluster. Supers of the future will likely be uncapped and extracted by the super without removing the frames, and possibly returned for the balance of the flow thus lowering the total investments. Shallower supers will more adaptable to this procedure. A possible practical size for this type of operation would be a standard Langstroth box 7⅜ inches deep. These combs will have a very limited examination and may be fastened in the supers even without end bars.

It will be possible to manage bees with a minimum of operations as our knowledge of bee behaviour develops. The brood chamber should therefore be large enough to accommodate all the brood area requirements at any season of the year. The most practical approach to this is the 10-frame jumbo.

Equipment of these sizes should be adaptable to a minimum amount of management and to highly mechanized operations thus making it adaptable to both the one year operator with little experience and the commercial operator, and at the same time suitable for all the expected changes in management in the forseeable future.

The only stumbling block to complete mechanization of management at the present time is a suitable method to destroy the old queen without opening the hive. Once this has been accomplished, beekeeping will be carried out by handling boxes only. Requeening once a year should control most swarming and with a method of destroying the old queen, requeening should be rather simple. Diseases will likely be completely controlled with drugs. With a little extra effort in research on the behaviour of queens and bees at the present moment, it may be possible to change the whole future path of commercial honey production and at the same time cater to the increased demands for a natural quality product.

Field for Improvement in the Techniques of Honey Production and Extraction

By Dr F. G. Smith, Australia

Member of the Melliferous Flora and Pollination
Standing Commission of "Apimondia"

Honey production in Australia is extraordinarily efficient. Had it not been, the industry would not have survived the long period of low prices which we have suffered. Nevertheless there is room for improvement in both the quantity of honey produced per hive as well as in the quality of the honey reaching the consumer.

The aspects on which I propose to speak will not only achieve greater efficiency but also make the work of honey production more pleasant for the beekeeper and his assistants.

There is room for **improvement of stock.** The selection of breeding stock should be based on performance not on appearance. Colour is of importance only in indicating possible mis-mating. Nevertheless we still find some beekeepers wanting golden Italians in spite of generations of experience that pretty bees are often useless bees. Queens cannot be judged by appearance alone, they are not beef cattle or porkers. Queens can only be judged by the performance of their progeny.

In selection of breeding stock the aims are high production and good management characteristics. The bees must be hard working. The queens must be good egg layers yet colony show economy with food consumption. The colony needs to build up before the honey flow not on it. The bees should show resistance to disease. There should be a disinclination to swarm; bees prone to swarming are useless to modern beekeeping. The workers need to have a long life; there needs to be a balance between fecundity and long life. The bees need to be good defenders of their hives; this must be balanced by manageability. There must be economy in the use of stores during periods of dearth. There must be readiness to build comb. The arrangement of stores in the hive is important; pollen should be seen to be stored around the brood nest and honey in the supers. Bees that spread their brood nests up through three or four boxes, make management difficult. Good temper and calm behaviour are vital to management. Disinclination to use propolis or brace comb also assists management. Even and level cappings on honey comb aids uncapping.

Once a beekeeper has a good strain he should do his own breeding; selecting bees most suited to the environment in which he works, and suited to his form of management.

Much honey is lost through **overstocking apiary sites.** Too many apiaries in an area are an obvious cause of loss; this is usually avoided. Too many **hives** in a single apiary is a more frequent cause of poor or low crop. During the active season each bee colony uses about 1½ lb (100 g) of honey each day for its own maintenance. Each colony has to gather this amount to keep it going. Any additional honey or nectar gathered is surplus; this becomes the beekeeper's crop.

Assuming that all hives are in condition for foraging, the amount gathered each day will be dependent on how much nectar is available within economic flight range, 100 hives of bees will obtain only just enough to keep them going; there will be nothing for the beekeeper. Fifty (50) hives of bees in such a place will gather 75 lb (35 kg) for themselves and 75 lb (35 kg) for the beekeeper. Twenty (20) strong hives will gather 30 lb (15 kg) for themselves and 120 lb (56 kg) for the beekeeper.

To get the best results each beekeeper needs to be able to assess the probable daily yield of nectar from the area around each apiary site. This is learnt only from experience. The beekeeper should then stock each apiary with sufficient hives to give him the maximum yield of honey in the form of crop. This should be on the basis of a 3 to 6 lb (136 g to 272 g) of honey per day per hive.

Beekeepers accustomed to handling hives of bees by the truck load find this concept difficult. But stocking each apiary, with only as many hives as will give the maximum return to the beekeeper, is essential for the most profitable honey production.

Combs used for the storage and extraction of honey should be used for that purpose alone. The frames to hold the combs should be designed for maximum efficiency in honey storage by the bees, and maximum efficiency in uncapping and extracting. Supers in which honey is stored should be of a size which is readily handled by a beekeeper when full of honey, not too heavy, not too light.

The 6⅝ inch (168 mm) super in the 10 frame size, meets these requirements. When full it averages 55 lb (25 kg) gross, ranging from 50 to 61 lb (23-28 kg). The amount of honey in it averages 40 lb (18 kg) ranging from 35 to 45 lb (16-21 kg); three quarters of that held by a full-depth 9½ inch (241 mm) 10 frame box. Many beekeepers have recognised that the full-depth 10 frame box is too heavy as a honey super, averaging 80 lb (36 kg) gross, it may be up to 90 lb (41 kg). The more manageable weight of the 6⅝ inch (168 mm) super increases the speed of handling, it lessens fatigue, and eliminates strain and backache from handling full depth boxes. These 6⅝ inch (168 mm) supers are filled and made ready for extracting more quickly. They are cleared of bees more quickly and thoroughly by phenol, other repellants or air blowers.

Manley frames are of simple construction. They are designed for the storage and easy extraction of honey, they are self spaced at the best spacing for honey storage, they do not crush bees when moving hives with empty supers, there is no fiddling spacing the frames by hand, and boxes can be stood on ends or sides without crushing bees or comb. The width of the top and bottom bars is just right for the removal of cappings with one clean sweep of the knife. Very little honey is cut off with the cappings. Less honey has to be separated from the wax; less honey is damaged by cappings reducers.

The essential features in the design of Manley frames are that the end bars, which are parallel sided, are ⅝ inch (16 mm) wider than the top and

bottom bars. The top and bottom bars are both the same width as each other for case of uncapping. This ⅝ inch (16 mm) difference between the width of the end bars and the top and bottom bars is vital. The bees cap honey comb when there is ½ inch (12 to 13 mm) between the faces of adjacent combs. The design of the Manley frame permits the cappings on the combs to stand proud of the top and bottom bars by 1/16 inch (1.5 to 2 mm) so that they can be uncapped easily with one stroke of the knife.

For use in Australian 10 frame size honey supers the width of the top and bottom bars of Manley frames should be 1 1/16 inch (27 mm) and the width of the end bars 1 11/16 inch (43 mm). Eight of these frames go into a 10 frame width super, allowing ample space at each side for expansion of the wood in the humid atmosphere of the hive and for easy removal of the frames. The depth of these frames is 6¼ inch (159 mm).

For the hand operator, and that includes most beekeepers, Manley frames are uncapped in half the time taken to uncap full-depth frames, with a shorter knife and much less fatigue. The use of 6⅝ inch (168 mm) supers and Manley frames results in faster handling and uncapping, a decrease in fatigue and strain, more honey can be extracted each day than with full-depth supers. As the combs are not used for brood production, the honey is free from the taint of dark combs, very little slumgum is produced in cappings melters and better quality honey results.

Because of the design of Manley frames, very little honey passes through the cappings reducer. Fuel is saved because less heat is taken up by honey and the maximum amount of honey is extracted in the proper place, the honey extractor. Finally, reduction in slumgum permits better flow of heat to the wax and results in better quality beeswax.

Field **extraction** is laborious and time-consuming. There is prolonged disturbance in the apiary and the extraction has to be carried out while the honey-flow is in progress. This frequently results in the extraction of freshly gathered nectar. Field extraction requires long absences from home and help is not easy to obtain.

Central extraction enables the design of more efficient extracting plant. The apiary work becomes more efficient; there is least disturbance in the apiary and reduced labour i nthe apiary. The robbing risk is reduced and the crop can be harvested after the end of the flow. There is better home life and more pleasant working conditions. Staff becomes easier to obtain and casual labour can be obtained as required.

Circulating hot water systems have a number of advantages over the use of steam. Steam has long been used to supply heat for the honey extractor, the uncapping knife and the cappings melter, also for cleaning down equipment. Steam has the disadvantage that it is of a higher temperature than that needed to do the work. Heat is therefore wasted, fuel is wasted, working conditions in the plant are hotter than desirable, and, unless a condensing system is incorporated, water is wasted.

Hot water circulating systems have the advantages of providing heat at precisely the temperature required to do the job. Residual heat is not wasted as the water recirculates through the system. Working conditions are more

pleasant. Damage by local overheating of honey and beeswax is eliminated. The overall reduction in heat losses saves fuel, and water losses are minimised.

Draining honey from cappings has advantages over the traditional steam-heated cappings melter. The steam-heated cappings melter has long been seen to be a source of damaged honey, up to 25% of the crop is so treated in some plants. The use of Manley honey-storage frames reduces this proportion considerably. But the aim should be to eliminate all damage to honey.

The causes of damage are local overheating when steam is used, chemical reaction with metals at high temperatures, leakage of steam and water into honey, and absorption by honey of the soluble stains in darkened cappings and pieces of comb.

Even if the first three causes of damage are eliminated by the use of hot water, stainless steel and sound plumbing, melting beeswax in contact with honey results in the transfer of dark staining from the wax to the honey.

The honey should be allowed to drain from the cappings in baskets. This is usually considered as a bulky and slow-operating arrangement, but there are compact refinements to this system with a series of baskets which drain in a warm cabinet.

After draining during the day, the wax can be melted by turning up the heat overnight, or by transferring the cappings to a separate beeswax rendering tank. Draining by gravity from a series of baskets presents fewer problems than do centrifugal extractors, although some have been used successfully.

The usual type of **honey sump,** receiving honey flowing from the extractor, frame rack and cappings drainer, mixes air and wax particles into the honey by allowing the honey to fall into the sump. To avoid beating in air and to aid the separation of air and wax from the honey, the honey should enter the sump at a level well below the surface, and be flowing horizontally. The light wax and air can then rise to the top and the honey settles to the bottom.

A baffle should be provided to maintain the honey level constant in the inlet chamber and to draw off the honey only at the bottom, thereby holding back the froth and wax. A strainer in the sump should be immersed in the honey. A strainer held above the surface quickly clogs and it beats air bubbles into the honey. A simple method of straining is to insert between a pair of baffles a close-fitting flat screen. Screens can be changed easily by putting another screen behind the first and withdrawing the clogged screen. For larger operations immersed hanging basket strainers can be used in the middle section of the sump. For practical purposes we have found that 32 mesh screens with baffles provide adequate honey clarity. The honey must go through the wax and air separation section before being allowed to flow into the basket. It should not be poured direct from the extractor into the basket. The third section of the sump behind another pair of baffles contains the pump float switch and the outlet. The honey is drawn from the bottom and the baffle maintains the level in the straining section. Arrangements are required to enable each section to be drained at the completion of an extraction.

Close-ended drums create problems in decanting honey. If honey has granulated, prolonged heating is required to liquify honey in 44 gallon (200 litre) drums sufficiently for the honey to flow out. This is the major cause of damage in packing plants. Open-ended drums enable a very short heating time to be used to free the solid plug of granulated honey. Once clear of the drum this plug can

be broken up by passing over heated tubes and by mechanical means, before being pumped through a heat exchanger to complete the dissolving of the crystals. In large plants, microwave heating may provide the answer.

In my opinion, the production of honey can be increased by **improvements in the selection of breeding stock,** and by stocking apiaries with the **number of hives suited to the availability of nectar** in the area. Improvement in the quality of honey produced, as well as in working conditions, can be obtained by the **use of 6⅝ inch (168 mm) supers** with **Manley frames** by the establishment of **central extracting plant,** by the use of **circulating hot water systems** instead of steam, by using **draining baskets,** for separating the honey from the beeswax cappings, by the use of a simple but efficient **honey sump,** and by the use of **open ended drums** instead of closed ended drums.

Nutritive Value of Honey and its Utilisation

By V. Petrov, Australia

Summary

The nutritive value of honey has been recognized by doctors and dietitians for centuries. Honey is an excellent stimulent in the medical diet. Honey is suitable as a food for people with retarded digestion and also for the feeding of infants. Increased knowledge of mineral elements in body function has brought the attention of scientists to the mineral content of honey and their nutritive values. Honey contains all essential trace elements. Inclusion of honey in the daily diet helps eliminate deficiences of these elements. Honey is an energy producing food. By combining honey with dairy and other products, a variety of new delicious products can be manufactured.

Honey was of great importance as an article of diet to the ancients, being almost their only available source of sugar. In India and other eastern countries, honey was used for the preservation of fruit, for making cakes, sweetmeats and other foods.

Dietitians and medical men have recognized, long ago, the nutritional value of honey and that honey has certain properties which ordinary sugar does not have. Doctors have recognized honey as a food especially suitable for people with retarded digestion. Experiments conducted in the United States have shown that honey is a valuable food for the feeding of infants. Dr M. W. O'Gorman, Chief of the Division of Hygiene of Jersey City, used honey for 25 years as a valuable additive to milk used for infant feeding and in the growing idetary (BECK, 1938).

Old people have been capable of building up their strength by using honey.

The ability and strength lost during life can be restored to a certain degree, by honey. Therefore, honey has been called "the milk for the old". What cows give to youth, the bees give to old people (SIMONS, 1965). Both cows and bees are suppliers of a special nutrition which helps mankind enormously at the beginning and the end of the life span.

Besides proteins, carbohydrates, fats and vitamins, babies for normal growth and adults for normal body function, require a variety of minerals. The mineral elements which the body needs, in what might be called substantial quantities, are calcium, magnesium, sodium, potassium, sulphur, chlorine and iron. The body also needs in smaller or "trace" amounts, copper, iodine, manganese, cobalt, zinc and molybdenum. Inorganic elements play various roles in the body: as components of skeletal structures, as cellular constituents, as regulators of body acidity and in association with enzymes systems (DAVIDSON and PASSMORE, 1963). Mineral elements such as copper, iron and manganese have important blood building functions (BECK, 1938). If there is not enough iron in the food, the body cannot build haemoglobbin (red pigment in blood cells). Iron is also essential for the haem-containing enzymes such as catalase, peroxidases and cytochromes. The deficiency of iron is a very common cause of anaemia.

Manganese is involved in the activation of several enzymes such as peptidase, phosphatase, argainase, cozymase, carboxylase and chlorine esterase. A normal human diet contains 5-10 mg of manganese per day. Zinc is also an essential element for the human body. It is a constituent of insulin and the enzymes anhydrase.

Cobalt is an essential nutrient for man. Cyanocobalamine (Vitamin B12) contains 4% cobalt. The quantity of cobalt needed to maintain the body in good health is extremely small, since the total amount of cyanocobalamine in the whole body is about 2 mg. Dark honey contains 6.0 mg of cobalt per kg of honey. Cobalt is a component of vitamin B12 which is essential for a large variety of animals and even some micro-organisms. The following table shows the daily requirements of various minerals (HARROW and MAZUR, 1962).

DAILY REQUIREMENTS OF SOME MINERALS

ELEMENT	DAILY REQUIREMENTS
Calcium	0.9 g
Phosphorus	1.3 g
Magnesium	0.3 g
Potassium	—
Sodium	10 to 20 g of sodium chloride
Chlorine	
Iron	12 mg
Copper	2 mg
Manganese	1.5 mg
Zinc	12 mg
Cobalt	15 mg

The increasing knowledge of the function of the mineral content in the

human body has brought the attention of scientists to the mineral constituents of honey and their nutritive value. A high ash content increases the nutritive value of honey (B. FEINBERG, 1951). The analysis of Australian dark and light honeys as determined by atomic absorption spectrophotometry (PETROV, 1970) showed some significant difference.

It can be seen from the analysis that the amount of potassium, calcium, iron, aluminium, magnesium, manganese and cobalt is higher in dark honeys than in light honeys. Similar results have been published by workers in other countries (SCHUETTE and REMY, 1932; VARJU, 1970).

Although the lighter coloured honeys are more popular with the consumer, it would seem that the darker variations have a greater nutritive value due to their higher mineral content. This analysis also showed that honey contains all essential trace elements. By studying the mineral requirements of the human body and the composition of the mineral constituents of honey, it can be seen

mg / Kg HONEY

CONSTITUENTS	STRINGY BARK (Dark)	CLOVER (Light)
Silicon	23	136
Aluminium	111	9
Iron	37	9
Calcium	227	107
Magnesium	132	40
Sodium	23	251
Potassium	1,241	441
Manganese	10	0.8
Copper	0.6	0.8
Chromium	< 0.6	< 0.3
Nickel	< 0.06	< 0.03
Zinc	2.0	3.0
Cobalt	6.0	0.2
Antimony	< 2.0	< 1.0
Lead	0.2	0.1
Phosphorus	123.0	129.0

that honey contains most of the essential elements needed by the human body. Therefore, in cases where a deficiency of trace elements exists, including honey in the daily diet may help to eliminate this deficiency. The deficiency of essential trace elements exists, not only in under-developed countries (World Health Organization Report, 1959), but also in developed countries of Europe and North America (DAVIDSON and PASSMORE, 1963; page 461-2). The deficiency of some essential nutrients or elements is not necessarily due to insufficient food supply but a consequence of an unbalanced diet.

Experimental work done by Drs KNOTT, SCHUKERS and SCHULTZ (1941) showed that the retention of calcium and magnesium in the body from food was higher when honey had been included in the diet of infants.

Dr EMRICH (1923), in his experiments with children, established that by including honey in the diet, the haemoglobin content in the blood was increased. This was possibly due to the presence of iron, copper and cobalt in honey which are essential elements in haemoglobin formation.

Dr PALMER, Division of Biochemistry, University of Minnesota, conducted a series of experiments on the value of honey for the prevention and cure of nutritional anaemia in rats. It was established in these experiments that by adding dark honey to the rats' food, the haemoglobin formation was increased. The addition of light honey was less effective. These experiments proved that by the addition of dark honey, nutritional anaemia in rats could be cured (ROOT, 1961).

If honey helped to cure anaemia in rats, it could possibly help to cure many cases in humans where the diet fails to meet the nutritional requirements. It has already been shown by Dr EMRICH (1923) that by the addition of honey to children's diets, the haemoglobin content can be increased.

Pernicious anaemia is now treated by the oral administration of Vitamin B12, between 75 and 300 mg per day in place of liver extracts formerly used (BREWERTON), 1962; BLACKBURN, 1952). Vitamin B12, unusual in that the molecule contains an atom of cobalt, occurs widely in nature in small quantities (e.g. fish, milk, sea-waters, etc.), and is synthesized generally by micro-organisms (ROBINSON, 1966).

It is interesting to speculate whether the cobalt found in honeys is present as cobalamin because very few organic compounds of cobalt are known to occur in nature. However, should this postulation be correct, it would mean that the dark honeys formed from eucalypt nectars are a rich source of Vitamin B12. As isolated from livers in a pure crystalline form, Vitamin B12 contains approximately 4% of cobalt (SMITH, 1948).

It is essential to do more experimental work of a similar nature as has been done by Dr PALMER, Dr EMRICH and Dr FRAUENFELDER, to establish further the nutritive value of other mineral elements found in honey.

In antiquity and all through the Middle Ages, honey was considered as an important medicine. Even today, honey is still used for medicinal purposes among Asiatic races, Egyptians, Arabs and Africans. Honey has a distinct antiseptic property. For this reason, honey is good for sore throats and chaffed skin. Hot milk and honey makes an excellent remedy for husky throats. The literature shows that children suffering from malnutrition, blood deficiency, lung diseases and nerve troubles have been successfully treated with honey in milk by Swiss doctors, P. EMRICH (1923) and FRAUENFELDER (1921).

Dr SCHUCHT (BECK, 1938) of Wiesbaden (West Germany) claims to have cured many hopeless cases of gastric and intestinal ulcers with honey. This is because the main components of carbohydrates in honey are glucose and fructose which can be taken directly into the blood so quickly that distress from acid stomach or heart burn cannot occur.

Honey is an excellent stimulant in the diet for physical and mental fatigue and over-work. When honey is taken in small amounts, it can act as a source of direct nutrition. This is because the main components of carbohydrates in honey are glucose and fructose which can be rapidly assimilated into the human digestive system. There are about 1,540 calories per pound in honey. It is therefore, an energy producing food.

Honey and milk have some similarities in their composition. Both of them contain minerals, proteins, carbohydrates and vitamins, although in different proportions. The average analysis of these two products shows the proportions as follows:

	HONEY	MILK
Minerals	0.2%	0.7%
Proteins	0.4%	3.8%
Carbohydrates	81.2%	4.7%
Vitamins	Several	Several
Fats	—	3.9%
Calories	326/100 g	67/100 g

From the composition of these two products, it can be seen that both are very nutritious due to the presence of necessary components needed to support life. This is not surprising because both of these products were made as nutritive foods: milk for young mammals and honey as a foodstuff to be used by insects during the winter.

From studies of the composition and nutritive values of honey and milk, it has been established that they are both important for human nutrition. By mixing the two products together, the nutritive value of the products can be increased. The Biblical designation "a land flowing with milk and honey" should be suggestive enough to combine honey with dairy prdoucts. Some wholesome combinations of these two products are: honey milk (5% honey and 0.01% stabilizer added to the milk), honey yoghurt (1 to 2% honey added to yoghurt milk before or after incubation), honey milk bar syrup (half ounce of honey milk bar syrup per pint of milk), honey butter, honey cream cheese and honey ice cream. The cost of honey milk will not be any higher than the present cost of flavoured milk. For example: to produce 1 gallon of chocolate milk, the cost of ingredients is 36.97 cents (Australian currency) per gallon. (To produce 7 gallons of strawberry, 32.15 cents per gallon, caramel, 33.13 cents per gallon and orange, 31.93 cents per gallon.) To produce 1 gallon of honey milk, the cost of ingredients is 31.45 cents per gallon. By combining various flavours with honey, a very pleasant milk drink is obtained. Also, by replacing the ordinary sugar in flavoured milk with honey, the nutritive value of this drink is increased (PETROV, 1970).

Honey is used to sweeten and give special flavour to foods such as breakfast cereals, fruits and candies. Honey is used for commercial baking and wine production. It has also been used as facial packs in beauty parlours, in hand lotions, and gums.

However, lack of uniformity in physical characteristics and chemical behaviour must be taken into account when honey is to be used for industrial purposes. Great care and a thorough understanding of the behaviour of particular honey types is necessary for complete success in utilization for the production of honey dairy products, candy manufacture, commercial baking and wine production.

To extend the market of honey, more research work on chemical composition, nutritive value and utilization of honey in food and drink preparation must be done. For this research, our industry needs to encourage and support research work in this field.

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Market Report — Beekeepers Supplies

Since the publication in our August issue of price comparisons of important requirements of beekeepers', new price lists have come to hand from two Australian manufacturers and the sole New Zealand manufacturer. The following is the up-to-date comparison:

	N.Z. Sole Manufacturer	AUSTRALIA Brand 'A'	Brand 'B'
	$	$	$
Full Depth Hoffman Frames per 1,000	128.07	190.00	210.00
Full Depth Lock Cornered Storeys each in 50's	2.07	3.04	3.10
Full Depth Half Checked Storeys each in 50's	1.75	Not Quoted	2.95
Medium Brood Comb Foundation Converted From Beekeepers Wax Carton Lots, price per lb	.18	Not Quoted	.28
Medium Brood Comb Foundation Ex Stock Carton Lots price per lb	.94	1.35	1.05
Thin Super Half Depth Standard Ex Stock Carton Lots price per lb	1.15	1.60	Not Quoted
Queen Excluders, Wood Frames each in 50's	1.50	1.72	Not Quoted
Queen Excluders, Metal Frames each in 50's	Not Quoted	Not Quoted	1.80
Prices Current at	Sept. 1973	July 1973	Sept. 1973

AUSTRALASIAN BEEKEEPER

ORCHARDISTS FACE CRISIS OVER BEES

"The fruit yield from Orange district orchards is expected to be cut by more than half this season because of a critical shortage of bees for pollination, says Graham Gosper in the "Central Western Daily" of September 18th, 1973.

Major beekeepers have banded together in refusing to supply hives for the orchards because they fear their bees will be killed by insecticides.

The new threat is likely to add thousands of dollars to the already big losses expected by district orchardists following the Budget decision to withdraw sales tax concession on the use of pure fruit juices.

The action by the beekeepers follows widespread bee losses in the area last season because of insecticids poisoning.

Agriculture Department apiculture officer in Orange, Mr Bruce White, said orchardists were finding it impossible to buy or rent hives.

This week he had received more than 30 telephone calls from orchardists and some chemical company representatives who desperately wanted bees.

KILLED

Most of the natural bees had also been killed off by the insecticides.

Mr White said most apple varieties, cherries, some grapes, nectarines, most peaches, plums, pears and some apricot varieties had to be pollinated.

A recent experiment conducted by the department in Victoria had shown that where bees were excluded from the pollination process fruit yields were cut by about 80 per cent.

Mr White said there were just not enough bees now in Orange area to pollinate the large district concentration of blossoming fruit trees.

The department was virtually powerless to do anything about the problem.

SUSPENDED

The main bee pollination service used by orchardists in the district has suspended operations because of the insecticide scare.

Mr Ray Mitchell who has provided the service for about 100 orchards for many years said he would not put hives back on to the orchards until the insecticide was taken off the market.

He said he had taken about 1700 off the orchards last season after about 95 per cent of his field bees had died.

Other major beekeepers from Molong and Orange had also shifted from the area on his advice.

"The only bees being supplied in the area this season are coming from the very small beekeepers," Mr Mitchell said.

They had almost doubled the rental rate charged last year.

Mr Mitchell estimated he had lost almost $30,000 as a result of the bees killed.

He said he was seeking compensation from the company manufacturing the insecticide.

District fruit officer with the Department of Agriculture, Mr B. Valentine, said DDT should be used to control apple dumplong bug and thrip pests without killing bees.

This should be sprayed in the late evening or early morning before the bees were on the move.

Mr Valentine said continued wet weather during the next few weeks would make losses very heavy because there would be no opportunity for wind pollination.

He said bees were far the most efficient pollinators.

BEE CULTURE

HONEY PRICES ON ENGLISH MARKET

News of honey prices reaches me from most parts of the country as the weeks go by. Retail prices vary from 32p to over 60p for floral honey. The latter seemed to me to be ridiculous. I found one shop buying my honey from another shop at 42p per lb and reselling it at 56p per lb! It appears that the price being offered by the "big boys" is about £600 per ton delivered to their premises but, if the crop is as much above the average as is promised at present, then I can forsee a fairly big drop in this price by the time this note is in print! Packers are finding a big resistance to higher prices throughout the country. My advice to all — keep your prices reasonable, do not part with your crop too cheaply but do not hold out for an unrealistic price — 26p-28p a lb in bulk; 33p-35p a lb in glass wholesale; 40p-42p a lb retail. After all, we want the public to buy and enjoy Local Honey.

[At current exchange rates, 1p is worth about 1.6c, so 40p would be 64c. Because of world trends I cannot see the threat of a fall in price having any substance.—Ed.]

OVERSEAS CORRESPONDENCE

Nick Wallingford
Box 8086, Austin, Texas, 78712, U.S.A.

October 30, 1973

Dear Sir,

I am a young man, 22 years old and unmarried, who has been working with bees for the last year on my own, keeping four hives. I have also been helping an older local beekeeper with his 150 hives and I have picked up a lot of enthusiasm and experience.

When I contacted the New Zealand Embassy in Washington, D.C., concerning immigration I was given, among other things, the August issue of "The New Zealand Beekeeper". Since the guarantee of a job is a prerequisite for a visa, I decided that this letter to you with my description and desires would be a good point from which to start. My hope is that you will be able to put me into contact with a beekeeper needing a reliable assistant.

I would prefer working in an area of rural to semi-urban nature, since one of my greatest satisfactions comes through working with soil and rebuilding it organically. The room and climate suitable for a fair-sized garden would be one of the requests I wuold make of the area in which I would hope to work.

I would, of course, also hope to be working for and learning from a beekeeper who is still open enough to innovation and experimentation that new procedures and ideas are considered and implemented; double-queening of hives is a process that I would enjoy being around, for instance.

To sum up, let me say that I enjoy working with bees, and am intelligent and interested enough to be an asset to your industry. I am honest and dependable, and capable of coming to your country as soon as a job in beekeeping is assured and a visa obtained.

Sincerely yours, NICK WALLINGFORD.

Chang Soo Kim,
Jo Toon Ri, Pyongchang Myon, Pyongchang Goon, Republic of Korea.

November 21, 1973

Dear Sir,

You may be surprised to receive this letter from Korean. I saw your ad in the "Bee Journal" and "Bee Culture".

I am 40 years old, Christian, graduated university, my occupation is agriculture. I have lived 20 years over with bees owning 190 colonies working myself.

If possible I wish to go there to study new bee craft. I am anxious to make contact with some New Zealand beekeeper where I might become employed as an apprentice learn your system of beekeeping.

I have in mind working anywhere in any case and under any conditions and will work do my best for his business prosperity. Please let me know what you are thinking and the best way I should take.

I hope you could find any helper at an early date. Would you help my plan. I hope you are understand my poor English.

Sincerely yours, CHANG SOO KIM.

Jack Varley, Nelson field officer, showed very interesting slides taken in the New Hebrides and Tom Holland gave an interesting detailed talk on the wasp, its nest construction, habits and results.

Mrs Ralph Glasson snr, very ably supervised the kitchen facilities which helped greatly to console the inner man.

Crop prospects, earlier, seemed good here in the south when most hives made excellent progress, but a prolonged wet spell and now (late Nov.) a cold windy spell has curbed their enthusiasm.

Reoprts would indicate that bees further north are not as far advanced. Swarming is more prevalent than usual. —Peter Lucas.

Southland

Southland and Otago beekeepers enjoyed a one-day seminar held in Gore in early September and apiary instructor Trevor Bryant is to be congratulated on his successful organising of a programme with such a variety of interesting topics.

Kevin Ecroyd's address on the possible effects of new metric sizes in milled timber was a mater of considerable concern and clearly showed that our industry must present a very strong case to the powers that be to ensure the availability of suitable timber sizes. The accepted hive-part measurements must either be adhered to or, alternatively, altered to an acceptable very slight degree, which will not affect the interchanging of all equipment or sacrifice the bee-space.

Generally, hives are in good order and those in sheltered areas adjacent to the willow have acquired a good boost in stores. November is usually our most critical month, however, and one wonders, sometimes, where all the early-gained stores have disappeared to. I believe large quantities of sugar have been and will continue to be fed in Southland this spring.

Our annual field day will be held at Glass Bros property, Waikaka Valley on Saturday, 2nd February, 1974 and we extend a cordial invitation to all who may be interested. —Allan Ward (Sec.)

BEEKEEPER WINS CHAIN-SAWING CONTEST

Mr Bill Ashcroft, well-known beekeeper and Mayor of Havelock North is watched with keen interest by Mr Peter Tait, Mayor of Napier and Mr G. Stiles, Mayor of Waipukurau and Mr Ron Giorgi, Mayor of Hastings, during a Mayoral Chain-sawing Contest at the Hawkes Bay Agricultural and Pastoral Society's Royal Show, Hastings.

—Herald Tribune Photo

CAR CRASHES AS WASPS ATTACK

From "The N.Z. Herald" 20/11/73

A swarm of wasps caused a car to crash in Titirangi last evening and left the two occupants both stung and injured.

And a fireman who arrived at the scene was also stung when the wasps turned on him as he went to attach a rope so the car could be pulled up a 12-foot bank it had crashed over.

The acident hapepned about 6 p.m., when the swarm of wasps flew into the car, a Mini, as it was going along Park Rd.

The police said the driver lost control and the car went over the bank.

The occupants of the car were taken to hospital for treatment of both stings and injuries.

The fireman, who was from the Titirangi brigade, was also taken to hospital to have his stings treated.

Other firemen sprayed the car with water to drive away the wasps and it was later pulled back on to the road.

[Perhaps the Ministry will be stung into concerted action on the wasp question when serious injuries become more common.—Ed.]

VISITORS TO "N.Z. BEEKEEPER"

Two visitors "dropped in" to Auckland from up north recently. By a strange co-incidence they are both airline employees, both large-scale amateur beekeepers and both belong to the same church denomination as the editor.

ART CHANG

Art Chang lives on the island of Oahu but has his 280 hives on the island of Hawaii because there are better floral sources there. He works with United Airlines at the Honolulu Airport which is on the island of Oahu, but flies the 200 miles to his hives, which are on the dry side of the island of Hawaii on an average of once a week.

In his tropical paradise Art says that there is such a wide variety of flowers that there is some nectar flow virtually all year round. Extraction is governed by the finish of a particular flow and may be more or less continuous all the year round.

The retail price of honey in Hawaii is $US1 or more per pound for average types but may go up to $US1.40 for special types such as the coffee flavoured variety brought in when hives are on or near a coffee plantation. Some pollination service is provided for the corn and bean growers but hives have also to be shifted at various times to take advantage of the varying nectar flows and the vagaries of the weather.

There is no wasp problem in Hawaii but red ants can cause considerable trouble. A dousing with seawater round his hives is a good preventative for red ants which is relatively easy, is cheap and non-toxic to bees. Most of his bees are within one or two miles of the sea so this is a cheap supply of sea-water.

Mr Chang plans to retire in "a year or two", build up his hives to 1000 or so and move over to where they are located on the island of Hawaii. The only real competition he will have is from the Hawaiian-American Honey Co (Millers Honey Co in California) who have 10,000 or more hives and are rapidly increasing their holding. Backyard smallholdings are virtually unknown in Hawaii.

The name Chang gives an indication as to one of the races of Art's family mixture of Chinese, English, Hawaiian, Irish and German. His wife is Japanese-Jewish. These mixtures are typical of Hawaii where fewer than 20,000 out of three-quarters of a million population claim to be true Hawaiians

CLARKE MASTERS

Clarke Masters is a pilot of American Airlines Boeing 707 aircraft who lives in Prescott, Arizona, and is based

OBITUARY

MACKISACK, JASPER BRETT

(As the result of an accident, on October 9).

He will be remembered mainly for his work in setting up the pilot scheme for Niue Island in 1967 and 1968, with the help of Mr A. J. Neil who was then the technical officer on economic development to the Niue Administration.

A total of 1250 hives were taken up to found what it is hoped will be a pilot scheme for the whole South Pacific. Without Mackisack's determination, patience and perserverance the whole scheme must have long ago faded into memory. The hurricane which came soon after the project was beginning to get on its feet stripped the plants of foliage and flowers but did not do much damage to the hives which were on sites specifically chosen to avoid the prevailing hurricanes.

After the hurricane a plague of caterpillars stripped the nectar sources again, then drought wrought havoc. Yet today, as a result of Mackisack's determination and tenacity, the whole scheme is viable under the management of a local Niueuan man. It is hoped that the whole Pacific basin will benefit from the lessons learned by his forethought. And his work could have far-reaching effects in increasing production by pollination since there are some food plants in the tropics, like the coconut, which can increase production by 80 per cent with adequate hives on hand.

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on Phoenix for flying purposes. His 100 or more hives are in desert-type country and the bees have to rely on cactus, sagebrush and similar low-rainfall plants for nectar.

Most of Clarke's honey is sold rete for $US1 per pound and it is in great demand.

His recent visit to Auckland was a stimulating experience from many points of view.

Having been provided with samples of both Hawaiian and Arizonan honey. the editor now feels he has taken the first steps towards becoming an international connoisseur on honey.

FOR SALE

4 X FRAME PENDER EXTRACTOR

Good order
Apply:

H. N. BRYANT

P.O. Box 3, Mayfield,
South Canterbury

CAPPINGS REDUCER; $100

(Stainless Steel, New)

4-Frame A1 Root Reversible Extractor, New Baskets; $100. Wanted to Buy: Old 8-Frame Extractor, Baskets not needed.

COMVITA APIARIES

R.D. 3, Kaitaia

45-FRAME RADIAL EXTRACTOR

With variable speeds and 1 h.p. elec. mtr. Has pyrotenax cable in base, also steam pipes. Price, $285.

G. L. HUNT

178 South Road, Ashburton

BEEKEEPING BOOKS AND MAGAZINES

The Australasian Bee Manual, 1911 (Isaac Hopkins); Practical Queen Rearing, 1918 (Frank C. Pellett); Gleanings in Bee Culture, 1935 to 1946; ABC and XYZ of Beekeeping; Some N.Z. Bee Journals from 1918; The Management of Bees, 1884 (Samuel Bagster, Jun.).

Price: $50 for the lot.

Most of these are difficult or unobtainable today.

A. J. SMITH

55 Gregg Street, Dannevirke

HONEY EXTRACTORS

One 4-frame reversible, with motor; $95. Also one 20-framed (no baskets or motor). No reasonable offer refused.

A. FAMILTON (PH. 357)
5 Stromness Street, Palmerston, Otago

WANTED TO BUY

BEES WANTED

UP TO 50 HIVES WANTED URGENTLY
Anywhere within 100 miles of Christchurch. Also up to 100 supers. Will buy in separate lots if necessary.

P. SELL

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HONEY PUMP

(ANY SIZE)

T. BEALE

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HONEY

Preferably Light Amber
Manuka, Rewarewa types
Top prices paid for honey of top quality.
Drums supplied.

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ANY QUANTITY

TOP PRICES PAID, GRATEFULLY

Ambrosia — P.O. 584, San Anselmo, California, U.S.A., 94960

Trends in Modern Farming

(Cont. from Page 48)

The second development is in the tussock country. Current high returns have caused an increased amount of topdressing and oversowing to be carried out. In this district we have 400,000 acres (160,000 ha) of tussock country and of this an estimated 40,000 ha has been developed. At a rough guess there will be another 80,000 ha capable of improvement by subdivision, oversowing with clovers and topdressing. It is in this country that beekeepers must look towards increasing returns and increased stocking with apiaries.

The National Beekeepers' Association

(For the advancement of the Beekeeping Industry in New Zealand)

'Better Beekeeping—Better Marketing'

NEW SUBSCRIPTION RATES (per year): These do not take effect until year starting 1st April next. For present rates, see May, 1973 issue.

0 to 20 hives	$4.00	1001 to 1100 hives	$44.00
21 to 200 hives	$8.00	1101 to 1200 hives	$48.00
201 to 300 hives	$12.00	1201 to 1300 hives	$52.00
301 to 400 hives	$16.00	1301 to 1400 hives	$52.00
401 to 500 hives	$20.00	1401 to 1500 hives	$56.00
501 to 600 hives	$24.00	1501 to 1600 hives	$60.00
601 to 700 hives	$28.00	1601 to 1700 hives	$64.00
701 to 800 hives	$32.00	1701 to 1800 hives	$68.00
801 to 900 hives	$36.00	1801 to 1900 hives	$72.00
901 to 1000 hives	$40.00	1901 to 2000 hives	$80.00

And increasing by $4 for each 100 hives up to a maximum of 4000 on which the subscription will be $160.00.

APIARY INSURANCE
(Public Risk Indemnity)

Free Cover for Association Members

All financial members of the Association are automatically indemnified against Public Risk claims up to $10,000 in any occurrence of injury or death to persons or livestock directly attributable to the action of the members' bees and arising from his or her negligence as the beekeeper. The cover is underwritten by the New Zealand Insurance Company Ltd and the premiums met by the Association from consolidated funds.

THE N.Z. BEEKEEPER

The subscription rate for all members is $1 per year, all others $2 (NZ) per year. Please check the exchange rate in your country and send an amount to produce $2 (N.Z.) here. For example it now takes $2.90 (US) to make $2 (NZ).

Literary contributions and advertisements must be in the hands of the Editor, Mr N. S. Stanton, P.O. Box 4106, Auckland, not later than the 25th of the month preceding publication.

Nome-de-plume letters must be signed by the writer and address given, not necessarily for publication, but as proof of good faith. Letters accepted for publication do not necessarily express the views of the Editor or the Executive.

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FRONT PAGE STORY

Papua-New Guinea Beekeeping Project

Our picture shows a group led by Chris Dawson of Timaru about to take home the honey collected from the walls of the Nurses' Dining Room at Tinsley Hospital, Baiyer River, Papua. More details of this encounter are on page 19 of this issue.

The Order Form enclosed with this isue is for your use in helping with this project.

Chris has reported that with excellent co-operation by a number of beekeepers, this project is nearing the halfway mark in raising its budget to set up a pilot teaching scheme for the Territory.

This is an excellent gesture which is perfectly timed at this time of the independence proclamation of this Territory of Papua-New Guinea.

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