THE NEW ZEALAND BEEKEEPER

VOL. 8, No. 2. MAY 20, 1946.

OFFICIAL ORGAN of the
NATIONAL BEEKEEPERS' ASSOCIATION
OF NEW ZEALAND

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

Better Beekeeping | Better Marketing

THE NATIONAL BEEKEEPERS' ASSOCIATION.

President: Mr. E. A. Field, Norbiton Road, Foxton.
Vice-President: Mr. W. J. Lennon, Omakau, Central Otago.
Executive: Messrs. E. D. Williams, Carlton St., Te Awamutu; E. J. Kirk, 16 Selwyn St., Wanganui; T. F. Penrose, Southbridge R.D., Canterbury; J. McFadzien, Jr., Outram A.D., Otago.
General Secretary: Mr. G. V. Fraser, F.C.S., N.Z., Foxton.

Branch.	President.	Secretary.
Far North	Mr. W. J. Haines, Bonnetts Road Kaitaia.	Rev. J. Graham, Dominion Road, Kaitaia.
Northland	Mr. J. Gavin, Titoki R.D., Whangarei.	Mr. H. R. Holdaway, Whangarei.
Auckland Cent.	Mr. F. Campbell, 1 Fitzroy Street, Papatoetoe.	Mr. E. J. Petry, 18 Wheturangi Rd., One Tree Hill, Auckland
Sth. Auckland	Mr. F. D. Holt, R.D., Te Kauwhata	Mr. J. R. Barber, Mangaotaki, Pio Pio.
King Country	Mr. H. S. Shoebridge, Manunui.	Mr. H. S. Shoebridge, Manunui.
Whakatane	Mr. I. Hubbard, Gouldstone Road, Whakatane.	Mrs. D. Petty, Eivers Road, Whakatane.
Hawke's Bay	Mr. A. Lowe, "Sunnybank," Hastings.	Mr. P. Berry, Arataki Road, Havelock North.
C/S H Bay	Mr. T. Taylor, School House, Takapau.	Mr. S. C. Graham, 7 Guy Street, Dannevirke.
Nth. Taranaki	Private P. H. Dickson, State Houses, Brooklands, New Plym.	Mr. J. Robinson, Mangorei Rd., New Plymouth.
Taranaki	Mr. H. R. Penny, High Street, Hawera.	Mr. T. R. Nicholas, Box 28, Hawera.
Wanganui	Mr. E. J. Kirk, 16 Selwyn Street, Wanganui.	Mr. R. Garrett, Durie Hill, Wanganui.
Waimarino	Mr. E. Larkin, Goldfinch Street, Ohakune.	Mr. J. Toland, Station Road, Ohakune.
Manawatu	Mr. H. Bowler, 29 Savage Cres., Palmerston North.	Mr. H. L. Campbell, Milson, Palmerston North.
Wellington	Mr. J. M. Bodmin, 18 Hobart St., Miramar, Wellington, E.4.	Mr. W. P. Carter, F.C.S., N.Z., Box 1182, Wellington, C.1.
Nelson	Mr. J. A. Adams, 123 Trafalgar Street, Nelson.	Mr. C. Cannington, c/o. Waimea C.C., Trafalgar St., Nelson.
Marlborough	Mr. E. R. Cragg, Old Renwick Road, Blenheim.	Mr. L. W. Gee, Springlands, Blenheim.
West Coast	Mr. E. Airey, 29 Palmerston St., Greymouth.	Mr. J. Glynn, Ranfurly St., Runanga.
Canterbury	Mr. T. Penrose, Southbridge R.D.	Mr. J. Forster, Washdyke, P.O.
North Otago	Mr. J. Neill, Maheno.	Mr. B. Gillies, 60 Tyne Street, Oamaru.
Central Otago	R. Farmer, Poolburn, R.D., Oturehua.	A. Myers, Poolburn, R.D., Oturehua.
Otago	Mr. R. Steele, 141 Eglinton Road, Dunedin.	Mr. E. Campbell, Box 845, Dunedin, C.1.
Clutha	Mr. A. W. Ogilvy, Romahapa.	Mr. R. C. Abernethy, Box 69, Owaka.
West Otago	Mr. C. Marsh, Ettrick.	Mr. E. Winslade, Kelso.
Gore	Mr. A. S. Burns, Gore-Waitaka R.D., Gore.	Mr. F. J. Glass, Gore-Waitaka R.D., Gore.
Southland	Mr. A. A. Lennie, West Plains.	Mr. L. K. Griffin, Woodlands.

SUBSCRIPTIONS:

Up to 30 colonies	....	£0 7 6 (minimum)
Up to 60 colonies	....	0 10 0
Up to 90 colonies	....	0 15 0
Up to 120 colonies	....	1 0 0
Up to 150 colonies	....	1 5 0
Up to 180 colonies	....	1 10 0
Up to 210 colonies	....	1 15 0
Up to 240 colonies	....	2 0 0
Up to 270 colonies	....	2 5 0
Up to 300 colonies	....	2 10 0
Up to 330 colonies	....	2 15 0
Up to 360 colonies	....	3 0 0
Up to 390 colonies	....	3 5 0
Up to 420 colonies	....	3 10 0
Up to 450 colonies & over		3 15 0 (maximum)

An Associate Member shall pay 5/- per annum.

INSURANCE PREMIUMS:

1/6 per apiary per annum. (Insurance is voluntary, but, if taken, all of a member's apiaries must be covered.)

JOIN YOUR NEAREST BRANCH AND DERIVE FULL BENEFITS.

The New Zealand BEEKEEPER

Published Quarterly on the 20th February, May, August and November, by the National Beekeepers' Association of New Zealand.

W. J. Lennon, Editor.

Subscription, 5/- per annum, post free.

VOL. 8, No. 2. MAY 20, 1946.

EDITORIAL.

DAME FORTUNE SMILES.

It would have been interesting to listen-in to the discussions beekeepers are having this month. From meetings we have attended and from reports to hand, it is evident that many are concerned about the future. Those who think, realise that there is much in present marketing methods that is sound, some that is unwise, and more than a little that is downright selfish and short-sighted. It is sound economics to sell a large part of one's production close to the point of production, to save undue transport charges and to avoid rehandling. It is unwise to sell in a market that is temporary, which will require the search for new markets when the emergency passes. Many beekeepers are putting on the market, reasonably near their door, a good product well processed and—this is most important—spreading their sales in packages that reach the consumer as honey to be eaten as honey. A few beekeepers are exploiting any market that will give the highest return, without any concern for the future. It may be bad business to have honey consumed as beer, or as soft drink, or as ice cream, however pleasant the consumption may be. It will be bad business of these markets close to us when sugar rationing is lifted. It means that the market is being temporarily deprived of honey and a real shortage being made worse by turning it into an unreal one. Then, at a later date, honey diverted from these channels will appear on the market as if there was a sudden increase in the supply. Worse still, the manufacturers mentioned have received their due ration of sugar to produce a certain amount of their goods. In buying honey, they can defeat the rationing efforts and produce more than is perhaps desirable. Many beekeepers receive sugar to feed bees to produce honey for table use. When their product is diverted to other uses they may find questions being asked as to why their allocation of sugar should continue, and the questioning would be justified. Unfortunately, the actions of a few selfish folk may harm the good of the majority.

We draw attention to this aspect of marketing, not because we fear it is wholesale but for the unhealthy tendency that it indicates. It is easy to sell honey in bulk at a high price, but it may be sheer selfishness and in the long run bad business. The present is a time to get honey—good honey—into every home, and to keep it there. The goodwill gained now will stand the industry in good stead for a generation. It is wise to question and wise to look ahead.

MEETING OF THE EXECUTIVE.

Wellington was the place and the end of March the time when the Executive held a three-day meeting. All members were present and a heavy agenda of discussions and consultations was carried through. Fortunately, business was finished in time for members to have two hours at the Basin Reserve to see Australia defeating New Zealand at the cricket test. We hope no one suggests that the Test helped business to be expedited! If so, we would suggest a Test during next Conference!

Many important subjects were discussed and decisions made, Government officials and others met the Executive, and the subject of these discussions will be referred to elsewhere in this issue. There are some who

expected the meeting to result either in an earthquake or in the resignation of the Government. Neither calamity has eventuated and we wish critics could understand that negotiations on important matters often take much time and appear negative for some time. A look at international consultations should teach us the need for patience, as a pattern in our own small affairs.

HONEY MARKETING COUNCIL.

The Director of the I.M.D., Mr. Ross Fraser, was able to give the decision of the Government on this question. The industry may now have an election for an ADVISORY BOARD on the terms requested by the National Association: that is, three producer members and three Government members, with the right to vote extending to suppliers to the Division and to the purchasers of seals as well. It is unfortunate that it has taken two years for the decision to be made. Two years ago the industry would have welcomed this decision as an evidence of the Government's desire for our co-operation. It is a question whether the beekeepers now desire such a board.

At the same time as it made the offer, the Government's attitude is that an Executive Council would be more desirable, as the value of an Advisory Board is limited. In view of this latter opinion, one wonders at the Appointment by the Government of an Advisory Board for the war period, and its retention now. The loss of goodwill to the Division, so painfully evident this year, is only one result of this near-sighted policy of denying adequate representation to the producers.

In recommending an Executive Board of the same membership, Mr. Fraser was compelled to point out that the franchise could not extend to the same wide extent. The Government might be compelled to limit the franchise to suppliers of the Division mainly with a limited representation to other sections. We fail to see the logic of having one franchise for an Advisory Board and another for an Executive Board. If the industry is to have a Statutory Board it must represent all sections. Suppliers to the Division have represented one third, at the most, of production, and if the franchise is to be limited mainly to that third it can hardly claim to be a Representative Board. We wonder at the extremity of the caution in limiting the franchise, as the Minister, under the Marketing Act, must have the power of veto in any case. We are concerned at the lack of cohesion and direction in our industry. Only an Executive Board properly constituted will begin to restore direction and drive. The National Executive recommends the industry to have an Executive Board.

SELECT COMMITTEE.

The Executive makes an important recommendation to Conference. It suggests that a committee of Government and producer representatives be set up to examine fully, to receive submissions, and to report on future lines of Marketing Policy. Two years ago the Executive gave advice on this subject to prepare the way for the change-over to the post-war period. That advice was based on sound economic principles, but neither the Government nor the producers seem to have taken the advice.

Many suggestions will be made to producers for the solution of a problem that would not exist if there was the will to solve it. No scheme is good merely because the words "modern," "progressive," "co-operative," or such, are used about it. No scheme is necessarily sound because enough people clamour for it. That is merely facism in economics. There is nothing new under the sun. Methods may change, shop fronts may be altered, but the only line of success lies in the application of proved principles. We hope Conference will accept the suggestion to set up the Select Committee to receive suggestions and report. It is better to hasten slowly. Remember the tortoise and the hare.

THE NEW CONSTITUTION.

It appears that we have not had the last headache on this matter. The Special General Meeting called for the 28th March, adopted the recommendations of Conference—with further amendments. The general principles seem to be widely accepted, both as regards payment and voting. There is an important reservation in each case. The meeting accepted an amendment, moved by the delegate for Wellington, to raise the minimum subscription from 5/- to 7/6, but not without some opposition. Both points of view are understandable. The minimum charge of 5/- has been accepted for some years, and no one wishes to see new members discouraged. On the other hand it has to be remembered that, out of the 5/- subscription, the branch retains 40% and forwards 60% to Head Office, or 2/- and 3/- respectively. Out of 2/- per member, the branch has to run its affairs, and the amount is understandably too low. Out of 3/- per member the Head Office provides a journal, which retails at 5/- per year, and the general administration of a national organisation. On under £200 per year, this is also quite inadequate for the services rendered. We leave it to the hobbyist member to examine the economics of the rise to 7/6 and feel sure that the rise will concern such members least.

On the matter of voting, the member at the other end of the scale—the commercial producer—is the most concerned. He wants to be sure that on the subject of marketing his vote will have real value. We believe it has. In fact, on this side of the new constitution the voting evaluation has been so adjusted as to give the man who has a stake in the industry the balance of voting. Under the old constitution, the balance was in the opposite direction. Practise of the new constitution at the next Conference will be a practical exercise of the recognition given to the man whose stake is solely in the industry.

Governments and societies rise or fall according to their constitution. The Executive has never claimed that the amended constitution will suit every member. It has endeavoured to amend wisely.

INCREASE IN THE PRICE OF HONEY.

Representations to the Price Tribunal for a price increase have failed. Producers who have been approached to furnish returns, that would show increased production costs, have failed to produce conclusive evidence, and 50% of returns were not made. The only case we could expect to be considered would be the inadequate price received for bulk honey by suppliers to the Honey Section. Any increase authorised would require to be made up by subsidy. When the Executive put its case for an increase to the Minister in 1944, he refused to support the case when it went back before December, 1942. The Tribunal appears to be prepared to receive evidence of increased costs back to 1939. If the industry is still interested to present a case, there would be more encouragement to proceed on this latter basis, which we have always claimed to be the only justifiable one.

CONFERENCE. 1946.

This Conference is to be held in Auckland about the end of the second week in July, provided reservations of halls, etc., can be made. We may be able to make a further announcement as we go to press.

I.M.D. RESERVES.

The payment of seal money reserves, accrued during the war, to suppliers of that period, is still "under consideration." Had this matter been "under consideration" six months ago and favourable consideration given to the proposal, many loyal suppliers would have been encouraged to continue their support to the Honey Section. It seems as if the forgotten man in the honey industry will be the

supplier who either from loyalty to the organisation or from fear of the consequences of disobeying the Regulations, send in his quota, during the period required.

The reply of the Minister to an earlier recommendation on the matter gave what appeared to be a complete answer to the producer. His reward was the patriotic privilege of supplying the Division under the Regulations. There the matter was expected to rest, even though the Government admitted its own incompetence to deal with those who failed to supply. Such trifling with the law by those charged to administer it can only result in a breakdown of confidence, and develop a sense of frustration in those endeavouring to observe it.

HONEY TO ENGLAND.

Many organisations have arranged to buy quantities of honey for shipment to England. We are pleased that there is some avenue for the despatch of honey. We regret, however, that the export of this produce was not organised through the Honey Section, which would have ensured that the grade and quality would have been to export standard. As it is, honey from many sources and qualities is being sent away without any guarantee that it will be a good advertisement for our produce. We are not questioning the good faith of those who have supplied, but we question the wisdom of this rafferty method of handling such a valuable foodstuff.

NOTICE BOARD.

The Editor would like to print plans of honey-houses. If you do not have a plan, please send a rough drawing and we will make up a line sketch. Good photographs showing arrangements would also be appreciated. Details of working arrangements will be printed if sent. These will appear anonymously if you wish.

THE PRESENT MARKETING SITUATION.

By the Editor.

The receipt by the Honey Section of under 100 tons of honey this season, compared with under 1000 tons before the war, is an indication of some lack of balance in marketing policy. The reasons for this lack should be sought and the remedy applied.

The weak spot in our N.Z. marketing organisation is the price for bulk honey. Given a higher price in bulk, the producers would send plenty of honey to keep the Honey Section operating an economic unit. It can be accepted for argument that the Internal Marketing Division cannot pay an increased price, on the scale of retail prices under which it has to operate.

Centralised packing has many advantages that that same fact of centralisation can bring disadvantages. The advantages come from skilled management, efficient handling of the product, because of large-scale and continuous supply, the use of good equipment and building, a market near the point of delivery, and adequate financial backing. The disadvantages arise when the supply is not adequate, when the markets are too far away for economical distribution or when a combination of factors makes the costs too heavy to be borne by the supply. In N.Z. the Honey Section receives financial help from a levy of one half-penny per pound on honey that is sold retail other than from the honey house. From a practical viewpoint the scheme has been of considerable help to the central organisation. From an economic viewpoint it has several undesirable features. The centralised marketing organisation apparently suffers from more disadvantages than advantages when it needs the support of this fund. The levy does not apply equally to all honey other than that sent to the Honey Section. Evasion either by design or ignorance deprives the fund of the full benefit of the levy. It would be more desirable to have the

levy apply equally to all honey or not to be levied at all.

If an alternative could be suggested that would have the merit of more simplicity and which would enable a higher bulk price to be paid, then it should be examined.

It has always been stated that the export price gives a return of several pence per pound better than the return from local marketing. It would be sound economics to export a sufficient quantity that would give the extra return to pay a higher bulk price. If the Honey Section received 1000 tons, it could market 500 tons readily on markets comparatively near to its factory, at the lowest distributive cost. If 500 tons were exported and the return secured only an extra twopence per pound, a further penny per pound could be paid on the 100 tons. That is, instead of the basis being sevenpence per pound, it would be lifted to eightpence. If the return from export was even higher, as some authorities state, then the minimum return on bulk honey could be raised to nearer ninepence per pound. The producer should be told authoritatively the return that could be secured from the export market.

The elimination of the seal levy would remove an irksome tax that bears unequally, and causes considerable extra work to producers. The best would be secured from the advantages of the central packing organisation and some of its disadvantages would be minimised. Marketing procedure would be simplified and everyone will agree that more simplification and less regulation is a desirable aim for any organisation.

Provided that an elected body with sufficient powers, and an adequate representation of producers had the direction of the organisation, tranquility and prosperity could be the immediate future hope of our industry.

DEPARTMENT OF AGRICULTURE
HORTICULTURE DIVISION

D.D.T. AND SULPHATHIAZOLE.

Letter from Mr. W. K. Dallas,

Director of the Horticulture Division, to the General Secretary, Mr. Fraser.

Dear Sir,

In reply to your letter of the 1st instant in regard to D.D.T. experiments in relation to beekeeping and the use of sulphathiazole for the control of American foulbrood (Bacillus larvae), early last season a small apiary was established by this Department at the Research Orchard of the plant Diseases Division at Oratia, to determine, if possible, the effect of D.D.T. on bees under practical conditions throughout the season.

I have asked Dr. W. Cottier, who is in charge of the investigation, to furnish me with a progress report indicating, if possible, the results so far obtained, and will advise you of the position immediately his report comes to hand.

With regard to sulphathiazole treatment of foulbrood, this matter was referred to the Superintendent, Animal Research Station, Wallaceville, and a reply has been received as follows:—

"I have been keeping in touch with overseas developments in the treatment of American foulbrood, by using sulphathiazole and other sulphonamides, over the last year. The use of these substances usually has the effect of keeping the disease in check, and allowing the infected colony to survive. L. Haseman and L. F. Childers (Missouri Station Bulletin 482, 1944), published a progress report, stating that sulphathiazole is harmless to bees and brood, when fed continuously for 60 days at the rate of 0.5 gram tablet in a gallon of water or sugar syrup. They found it had a beneficial influence on bees infected with Nosema. Later they experimented with sulphanilamide, sulphathiazole, and sulphadiazine to aid colonies infected with American foulbrood to recover from the disease. Their most successful trials were with medicated syrup, fed consistently and over long periods. Sulphathiazole seemed most suitable and proved harmless to both bees and brood. The disease bacilli will not develop in its presence. Final results are not yet determined.

Promising results were also obtained by P. S. Milne, Rothamsted, England.

The important point in these accounts is that, although the infected hives may benefit, recovery is slow, and consequently experimental work has not been completed satisfactorily.

Sulphonamides are mainly bacteriostatic in their action on bacteria invading an organism, and interfere with the nutrition and growth of the bacterial cell by interfering with the function of bacterial enzymes. Consequently, they would tend to inhibit increase of the vegetative stage of American foulbrood, but would not affect spores in the alimentary tract of the adult bees. Spores in honey and inside the hive would not be affected and would also exist as a source of infection to other hives. The course of treatment is prolonged and would keep alive a hive which would be a potential menace to every hive within flying range of a bee. At present such a hive would be immediately burned and its threat removed.

I am strongly against encouraging such methods of treatment at present, as I feel that hives being so treated would cause American foulbrood to spread. If a method can be found which would kill the American foulbrood spores it would be of real value.

In view of the drawbacks to this method of treatment, I do not feel it desirable to carry out an investigation at Wallaceville. Later, if new facts are discovered, such an investi-

gation may be desirable."

In view of the nature of this disease, the present policy of the Department in dealing with American foul-brood (Bacillus larvae) is to continue.

Many beekeepers still operate reduced holdings as a result of wartime conditions, but the beekeeping industry as a whole came through the war years in fairly good shape.

The present distribution of hives (June, 1945) in the various apiary inspection districts throughout New Zealand is as under:—

Apiary Inspection District.	No. of Beekeepers.	No. of hives Registered.
Auckland	1,462	16,020
Hamilton	848	32,865
Hastings	859	13,331
Palmerston Nth.	1,258	21,394
Nelson	447	6,379
Christchurch	729	20,714
Dunedin-Invercargill	904	18,873
	6,507	129,576

Beekeepers with one to ten hives each number 5,122, and the total number of hives registered in this group is 15,461, while 1,385 beekeepers each with eleven hives or more registered a total of 114,115 hives.

Climatic Conditions and Production:

Climatic conditions throughout the Dominion varied to a considerable degree during the 1945-46 honey season, which was three to four weeks later than usual in most districts. Conditions generally improved from December onwards in both the North and South Islands, with the exception of Hawkes Bay, Wairarapa, North Canterbury, and parts of Southland, where honey production was down to half a normal crop to a complete crop failure in some localities. Elsewhere average to excellent crops of good quality honey were secured.

The estimated normal production of honey harvested in New Zealand at present (based on the number of hives registered at June, 1945) from commercial and domestic apiaries is 3,259 tons, while production from all sources for the 1945-46 season was estimated to be not less than 3,116 tons of honey and 89,925 lb. of commercial beeswax.

All activities of the apiary section were maintained at full pressure during the past season. Sixty-eight competent beekeepers were employed as part-time Apiary Inspectors to assist the Department's permanent officers in the detection and control of bee diseases. Reports to hand indicate that the disease situation generally in the areas covered under this plan is well in hand.

W. K. DALLAS,
Director of the Horticulture Division.

Agricultural Development Committee

Sub-Committee on Beekeeping.

1. In December last, the Agricultural Department Committee of the Organisation for National Development, set up a sub-committee to report on the scope for development and expansion of the beekeeping industry. The members of this sub-committee were:—

Mr. E. A. Field (Chairman), National Beekeepers' Assn. of N.Z.
Mr. T. F. Penrose, National Beekeepers' Assn. of N.Z.
Mr. T. S. Winter, Department of Agric.
Mr. H. F. Stoupe, Internal Marketing Division.
Mr. A. G. Rodda (Secretary), Department of Agriculture.

2. The principal task of this sub-committee has been to gather together the available facts about the beekeeping industry to provide a background against which its future development might be depicted. The sub-committee has concerned itself with the overall picture of the industry. It has considered first the re-establishment of the industry, in the post-war years, particularly in relation to essential requirements of imported materials and equipment, and secondly, the extent to which the industry could be expanded and how and where any expansion should take place with particular reference to the rehabilitation and settlement of ex-servicemen.

3.The report and recommendations of the sub-committee are attached.

Wellington, N.Z., August, 1945.

REPORT AND RECOMMENDATIONS OF BEEKEEPING SUB-COMMITTEE.

A. Brief Survey of Beekeeping Industry:

(1) Introductory.
(2) Physical requirements.
(3) Apiary statistics—Geographical distribution.
(4) Honey production.
(5) Production units—
  (a) Knowledge required.
  (b) Labour requirements.
  (c) Establishment costs.
(6) Marketing—
  (a) Internal Marketing Division as agent.
  (b) Internal Marketing Division sales.
  (c) Prices.

B. Development and Expansion:

(1) Market prospects.
(2) Increased production from existing apiaries.
  (a) Renovation.
  (b) Instruction to beekeepers.
  (c) Control of bee diseases.
  (d) Lime on pastures.
  (e) Large holdings.
(3) Expansion of beekeepers.
(4) Establishment of ex-servicemen.
  (a) Limited scope.
  (b) Training.
  (c) Advice.
  (d) Protection of assets—encroachment.
(5) Establishing new units—
  (a) Size of economic unit.
  (b) Methods of establishment.

A. BRIEF SURVEY OF INDUSTRY.

(1) With the advent of motorised transport, beekeeping has made good progress in New Zealand during the past twenty years. This industry is essential to our economy as it supplies a national service of pollination to economic plants and also adds to the wealth of the community by the production of a first-class food that would otherwise go to waste.

The general trend in beekeeping is illustrated by the following table:—

Year.	No. of Registered Beekeepers.	No. of hives owned.
1920 ..	6,392	69,877
1940 ..	5,248	136,362
1943 ..	5,646	133,604
1945 ..	6,507	129,576

(2) **Physical Requirements:** While there are many minor sources of nectar supply such as buttercup, catsear, lotus major and thistle, etc., the chief source of the main honey crop in New Zealand is White Clover (Trifolium repens). Light or heavy rolling sheltered country where there is adequate rainfall is best for nectar secretion from white clover pastures. Beekeeping in bush areas is confined chiefly to the West Coast of the South Island where large quantities of honey are produced from Rata (Metrosideros lucida), Kamahi (Weirmannia rocenosa), and from Blackberry growing on waste lands.

Artificial Food Supplies: To maintain the production of honey and beeswax in New Zealand during the war years the Food Rationing Controller has released sugar for spring and winter bee feeding purposes where required. Following is the total amount of sugar used for this purpose by the beekeeping industry during the past two seasons:—

1942/43 season	288 tons
1943/44 season	245 tons

(3) **Apiary Statistics:** The present distribution of registered apiaries in the respective apiary inspection districts throughout New Zealand is as follows:—

	Beekeepers.	Apiaries.	Hives.
Auckland ..	1,462	1,598	16,020
Hamilton ..	848	1,456	32,865
Hastings ..	859	1,245	13,331
Palmerston North	1,258	1,909	21,394
Nelson ..	447	547	6,379
Christchurch ..	729	1,362	20,714
Dunedin ..	904	1,328	18,873
Dominion Total	6,507	9,445	129,576

The following tables show the distribution of beekeepers grouped by number of hives owned:—

	1 to 5 hives			6 to 10 hives			11 to 24 hives		
	Beekeepers	Apiaries	Hives	Beekeepers	Apiaries	Hives	Beekeepers	Apiaries	Hives
Auckland ..	1,004	1,006	2,285	191	194	1,149	118	125	1,830
Hamilton ..	463	450	1,014	84	87	660	75	82	1,220
Hastings ..	523	525	1,151	92	97	726	87	100	1,370
Palmerston North	840	846	1,678	178	191	1,357	134	165	2,104
Nelson ..	283	284	649	52	53	382	44	53	670
Christchurch ..	336	338	789	84	90	623	108	123	1,771
Invercargill ..	514	516	1,195	126	131	974	123	150	1,949
Totals ..	3,963	3,965	8,761	807	843	5,871	689	798	10,914

Beekeepers owning under 25 hives at June, 1944:—Beekeepers 5,459, Apiaries 5,606, Hives 25,546.

	25 to 200 hives			201 to 400 hives			401 to 500 hives			501 hives & over		
	Beek'p's	Apiaries	Hives	Beek'p's	Apiar.	Hives	Beek'p's	Apiar.	Hives	Beek'p's	Apiar.	Hives
Auckland	63	130	4,496	5	37	1,393	1	15	480	5	92	3,795
Hamilton	73	170	6,518	19	145	5,682	4	42	2,189	17	350	15,135
Hastings	49	114	3,102	4	46	1,245	2	50	879	3	140	3,558
Palm. North	47	134	2,943	12	138	3,923	—	—	—	10	262	9,160
Nelson	33	73	2,254	7	56	1,952	—	—	—	—	—	—
Christchurch	92	290	6,589	20	192	5,530	4	55	1,751	4	73	3,290
Invercargill	79	227	6,219	19	155	5,169	4	53	1,835	1	13	562
	436	1,138	32,121	86	769	24,894	15	215	7,134	40	930	35,500

Beekeepers owning 25 hives and over at January, 1945:—No. of beekeepers 577, No. of apiaries 3,052, No. of hives 99,649.

(4) **Honey Production:** Where apiaries are kept in suitable beekeeping country by competent commercial beekeepers, the average production of honey over a period of years is approximately 60 to 80lb. per hive, according to location and the skill with which the colonies are managed.

Commercial beekeeping cannot be satisfactorily combined with other forms of primary production where seasonal work coincides, due to the time factor in colony (hive) management, as delays in such matters often mean not only a complete crop failure, but also loss of valuable stocks (bees). Evidence of this is the fact that farmers in New Zealand including seed growers and orchardists, rarely attempt to keep the necessary hives of bees required for fertilization purposes, but make arrangements with competent full-time apiarists to place bees on the properties for the purpose stated, to mutual advantage.

Beekeeping with a few hives or any number up to approximately twenty or thirty hives (kept as single units on a favourable site) may, however, be combined with any occupation that would allow the beekeeper to give his undivided attention to the bees during the day at regular intervals as required from September to March or April each season.

The estimated normal production of honey harvested from each apiary inspection district from commercial and domestic apiaries, based on the number of hives kept at 30th June, 1943, is as under:

	Commercial Apiaries.		Domestic Apiaries.		Grand Totals.
Inspection District.	Total No. Hives.	Normal Av. Prodn. (tons)	Total No. Hives.	Normal Av. Prodn. (tons)	Honey Production. (tons)
Auckland ..	11,159	299	3,205	43	342
Hamilton ..	31,029	831	1,493	20	851
Hastings ..	11,673	313	1,662	22	335
Palmerston Nth.	20,427	547	2,895	39	586
Nelson ..	4,108	110	976	13	123
Christchurch ..	22,200	600	1,375	19	618
Dunedin and Invercargill	19,358	519	2,044	28	547
Total ..	119,954	3,219	13,650	184	3,402

Owing to variation in climatic conditions, normal production is rarely maintained in all districts during a single season.

The average annual production for the Dominion over a number of years is estimated at 2,700 tons.

(5) **Production Units:**

(a) **Knowledge required:** Three factors govern success in bee culture, namely, locality, apiary management, and the right strain of bees.

The successful commercial beekeeper must be a specialist and requires a fairly complete knowledge of the life history and habits of the bees; also of nectar sources in the neighbourhood of his apiaries and of seasonal and weather conditions.

To operate 350 to 450 hives successfully, a person must have a complete knowledge of queen-rearing and methods of queen introduction. He must also thoroughly understand all bee-diseases and methods of treatment, wax rendering, harvesting and packing a crop of honey. Where the beekeeper is able to manufacture certain wooden appliances, i.e., hive bodies, frames, lids and floor-boards, he can keep abreast of requirements at a reduced cost.

The average successful commercial beekeeper in New Zealand to-day developed his business gradually over a long period of years by:—

(i) Working long hours, including week-ends, and on public holidays.

(ii) Taking outside employment during building-up period.

(iii) Making his own wooden appliances (hive boxes, lids and floor-boards), thus cutting establishment costs to a minimum.

(b) **Minimum Labour Requirements (Dominion average):**

No. of Hives kept.	Occupation owner period.	Assistants Required. Permanent.	Assistants Required. Casual.	Casuals, Period of Employment.	Remarks.
100/150 ..	Part-time	—	—		
200/250 ..	do	—	1 unskilled youth.	Dec./Mar. incl.	Assistance may be required to harvest crop. Speedy removal desirable.
350	Semi-permanent	—	do	Oct./April incl.	The owner may be fully occupied according to his knowledge of beekeeping, physical condition, and social requirements.
450	Full-time	—	1 semi-skilled man or strong youth.	Sep./April incl.	Assistance required with apiary management and harvesting crop for best results.
550	do	—	do	Sep./May incl.	do do
750/850 ..	do	—	1 man skilled, 1 youth unskilled	Aug./May incl.	Sept. to Dec.: Spring hive management, feeding, queen rearing, fitting comb foundation, assembling supers and frames. Dec. to April: Harvesting and packing honey crop. May: Wintering bees and cleaning up. June, July, Aug: Cleaning up and repairs to appliances, making up appliances, replacements and attention to apiary sites.
1000/1200 ..	do	1 skilled man	1 semi-skilled, 1 unskilled man or strong youths.	Sep./May incl.	do do
1500/2000 ..	do	2 skilled men	do	Aug./May incl.	Sep. to Dec.: Hive management, feeding, queen rearing, fitting comb foundation, assembling supers and frames. Dec. to May: According to location—harvesting and packing honey crop. April and May: Wintering bees, general clean-up all apiary work. June, July, Aug.: Making appliances for replacements, repairs to appliances and plant, cleaning up, attention to apiary sites, and general preparations for next season.

(c) **Cost of Establishment:** The pre-war cost to establish an apiary where the beekeeper was able to manufacture wooden hive parts required was approximately £3 per hive. The 1944 cost of establishing 100 hives using new materials and nucleus colonies of bees and including all labour charges has been calculated as £439/4/2, i.e., £4/7/10 per hive. In this computation, the costs of materials have been drawn from price lists of manufacturers of standard equipment (bulk buying). Post-war supplies and costs of materials cannot, of course, be foreseen.

On this basis the initial cost of establishing 450 colonies of bees in eleven apiaries would be as follows:—

450 colonies at £4/7/10 ..	1,976	5	0
Plus approx. cost of land, buildings, and plant:—			
Land	150	0	0
Buildings	450	0	0
Plant	398	7	0
Fencing costs, all apiaries, (11 sites) ..	82	10	0
Freight of goods and rail	16	10	0
Cartage to home site for assembling	7	10	0
Cartage establishment, running own truck, approx. 522 miles at 6.3d. per mile (3 trips to each site)	13	14	0
TOTAL COST	£3,094	16	0

(5) **Marketing:** (Compiled from data supplied by Internal Marketing Division.)

(a) **Internal Marketing Division as Marketing Agent:**

Although New Zealand produces a particularly fine honey, enormous fluctuations in the crop from year to year owing to vagaries of the weather, not only have made beekeeping a precarious livelihood, but in 1937 damaged our British market for several years by removing "Imperial Bee" for a whole season. Accordingly the beekeepers, whose Honey Control Board had been sole export authority since 1924, but whose two attempts at local co-operative marketing had broken down, asked for Government assistance in 1937. The I.M.D. therefore purchased N.Z. Honey Ltd., a producers' company in Auckland, and attempted a long range policy of conserving stocks to iron out glut and famine years, and of blending on a large scale and high standard to maintain a good market in Britain.

A disastrous season for 1939 brought New Zealand into the war with depleted stocks. Sugar rationing plus military calls on both jam and honey, created an unusual demand, and by 1942. after a one-third crop in 1941/42, the I.M.D. was reduced to supplying little beyond army and hospital requirements.

Such was the situation at the end of the 1941/42 season. Although the I.M.D. was "in honey," both marketing and blending, at the request of the producers, it had no monopolist rights, merely running the largest processing plant, doing the biggest exporting, and paying, on the whole, for the larger northern apiarists at least, the best prices. This set-up is a benefit to the industry as a whole, both suppliers and non-suppliers, as it helps to even out returns over good and bad seasons by providing a certain market for local over-supply and an unbroken export flow to Britain of standard blend.

With the continuing poor season (for 1942/43 was still below normal) and with the increased demand making it possible for beekeepers to sell locally at retail rates rather than wholesale to the I.M.D., the Government plant found itself likely to have insufficient honey to meet even special war needs (prisoner-of-war, services and ships) let alone maintain supply to hospitals and the city populations. Therefore it took powers (Honey 1942/43 Season Emergency Regulations) to require all owners of 20 hives and over to send I.M.D. 70% of their honey to form a national pool for these needs, leaving them 30% for local disposal. This position, brought about solely by war-time emergency conditions, was recognised as a national necessity by a majority of beekeepers.

(b) **I.M.D. Sales and Capacity:** All honey marketed through the Division is graded by an officer of the Department of Agriculture to a standard arranged in accordance with experience of the public demand for various types of honey. Colour, flavour and cleanliness or condition are taken into account.

The following table shows the quantity of local sales and exports and average grading of honey handled by the I.M.D. during the last six seasons:—

Season.	Local Sales. (tons)	Exports. (tons)	Average Grading.
1938/39 ..	357	777	88.26
1939/40 ..	548	179	87.38
1940/41 ..	642	400	91.31
1941/42 ..	666	375	91.86
1942/43 ..	392	*	90.16
1943/44 ..	852	130	93.40

*Ships' stores and P.O.W. parcels only.

The following table shows the break-up of the 1944 I.M.D. sales:—

	Tons
Army	165
Navy	30
Air Force	47
Schools and Institutions	8
Manufacturers—	
Essential	51
Other	36
Hospitals	26
Medical	6
Patriotic	23
Merchants—	
Auckland	222
Christchurch	115
Wellington	187
Dunedin	87
Rest of New Zealand	129
Export to London	100
Shipped to Greece	30
	1,262

The present plant of the I.M.D. is able to process considerably more honey than it has ever been required to deal with, and a second unit is ready to provide a 50% increased capacity, i.e., a total of 90,000 lb. weekly as against total 1944 receipts of 2,800,000 lb.

(c) **Prices:** Prior to the 1942/43 season the beekeeper had the option of marketing his honey through the I.M.D. or disposing of it in the local market at the best price he could obtain. The returns received by the I.M.D. from export and local sales were pooled in paying producers pro rata to the grading of the honey supplied.

The I.M.D. payments to suppliers from

1938 to 1944 for honey graded 100 points were as follows:—

	Receipt.	Total.	Bonus.
1938 ..	4½d.	6d.	½d.
1939 ..	4½d.	6½d.	¼d.
1940 ..	5d.	6¾d.	¼d.
1941 to 1943	5d.	7d.	¼d.
1944 ..	7d.	7d.	¾d.

Since 1942 prices have been "frozen" under ecenomic stabilisation. A wholesale Price Order was gazetted in 1942 and a retail order in January, 1943. The maximum prices allowed for **bulk** honey were:—

	per lb.
Sold by a producer to a packer for packing in retail containers ..	7d.
Sold by a wholesaler (including a producer) to a wholesaler other than a packer	7¾d.
Sold by a producer (including a wholesaler) to a retailer	8¾d.
Sold by a retailer	10½d.

Thus beekeepers with twenty hives or more producing extracted honey were obliged to supply to the Internal Marketing Division 70% of their crops, for which the 1943/44 average price was 7.21d. per lb. The balance (30%) could be sold without restriction at prices not exceeding the maximum permitted by the ruling Price Order, subject to a scale levy of one half-penny per lb.

For the current season 1944/45, beekeepers are required to supply to the I.M.D. a minimum 30 lb. of honey for each hive in excess of nineteen hives, and the balance of their crops may be disposed of at their discretion as formerly.

B. DEVELOPMENT AND EXPANSION.

(1) **Market Prospects:** The local New Zealand demand for honey, which has not been fully satisfied in any of the war years, is likely to decrease as other sweet stuffs become more available with peace conditions. Britain, however, will probably require at least as much as pre-war, when practically all our surpluses went to the United Kingdom. Prior to the wartime restrictions on shipping we were permitted by the Ministry of Food in England to ship 460 tons per year. This was eliminated only last year. Actually the I.M.D. had permission to ship more honey than was available for that purpose. Under normal conditions the English market is a very profitable one for the industry and New Zealand honey sold under the brand of "Imperial Bee" runs a premium of £10 per ton over the rest of the honeys of the world.

Some five years ago supplies of packed "Imperial Bee" honey were shipped to the Continent, United States of America, and India. Of course these markets. which were operated from England, have since the war been eliminated, but I.M.D. still receives communications from a firm in New York which is anxious to open up direct business with New Zealand. The authorities responsible for rehabilitating Malaya and adjacent territories have requested a supply for the eighteen months following military re-occupation.

In short, overseas marketing is unlikely to prove a problem for New Zealand honey—provided that trade barriers are not raised to impede it.

After taking these factors into account, the Committee considers that from the marketing aspect there should be no great difficulty in planning for an average annual increase of up to 400 tons in the production of first quality marketable honey.

(2) **Increased Production from Existing Apiaries:** The Committee has given careful thought to the means of securing increased production from established apiaries. The following comments and recommendations are put forward:—

(a) **Renovation:** Many apiaries have deteriorated both in bee stocks and apiary appliances during the war due to severe shortages of labour and materials. The first essential in the industry's post war economy is the re-establishment of good stocks (bees) and the renovation of deteriorated apiary equipment.

The labour position is likely to ease with the release of manpower from military requirements. But the Committee recommends that the Government be urged to make available as a matter of priority the industry's essential requirements of timber, materials and appliances, imported or locally manufactured, e.g., 28 gauge flat galvanised iron, queen excluders, honey extractors, etc.

(b) **Instruction to Beekeepers:** Many beekeepers are very efficient in the art of apiary management and harvesting of honey whilst others, due to inaptitude or inexperience, are much less competent. The Committee considers, therefore, that many existing apiaries could increase their production if more intensive instruction were given to beekeepers (both commercial and semi-commercial) on breeding suitable stocks and general apiary management. This is not a criticism of the Department of Agriculture's present instructional service, but is rather an acknowledgment of its great value to the industry and a recommendation for its continuation and extension.

(c) **Control of Bee Diseases:** The Committee recognises that continued intensive inspection of apiaries for the control of bee diseases is of advantage to the industry.

(d) **Lime on Pastures:** In view of the effect on most clover pastures of the application of agricultural lime, the Committee recommends that every avenue be explored to facilitate and encourage the extended use of lime on pastures to promote increased production of honey.

(e) **Large Holdings:** Some beekeepers own such a large number of hives spread over a wide area that adequate supervision of operations is extremely difficult. This often results in a lower average crop per hive than would be possible from a much reduced sphere of operations. The Committee considers that increased average production would result from the voluntary disposal by very large owners of portions of their territory to enable returned servicemen to be established in single economic units.

(3) **Expansion of Beekeeping:**

(a) **General:** Up to the present time the establishment of clover and mixed pastures has been followed to a large extent by commercial beekeepers. Thus in addition to factors already discussed, the future expansion of honey production will depend largely on the progress made in livestock farming and pasture production. Further increases in seed production in New Zealand would also be associated with the production of honey.

(b) **Scope and Location:** With the object of ascertaining the scope for the establishment of additional apiaries in the Dominion, a survey by counties has been undertaken by the Department of Agriculture. A broad

classification of counties has been made into the following groups:—

(A) Counties not fully stocked with bees and considered suitable for the establishment of more commercial apiaries (economic units of 400 to 450 colonies), for the production of good quality White and Light Amber honeys suitable for marketing purposes.

(B) Counties not fully stocked at present where beekeepers already established could extend their present holdings to advantage, but where there is insufficient scope for the establishment of complete economic units of 400 colonies or more.

(C) Counties considered well stocked with commercial apiaries in all favourable commercial beekeeping locations, and where there is little or no scope for future expansion.

(D) Counties considered suitable only for domestic or semi-commercial beekeeping and definitely not suitable for extensive beekeeping at present.

The detailed results of this survey in each apiary inspection district are shown in Appendix "A" to this report, and are summarised in the following table:—

	Class (A)			Class (B)		Class (C)	Class (D)
		Possible Expansion.			Possible Expansion.		
	Counties.	Units.	Hives.	Counties.	Hives.	Counties.	Counties.
North Island ..	14	19	7,950	31	6,800	17	14
South Island ..	3	4	1,800	12	3,100	22	15
Totals ..	17	23	9,750	43	9,900	39	29

Thus at the present time (July, 1945) it is estimated that in addition to further expansion from existing apiaries there is scope in selected localities for 23 new economic units of 400 to 450 colonies each.

(4) **Establishment of Ex-servicemen:**

(a) **Limited Scope:** From the facts before it the Committee is led to the conclusion that while the overall spread of bees established in modern hives in semi-commercial or domestic apiaries could be increased considerably under normal conditions, there is at present only limited scope for the immediate expansion of the production of first quality marketable honey **on a commercial basis from economic units** suitable for the rehabilitation of ex-servicemen.

(b) **Training:** The Committee attaches the utmost importance to the adequate training of ex-servicemen who are being established in beekeeping, where knowledge and skill are essential for first class results. Qualified beekeepers have a responsibility to assist in giving that training wherever possible . . . . The Committee therefore recommends that the National Beekeepers' Association be requested to urge its members to contact the local apiary instructor when they have an opening available for the employment and training of a suitable approved ex-serviceman.

(c) **Advice:** The Committee understands that the National Beekeepers' Association would be willing to assist any Rehabilitation Committee which is establishing an ex-serviceman in beekeeping. The Committee suggests therefore that the Rehabilitation Department seek the advice and assistance where required of a member of the local Branch of the Association nominated by the national body.

(d) **Encroachment:** At the present time there is no legal provision for preventing newcomers from encroaching on territory already being worked by established beekeepers. In order to provide protection of the assets of rehabilitated servicemen who are established as beekeepers, the Committee recommends that the Government be urged to consider with the National Beekeepers' Association suitable regulations to prevent uneconomic encroachment on their apiaries.

(5) **Establishing New Units:**

(a) **Size of Economic Unit:** The Committee considers that the minimum number of hives required for an economic unit is 450. This not only provides a reasonable living for a family man but secures full supervision of operations by the owner with the greatest prospect of maximum crop production.

(b) **Methods of Establishment:** Several methods may be employed to establish new apiaries. These include:

(i) The purchase of full size standard hives complete with bees, bee combs and stores from neighbouring beekeepers, for removal to selected apiary locations.

(ii) A chain of apiaries (containing 450 hives) may be developed as under:—

1st Year: Purchase of 225 two storey hives complete with bees, bee-combs and stores, and all necessary materials, sufficient to build up each hive to four storeys that year. Building and plant also to be established. Crop average approx. 45 lb.

2nd Year: Purchase balance of materials necessary to build up to 450 hives by dividing the established colonies. Crop average 45 lb.

3rd Year: All hives (450) fully developed to four storeys each. Crop average approx. 3 ton per hundred hives (62.7 lb.).

4th Year: Full production.

(iii) **1st Year:** Purchase (Sept.-Oct.) 225 three or four frame nucleus colonies complete with stores, breed and bees (including young autumn raised queens) from any reliable breeder, to be transferred on arrival at selected locations, into standard hives prepared to receive them. Establish buildings and plant and develop each hive to three storeys. Surplus crop average 35 lb. per colony.

2nd Year: Increase to 450 colonies by dividing. Develop each hive to three storeys. Surplus crop, average 35 lb. per colony.

3rd Year: Develop all hives (450) to four storeys each. Average crop approx. 50 lb. per colony.

4th Year: Full production.

Average seasons or better would be required to carry out any of the above methods.

(c) **Best Method:** All apiaries established under method (i) above would be in full production in the first year. Under methods (ii) and (iii) apiaries would be developed to full production in three or four seasons according to seasonal conditions and the

ability of the beekeeper. The Committee considers that method (ii) is to be preferred where suitable stocks of bees and apiary equipment are available. Under method (ii) the approximate capital expenditure for a 450 hive establishment would be:—

1st Year:

	£	s.	d.
225 two-storey hives complete with bees at £3 each (second-hand materials)	675	0	0
450 supers complete with frames and foundation (new materials) at 11/- each	247	10	0
Buildings	450	0	0
Plant	398	7	0
Land for home apiary and central extracting plant ..	150	0	0
Fencing materials, 5 sites, at £7/10/- each	37	10	0
Land rents—4 out-apiary sites at £3 each	12	0	0
Sufficient nails and paint—approximately	15	7	6
Sugar—1½ tons at £32 per ton	36	0	0
	£2,021	14	6

2nd Year:

Purchase 225 4-storey hives complete (no bees)—1944 prices new materials ..	523	6	3
Sufficient nails and paint—primer and 3 coats	34	0	0
Fencing 6 out-apiary sites—materials at £7/10/- each ..	45	0	0
Sugar—1½ tons at £32 per ton	36	0	0
	£2,660	0	9

(6) **Registration of Apiaries:** During the war years no re-registration of apiaries has been carried out. Existing statistics reflect changes that have been recorded by the Department of Agriculture, but there are probably many changes that have not been notified to the Department. The Committee therefore recommends that re-registration of apiaries under the Apiaries Act, 1927, and regulations thereunder, be carried out as soon as possible.

BEEKEEPING IN AUSTRALIA

"The Australasian Beekeeper." Illustrated magazine, published monthly by Messrs. Pender Bros. Pty. Ltd. Subscription, 5/- per year, posted. Sample copy free on application to
The Editor. P.O. Box 20,
West Maitland, N.S.W., Australia

BEE HIVES BECOME HEALTH FACTORY.

Combining Medicines With Honey.

Imagine walking into your corner chemist, handing in a prescription from your doctor, and getting a little jar of honey instead of a bottle of pills or medicine. Think how easy it would be to get your youngsters to take a laxative or tonic if you could serve it to them in the form of honey-on-toast.

Two Soviet scientists, working in widely separated regions, have just announced discoveries that may have a profound effect on the future of beekeeping, pharmacy, and nutritional science.

E. Arefyev, of the U.S.S.R. bee research farm at Maikop, and E. Shishkin, who manages the Azerbaijan Republic bee nursery at Baku, have made public the results of many years of research. These men worked independently, but towards the same goal.

Dr. Arefyev has succeeded in getting the bees to use certain fruits—instead of flowers—and thus to produce a honey in which was stored the previous fruit vitamon C. The discovery that vitamin C greatly hastens the recovery of wounded men led Arefyev to redouble his efforts during the war.

Now his "vitamin bees" are getting into mass production. The last season (1944-45) they turned out five tons of vitamin honey. This was manufactured by the bees from no less than 80 different varieties of fruits and berries.

So far, production of honey from green leaves has been largely experimental. There is one exception to this. Areryev's bees have developed a real appetite for mint leaves. The honey which they get from this source is reported to have a very pleasing flavour and fragrance. in addition to a surprisingly high vitamin C value.

The mint honey is tinted green. In fact an unusual result of this research is the production of many-coloured honeys. Arefyev finds that bees are by no means limited to following one recipe for making delicious confections.

They can turn out honeys with an extraordinary range of colour, taste and smell. And to top all this, Arefyvev's report indicates that honey—long known to have excellent preservative powers—is a splendid form in which to store the vitamins and other nutritional values of fruits.

Sensational results came when the Maikop laboratories tried feeding medicines to bees. The procedure is quite simple. A drug such as quinine is mixed with a thin syrup of honey. The bees are turned loose on this. They gladly serve as pharmacists. The drug neither spoils their appetite nor seems to affect them. What is more important, they concentrate the quinine along with the honey, and the resulting product has medicinal values superior to any other form of quinine.

The sulpha drugs have been successfully prescribed at beehive chemists. Results are the same as with quinine.

The main points of Arefyvev's work are confirmed by Dr. Shishkin, working in the Black Sea region of Baku. In fact, he has made two additional discoveries. He reports that besides fruit and berries, bees thrive on a wide variety of vitamin-rich vegetable juices.

At any rate, the Soviet experiments have given beekeepers a remarkable new prospect. We may see greatly expanded bee farms in the post-war. The future apiary may be a cannery of fruits and vegetables, a processing plant for milk and medicines, a concentrator of vitamins—a health factory in a beehive . . . .

—Dyson Carter, in Toronto Star Weekly.

RENDERING BEESWAX.

(By E. L. Sechrist.)

How can a beekeeper produce clean beeswax?

How can he keep slumgum and wax-waste free from damage by wax moths? How can he keep it so that it will attract bees, and so that it can be handled with a shovel as readily as soft earth?

How can we prevent discoloration of wax by iron when it is being rendered in an iron boiler, or in a press, Herisher or other make?

How can wax be kept from foaming and boiling over when it is being clarified?

In short, how can a beekeeper get rid of most of the troubles and annoyances met with in rendering beeswax? . . . .

The plan developed by Mr. Frank Buchanan and his son Robert, of Glendale, California, for use with the wax output of their more than 3000 colonies, furnishes a satisfactory answer to these questions. The plan is very simple, and it works. In fact it almost follows the line of least resistance to produce the best results. So far as I know, however, it is new.

Here is the procedure: make a copper-lined tank or tanks of size to fit your needs. Each of the three tanks of the Buchanan outfit is 8 feet long, 26 inches wide, and 28 inches deep. They are heavily constructed of 2-inch plank sides, with 2in. x 4in. corner posts and middle uprights, fastened to 3in. x 6in. crosspieces across the bottom.

Line your box with tin-coated copper sheets. Put the tank anywhere out of doors that is convenient: the bees will not bother it if this procedure is followed. Fill it half full of water and dump into it the wax cakes, **dripping with honey**, from the Solar or other wax melter. Dump into it, also, all the slumgum and bits of scrap wax.

Cover it with canvas, and allow to remain for a few days until the honey solution ferments and acetic acid (or vinegar) fermentation sets in. It will soon be so sour that bees will leave it alone. Occasionally stir up the mass with a shovel.

The fermenting and foaming will break up the slumgum into a flaky powdery mass that can be handled like soft dirt.

When one tank is filled, use another; or the cakes of wax can be taken out at your convenience, broken up, and melted and clarified in your favourite way. If you haven't a way that is good enough to be a favourite, I'll give you the plan of Buchanan's "thunder mug" in a later article. It is so called because of the way it rumbles and roars while the melted wax is boiling in it and being clarified. In this clarifier, the wax never foams, but boils as freely as water. By regulating the amount of steam admitted, the wax may be kept at a full, rolling boil during the two hours needed to clarify it.

The soft slumgum mass can be rendered at any time, or left in the acid vat for months, if desired, without injury. Then it may be melted at the end of the honey season, when the beekeeper is less busy.

The secret of the clear, bright yellow wax which results from this method is in the acid formed from the fermenting honey solution. The vinegar, or acetic acid in the tank has a stronger affinity for metallic salts than does the wax itself, and thus removes all discoloration from these salts. Boiling the acid solution in any iron wax-press or melter readily removes the iron oxide, or rust, from the iron surface, making it very bright. Iron stain is one of the chief causes of discoloration of wax, and it seems to be entirely removed by boiling the wax with the acid solution formed by the fermenting honey.

All the honey steeped off the wax having been destroyed by fermentation, there is none of the foaming that is usual when wax is boiled in water containing some honey. A little honey is lost, to be sure, but that is a small price to pay for ease in handling, freedom from stickiness and attraction for bees, freedom from loss by wax moth larvae, and for clean yellow cakes of highest quality wax.

NOTES FOR BEGINNERS.

Although honey bees are kept primarily for the production of honey, it is recognized that the service they render in the pollination of fruits, vegetables, and forage crops, far outweighs in importance their service in the production of honey and beeswax.

Beekeeping is a specialized industry requiring fundamental knowledge of bee behaviour and a genuine liking for handling bees. Locating colonies close to available sources of nectar is important, since to insure good crops the bees should be within flying range, that is, 1 or 2 miles, of an abundance of nectar-secreting plants. Good beekeeping locations are found in practically every State, so that the selection of apiary sites resolves itself into choosing locations where nectar-secreting plants occur in profusion and where living conditions are desirable.

We believe that given proper experience and liking for bees, a person in a favourable location can obtain from beekeeping a return that will compare favourably with that from most agricultural pursuits. Beekeeping, however, can easily result in a profitless undertaking, and to avoid this we would not advise a beginner to invest heavily. Practical knowledge gained through a season's work with an experienced beekeeper should be invaluable to a beginner. If a person cannot spend time with a beekeeper the next best thing is to acquire two or three colonies and do the best he can.

The best time to begin beekeeping with either package bees or established colonies is in the spring when fruit trees are in bloom.

If established colonies are purchased they should be: (1) in modern hives, (2) acquired from a reliable beekeeper, and (3) accompanied by a certificate of inspection to insure freedom from disease.

While ordinarily more satisfactory results will be had with factory-made beekeeping equipment, some beekeepers prefer to construct their own beehives. If this is done it is a good plan to purchase or borrow a complete hive to use as a model. It is essential that all dimensions be carefully adhered to, otherwise the bees will build combs and add propolis where it is not desired. Likewise careful construction is necessary so that all hive parts are readily interchangeable.

The Italian bee is the kind recommended for the beginner. It is hardy, industrious, fairly gentle, and can be readily obtained in pure stock since it is the bee most commonly kept in New Zealand.

You should consult your Department of Agriculture for information on beekeeping publications, extension work in beekeeping, inspection service, good beekeeping locations, beekeeping associations, and the like.

Cardinal Points to be observed in Keeping Bees.

1. Bees need in the spring: An abundant store of honey, 15 or more pounds at all times, and pollen, plenty of room for brood rearing, a source of water, protection from the wind and exposure to sunlight.

2. Swarming results in the loss of honey, is undesirable, and should be controlled.

3. There should be empty comb space in the hives at all times preceding and during a honey flow. With every cell occupied with brood, pollen or honey, the bees will swarm or stop working, either of which causes a loss of honey if it occurs just before or during a flow.

4. For successful wintering a colony should have a young queen of high producing stock, a large cluster of young, fall-raised bees, 60 or more pounds of sealed honey, and several combs containing large areas of pollen. For these requirements a colony must have a 2-storey standard hive with a gross weight in April of about 130 pounds.

5. It is illegal to keep bees in box hives.

6. It does not pay to cultivate any plant for bees alone. Nectar sources may be improved, however, by planting such crops as sweet clover on waste lands.

7. Starvation is one of the principal causes of unprofitable beekeeping. If bees are short of stores, a syrup of two parts of clean granulated sugar

to one of water should be fed. Plan carefully and avoid feeding by leaving the bees plenty of honey at all times.

8. Diseases of bees cause large annual losses of bees, honey and equipment. Beekeepers should learn to recognize the symptoms, particularly of American foulbrood.

Diseases of Bees.

While it is normal to find a few dead bees at the entrance of a hive, the presence of large quantities should cause the beekeeper to examine the colony for some abnormal codition, as should also the presence of trembling or paralysed bees, or bees crawling and apparently unable to fly. Two of the commonest conditions of adult bees are poisoning by insecticides and Nosema disease. Bees suffering from these two and other abnormal conditions may all appear to behave alike. A laboratory diagnosis can be made for Nosema disease and insecticide poisoning; although, at times, making a diagnosis of any abnormal condition of adult bees must include actual observation of the colony affected.

In many parts of the country beekeepers suffer losses from American or European foulbrood, the two most serious brood diseases. European foulbrood can be controlled by proper corrective measures, but American foulbrood, the more serious and prevalent of the two, requires a more drastic treatment. **The bees and combs of colonies infected with American foulbrood should be burned.** Apiary inspection is a function of the States. Apiary inspection is maintained by most State Departments of Agriculture, to which should be referred all questions concerning apiary inspection, diagnoses, and proper methods of control.

As a service to beekeepers, however, the Department of Agriculture examines, without cost, samples of brood and adult bees. Reports of these diagnoses are sent to the beekeepers in question, with a copy to the proper district apiary officials.

For diagnosing **brood diseases**, send a sample of comb about 4in. x 4in. containing the affected brood or brood remains. Avoid including any honey if possible. In the case of **adult** bees, send from 100 to 200 (preferably the latter) sick or dead bees. Mail all samples in a wooden or heavy crdboard box. **Do not use tin, glass, or waxed paper.**

—Jas. I. Hambleton,
Division of Bee Culture,
Beltsville, Maryland.

Otago Convention

The ANNUAL CONVENTION of the Otago and Southland Apiarists will be held in the Otago Pioneer Women's Hall, 362 Moray Place, Dunedin, on MONDAY, 3rd JUNE, at 7 p.m., continuing at 2 p.m. and 7.30 p.m. on 4th JUNE.

All Apiarists are cordially invited to attend.

E. CAMPBELL, Hon. Sec.,
P.O. Box 845, Dunedin.

NOTES FOR BEGINNERS.

Skep has received the following very interesting letter from a beginner who signs himself "New Chum," from shyness.

"Dear Skep,

I am a new chum at beekeeping and very keen to know the right thing to do when confronted with the unexpected, and for this reason have read everything I can lay my hands on about bees and their ways. However, as you are asking for questions, here are two which I have not been able to answer from books.

(1(In early February I found on adjacent frames, in the same box, mother and daughter both laying. I used the daughter to make an increase. Now the question is if I did not want to increase, what should I do? Kill the mother or leave the bees to do it? If I leave both queens, is there a chance of them swarming? Mum had her wings cut and the bees killed her and raised cells a week later. My reason for making the increase was that Mum was the only purely mated queen that I had and I wanted to breed from her."

This is a straight-out case of supersedure. Nothing you could do would prolong the old girl's life. She had "had it." The bees knew that she was done and they were quietly and naturally raising a daughter in her place. If you had been more observant a month earlier, you would have seen that the old queen's laying was becoming patchy and that she was laying two eggs to a cell and dropping an odd egg on the side of some cells. You could then have taken steps to raise some queens from her. But nothing you could have done then would give you such a good queen as the daughter the bees raised in their own way. The daughter you took away for increase should be a much better queen than the one the bees were forced to raise later. Watch next season. You should have left the two together and the old queen would have faded away like the old soldiers. The drones you will get from the daughters will be a pure strain but you will have to wait till next spring to see how pure the workers are. If these daughters are pure, watch to see if they are superseded naturally. If they do the same thing, it means that the tendency to supersede naturally is prepotent or firmly fixed on the female side—the only side the beekeeper can control. Skep would say that you have a good breeding strain there, provided that they are good honey gatherers and have some other less important features that are good. If both daughters are the same in superseding, even if one is cross-mated, then you are almost sure to be on a good thing. Watch them carefully. There would have been no fear of swarming as the impulse to supersede is quite different from the swarming impulse. You will only learn by experience to recognise one from the other, but it is important to learn it. Briefly, only about three cells of different ages are raised in supersedure, while in swarming about ten or twenty cells, with many at the same age, are raised.

"(2) In the February, 1946, Beekeeper, Mr. Jessup, in his article on swarm control, says 'The colonies preparing to swarm soon are held in check by taking a frame or two of brood **with adhering bees** and giving them to weak colonies.' Now what stops these adhering bees from fighting with those of the colony to which they are given, or don't they?"

No, they don't fight. The reason is that the bees on the brood are mostly young bees that have not learned the vicious ways of older bees, and some humans. Either they have just hatched or they are nurse bees full of juicy meals for the younger bees. These bees are always welcome in any hive. The books say that they have not yet acquired a hive odour and so are not objectionable. Also both hives have been disturbed and smoked, more or less, so that in the disturbance they hardly realise that there has been a change till they settle down for the night. Then they seem to decide that there is nothing to fight about.

Thank you very much, New Chum. Skep would like more questions like this. He is glad to know that you are reading everything you can lay your hands on. "Reading maketh a full man." We could all be a little more full of knowledge about our own work.

Hoping you all winter well.

SKEP.

HONEYBEES

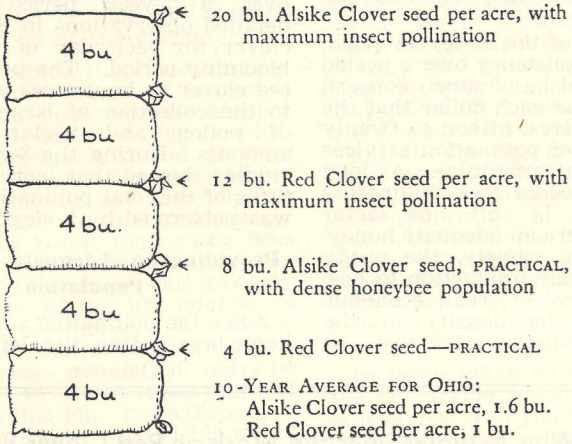
INCREASE CLOVER SEED PRODUCTION 15 TIMES

By Departments of Zoology and Entomology, and Agronomy,
The Ohio State University

Insect Pollination Vital Factor in Increasing Seed Yields–

Alsike, medium red, white Dutch and Ladino clovers are practically self-sterile, and are dependent upon insect pollination to insure cross-pollination and subsequent seed set. Sweet clover, mammoth red clovers, and alfalfa vary in their degree of self-fertility, but in all cases are tively. To have 100 per cent pollination occur each floret must be visited by a pollinating insect. Under field conditions this would seldom happen. However, under experimental conditions where 100 per cent pollination took place with alsike clover bloom, yields varying from 12½ to as high as 20 bushels of seed an acre have occurred.

Fig. 1.—Seed Yields Occurring with Favorable Cultural, Soil, and Weather Conditions



dependent on insect pollination to insure self and cross-pollination so necessary for profitable seed yields. The flower structure of all these legumes makes wind pollination a negligible factor.

The size of the pollination job for an acre of legume bloom is much larger than most of us realise. For example, an acre of alsike or red clover blooms contains 400,000,000 or 216,000,000 individual florets respec-

Legume Pollinating Insects

The legume pollinating insects may be classed in two groups, namely: the natural pollinating insects over which we have little control; and the honeybee—the only controlled pollinating insect. The uncontrolled pollinating insects, which play a meagre role in legume pollination, are exemplified by the bumblebees, solitary bees, flies, but-

terflies, and moths. In 43 hours of collecting natural pollinating insects on alsike bloom in various countries, only an average of 9 insects were collected per hour. Where honeybees are plentiful, from 200 to 300 can be found in an hour.

The honeybee represents the only controlled pollinating insect and is ideally adapted to accomplish the pollination job. Its social organisation makes possible the development of enormous colonies which may be placed in any desired location in the numbers necessary. The instinct of the honeybee to gather nectar and pollen, along with its behaviour of working every hour of the day when weather permits, are assets which very few other insects possess.

By skilful bee management it is possible to build the bee population of each colony to over 80,000 worker bees by the clover blooming season, and those colonies can be stimulated to deliver maximum pollinating services.

The density of the honeybee population and its constancy over a period of years should be of much concern to farmers. For each dollar that the beekeeper receives, fifteen to twenty dollars' worth of pollination services are returned to agriculture. As long as farmers receive free pollinating services there is only one factor which will insure an adequate honeybee population, namely, the profitableness of honey production to beekeepers. It is of real economic interest that the density of the honeybee population increase as much as possible. Yet, at the same time, those bees should return profitable honey and beeswax yields to the beekeeper.

Utilisation of Honeybees Solution to Pollination Problem

Experimental studies conducted by the Department of Entomology, Ohio Agricultural Experiment Station, show that seed yields are directly correlated with the density of the honeybee population.

The station's experimental data relating to alsike seed yields can be taken as a general index of what will occur with the self-sterile group of legumes.

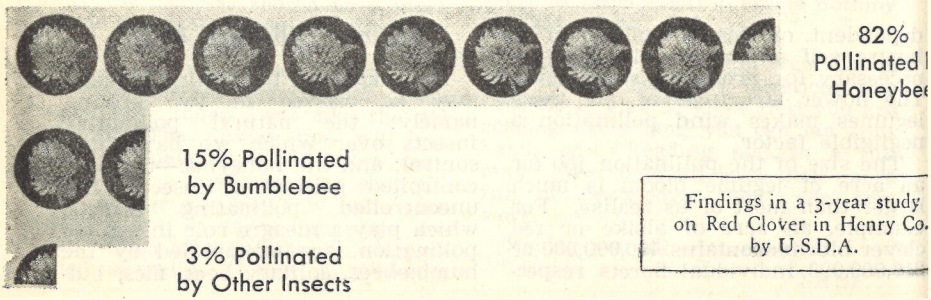
Because of the general impression that honeybees do not pollinate red clover, the data from Henry County in Figure 2 are presented as typical of the significance of the honeybee as a pollinating agent.

Extensive studies were carried on over a 3-year period involving detailed observations in fields of red clover for each day of the second blooming period. The pollination of red clover by honeybees is incidental to the collection of large quantities of pollen, and nectar in small amounts. During the 3-year period, studies showed that more than four-fifths of the total pollination services was performed by honeybees.

Providing an Adequate Honeybee Population

Since the pollinating services from honeybees is free, the density of the

Fig. 2.—Who Actually Does the Work on Red Clover Bloom?



bee population will be determined by the number of colonies that the community will support for profitable honey production. A commercial yard of bees, that is, 60 to 100 colonies of bees in one location, is about as dense a population as can be expected. A farmer having a commercial yard of bees on his farm and farmers close to bee yards should find the growing of legume seed very profitable.

If all farmers would take advantage of established bee yards it would be the most effective means of "stepping-up" legume seed production. A farmer desiring to increase his legume seed yields, but who lacks the necessary pollinating insect force, could, in many cases, correct this limiting factor by offering a free apiary site as a special inducement to a beekeeper to establish a yard of bees on his farm. When colonies of bees are moved on a farm for legume pollination, it should be done previous to the blossoming of the clovers.

In areas where there are no commercial yards of bees, a farmer is encouraged to own whatever number of colonies he can profitably care for. Farmer beekeepers should produce extracted honey, because larger populated colonies are assured, less skilled labour required, and larger honey yields result than when bees are managed for comb honey. On the glaciated limestone soils a colony will average 50 to 100 pounds of extracted honey annually (see Extension Bulletin 159 for details). While this honeybee population may be inadequate to do a good job of legume pollination, nevertheless, a sizeable increase in seed yields would result over yields where natural pollinating insects alone were depended on for pollination.

For purposes of heavy seed production it may be desirable to increase the honeybee population to a degree where honey production becomes unprofitable. Such a programme would necessitate the renting of colonies of bees during the blooming period of legumes, and might involve as many as four or five colonies per acre. Such a heavy concentration of honeybees would be especially desirable in cases where it seems highly important to make superior strains of legume seed rapidly available to farmers.

Competition of Blooming Plants for Insect Visitors Influences Seed Yields

Keen competition exists between blooming legume plants for the visits of pollinating insects. These insects generally confine the bulk of their activity to the blossoms secreting the sweetest nectar. This explains largely why seed sets may be poor on some clovers while on other varieties the seed set is extremely heavy during the same season. Competition between the fields of a given variety of clover will also vary due to genetic differences between strains to produce nectar; to different soil types; and to variation in the soil moisture of the fields.

Alsike clover normally competes well for pollinating insects. White Dutch, yellow and white sweet clovers are the chief competitors of alsike clover bloom. White sweet clover usually competes better for insect visitors than does yellow sweet clover. The second or third bloom of alfalfa which is usually saved for seed normally blossoms at a time when other clover bloom is not so plentiful. During dry seasons honeybees work alfalfa blossoms intensively. Red clover seed in Ohio is produced from the second bloom. This blossoming period usually occurs when there is a scarcity of forage plants for honeybees. Honeybees work red clover heavily for pollen and also obtain nectar in small amounts.

In years when weather conditions are favourable for enormous stands of legumes, seed yields generally will be less because of the inability for even a large insect population to cover the acreage adequately.

ASSOCIATION AFFAIRS

AUCKLAND CENTRAL.

We are pleased to be in the happy position to report that since the publication of the last issue of the N.Z. Beekeeper, our goal has been achieved, and our membership has topped the century. No doubt strict adherence to our programmes, together with our policy of providing a variety of speakers, has resulted in sustaining the interest shown earlier in the year.

Attendances have improved, and we now average 70 members each meeting.

Guest speakers since November last have included the High Commissioner (Mr. Jordan), who spoke at length on the past history of the Honey Industry, Beekeeping in England, an the future of the industry in New Zealand. The branch donated to Mr. Jordan a complete Langstroth hive, the advantages of which he intends to demonstrate to English beekeepers.

Another was Mr. W. Nelson (Chairman of the Honey Control Board), who at the April Meeting addressed members on the "Use and abuse of Queen Excluders." We feel sure that members' knowledge of the use of this appliance has been greatly increased, and that they derived considerable tuition in the many phases of beekeeping touched on by Mr. Nelson.

The main attraction at one of our recent evenings was a moving picture, "The realm of the Honey Bee," lent free of charge by the American Legation, Wellington. We can recommend the film to all branches, as it is an outstanding production, beautifully photographed, up-to-date in subject matter, and makes a special appeal to the beginner in beekeeping.

SUCCESSFUL FIELD DAY.

The weather favoured a gathering of 150 members and friends of Auckland Central Branch at the apiary of Mr. P. A. Hilliary, in the outer suburbs of Auckland, on Saturday, March 23.

The honey house, of two storeys, was in full operation at 10 a.m. Honey was uncapped, then placed on a turntable holding 70 combs, from which an eight frame reversible power extractor, and a 64 frame radial extractor were loaded up. The honey was led by pipes below the floor into a steam jacketed tank, then pumped into a settling trough from which it ran through a fine strainer, and direct into the tanks in the honey room, on the bottom floor. All machinery had individual motors. A steam plant heated the equipment and two tanks of water, and provided for the uncapping knives.

The frame-assembly room, where wiring and embedding took place, and also several benches of exhibits, proved most interesting.

The two hot rooms, holding 350 supers of honey when full, and giving seven tons of honey in a normal season, attracted attention with its warmed honey and automatically controlled heating system.

The queen-rearing apiary, surrounded by Lawsoniana hedges, was very picturesque, holding 600 mating nuclei on stands.

After lunch, the Mayor of Papakura (Mr. S. Evans) opened the Field Day, and congratulated the Auckland Central Branch upon the function.

The President, Mr. F. Campbell, in a happy speech, welcomed visitors, and explained the course of interesting lectures at branch meetings, with an invitation to attend.

Mr. R. Walsh (Apiary Instructor) gave a most interesting lecture and live-hive demonstration. entitled "Wintering Colonies."

Mr. L. Reisterer demonstrated a very instructive lecture entitled "The Manipulation of a Hive." A lecture with demonstration of young queens in mating nuclei, was given by Mrs. Hilliary, and was followed with keen interest. "The Use of Excluders" was ably explained by Mr. W. Nelson.

After afternoon tea had been dispensed by the Branch, an exciting and interesting session of competitions followed. Find the queen in 4-framed nuclei attracted a number of young beekeepers, and had to be run in heats.

The caging of 12 bees, picking each one up by its wings, was competed for by 12 beekeepers, one young lady being an able trier. Many laughs from the gathering greeted any clumsy hold on a bee and a consequent sting.

Mr. Campbell, in concluding the day's function, thanked Mr. and Mrs. Hilliary for the use of their honeyhouse and grounds, and for their co-operation in the preparations for the field day.

He also thanked the ladies for their catering service. and expressed appreciation of the organising ability and work of the Secretary, Mr. E. J. Petry.

FIELD DAY.

SATURDAY, 23rd MARCH, 1946.

Morning Session—10 a.m. till 12.30 p.m.

(1) Uncapping and extracting honey.
2 frame extractor.
8 frame reversible extractor.
64 frame radial extractor.
Steam capping reducer.
Honey pump.
Honey heater and strainer.
Turntable for uncapped combs.
(2) Wash-room (hot and cold water).
(3) Hot-rooms that hold 300 supers of honey.
(4) Assembling and nailing-up frames.
(5) Wiring frames.
(6) Electric embedding wire in foundation.
(7) Benches of equipment and exhibits.
(8) Honey packing room with six tanks.
(9) Filling and stacking 60 lb. tins.
(10) Saw bench (making frames).
(11) Comb melting room.
(12) Oil-burning boiler to supply steam.
Jacketted steam-heated copper.
(13) Melting wax out of old combs.
(14) Queen-rearing apiary.
(Session closes at 12.30 sharp.)
Hot Water provided for Lunch.

Afternoon Session.

1.30 p.m.—Lecture and demonstration: "Use and Abuse of Queen Excluders," by W. Nelson.
1.45 p.m.—Lecture and demonstration: "Wintering Colonies," by R. Walsh.
2.00 p.m.—Lecture and demonstration: "Manipulation of Hives in Spring," by L. Reisterer.
2.15 p.m.—Lecture and demonstration: "Queen-Rearing," by Mrs. Hilliary.
2.30 p.m.—Afternoon Tea.
2.45 p.m.—Competition: 'Finding the Queen.' First Prize, a young laying queen, autumn reared.
3.00 p.m.—President's Remarks.
Official Visitor—Mayor of Papakura.
4.30 p.m.—President closes meeting.

—E. J. PETRY.

MANAWATU.

A Field Day was held at Miss Barrett's apiary, Kiwitea, on 29th March. Seventeen attended and all had a very interesting and instructive day. Mr. Johnson, the Apiary Instructor, first gave a demonstration on introducing a queen by the cage method. The queen to be replaced was found by sieving, partly for demonstration purposes and partly because the bees were dark, which made the queen hard to find. The queen introduced was a Caucasian, the introduction of this strain being an experiment. The queen removed from this hive was next introduced into a nucleus by the direct honey method. This was done by smearing the queen with a good coating of honey from the hive into which she was to be introduced and just letting her go.

The next demonstration was the handling of bees by the chloroform method. This seemed to put the bees temporarily to sleep, and the most savage hives can be easily handled. It is claimed that the bees suffer from no after effects. (Perhaps the President has all the details for handling some members at Conference.—Ed.)

An adjournment to the honey-house was next taken, and Miss Barrett demonstrated the use of the cold uncapping knife, and the extractor created much interest. It is a very old type, having belonged to Miss Barrett's father. One feature was that instead of the combs going in on their end, they go in lengthwise. It is also a quiet-running extractor, being easy to turn with practically no noise.

Afternoon tea was served in the house, which is situated in a pretty spot surrounded by native bush. This part of the programme was carried out by Mrs. Svendsen and Mrs. Campbell, assisted by the other ladies present.

Following this break, Mr. Johnson answered numerous questions.

It was pleasing to see Mr. Hills of Colyton back amongst us. He is an old member of the branch and has not long returned from active service. His bees have been cared for by his mother during his absence. (Good on Mother.)

A very pleasant and enjoyable day was brought to a close by passing a vote of thanks to Miss Barrett and Mr. Johnson, whose work amongst the beekeepers and assistance to the Branch is much appreciated by all.

—H. L. CAMPBELL.

CENTRAL OTAGO.

A most enjoyable Field Day was held at the home of Mr. R. Farmer, Poolburn, towards the end of March. There was an excellent attendance of hobbyist as well as of commercial beekeepers. A feature of the day was the series of addresses given by members on some aspect of apiary work. We were pleased to welcome Mr. Forster, the apiary instructor, and Mr. Marsh, the President of the West Otago Branch.

Mr. Forster spoke on the use of the Swarm Box and its use in raising queen cells, demonstrating such a box.

Mr. Horn spoke on Swarm Control and demonstrated several useful appliances. The hive lifter for prizing boxes apart created much interest, and its effectiveness was evident when the boxes were easily separated even when the burly weight of our President had to be raised. A hoop-iron clip that went right over the roof and clipped into the hand grips, to hold on the roof in a gale, also seemed to be effective. Perhaps it was fortunate that there was no gale that day to try it out. A wire and chain strap for holding a complete two-storied hive together for shifting also seemed to be an effective weapon in theory.

Mr. Adamson spoke on a method for the removal of honey, at the end of the season, without handling frames or using super clearers. The roofs were removed from four or five hives and several puffs of smoke sent down. Then they were smoked again before the super was removed and stood on end in front of the hive, with the frames towards the sun. Every four or five hives were done in the same manner till the yard was completed and the honey loaded for home.

Mr. Myer, who was an apiary instructor on the West Coast, but is now a member of our branch, demonstrated samples of honey from the Coast. Many of our members who cannot do better than produce a pale water-white honey grading 99 points, envied the West Coasters, who had the opportunity of producing honeys of such full and fragrant flavours!

The weather was perfect and a full and enjoyable day ended with regrets that we could not meet more often. The President, Mr. Bennie, thanked Mrs. Farmer and the ladies who assisted her, for attending to our inner needs in their usual hospitable manner.

—W. J. LENNON.

CANTERBURY.

A successful Field Day was held at Geraldine recently by the Canterbury Branch of the National Beekeepers' Association, at the home apiary of Mr. W. W. Watson. Well over 80 people attended, and perfect weather conditions added to the success of the function. The Branch President (Mr. T. Penrose) welcomed those present, and introduced Mr. T. Winter (Chief Apiary Instructor) who paid tribute to Mr. Watson, whom he stated had largely pioneered commercial beekeeping in the Geraldine district, and had set a very high standard in the practical and ethical sides of the industry.

Various demonstrations were given and Mr. Smellie (Apiary Instructor for Canterbury) gave a demonstration of swarm control, and supported his work with an able commentary on the work leading up to the honey flow. He stressed the need for uniformity in apiaries and the adoption of a system or combination of systems best suited to local conditions.

Queen rearing, an interesting and important part in beekeeping, was a subject ably dealt with by Mr. J. Watson, and Mr. Hight gave an interesting talk describing methods of taking off honey with a minimum of work.

Tracing the industry from the early days when sites were hard to secure, and the position ruling to-day, when farmers were paying beekeepers to put bees on their property, Mr. W. Bray, in his talk, said that results to-day proved beyond doubt that bees were essential to a balanced husbandry. To maintain fertility clover was essential; to get clover, lime was essential; but both lime and clover were only partly successful without a proper distribution of the honey bee.

The inspection of Mr. Watson's honey-house proved of great interest to the visitors and revealed a plant capable of handling a large crop, quickly and efficiently. Numerous interesting gadgets were on view and explained by Mr. Watson. Most people present saw for the first time a Dazenbaker hive which was stocked with bees.

Honey Crops Good in District.

"While your crops are obviously good in this district, other parts of the country are not so fortunate," said Mr. Winter, in addressing the gathering. On the whole the South Island was good, he said, but in the North Island beekeepers were in a sorry plight, especially in Hawkes Bay where the disastrous fruit spraying losses had been followed up by a severe drought. In this district it was not a case of estimating a crop but estimating whether bees would gather sufficient to winter on. Mr. Winter outlined the work of his department and said inspection work had been satisfactory, but in his opinion districts were too large. With smaller districts more attention could be given by the officers of his department to actual development work, and with efficient management he was confident that production per hive could be increased.

Pollen substitutes were a problem that his department was working on, and while experiments being carried out were encouraging the results would not be available for a year or two, Mr. Winter said. He was not in favour with the practice of an apiarist buying combs of pollen from a district where pollen was always a surplus. Mr. Winter spoke on the Apiaries Act, and stressed the necessity for all beekeepers to conform with the Act and aid the department to further their interests.

During the afternoon the "Question Box" provided an interesting discussion, much interest being taken in the possible use of sulphur drugs in combatting American foulbrood. Luncheon was served under the trees in the grounds at the home of Mr. and Mrs. Watson, when a very hearty vote of thanks was passed for their generous hospitality.

—J. FORSTER.

WEST OTAGO.

Although the weather was dull but mild, this branch held a very successful Field Day on February 2nd, at Mr. Charles Marsh's apiary, Ettrick.

A good representative gathering was present from different branches. Apologies were received from Mr. J. Forster, Apiary Instructor, and Mr. W. J. Lennon.

On behalf of the branch, Mr. Marsh welcomed the visitors. It was pleasing to note that Mr. R. Stewart, veteran queen breeder, whom we were all pleased was able to be present with us, opened the afternoon's proceedings by introducing a queen. Mr. White demonstrated how to take honey by brushing, then Mr. Marsh's extracting equipment was shown in operation.

Another interesting feature of the afternoon's entertainment was when Mr. May and Mr. Herron showed their respective hive clamps for shifting bees.

After an enjoyable afternoon tea was partaken of, a hearty vote of thanks was accorded Mr. and Mrs. Marsh, and others who helped to make the day such a success.

—H. E. WINSLADE.

ANNUAL CONFERENCE, 1946.

The Annual Conference of the National Beekeepers' Association will be held in AUCKLAND, at the Manchester Unity Hall, on the 10th, 11th, and 12th of July, 1946. Conference commences at 10 a.m. on the 10th. Intending members should book their accommodation in good time, and make train and steamer reservations likewise.

JOURNALS.

The General Secretary is receiving remittances from secretaries that go back to June, 1945. These should be made quarterly. Members cannot receive their Journals until the remittance, with duplicate receipt, goes to the General Secretary, who forwards the duplicate to the Editor for the Journal mailing file. Those members who have not been receiving Journals may have wondered why. As many back copies as possible have been sent out.

Editor.

INTERNAL MARKETING DIVISION
(HONEY SECTION)

There is very little to report at the present time owing to the fact that only small quantities of honey are being received this year.

Firstly, we must thank all those producers who had the courtesy to answer our Circular of the 1st March, and also those who forwarded supplies of honey. The job has been extremely difficult this year to allocate the small quantity of honey received, and only a very small distribution has been made to the civilian trade.

All hospital orders have had to be reduced and any surplus honey that we have been able to save is being packed into bulk and forwarded to England in an endeavour to satisfy their requirements of 500 tons.

For the information of producers, the following is a copy of a letter just received from a consumer of New Zealand Honey in London:—

London, E.C.2,
27/2/46.

New Zealand Honey Board,
Auckland, New Zealand.

Dear Sirs,—At the commencement of war, five jars of New Zealand Honey were among my small supply of emergency stores.

These being very precious, we only opened them on special occasions, and a week ago we finished the last.

I should like to put it on record that each jar was better than the preceding one, and if you feel inclined to answer this appreciation, perhaps you could tell me if honey really matures with age, or whether we just thought it better owing to the increased shortage of good things.

Here's to the future when we again get supplies of New Zealand honey, unrestricted by international groups or even by our own Government officials.

Please remember always that the ordinary people of England thoroughly appreciate all the help given and offered by New Zealand, especially the recent food offer, though bureaucracy sometimes makes it appear otherwise.

With compliments, yours faithfully,

C. E. Playford.

H. F. STOUPE, Manager.

STOP PRESS.

As we go to press, the Minister of Marketing has made an announcement of a one farthing per lb. bonus payment on honey supplied from 1943 to 1945 inclusive. This announcement will give considerable satisfaction to the suppliers of that period, and we congratulate the Minister on the wisdom of his reply to representations on the subject.

FOR THE HOUSEWIFE.

GRAPEFRUIT WITH HONEY.

Use one for breakfast. Halve the grapefruit the night before. Take the seeds out and pour honey in the places where the seeds were. Leave till next morning. The honey will penetrate the fruit and mix with the juice. By doing this you will realise how good the grapefruit is as a breakfast dish—with a glass of milk.

CAKE MIXTURE.

To any cake mixture add half a pound of honey. Cream honey and butter. Add beaten eggs and then dry ingredients, fruit, etc.

GINGER CAKES AND BISCUITS.

Use one cup honey. It's very good.

Thank you again to "Beekeeper's Wife," Nelson.

SWEET CLOVER AS A SOIL BUILDER.

Present day agriculture requires the use of some legume in the crop rotation in order to maintain the supply of nitrogen in the soil. The need has resulted in the general use of sweet clover in recent years.

Advertising matter recently issued by the American Agricultural Chemical Co., which summarizes reports of experiment stations, shows sweet clover to return a higher yield of nitrogen than other legumes when used for this purpose.

Their table averaging the experience of leading experiment stations show that a total of 117 pounds of nitrogen per acre can be added by ploughing under a crop of sweet clover. The average of all legumes is 104 pounds per acre. Soybeans yield only 91 pounds while alfalfa next highest to sweet clover yields a total of 113 pounds.

As a soil builder sweet clover is second to none, and as a honey plant it is the finest yet to come into cultivation under midwest conditions.

—American Bee Journal.

CONTENTS.

	Page
Editorials	3
Meeting of the Executive	3
Honey Marketing Council	4
Select Committee	4
The New Constitution	5
Increase in the Price of Honey....	5
Conference, 1946	5
I.M.D. Reserves	5
Honey to England	7
The Present Marketing Situation	7
Department of Agriculture	9
Agricultural Development Committee	11
Beehives become Health Factory	18
Rendering Beeswax	19
Notes for Beginners	20, 22
Honey Bees	23
Association Affairs	26
Internal Marketing Division	29
Sweet Clover as a Soil Builder	30
The N.Z. Beekeeper	31

"THE N.Z. BEEKEEPER"

This Journal is issued free to all members of the National Beekeepers' Association of N.Z. Failure to renew subscriptions promptly results in automatic removal of names from Journal Mailing List.

Subscription rates for the Journal are 5/- per annum, post free. Please notify any irregularity in receipt of the Journal to the Editor.

Literary contributions and advertisements must be in the hands of the Editor, Mr. W. J. Lennon, Omakau, Central Otago, not later than the first of month of publication.

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

Beynon Printing Co. Ltd., Timaru